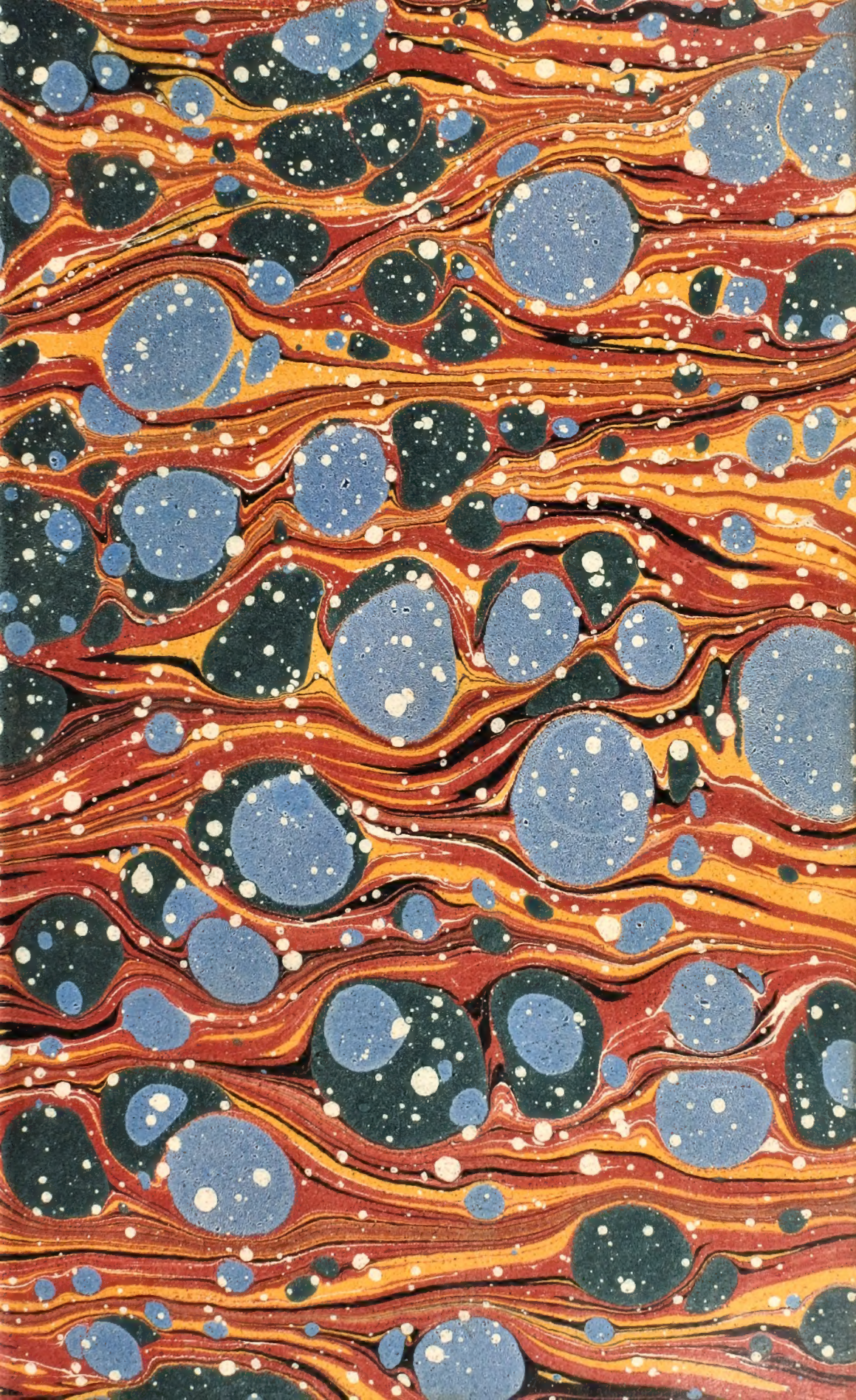


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LEXICON MEDICUM;

OR

MEDICAL DICTIONARY:

CONTAINING AN

EXPLANATION OF THE TERMS

IN

ANATOMY, HUMAN AND COMPARATIVE,
BOTANY,
CHEMISTRY,
MATERIA MEDICA,
MIDWIFERY,
PHARMACY,
PHYSIOLOGY,
PRACTICE OF PHYSIC,
SURGERY,

AND THE

VARIOUS BRANCHES OF NATURAL PHILOSOPHY CONNECTED WITH MEDICINE.

SELECTED, ARRANGED, AND COMPILED, FROM THE BEST AUTHORS.

BY THE LATE

ROBERT HOOPER, M.D. F.L.S.

The Seventh Edition,

REVISED, CORRECTED, AND ENLARGED, BY

KLEIN GRANT, M.D. &c. &c.

LECTURER ON THERAPEUTICS AT THE NORTH LONDON SCHOOL OF MEDICINE.

LONDON:

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1839.

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JAMES COPLAND,

M.D. F.R.S. &c. &c.

IN TESTIMONY OF RESPECT

FOR HIS HIGH INTELLECTUAL ENDOWMENTS, EXTENSIVE LEARNING,

AND GREAT PROFESSIONAL SKILL,

AND OF ESTEEM

FOR HIS MORAL WORTH, AND HONOURABLE AND

BENEVOLENT CHARACTER,

THIS EDITION

OF

HOOPER'S MEDICAL DICTIONARY

IS INSCRIBED BY HIS FRIEND,

THE EDITOR.

THE

EDITOR'S PREFACE.

The work of which a new edition is now offered to the public, is in some degree peculiar in its character, inasmuch as it attempts to combine the objects of a technological lexicon, with those of a compendious cyclopædia of the medical sciences.

Whatever opinion may be formed in the abstract as to the congruity of these objects, the extensive circulation of Dr. Hooper's Medical Dictionary has sufficiently evinced that there must be something in its plan which is generally useful, and adapted to the wants of a large class of readers. The object of the Editor, therefore, has been to improve it in its details without altering the general principle of its construction. Nevertheless, several changes have been made, the expediency of which it is presumed will be admitted. Thus, there were formerly numerous mineralogical articles which had no immediate relation to any branch of medical science: in the present edition, notices of those mineral substances only are retained which have been at some time or other employed medicinally, or have reference to some particular point in chemistry. The space thus left vacant has been re-occupied with the principal terms of comparative anatomy and zoology — sciences intimately connected with medicine, and essential to its philosophical cultivation. The biography has been entirely expunged, since it was too meagre to be of much utility, while an extension of it would have excluded matters which had a more decided claim to admission. There is one circumstance that can hardly fail to be remarked, both in the last edition and in the present, namely, the great length of the articles on chemistry, in comparison with those on other subjects: but, on attentive consideration, it will be found that, from the peculiar nature of the objects with which this science is conversant, it is often impossible to give a sufficient definition, without giving a description of the thing defined; and, since much useful information on this subject had been accumulated, the Editor thought it better to render this portion of the work as complete as possible, than to attempt to abridge it: great pains have therefore been taken to introduce the most recent discoveries, and particular attention has been directed to the department of organic chemistry. On the subject of drugs and their

preparations, the Editor found an immense mass of information ready to his hand; and this, with some corrections, and numerous additions, now affords a very extensive view of the Materia Medica and Pharmacy of all ages. Great care has been taken to mention the proper doses, and modes of administration of medicines, in order to render this part of the work as practically useful as possible. It is necessary to mention that as a portion of the present edition of this Dictionary was already printed when the recent London Pharmacopœia appeared, the Pharmacopœia referred to as *the present* in the earlier parts of the work, is that of 1824, instead of that of 1836. The discrepancies thus occasioned are, however, of little importance, and have been reconciled as much as possible in the subsequent progress of the work.

The general plan of this Dictionary having been adhered to, very extensive alterations have been made in the details of its execution. The Editor, conceiving that, after all, the main object of a lexicon is the definition and derivation of terms, has bestowed much labour on this part of the work, which it must be acknowledged was before extremely defective, a very large proportion of the terms having been erroneously derived and ill defined, and many terms in familar use omitted altogether.

The lexicography in this edition is therefore in a great measure new, and it is hoped that the work, as it now stands, will be found to contain a tolerably full and accurate explanation of the terms used in medicine, and the collateral sciences. Many barbarous and ill-constructed words will here be met with, which are admitted either because they are or have been in general use, or have been introduced on the authority of some distinguished writer, or are necessary to the understanding of the medical literature of some particular period. A host of new words have lately been invented on the Continent, which, being either ungrammatical, or superfluous, or both, have no chance of ever being adopted into the permanent language of medicine: these have been purposely omitted.

With respect to the longer articles, or those in which an exposition of the subject follows the definition of the term, the Editor has not had an easy task to perform. The views contained in some of these articles were nearly obsolete, and in the greater part considerable alterations and additions have been found necessary. Many of them have been replaced by articles entirely new, which have either been supplied by the Editor, or selected from sources which seemed most appropriate as combining full and accurate information with condensation of style: a few, relating to subjects on which scarcely more is known now than formerly, remain with little alteration. The greater part of the articles on the practice of physic are new, or nearly so.

In order to connect the different articles on comparative anatomy, zoology, and botany, scattered through the work, two new articles have been given

under the heads *Animal Kingdom* and *Vegetable Kingdom*, which the Editor hopes may be found useful.

With respect to the sources from which the information on different subjects has been drawn, — wherever a particular obligation to any one author has been incurred, it has been duly acknowledged, in as far at least as the Editor was concerned.

Some articles having been unavoidably omitted in the progress of the work, a short Supplement has been added. It is too little the custom in the present day to take any notice of typographical errors; the consequence of which is, that they are transmitted from one edition to another, till they come at last to affect the meaning, and are rendered permanent. In this edition of Hooper's Dictionary, such errors, of whatever kind, as are likely to mislead, are noticed in a table of errata.

Finally, the Editor trusts that on a comparison of the present with the preceding edition, it will be found that the work, in passing through his hands, has gained both in accuracy and extent of information.

50. *Bernard Street, Russell Square,*
December, 1838.

A NEW

MEDICAL DICTIONARY.

A. 1. In composition this letter, when it represents the *alpha privativum* of the Greeks, denotes the absence or privation of any thing; as *aphyllus*, leafless; *aphonia*, loss of voice: when the word to which it is prefixed begins with a vowel, *v* or *n* is inserted for the sake of euphony; thus *anorexia*, want of appetite.

2. A. AA. Abbreviations of the Greek preposition *ανα*, *ana*, which signifies *of each*, and is used in prescriptions after the mention of two or more ingredients, when it is intended that the specified quantity of each ingredient should be taken; thus ℞. *Potassæ nitratis — Sacchari albi* āā ʒj. Take nitrate of potassa and white sugar, of each one drachm.

3. AAA. A contraction of *amalgama*, an amalgam.

Aabam. An alchemical name of lead.

Aarzhil. A place in the canton of Berne in Switzerland. It has mineral waters which contain muriates and sulphates of lime and soda, oxide of iron, and hydrosulphuric acid.

Abach. A town not far from Ratisbon in Bavaria. It has a hydrosulphuretted saline spring.

Abactus venter. This phrase has been used to signify abortion; but not by any classical writer.

Abaisir. See *Spodium.*

Abalienа'tio. Abalienation. A term formerly applied to a decay of the body, or any part of it, and to a loss of the senses or of the understanding.

Abaliena'tus. Abalienated. Corrupted. Applied to the mental powers when disordered, and to parts that are dead or benumbed.

Abanga. See *Ady.*

ABAPTI'STON. (From *α*, neg. and *βαπτιζω*, to plunge.) A name given to the crown of the old trepan, which was of a conical shape, to prevent it from penetrating the cranium too suddenly.

Abaremo-temo. A tree which grows in the mountains of Brazil, and is supposed to be a mimosa. According to Piso, the decoction of its bark, which is bitter and astringent, was applied by the natives to ill-conditioned ulcers.

Abarnahas. A term used by the alchemists, signifying *luna plena, magnes* or *magnesia.*

Abartamen. Lead.

ABARTICULATION. (*Abarticulatio, onis*, f.; from *ab*, and *articulatio*, a joint.) A species of articulation which admits of free motion. See *Diarthrosis.*

Abas. An Arabic name of the scald-head.

Abbecourt. A village six leagues from Paris, and one from Poissy. It has a chalybeate spring, formerly much frequented, but now fallen into neglect.

Abbeville. A city in the department of the Somme. It has an acidulous chalybeate spring.

ABBREVIATION. (*Abbreviatio, onis.* f.) Certain abbreviations, consisting of signs, letters, or parts of words, are used in medical formulæ and prescriptions for the sake of expedition; thus ℞ signifies *recipe — h. s. horâ somni — conf. aromat. confectio aromatica.* Abbreviations were much more employed formerly than they are at present. The following are some of those now in most general use: —

āā. *Ana.*
Aq. *Aqua.*
Aq. Font. *Aqua fontis.*
Aq. Destil. *Aqua destillata.*
B. A. *Balneum arenæ.*
B. M. *Balneum mariæ.*
B. V. *Balneum vaporis.*
C. *Compositus.*
C. M. *Cras manè.*
Cochl. *Cochleare.*
Cochl. Ampl. *Cochleare amplum.*
Cochl. Med. *Cochleare medium.*
Cochl. Min. *Cochleare minimum.*
Cyath. *Cyathus.*
Decoct. *Decoctum.*
Div. *Divide.*
Elect. *Electuarium.*
F. *Fiat* or *Fiant.*
G^{tt}. *Gutta.*
Gr. *Granum.*
Haust. *Haustus.*
H. S. *Horâ somni.*
Inf. *Infusum* or *Infunde.*
M. *Misce.*
M. or Man. *Manipulus.*

Mist. *Mistura.*
N°. *Numero.*
O. *Octarium.*
Ol. *Oleum.*
P. Æ. *Partes æquales.*
Pil. *Pilula*
P. P. *Præparatus.*
P. R. N. *Pro re natâ.*
Pug. *Pugillus.*
Pulv. *Pulvis.*
Q. S. *Quantum sufficiat.*
℞. *Recipe.*
S. A. *Secundum artem.*
Sp. *Spiritus.*
SS. *Semis.*
Syr. *Syrupus.*
Tinct. *Tinctura.*
℔. *Libra.*
℥. *Uncia.*
℈. *Drachma.*
℈. *Scrupulus.*
♏. *Minimum.*

It is unnecessary to enumerate all the contractions used in ordinary prescriptions, since they are in a great measure arbitrary with respect to the omission of one or more syllables in a word, and very soon become familiar by a little practice.

A variety of characters or signs were used by the old chemists and pharmacologists: thus the seven metals were represented by the signs of the planets after which they were named, as gold or *Sol* by that of the sun ☉; silver or *Luna* by that of the moon ☽; iron by that of mars ♂, &c. All the principal substances used in chemistry had likewise their particular symbols, which were employed partly for the sake of brevity, but chiefly perhaps for the purpose of mystification. The ancient characters were improved and new ones added by Bergman; and when the French chemists reformed the nomenclature of the science, they also attempted to introduce a corresponding system of signs, which might speak a language intelligible to scientific men of all nations, and constitute a kind of chemical stenography. Such characters, however, are not of much use, and have now fallen into neglect. Botanists employ some abbreviations and characters, but each writer usually determines the signification of these according to his own pleasure; a few, however, are generally adopted. Numerical words are expressed by the corresponding figures: thus 2-valvis for *bivalvis*, 4-fidus for *quadrifidus*, &c. O after the name of any part of a plant denotes the absence of that part: thus *Cor.* O denotes that a plant has no corolla. The sign ☉ after the name of a plant denotes it to be annual; ♂ biennial; ♃ that it has a perennial root; ♄ that it has a perennial stem.

ABBREVIA'TUS. Abbreviate: shortened. Thus a calyx or flower-cup is said to be abbreviate when it is shorter than the tube of the blossom.

Abcdaria herba. *Abecedaria herba.* The *Spilanthus acmella* is so named by Rumph, because the Ethiopians gave it to their children to chew, in order to make them pronounce their letters better.

Abdellavi. A species of melon which grows in Egypt. It is rather insipid to the taste, but its seeds were highly esteemed for their refrigerant virtues. — *Prosper Alpinus.*

ABDO'MEN. (*men, inis.* n.; from *abdo*, to hide: because it hides the viscera. Some derive it from *abdo*, to hide, and *omentum*, the caul.) The belly. The largest cavity in the body, bounded above by the diaphragm, by which it is separated from the chest; below, by the bones of the pubes, and ischium; on each side, by various muscles, the short ribs and ossa ilii; anteriorly, by the abdominal muscles, and posteriorly by the lumbar vertebræ and muscles of the loins. Internally it is invested by a serous membrane, called peritoneum (see *Peritoneum*), and externally by muscles and common integuments. The abdomen and the pelvis constitute in reality but one cavity, there being no partition between them. The abdomen is arbitrarily divided into certain regions. An imaginary line is drawn transversely from the cartilage of the seventh rib on one side, to the corresponding point on the opposite side, and another transverse line between the anterior superior spines of the ilia. The part above the upper line is termed the *epigastric* region; that between the upper and lower lines, the *umbilical* region, in the centre of which is the umbilicus or navel; and that beneath the lower line, the *hypogastric* region. These regions are subdivided by two vertical lines, one being drawn on each side from the cartilage of the seventh rib, to the anterior superior spine of the ilium. The central portion of the epigastric region retains the name of *epigastric;* the lateral portions are called the right and left *hypochondriac* regions; the middle part of the umbilical region is still called *umbilical*, while the parts to the right and left are called *lumbar:* the hypogastric region is denominated *pubic* in its central portion, and is divided, on each side, into an *iliac* and an *inguinal* region.

In the cavity of the belly are contained,

Anteriorly and *laterally*,

1. The epiploon. 2. The stomach. 3. The large and small intestines. 4. The mesentery. 5. The lacteal vessels. 6. The pancreas. 7. The spleen. 8. The liver and gall-bladder.

Posteriorly, without the peritoneum,

1. The kidneys. 2. The supra-renal glands. 3. The ureters. 4. The receptaculum chyli. 5. The descending aorta. 6. The ascending vena cava.

Inferiorly, in the pelvis and without the peritoneum.

In man, 1. The urinary bladder. 2. The spermatic vessels. 3. The rectum.

In woman, besides the urinary bladder and intestinum rectum,

1. The uterus. 2. The four ligaments of the uterus. 3. The two ovaria. 4. The two Fallopian tubes. 5. The vagina.

ABDOMINAL. (*Abdominalis;* from *abdomen*, the belly. Abdominal; pertaining to the belly.

Abdominal aorta. That portion of the aorta which is situated below the diaphragm.

Abdominal aponeurosis. The tendinous aponeurosis of the oblique and transverse mus-

cles which forms the linea alba and sheath of the recti muscles.

Abdominal ganglia. The semilunar ganglia are so called, because they are situated in the abdomen.

Abdominal muscles. See *Muscles.*

Abdominal regions. See *Abdomen.*

Abdominal ring. See *Annulus abdominis.*

Abdominal vertebræ. The lumbar vertebræ are so called, because they contribute to form the posterior wall of the abdomen.

Abdominal viscera. See *Abdomen.*

Abdomino'scopy. (*Abdominoscopia, a, æ.* f.; from *abdomen*, and σκοπεω, to explore.) Exploration of the abdomen.

Abducens labiorum. See *Levator anguli oris.*

ABDUCENT. (*Abducens;* from *ab*, from, and *duco*, to draw.) 1. Muscles are so called which separate the parts into which they are inserted from the axis of the body or of a limb. See *Abductor.*

2. The sixth pair of nerves are called *nervi abducentes.* See *Nervi abducentes.*

ABDUCTION. (*Abductio, onis.* f.; from *ab*, and *duco*, to draw.) 1. In *Physiology*, the action by which muscles withdraw a part from the axis of the body or of a limb, and also the state of a part so withdrawn; thus when certain muscles separate the arm from the side, or the thumb from the rest of the fingers, they are said to perform the abduction of these parts, and the parts themselves are said to be in a state of abduction.

2. In *Surgery*, this term was formerly applied to a fracture in which the bone near a joint is so divided that the extremities recede from each other. Cælius Aurelianus uses this word for a sprain.

ABDUCTOR. (*or, oris*, m.; from *abduco*, to draw away.) A muscle is so called which performs the abduction of any part; its antagonist is called *adductor.*

Abductor auricularis. See *Abductor minimi digiti manus.*

Abductor auris. A portion of the posterior auris muscle, the existence of which is not constant.

Abductor brevis alter. See *Abductor pollicis manus.*

Abductor indicis. See *Abductor indicis manus.*

Abductor indicis manus. An internal interosseous muscle of the fore-finger, *Semi-interosseus indicis* of Winslow; *Abductor indicis* of Cowper. It arises from the superior part of the metacarpal bone, and inner side of the os trapezium, by a fleshy beginning, runs towards the metacarpal bone of the fore-finger, adheres to it, and is connected by a broad tendon to the superior part of the first phalanx of the fore-finger. Sometimes it arises by a double tendon. Its use is to draw the fore-finger from the rest towards the thumb, and to bend it somewhat towards the palm.

Abductor indicis pedis. An internal interosseous muscle of the fore-toe, which arises tendinous and fleshy, by two origins; from the root of the inside of the metatarsal bone of the fore-toe, from the outside of the root of the metatarsal bone of the great-toe, and from the os cuneiforme internum, and is inserted tendinous into the inside of the root of the first joint of the fore-toe. Its use is to pull the fore-toe inwards, from the rest of the small toes.

Abductor longus pollicis. See *Extensor primi internodii pollicis.*

Abductor longus pollicis manus. See *Extensor ossis metacarpi pollicis manus.*

Abductor medii digiti pedis. An interosseous muscle of the foot, which arises tendinous and fleshy, from the inside of the root of the metatarsal bone of the middle toe internally, and is inserted tendinous into the inside of the root of the first joint of the middle toe. Its use is to pull the middle toe inwards.

Abductor minimi digiti manus. A muscle of the little finger. *Extensor tertii internodii minimi digiti* of Douglas; *Hypothenar minor* of Winslow; *Abductor auricularis* of some writers. It arises fleshy from the pisiform bone, and from that part of the *ligamentum carpi annulare* next it, and is inserted, tendinous, into the inner side of the upper end of the first bone of the little finger. Its use is to draw the little finger from the rest.

Abductor minimi digiti pedis. A muscle of the little toe. *Abductor* of Douglas. Winslow divides this muscle into two, *Parathenar major* and *metatarseus.* It arises tendinous and fleshy, from the edge of a cavity on the inferior part of the protuberance of the os calcis, and from the root of the metatarsal bone of the little toe, and is inserted into the root of the first joint of the little toe externally, Its use is to bend the little toe, and its metatarsal bone, downwards, and to draw the little toe from the rest.

Abductor oculi. See *Rectus externus oculi.*

Abductor pollicis manus. A muscle of the thumb. *Abductor thenar Riolani* of Douglas; *Abductor pollicis* of Cowper. It arises by a broad, tendinous, and fleshy beginning, from the ligamentum carpi annulare, and from the os trapezium, and is inserted tendinous into the outer side of the root of the first bone of the thumb. Its use is to draw the thumb from the fingers. The *Abductor brevis alter* of Albinus is merely the inner portion of this muscle.

Abductor pollicis pedis. A muscle of the great toe. *Thenar* of Winslow; *abductor pollicis* of Cowper. It arises fleshy, from the inside of the root of the protuberance of the os calcis, where it forms the heel, and tendinous from the same bone, where it joins the os naviculare; and is inserted tendinous into the internal sesamoid bone and root of the first joint of the great toe. Its use is to pull the great toe from the rest.

Abductor tertii digiti pedis. An interosseous muscle of the foot, which arises tendinous and fleshy from the inside and inferior part of the root of the metatarsal bone of the third toe; and is inserted tendinous into the inside of the root of the first joint of the third toe. Its use is to pull the third toe inwards.

Abecedaria herba. See *Abedaria herba.*

ABELLICE'A. An old name of the logwood tree. See *Hæmatoxylon campechianum.*

ABELMELUCH. The name of a species

of *Ricinus* according to some authors. Prosper Alpinus states that a tree growing in the neighbourhood of Mecca is so called. Its seeds are black and oblong, and are alleged to act as a very violent cathartic.

ABELMO'SCHUS. (From the Arabic *habb el misk*, musk seed) Abelmosch or Abelmusk. See *Hibiscus abelmoschus*.

Abensberg. A city of Bavaria which has a cold sulphureous spring.

Abepithy'mia. (From α, priv. and επιθυμια, that portion of the soul or active principle which, according to Plato, is seated in the abdomen.) This name has been given to a paralysis of the solar plexus, by which the communication is cut off between the abdominal viscera and the nervous system, and life thus destroyed. Lobstein believes that instances of sudden death from strong passions of the mind are referrible to paralysis of this plexus.

ABERRATION. (*Aberratio, onis.* f.; from *aberro*, to wander from.) In medical language this word signifies, 1. The passage of a fluid in the living body into vessels not destined to receive it, as of red blood into the capillaries, constituting the *error loci* of Boerhaave; 2. The determination of a fluid to a part different from that to which it is ordinarily directed, as in vicarious hæmorrhage; 3. Alienation of the mind, which is its most usual acceptation.

Abe'sasum. The oxide which forms on the iron of wheels was formerly so called, and was used in medicine.

A'besum. Quicklime.

Abevacuation. (*Abevacuatio, onis.* f.; from *ab*, diminutive, and *evacuo*, to empty.) A partial or incomplete evacuation of humours, either naturally or by art.

Abhal. A fruit well known throughout Asia; it is the produce of a species of cypress, and is believed to be a powerful emmenagogue.

A'bies. (*Es, etis.* f.; probably from απιεις, *abiens*, as denoting its lofty growth.) The fir. See *Pinus*.

Abies balsamea. See *Pinus balsamea*.

Abies canadensis. See *Pinus balsamea*.

Abies cembra. See *Pinus cembra*.

Abies mungos scopoli. See *Pinus pumilio*.

Abies virginiana. See *Pinus balsamea*.

Abie'tic acid. (*Acidum abieticum.*) This name is given by M. Baup to a peculiar acid discovered by him in the resin of the *Pinus abies*. It crystallises in square plates, is soluble in alkohol, and forms salts with the alkalies. Caillot has applied the same name to a resinous substance which he found in the Strasbourg turpentine; Berzelius regards it as a mixture of the resins *alpha* and *beta* of this turpentine.

Abi'etine. *Abietina.* The name given by Caillot to a resinous substance obtained from the Strasbourg turpentine; Berzelius calls it the resin *gamma* of the same turpentine.

A'biga. (Probably so called from *abigo*, to expel, as it was supposed to promote delivery.) The ground pine or chamæpitys. See *Teucrium chamæpitys*.

ABIO'TOS. From α, neg. and βιοω, to live.) Deadly. A name given to hemlock, from its deadly qualities. See *Conium maculatum*.

ABIRRITATION. (*Abirritatio;* from *ab*, priv., and *irritatio*, irritation.) A term introduced by Broussais, by which he understands diminution of the vital phenomena in the different tissues. This term appears to be superfluous, since it is synonymous with Asthenia, Debility, &c.

ABLACTATION. (*Ablactatio, onis* f.; from *ab*, from, and *lacto*, to suckle.) Ablactation, or the weaning of a child from the breast.

ABLATION. (*ablatio;* from *aufero*, to take away.) 1. The taking away from the body whatever is hurtful.

2. In the writings of some old authors, it expresses the interval betwixt two paroxysms of a fever, or the time of remission.

3. Chemists formerly employed this term to signify the removal of any thing that is either finished, or no longer necessary in a process.

Able'psia. (From α, priv. and βλεπω, to see.) Ablepsy. Blindness.

ABLUENT. (*Abluens;* from *abluo*, to wash away.) That which washes away any impurity.

ABLUTION. (*Ablutio;* from *abluo*, to wash away.) 1. The washing of the body or any part of it with a proper fluid. 2. The separation of extraneous matters from any substance by washing.

Aboit. Abit. An alchemical term for white lead.

Aboma'sus. *Abomasum. Abomasium.* (From *ab*, beneath, and *omasum*, the paunch.) The fourth stomach of ruminating animals. (See *Rumination*.

Abomina'tio. This term has been used by some medical writers to signify loathing of food.

Abo'rsus. A miscarriage.

Abo'rtiens. Miscarrying. Botanists have sometimes used this term synonymously with *sterilis*, barren.

ABORTION. (*Abortio, onis.* f.) Abortus; Aborsus. Αμβλωμα; Αμβλωσις; Εξαμβλωσις; Εκτρωμα; Εκτρωσις, Τρωσμος; Διαφθορα; Αποφθορα; Φθορα; Αποφθαρμα.

The natural term of pregnancy is forty weeks, or nine calendar months; but a morbid expulsion of the fœtus may take place at any time during this period. If this accident occur before the end of the sixth month it is called *abortion* or *miscarriage;* if between the sixth and the end of the ninth month, *premature labour*. The term *miscarriage* is restricted by some writers to expulsion of the fœtus within six weeks after conception; abortion and miscarriage are, however, generally used synonymously.

The causes of abortion are referrible to the ovum, to the uterus, or to the constitution of the mother as influencing either or both of these. The causes connected with the ovum act by destroying the life of the fœtus, which then operates as a foreign body stimulating the uterus to expel it; or by impeding the growth of the fœtus, so that it does not afford a ready circulation to the blood sent to the uterus; whence arises a congested state of the uterine vessels and consequent hæmorrhage. Though the death of the fœtus generally induces abortion, it is not invariably followed by this event.

"There is usually," says Dr. Denman, "a consent between the fœtus and the shell of the ovum, as the placental part and membranes may be called, but not always; for examples have occurred in which the fœtus has died before the termination of the third month; yet the shell, being healthy, has increased to a certain size, has remained till the expiration of the ninth month, and then been expelled according to the genius and constitution of the uterus, though frequently it has been found to have undergone great changes; as, for instance, in many cases of hydatids." The changes effected in the product of conception when thus retained in the uterus after the death of the fœtus are various. In some cases the fœtus and its appendages are discharged at uncertain intervals in different degrees of putrefaction and dissolution. When the membranes remain unbroken, and the air is thus excluded from the cavity of the uterus, the fœtus, though dead, is occasionally retained to the full period, and is then expelled in a softened and macerated state, but without putrefaction. In a few instances the fœtus and its envelopes have been converted into adipocere; and in still rarer cases they have beeome more or less completely hardened, or ossified, and either remained *in situ* during the natural life of the mother, or, after an interval of months or years, excited inflammation and abscess, and made their escape in detached fragments by the vagina, or through the parietes of the abdomen, or they have passed by an ulcerated opening into the intestinal canal and been discharged by the rectum. In some cases, the placenta is retained for a longer or shorter time after the expulsion of the fœtus, and occasionally it continues attached to the uterus, increasing in size, and assuming the form of a fleshy mass, in which have been found simple cysts, or cysts containing hydatids. (See *Mole.*) In cases of twins, one fœtus may die while the other continues alive, both being retained to the full time. The death, or atrophy, of the fœtus may be caused by a diseased state of its own organs, as the brain, or the thoracic or abdominal viscera; the same result may follow defective or anormal development. Various morbid conditions of the appendages or envelopes may impede the nutrition or destroy the life of the fœtus. Thus the placenta may be imperfectly attached to the uterus, it may be implanted over the cervix uteri, or it may adhere to some part of the surface of the fœtus: it may be inflamed, it may undergo a schirrous or cartilaginous induration, or degenerate into a fatty matter; blood may be effused within its substance; it is subject to varices, atrophy, and hypertrophy, and is sometimes found to contain cysts, hydatids, or calcareous deposits: diseases of the umbilical cord, as tumours, hydatids, knots, or adhesions, may impede the course of the blood through it, and thus prove destructive to the fœtus. Unusual length or shortness of the cord, and its torsion round the neck, or other parts of the fœtus, have also been regarded as circumstances operating injuriously on the circulation; their influence however cannot often be very considerable; the membranes may be inflamed and thickened, serum may be effused between the chorion and amnion, and blood may be extravasated in various situations, as between the uterus and placenta, or in the substance of the placenta—between the uterus and the ovum, or between the membranes of the latter—in the cavity of the amnion, or in the substance of the cord. The presence of a very large or very small quantity of the amniotic fluid may occasionally be a cause of abortion, and may be considered as operating both on the fœtus and the uterus.

The chief causes of abortion immediately referrible to the uterus are—morbid sensibility and contractility of this organ, a plethoric or congested state of its vessels, chronic inflammation, morbid adhesions of the uterus to the surrounding parts, schirrous and various other tumours. Relaxation of the neck of the uterus, and atony of the organ, whether arising from natural defect, protracted leucorrhœa, or laborious parturition, may also be reckoned among the occasional causes of abortion. Diseases of the ovaries or Fallopian tubes may so influence the uterine functions as to occasion premature expulsion of the fœtus. Of the causes of abortion referrible to the uterus none is more frequent than vascular congestion: the great influence of this cause is illustrated by a fact observed by many authors; namely, that all the occasional causes of abortion produce a greater effect at the monthly periods corresponding to those of the menses than at any other time—which in all probability is to be ascribed to the natural turgescence of the uterine vessels at those periods.

The causes referrible to the constitution of the mother are extremely numerous. Among the most frequent may be mentioned great mobility of the nervous system, as that attendant on hysteria; extreme debility; general plethora; advanced age; cachectic states of the system, especially those induced by the syphilitic or mercurial poison; and deformity of the spine or pelvis. The hæmorrhagic diathesis, so remarkable in some individuals, will naturally tend to produce abortion in pregnant females who labour under this morbid disposition. The general disturbance excited by any severe febrile disease, as typhus, small-pox, &c., frequently induces abortion. A tendency to miscarry, like many other morbid tendencies, may be confirmed by habit: a woman who has miscarried once or twice from accidental causes is very liable to repetitions of the same evil; but if after repeated miscarriages she is once enabled to go on to the full time, the morbid habit is frequently broken, and the disposition to abortion ceases. Lastly, the frequency of abortion seems, at particular times, to be increased by unknown atmospheric causes, or rather by some unknown causes connected with the constitution of external nature, under the influence of which miscarriage has even been observed to prevail as an epidemy. Particular habits or circumstances of life are found to predispose to abortion: thus a luxurious and indolent mode of living is productive at once of plethora and debility, and therefore likely to induce a disposition to this accident;

excessive venery, as productive both of local and general debility, is a frequent predisposing cause; and sexual intercourse during the early months of pregnancy often interrupts the natural progress of gestation.

The occasional exciting causes of abortion may be said to embrace every thing capable of making a noxious impression on the system. The most frequent are those which affect the nervous system through the medium of the mind, such as terror, anger, excessive joy, and other powerful emotions; and those which occasion mechanical injury, as falls, blows, dancing, riding on horseback or in an uneasy carriage, &c. To these may be added severe vomiting, as that induced by sea-sickness, violent coughs, large blood-letting, drastic purgatives, emmenagogues, and hot baths. Where a strong predisposition to abortion exists, the most trivial causes are sufficient to determine its occurrence; even the extraction of a tooth, or a violent fit of laughter, or of hiccup, has been known to produce this effect.

The precursory symptoms of abortion will necessarily vary according to the exciting cause; in general, however, this accident is preceded by a sense of languor, depression, and faintness, with flaccidity of the breasts, and disorder of the digestive organs. Where a plethoric state of the uterine vessels exists, febrile symptoms are present for several days previously, accompanied by a sense of weight in the loins and pelvis, and discharge of blood from the vagina in larger or smaller quantity, with occasional pains resembling those of incipient labour. Notwithstanding the occurrence of such symptoms, miscarriage may sometimes be averted by judicious treatment, especially in the early months of pregnancy; when, however, the discharge is continual, the pains return at regular intervals, the os uteri is relaxed, and the membranes begin to protrude, counteracting measures are of no avail, and abortion is inevitable.

The process of abortion consists of two parts: the detachment of the ovum, and its expulsion. The former is productive of hæmorrhage, which varies in degree according to the period of pregnancy and other circumstances; the latter is accompanied with pain, arising, at early periods, from irritation of the uterus, and at later periods from its contractions. The symptoms of abortion, therefore, vary materially according to the period of gestation at which it takes place. Abortion may occur within three weeks after conception, at which time the ovum has either not descended into the uterus, or is too small to be easily detected; the tunica decidua alone presents itself. In this case the symptoms of abortion nearly resemble those of menorrhagia; there is a considerable and often a copious flow of blood, which coagulates and forms clots, and in some of these the ovum and fragments of the decidua are enveloped and discharged unperceived: this is accompanied with pain in the loins, and frequently with spasmodic pains in the bowels — symptoms indicative of uterine irritation; a slight degree of fever is also sometimes present. When abortion occurs in the second month, the symptoms are rather more marked: slight contractions of the uterus are indicated by pains more or less regular in the loins and hypogastrium; the hæmorrhage is more profuse; small portions of fibrous matter may be observed in the discharge, and the ovum itself is sometimes detected: abortion, however, when it happens within the first two months, very often escapes attention — the patient herself supposing that the menses have merely been suppressed and have returned in unusual abundance. After the commencement of the third month, the expulsion of the ovum requires a greater effort; it is preceded for some time by hæmorrhage, and the uterine contractions are accompanied with pretty severe pain: the ovum rarely comes away entire; the fœtus is first expelled, and the secundines follow in a few hours, — the hæmorrhage continuing till the uterus is disburthened of all its contents; the derangement of the stomach is considerable, and the nausea acts beneficially by restraining hæmorrhage.

At more advanced periods of gestation the phenomena of abortion approximate more to those of labour at the full time; the expulsive pains are severe, the membranes give way, the fœtus escapes along with the liquor amnii, and the placenta and membranes follow at an interval varying from a few hours to several days: a discharge somewhat resembling the lochia succeeds. Generally speaking, the hæmorrhage attending abortion is greater at an advanced than at an early period of gestation: but this is not always the case; for the greater rapidity of the hæmorrhage arising from the increased diameter of the vessels at a late period frequently induces a degree of faintness favourable to the speedy formation of coagula, so that the actual quantity of blood lost may not be greater than at an early period.

The treatment of abortion is directed either to its prevention when threatened, or to conducting the patient safely through it when it has actually commenced. The prophylactic treatment must be regulated by the state of the constitution and the peculiar pathological condition of the uterus which is supposed to conduce to abortion in each individual case; hence the principles of such treatment can be stated only in a very general way. When plethora, general or local, is regarded as the cause, we must endeavour to obviate it by a spare diet, cooling laxatives, and the avoidance of all undue excitement. Should these means prove insufficient, recourse must be had to general or local bleeding, at short intervals, but in small quantity at a time. In congestion of the uterine vessels the frequent application of a few leeches to the hypogastrium will often produce the most beneficial effects. In France it is a common practice in such cases to apply leeches to the groins, vulva, or anus; and experience sufficiently demonstrates its utility. The general or local abstraction of blood, though highly necessary in many cases, should always be conducted with great caution and moderation, lest the strength of the patient be too much reduced. When, as sometimes happens, bloodletting is indispensable in a woman of a weak and irritable habit, it should always be followed by an opiate, except where the latter is contra-indicated by some particular circum-

stance. Where the constitution is in a state of debility and relaxation, tonic remedies are required; but medicines of this class, though not to be neglected, will be found less efficacious than a light and nutritious diet, gentle exercise in a salubrious air, and cold bathing. The diet, though generous, should not be stimulating; and with respect to the cold bath, it is to be observed that its beneficial effects are only to be expected where there is sufficient vigour in the arterial system to excite a salutary reaction. Where this is not the case, and the patient remains chilly and languid after bathing, it is manifestly injurious by its tendency to produce internal congestion.

The morbid irritability of the uterus which sometimes disposes to abortion, independently of vascular derangement, is generally connected with constitutional debility; nor do we possess any means of controlling it, except such as are calculated to improve the general health, and to allay nervous excitement.

Where a tendency to abortion exists, the most scrupulous attention must be given to diet and regimen; but it would be useless to dilate on this subject here, since the hygienic rules generally applicable to the management of pregnant women are not less so in the present instance, although they require to be modified according to the circumstances of each individual case, and the nature of the cause from which danger is apprehended. It is scarcely necessary to observe that the bowels must in all cases be kept regular, and that where laxatives are required, the mildest and least irritating should be preferred: where there is any tendency to plethora, those of the saline class are particularly applicable.

When abortion is immediately apprehended, from whatever cause, absolute rest in the horizontal posture should be rigidly enjoined; and where plethora does not exist, or has been removed by suitable evacuations, an opiate should be administered and repeated at intervals according to the judgment of the practitioner; the patient should be kept cool, and the bowels opened by gentle laxatives. Where there is a discharge of blood, the local application of cold should not be neglected; for this purpose the cold hip-bath may be used, or the hips, thighs, and lower part of the trunk may be sponged with cold vinegar and water; if the hæmorrhage still continue, cold water or astringent solutions may be injected into the vagina. Great reliance has been placed by some practitioners on the mineral acids, especially the sulphuric, for the suppression of hæmorrhage in such cases; their efficacy has been much over-rated, but they may nevertheless be used with some advantage: digitalis and colchicum have also been recommended; but in this case they are uncertain and unmanageable remedies.

It has been stated that when abortion is immediately threatened the patient must be confined to the horizontal posture; and it frequently happens that the continual recurrence of urgent symptoms, notwithsanding the use of appropriate means, renders it necessary to restrict her altogether to this posture; but it is a great error to confine a woman to her couch, during the whole term of pregnancy, merely because we apprehend miscarriage from its having formerly occurred: as an indiscriminate practice this is decidedly injurious, since any advantage that may be derived from quiescence is more than counterbalanced by the evils resulting from the privation of fresh air and exercise, which tends to induce the state of atonic plethora already commented upon as strongly predisposing to abortion. When preventive measures have failed, and abortion is inevitable, our attention is directed solely to the safety of the patient. The hæmorrhage is to be restrained, and the expulsion of the detached ovum promoted, should this be attended with any difficulty. The patient must be kept in the horizontal posture, in a cool, airy apartment; and those local means of refrigeration adopted which have just been recommended under the head of prevention. A large dose of opium should be administered, and its effect kept up by somewhat smaller doses repeated according to the judgment of the practitioner. Acetate of lead is a useful astringent in such cases, and has usually been prescribed in doses of two grains with a quarter of a grain of opium every three hours. Dr. A. T. Thomson has, however, discovered that the acetate of lead is poisonous only from its undergoing a partial decomposition in the stomach, and depositing the carbonate, which is the only really poisonous salt of this metal; and hence that an excess of acetic acid, which prevents this decomposition, renders the acetate of lead harmless; a valuable observation, which will probably lead to the use of this powerful sedative in much larger doses. (See *Plumbi Acetas.*)

The means above mentioned will generally suffice to keep the hæmorrhage within moderate bounds; should they fail, however, recourse ought to be had to the *tampon* or plug; an obvious and effectual remedy, though comparatively little used in this country. (See *Plug.*)

It is of great importance that the whole contents of the uterus should be expelled, since the retention of even a small portion of the placenta or membranes may occasion a tedious or even dangerous continuance of hæmorrhage, and subsequently give rise to irritative fever and the other evils arising from the absorption of putrid matter. When the ovum is long in being expelled, or when the secundines remain after the fœtus has been excluded, the secale cornutum may be used to excite more vigorous contraction of the uterus. The ovum, or some portion of it, is often arrested at the orifice of the womb, and may then be gently drawn down with the finger or a pair of curved dressing-forceps; but all attempts to introduce the hand or forceps into the cavity of the uterus when the ovum is retained there, are justly reprobated by the greater part of modern practitioners.

During the whole process of abortion the bowels must be kept free, and the diet regulated according to circumstances. It must not be supposed from the foregoing account of the treatment of abortion, that every case demands such active interference on the part of the practitioner: the recumbent posture, a cool chamber, and a

gentle laxative are very often all that is required.

In cases of extreme deformity of the pelvis, and in a few other instances, it is sometimes necessary, for the safety of the mother, to induce abortion artificially; and the practice, in the hands of the medical profession, is, of course, recognised as legal and justifiable; but the attempt to induce abortion under any other circumstances is regarded by the law as felony. Several violent and empirical measures are resorted to by unprincipled persons for this end; but it cannot be too generally known that these infamous practices are extremely uncertain with reference to the object in view; and that where they do succeed, it is often at the expense of the mother's life.

Abortive. Applied, 1. To a medicine which has the power of exciting abortion; but this is an imaginary power, no medicine being found to have any immediate operation of the kind. 2. In Botany. To flowers or florets which do not produce perfect seed. Abortive, or barren, flowers are generally such as have stamens but no pistils; those which have pistils only are sometimes abortive from the absence of other flowers which bear the stamens. In umbelliferous plants, several of the florets are often barren, though possessing both stamens and pistils, which probably arises from some imperfection in the pistils.

Abrabax. *Abraxas, Abrasaxas.* A mystical term, to which several meanings have been ascribed. According to some it is a name of the supreme deity of the Basilidians; according to others it signifies the sun. The Greek letters of which the word *Abraxas* is composed *α, β, ρ, α, ξ, α. s,* express the number 365. The cabalists attributed wonderful virtues to this term. The name of abraxas was also applied to small statues or plates of metal or stone, engraved with figures of Egyptian deities, and with Magian and Rabbinical symbols, and Hebrew, Phœnician, Coptic, Greek, and Latin characters; these are supposed by some to have been worn as amulets.

ABRACADA'BRA. A word, supposed by the cabalists to possess great virtues in preventing and curing fevers, especially that denominated Hemitritæus or semitertian. The word was written on paper as many times as it contains letters, omitting the last letter every time, and then read in the same order thus: —

A B R A C A D A B R A
A B R A C A D A B R
A B R A C A D A B
A B R A C A D A
A B R A C A D
A B R A C A
A B R A C
A B R A
A B R
A B
A.

This formula has been preserved by Serenus Samonicus. A paper inscribed with the *Abracadabra*, and worn suspended from the neck, was thought to propitiate a Syrian deity named *Abracadabra.*

Abra'calan. A cabalistical term to which the Rabbins ascribed the same virtues as to the *Abracadabra.*

Abra'chia. (From *α*, priv., and *βραχιων*, the arm.) A name given by Breschet to that form of partial agenesia which consists in absence of the arms.

Abra'nchia. (From *α*, priv., and *βραγχια*, gills.) Animals which have no gills. An order of the class Annelida.

Abrasion. (*Abrasio, onis,* f.; from *abrado,* to scrape off.) A superficial lesion of the skin by the partial removal of the cuticle. A very superficial ulcer or excoriation of the intestinal mucous membrane.

Abrathan. *Abratan.* Corrupted from Abrotanum. See *Artemisia abrotanum.*

Abric. An alchemical term for sulphur.

ABRO'TANUM. (*um, i.* n.; from *α*, neg., and *βροτος*, mortal; because it never decays: or from *αβρος*, soft, and *τονος*, extension; from the delicacy of its texture.) Common southernwood. See *Artemisia.*

Abrotanum mas. See *Artemisia.*

ABROTONI'TES. (From *abrotanum.*) A wine mentioned by Dioscorides, impregnated with *abrotanum*, or southernwood, in the proportion of about one hundred ounces of the dried leaves to seven gallons of must.

ABRU'PTE-PINNA'TUS. Abruptly pinnate. A term applied in Botany to a leaf which is pinnate and terminates abruptly without an odd leaflet, or a cirrus.

Abru'ptio. A surgical term formerly applied to fractures in the same sense as *abductio.* See *Abduction.*

Abru'ptus. Abrupt: applied in Botany to pinnate leaves which terminate without an odd leaflet or other appendage.

A'BRUS. (*us, i.* m.; from *αβρος*, soft or delicate: so named from the extreme tenderness of the leaves.) The name of a genus of plants. Class, *Diadelphia;* Order, *Decandria.*

Abrus precatorius. A small shrub which grows in Africa and the East and West Indies. Its root is used by the natives for the same purposes as liquorice. Its seed, which is called Angola seed, is farinaceous, and is used as food in some countries; it is of a bright scarlet colour, marked with a black spot: these seeds were formerly employed as beads for making necklaces and *rosaries,* whence the specific name of the plant.

Absce'dens. (From *abscedo,* to depart.) Applied to a decayed part of the body which is separated from the sound.

ABSCESS. (*Abscessus, ûs.* m.; from *abscedo* to depart.) Αποστημα. Αποστασις. *Imposthuma.* A collection of pus in a cavity formed by a morbid action. Abscesses are distinguished into acute and chronic. 1. *Acute Abscess.* An acute abscess is preceded by inflammation in the affected part, which soon terminates in suppuration or the formation of pus. (See *Pus.*) The commencement of suppuration is indicated by a change in the nature of the pain, which becomes more obtuse and throbbing; the tumefaction of the part increases; and when the matter is formed, its fluctuation within the part, if not too

deeply seated, may be detected by the touch. The cavity of the abscess is lined with a smooth membranous substance, bearing a strong resemblance to a layer of coagulable lymph; this forms the *sac* or *cyst* of the abscess, and is connected by a vascular union to the surrounding cellular substance, which is condensed and rendered more vascular than natural by adhesive inflammation. The lining membrane of an abscess is both a secreting and an absorbing surface, as will become evident from the account about to be given of what takes place within it.

In whatever part an abscess is seated, it will sometimes spread to a great extent, and be loaded with a prodigious quantity of pus. In all such cases, the adhesive stage of inflammation must have been superseded, either from the violence of the action, or from something unhealthy in its character, and the suppurative and ulcerative stages must have commenced simultaneously from the first; for otherwise the coagulable lymph thrown forth into the cellular membrane in the earliest stage of the inflammation, would have formed a boundary-wall by the production of new vessels and reticulations, much nearer to the salient point of the inflammatory action, and confined the secretion of pus to a much narrower limit. These large uncircumscribed abscesses are called *diffuse abscesses*.

The secretion of coagulable lymph, and the formation of new vessels which issue from it, is indeed designed to prevent the necessity for the suppurative and ulcerative stages of inflammation; and the natural cure of the adhesive stage is by resolution.

When an abscess takes place in a healthy frame, or, in other words, when the inflammation passes into the two ensuing stages of the suppurative and ulcerative, and pus is formed, and a cavity scooped out for its reception, we are to understand that the remedial power of nature is incapable of producing a cure by the first intention; that there is some dead part or extraneous substance to be removed; and that the two ensuing stages of inflammation are had recourse to for this purpose.

For the restoration of the healthy state of a part under such circumstances, it is obvious that two things are necessary; the dead matter must be carried off, and its place must be filled up by the substitution of new matter similar to the old. In the process which is established for these two purposes, we meet with a striking instance of that instinctive power which pervades every portion both of the animal and vegetable creation, and which is perpetually stimulating the living body to the repair of every mischief that may occur, by the most skilful and definite methods.

In order to answer this double intention of carrying off the dead matter and of providing a substitute of new, the absorbent and secernent vessels in the living substance which immediately surrounds that which requires to be removed, commence equally, and nearly at the same time, a new mode and a new degree of action. A boundary line is first instinctively drawn between the dead and useless, and the living and active parts; and the latter retract and separate themselves from the former. This process being completed, the mouths of the surrounding absorbent vessels set to work with new and increased power, and imbibe and carry off whatever the material may be of which the dead part consists, whether fat, muscle, ligament, cartilage, or bone; the whole is sucked up and taken away, and a hollow is produced where the dead substance existed.

From the commencement of this process, or perhaps somewhat antecedently, the mouths of the corresponding secernent vessels also assume a new and increased action; and, instead of the usual fluid pour forth into the hollow, a soft, bland, creamy, and inodorous material, which progressively fills up the cavity, presses gradually against the superincumbent skin in the gentlest manner possible, distends and attenuates it, and at length bursting it, exposes the interior to the operation of the atmosphere. From this period the process of incarnation commences: granulations of new living matter pullulate on every side, assimilating themselves to the nature of the different substances that are lost, till the hollow is sufficiently filled up, and the texture of the part completely regenerated. It is a most beneficial law with respect to the bursting of abscesses, that the ulcerative process by which the egress of the pus is effected, always takes place in that part of the sac which is nearest the surface of the body: though there should be but a thin membrane between the matter and any internal cavity of the body, the matter will work its way outwards, where this is possible, even through a dense mass of superincumbent textures. Were it not for this law, a common abscess might produce the most extensive destruction of parts, and would often prove fatal to the patient.

On the bursting of an abscess externally a portion of the dead matter sometimes remains, which afterwards sloughs away. This is particularly the case in furuncles or boils; and still more strikingly so in large abscesses that include bones, or the tendinous parts of muscles, which are more difficult of absorption, though even these are sometimes absorbed, and completely carried off.

The attenuation of the superincumbent integuments of an abscess appears to be produced by the stimulus of distension occasioned by the pressure of the accumulating pus. And it is to the same stimulus that Mr. Hunter attributes the absorption of the dead matter itself, conceiving that for this purpose the secretion of pus commences somewhat earlier than the absorbing process.

The formation of pus, as before observed, is marked by a change in the character of the pain, which, from being acute, becomes dull, and is accompanied with a sensation of throbbing which is synchronous with the arterial pulse: the tumefaction increases, the swelling becomes softer, and the throbbing pain gives place to an uneasy feeling of weight; lastly, the tumour *points* or assumes a somewhat conical shape at some part which is usually near the middle of its

external surface; over this part, the skin reddens and becomes thin, and soon after gives way, and affords free egress to the purulent matter. When an abscess is of any considerable extent, the suppurative process is attended with peculiar constitutional symptoms: the fever which accompanied the previous inflammation is diminished, the tongue and skin become moister, and the pulse much softer and more open; while irregular chills or rigors, succeeded by heat and a slight exacerbation of fever, render it nearly certain that suppuration has commenced, or is about to do so. These rigors, however, are more frequently observed to attend idiopathic abscesses than those which result from wounds or operations.

There has been some dispute as to the individual to whom we are indebted for the true theory of suppuration; the suggestion, however, that pus was formed by a process analogous to secretion seems to have originated with Dr. Simpson, of St. Andrew's: this opinion was adopted by De Haen, Morgan, and others; its truth was demonstrated by Hewson; his views were extended and corrected by J. Hunter and Cruikshank, and the subject has received more recent illustration from the researches of Sir E. Home. Previously to this important discovery, pus was supposed to be formed by a solution of all the solid textures of the part in the natural serum effused in unusual abundance, which was the opinion of Boerhaave, Platner, and most of their predecessors; or it was supposed to be formed by a change effected in the gluten of the effused serum by stagnation, whereby it was converted into pus, which was the opinion of Sir J. Pringle and others. These erroneous hypotheses were subverted by Mr. Hewson, who set it beyond a doubt that pus is a peculiar secretion, and that it is often, indeed, secreted where there is no abscess or breach of surface. He ingeniously accounted for its production by supposing it to be formed out of the coagulable lymph, by a new power given to the secernent vessels in consequence of the inflammatory action. "And if pus," says he, "in these cases, is produced merely by a secretion, so likewise it would seem probable, that even in abscesses, where there is a loss of substance, it is not the melting down of the solids that gives rise to the pus; but the pus being secreted into the cellular membrane, from its pressure, and from other causes, *deadens the solids, and then dissolves* them."

This idea of the solids contained in an abscess being deadened and dissolved by the pus which surrounds them, in the ordinary sense of the expression (for in one sense, as will appear hereafter, they may be said to be dissolved), was one of the erroneous opinions of Mr. Hewson, and originated from too close an adherence to the earlier and still more mistaken hypotheses just noticed.

Mr. Hewson, therefore, advanced scarcely more than half way in explaining the economy of suppurative inflammation. The subject was afterwards taken up by Mr. Hunter, who prosecuted it with great success. He proved that the solid parts contained in the area of an abscess, instead of being deadened by the pressure of the surrounding pus, are dead beforehand, destroyed indeed by the violence of the accident, or of the inflammation; and that, instead of being merely dissolved in the pus, they are absorbed and carried off by a new and increased action of the absorbents; thus showing, that even ulceration itself, when of a healthy kind, is only another link in the chain of restorative actions.

The greater part of this beautiful contrivance is rendered so clear in Mr. Hunter's work on inflammation, and his facts and arguments have been so fully confirmed, and so abundantly exemplified by later physiologists, and particularly by Mr. Cruikshank, in his valuable treatise on the absorbents, as to remove every doubt upon the subject.

That pus, instead of being a mere solution of dead animal matter, is a distinct secretion, is now obvious to common observation; for every practitioner must have repeatedly witnessed its formation in parts where there has been no ulceration or breach of structure, and where consequently there could be no dead animal matter to dissolve.

It was noticed under these circumstances by De Haen so far back as the middle of last century; and was pointed out by Mr. Hewson as frequently found, on dissection, on the surface of the pleura, the peritoneum, and the pericardium. A very decided case, to which both Dr. Hunter and Mr. J. Hunter were witnesses, was published by Mr. Samuel Sharp, about the same time that De Haen first brought the subject before the public. Nothing is more common than a copious secretion of pus without ulceration in the first stage of purulent ophthalmia, and in purulent inflammation of different mucous surfaces.

Genuine pus is peculiarly distinguished by its consisting of white globules swimming in a fluid, which to the eye has the appearance of serum, but possesses characters of its own, equally different from those of serum and of every other secretion we are acquainted with. Pus, however, is not globular at its first formation, but a transparent fluid, of a consistence in some sort resembling jelly; the globules are produced while it lies on the surface of the sore, usually in about fifteen minutes after its secretion, when it is not exposed to the external air. The perfection of pus seems to depend upon the large proportion which its globules bear to its other parts. For the physical and chemical properties of this remarkable fluid, the reader is referred to the article *Pus*.

In the natural cure of an abscess, we find that the process of granulation immediately succeeds the removal of the dead matter. "The vessels," says Mr. Hunter, "forming themselves into a certain structure which fits them for secreting pus, it is so ordered that the same structure also fits them for producing granulations; and thus these two processes are concomitant effects of the same cause, which cause is a peculiar organisation superadded to the vessels of the part."

The idea of a change of organisation is hypo-

thetical. All that we have any proof of is a change of action.

The obvious design of granulation, or incarnation, as it is also called, is to repair the injury by the reproduction of the lost parts. Granulation commences from the base of the cavity and proceeds outwards towards the surface. The process generally goes on most favourably under exposure to the air, or at least when an external opening has been effected; though there are instances in which granulation has taken place when the external air has had no access to the cavity. The granulating pullulations, according to Mr. Hunter, consist of exudations of coagulating lymph from the vessels. He conceives it probable not only that the old vessels extend into these pullulations and become elongated, but that new vessels also form in them, and, like the old, still continue to secrete pus. The granulations, as they are formed, mutually and readily unite; inosculation is established between them; and their vessels, thus joined, are transformed from secreting into circulating tubes. Immediately upon their formation, cicatrisation seems to be in view. The parts which had receded, in consequence of a breach being made, begin now, from their natural elasticity, and probably from muscular contraction, to be brought together by the new-created substance; and the contraction of the sore is a sign that cicatrisation will speedily follow. This contraction takes place at every point, but principally from edge to edge, which brings the circumference of the sore towards the centre: so that the exposed surface becomes smaller and smaller, even before there is any formation of new skin.

There are two parts, at least, of this wonderful economy that still demand explanation. The first is the real use of the pus after it is secreted; and the second, the means by which the absorbents carry off the dead matter.

That pus is a secretion distinguished by peculiar properties, and not a solution of the dead animal matter which it is the design of nature to remove, has already been sufficiently shown. "But I am apt to believe," says Mr. Hunter, "that we are not yet well, or perhaps not at all, acquainted with its use: for it is common to all sores; takes place in the most perfect degree in those sores which may be said to be the most healthy, and especially in those where the constitution is most healthy." It forms, indeed, a means of expelling foreign bodies; is supposed by many to carry off humours from the constitution, or convert general into local complaints; and by others, to act as a preventive of numerous diseases. Yet all these uses, even admitting them to exist, are but secondary; and the main intention still remains to be accounted for.

Again, since the dead matter of an abscess does not constitute the pus that is found in it, and hence can only be carried off by absorption, we have yet also to learn by what means it becomes prepared for an entrance into the delicate mouths of the absorbent vessels. There is no small difficulty in conceiving how these very minute mouths can apply themselves with sufficient activity to the various tough and hard substances they have to remove, as tendon and bone, even when in close contact with them; but, as soon as the dead part becomes separated from the living, they are often no longer in close contact with them, except at the base, where little or no absorption takes place; and in many cases, as in boils, carbuncles, and other imperfectly suppurating tumours, possessing cores or tenacious sloughs, are at a considerable distance from them, with the entire body of the contained pus placed intermediately in the hollow.

In the last case it seems impossible for them to act except through the medium of the pus; or otherwise than by a solvent power possessed by the pus, and exercised upon the matter to be removed. And if such be the nature of the action in this case, it is doubtless the same in all other cases: and hence we arrive at one immediate and direct use of pus, which is, that of dissolving the dead animal matter that requires to be carried off; not, indeed, by converting the whole substance at once into a fluid mass, and still less into a fluid mass of its own nature, as supposed by Sir John Pringle, but only the surface of the substance to which it is applied, and which hereby is rendered fit for absorption, carried forward to the mouths of the imbibing vessels, and absorbed accordingly. And as the same power is exerted in succession upon every fresh surface of the dead matter that becomes exposed to its action, the whole is at length carried away, and a cavity produced where before was solid substance.

That pus first kills and then dissolves the organised matter of an abscess, was, as we have already seen, the opinion of Mr. Hewson. In the first part of this opinion he was completely mistaken; for, as we have already observed, the organised matter is dead before the process of suppuration even commences: in the second, he seems, to a certain extent, to have been correct, though he still erred in supposing the dead substance to be melted down into pus, and was unacquainted with the important process of its absorption. Mr. Hunter, in advancing his own full and more elaborate hypothesis against the errors of Mr. Hewson, ran into the opposite extreme; and contended that pus is not designed to be a solvent at all, and that animal substances are decomposed in it with very great difficulty: thus leaving us totally at a loss to account for its use; and equally so to explain the manner in which the mouths of the absorbents of an abscess can operate upon, or even, in many instances, get at the material they are to remove.

Mr. Hunter made this question a subject of experiment, and the experiment, as he conceived, fully established his preconceived opinion, and gave proof that the pus of an abscess does not act as a solvent. This conclusion of his only shows how difficult it is even for the most philosophical mind, when biassed by a favourite hypothesis, to weigh impartially the evidence that lies before it. "To see," says he, "how far the idea was just, that dead animal matter was dissolved by pus, I put it to the trial of experiment; because I could put a piece of dead

animal matter of a given weight into an abscess, and which could at stated times be weighed. To make it still more satisfactory, a similar piece was put into water, kept to nearly the same heat. They both lost in weight; but *that in the abscess most*. And there was also a difference in the manner, for that in the water *became soonest putrid*." There is nothing in animal chemistry, strictly so called, that decomposes animal substances so rapidly as putrefaction. And yet, in the present instance, the pus of an abscess evinced a more active decomposing power than water, though aided by the influence of putrefaction. It is not very wonderful that Mr. Hunter, though regarding this result as in his favour, should not be disposed to rely on its accuracy; and he refers us, therefore, for a further proof, to a more competent experiment of Home, which consisted in immersing a portion of muscle weighing exactly one drachm, "in the matter of a compound fracture in the arm of a living man, and a similar portion into some of the same matter out of the body; also a third portion into fluid calf's-foot jelly, in which the animal substance was pure, having neither wine nor vegetables mixed with it. These portions of muscle were taken out every twenty-four hours, washed in water, weighed, and returned again."

The result of this experiment is still more in favour of the solvent power of pus than the preceding. At the end of forty-eight hours there was indeed no great difference, as the muscle in the abscess was reduced to thirty-eight grains, and that in the other two fluids to thirty-six. But from this period to ninety-six hours the muscle in the jelly continued the same, while that in the abscess was reduced to twenty-five grains, and that in the exposed pus dissolved; the power of putrefaction, as Mr. Hunter observes, being in this last case superadded to that of the pus itself.

We hardly stand in need of other experiments. The solvent power of pus above that of water, of animal jelly, and hence we may conclude of animal fluids in general, is sufficiently established by the very evidence that is advanced in opposition to it. And it should hence seem, that one at least of the direct uses of pus is to reduce, surface after surface, the dead animal matter which is exposed to its action, to that state in which it may be rendered fit for absorption, and at the same time conveyed to the mouths of the absorbent vessels.

Pus has also been considered as having another equally important use; that of assisting in the process of granulation: and an article by Sir Everard Home in the Philosophical Transactions, containing the observations of Mr. Bauer upon the germination of plants, and his own application of those observations to the growth of the new vessels in animals, seems very considerably to favour this view of the subject.

Having sown a quantity of wheat for the purpose of noticing the changes which occurred from the first, Mr. Bauer took up every day several plants for examination, till they were ripe; and in the course of his attention, was much struck with the rapid increase of the tubular hair of the root of a young plant in its earliest stage of vegetation: and, fixing his view entirely on that part of the plant, he observed small pustules of a slimy substance arising under the epidermis on the surface of the young root, and in a few seconds a small bubble of gas bursting from the root into the slimy matter, which it extended in a moment to the length the hair was to acquire, when the slimy matter surrounding the gas immediately coagulated and formed a canal. He repeated his observations on another plant, whose pubescence consisted of a jointed hair, and observed the same effect; a bubble issued from the young stalk, and extended the slimy mucous to a short distance, forming the first joint, which immediately coagulated and became transparent; and at its extremity a new pustule of the same slimy matter accumulated, into which, in a short time, the gas from the first joint rushed; and thus, in a moment, a second joint was formed. In the same manner he observed the formation of the hairs of ten or twelve joints take place.

Impressed with the importance of these facts, Sir Everard Home immediately began to inquire how far the same course is pursued in the production of new animal matter. He first ascertained, by experiments of Mr. Brande, that blood in a state of circulation contains a considerable proportion of air, which, in the process of coagulation, escapes in the form of carbonic acid gas, and in its escape produces bubbles as in the slime of plants; and that it escapes equally from the coagulating blood of veins and arteries from effused serum and from pus. And in pursuing the subject, he found that, on the coagulation of a drop of blood placed in the field of a microscope, an intestine motion occurred, and a disengagement of something took place in different parts of the coagulum; beginning to show itself where the greatest number of globules were collected, and thence passing in every direction with considerable rapidity through the serum, but not at all interfering with the globules themselves, which had all discharged their colouring matter. Wherever this extricated colouring matter was carried, a network immediately formed, anastomosing with itself on every side through every part of the coagulum. When the parts became dry, the appearance of a network remained unaltered. In some instances, bubbles were seen to burst through the upper surface of the coagulum: this however did not prevent the ramifications, that have been described, from taking place. "When this happens," continues Sir Everard, "in living animal bodies, from whatever cause and in whatever circumstances it takes place, no difficulty remains in accounting for its afterwards becoming vascular, since all that is necessary for this purpose is the red blood being received into the channels of which this network is formed." He next proceeded to the subject immediately before us. "As the globules of pus," says he, "are similar to those of blood, I made experiments upon the fluid in which they are suspended, and found inspissation produce the same effect on it as coagulation does on the other; that a similar network is formed, and apparently by the same means; since, if pus

be deprived of its carbonic acid gas (of which it contains a large quantity) by exhaustion in the air-pump, no such network takes place."

Additional experiments are still necessary upon this interesting subject; but these, as far as they go, are favourable to the opinion that pus has a double use; that it acts as a solvent upon the dead matter, preparing it for absorption, and as a fomes for granulation and the production of new vessels.

The existence of carbonic acid in the blood has been called in question; but this does not influence the validity of Sir E. Home's observations on the mechanical structure assumed by the blood during the process by which it becomes organised, and the analogous phenomena alleged to occur in pus.

Nor let it be objected to the opinion just stated, that we are endowing purulent matter with incongruous qualities; and that if it be erosive in the one instance, it cannot favour nutrition in the other; for the animal economy presents us with various similar examples of effects, contrary, indeed, but not contradictory, produced by one and the same secretion, on dead and on living matter: we need go no further than to the operation of the gastric juice, which, while the most powerful solvent of dead animal matter in the whole range of animal chemistry, is a healthy stimulant to the living stomach, and even to other living organs, and has been successfully applied for this purpose by surgeons to languid and ill-conditioned ulcers, and employed by physicians as an internal tonic in cases of dyspepsy and cardialgia.

The foregoing remarks may serve to give an idea of the nature of suppuration, and of the ordinary progress and termination of acute abscess. It is sometimes observed, however, that purulent matter secreted in an inflamed part, instead of ulcerating its way to the surface, and thus escaping, is absorbed into the blood, in which case the result will be very different according to circumstances which we are at present unable to explain. In some instances, the pus thus taken into the circulation is discharged by the kidneys, the urine being increased in quantity and containing puriform matter; in others, it seems to be ejected from the mucous surface of the bowels by a diarrhœa: and in others, again, it is carried off by a copious, viscid, and offensive perspiration. In many cases the absorption of the matter of an abscess leads to fatal results, the pus being deposited in some distant part of the body, and usually in some internal organ, or in the cavity of a joint; thus an abscess disappears suddenly from an external part; the patient sinks under typhoid fever; and on examination after death, collections of pus are found in the lungs, liver, brain, or articular cavities: these are called *Consecutive abscesses*. Such results occasionally follow the suppuration of a stump after amputation, especially where the matter has been confined by the adhesion of the integuments over it; similar phenomena not unfrequently ensue on suppuration of a vein occurring after bloodletting; but the most striking illustration of the deposition of pus in parts distant from that of its formation is afforded by recent observations on the uterine phlebitis of lying-in women, where the most extensive effusions of pus in various parts of the body seem to derive their origin entirely from the suppuration going on within the veins of the uterus. Lastly, the contents of abscesses have, in a few instances, been gradually absorbed without any injury to the constitution, and without any perceptible critical evacuation.

2. *Chronic Abscess*. A chronic abscess is a collection of unhealthy pus resulting from a slight but continued inflammation, which usually occurs in feeble constitutions, and especially those tainted with scrofula. Its most frequent seat is in the cellular tissue and the lymphatic glands. It is attended with scarcely any pain; and till the cavity becomes exposed to the air, there is no constitutional affection. From the slowness of the morbid action the sac of a chronic is more distinctly organised than that of an acute abscess; and in this respect, as well as in the nature of its contents, a chronic abscess approximates to the character of some encysted tumours. The secreted matter is an imperfectly formed pus mixed with a large quantity of serum, and containing albuminous flakes; in some cases, indeed, the fluid cannot be said to present any puriform character, but rather resembles mucus; and lastly, where it has been of very slow formation, it may become inspissated and of an almost caseous consistence. When the abscess is not artificially opened, the cyst goes on enlarging, and the matter accumulating, often to a vast extent; the skin becomes much distended and extenuated, and at last, giving way, admits the air to the interior of the cavity. This is followed by inflammation of the cyst, which, if the abscess be small, sometimes operates as a salutary stimulus inducing a more healthy action; but, if it be large, great constitutional irritation ensues; the cavity, instead of contracting, continues to discharge profusely, and hectic fever is excited. The fatal effects of a large chronic abscess are daily exemplified in cases of *lumbar abscess*. The healing process in a chronic abscess is similar to that in an acute, but infinitely more tedious; in favourable cases, however, the granulations at last assume a healthy aspect, the cavity contracts and fills up, and cicatrisation is effected.

It would be out of place here to enter at any length into the treatment of abscess. When collections of matter form in the internal viscera, the physician can do no more than support and regulate the actions of the system during those processes by which nature is sometimes able to effect the expulsion or absorption of the purulent matter and the restoration of the injured organs. All abscesses which point externally, or whose contents may be most safely evacuated through an artificial opening, demand the aid of the surgeon. The general principles which should regulate the surgical treatment of abscesses may be stated in a few words. In acute abscesses the best practice is to promote their maturation by warm poultices and fomentations, and to leave the matter to find its own way out, except in cases where the confined pus, by its pressure, or extensive diffusion, is likely to injure important parts; in cases of the latter kind, an open-

ing should be made as soon as the presence of purulent matter is ascertained; thus, when matter forms under the cranium, in the thorax, in the cavity of a joint, in the vicinity of the eye, by the side of the rectum, or in the axilla, or when it is confined under a tendinous aponeurosis, or so situated that there is danger of its being discharged into any of the cavities of the body, the surgeon should be careful in good time to afford it a safe outlet.

In chronic abscesses the general principle of treatment is exactly the reverse of that which obtains in the acute; an opening is always to be made as early as possible, with a view of preventing a large accumulation of matter, and this opening should be no bigger than is absolutely needful to give exit to the matter, lest the cavity of the abscess become inflamed by exposure to the external air. Where the collection of matter is very extensive, as in lumbar abscess, it will accumulate repeatedly after being evacuted; hence the opening should be immediately healed up, and a new one made when necessary.

Abscissa vox. Loss of voice. *Celsus.*

ABSCISSION. (*Abscissio*; from *abscindo*, to cut off.) 1. The cutting away some morbid or superfluous part, by an edged instrument.

2. The term abscission was formerly used by medical writers to denote the sudden termination of a disease in death, before it arrives at its decline.

Absco'nsio. (From *abscondo*, to hide.) A cavity of a bone, which receives and conceals the head of another bone.

Absi'nthate. *Absinthas.* A salt formed by the combination of the absinthic acid with a base.

Absi'nthine. *Absinthina. Absinthia.* The bitter principle of the absinthium detected by Caventou.

Absi'nthic Acid. *Acidum absinthicum.* A peculiar acid found by Braconnot in the absinthium.

Absinthi'tes. Wine impregnated with absinthium.

ABSI'NTHIUM. (*um, ii.* n. Αψινθιον; from *a*, neg. and ψινθος, pleasure: so called from the disagreeableness of its taste.) Wormwood. See *Artemisia.*

Absinthium commune. Common wormwood. See *Artemisia absinthium.*

Absinthium maritimum. Sea wormwood. See *Artemisia maritima.*

Absinthium ponticum. Roman wormwood. See *Artemisia pontica.*

Absinthium romanum. See *Artemisia pontica.*

Absinthium santonicum. See *Artemisia santonica.*

Absinthium vulgare. Common wormwood. See *Artemisia absinthium.*

Absolute. Alkohol as free from water as it can be obtained is called *absolute alkohol.* The French chemists sometimes apply this term to other substances which are perfectly pure; thus, *huile absolue*, pure oleine.

ABSORBENT. (*Absorbens*; from *absorbeo*, to suck up.) 1. In *Anatomy*, the small, delicate, transparent vessels, which take up substances from the surface of the body, or from any cavity, and carry it into the blood, are termed absorbents, or absorbing vessels. They are denominated, according to the liquids which they convey, lacteals or lymphatics. See *Lacteal* and *Lymphatic.*

2. In *Pharmacy*, medicines which destroy acidities in the stomach and bowels are called absorbent medicines; such are magnesia, prepared chalk, oyster-shells, crabs' claws, &c.

3. In *Chemistry*, this term is applied to substances which have the faculty of withdrawing moisture from the atmosphere.

ABSORPTION. (*Absorptio, onis.* f.; from *absorbeo*, to suck up.)

1. In *Physiology*, a function of the animal body, which consists in the taking up of substances and their conveyance into the mass of circulating fluids by means of absorbing vessels. The absorbent system consists of *lacteals*, which convey the chyle from the intestines, and *lymphatics*, which absorb all redundant matter from every part of the body. The former class of vessels are described in this Dictionary under the head *Lacteal.* It is evident that the fluids which are secreted by the different secerning organs would accumulate in a manner prejudicial to health, and in many instances speedily destructive to life, if there were not a set of vessels perpetually at work to carry off the surplus. Accordingly, a set of vessels is every where distributed both within and without for this express purpose, and they are called lymphatics, from the limpidity of the fluid they contain. The merit of the first distinct discovery in the physiology of absorption is generally conceded to Aselli, who, in the year 1622, observed a set of vessels in the mesentery of a dog which appeared to have no direct connexion with arteries or veins, and which he denominated lacteals, from the milky appearance of the fluid they contained.

In 1651, Pecquet discovered the termination of these vessels in the thoracic duct. The discovery of the lymphatics was not made till about the year 1650, and the title to it was warmly contested between Rudbek and Bartholin: it is generally thought that the merit of priority belongs to the former, and that of more extensive investigation to the latter. According to Glissen, an English anatomist named Joliffe was acquainted with the lymphatics before either of the writers above mentioned; but as he never published his discovery, his claim to it remains very doubtful. The subject, once brought forward, was prosecuted with activity and success by numerous inquirers; among whom were Glisson, Nuck, Ruysch, Meckel, Hewson, the second Monro, and both the Hunters: finally, the world was indebted to Cruikshank and Mascagni for full and accurate descriptions of the anatomy of this wonderful system.

The absorbents anastomose more frequently than either the veins or the arteries; for it is a general law of organisation that the smaller the vessels, of whatever kind, the more freely they communicate and unite with each other. We cannot trace the orifices of the absorbents except in the instance of the lacteals; but we can trace their united branches from an early junction,

and follow them up singly or convoluted into glands, till, with the exception of a few that enter the right subclavian vein, they all terminate in the common trunk of the thoracic duct, which also receives the lacteals, and pours the whole of their blended fluids into the subclavian vein of the left side, regurgitation being prevented by a valve formed of the inner tunic of the vein and placed over the orifice of the duct.

By the economy of absorption there is a great saving of animalised fluids, which, however, they may differ from each other in several properties, are probably far more easily reducible to genuine blood, than new and unassimilated matter obtained from without.

Some of the secretions also, the surplus of which is thus thrown back upon the system, essentially contribute to its greater vigour and perfection. We have a striking example in absorbed semen, which gives force and firmness to the voice, and changes the downy hair on the face into a bristly beard; insomuch, that those who are castrated in early life are uniformly destitute of these peculiar features of manhood.

Absorbents are found in every part of the frame, and enter into the minutest textures. Cruikshank has proved them to exist very numerously in the coats of small arteries and veins, and suspects them to be attendant also on the vasa vasorum. Wherever they exist, they are peculiarly distinguished by the great number of their valves, with which they are supplied far more abundantly than any other set of vessels. "A lymphatic valve is a semicircular membrane, or rather of a parabolic shape, attached to the inside of the lymphatic vessels by its circular edge, having its straight edge, corresponding to the diameter, loose or floating in the cavity: in consequence of this contrivance, fluids passing in one direction make the valve lie close to the side of the vessel, and leave the passage free; but attempting to pass in the opposite direction, raise the valve from the side of the vessel, and push its loose edge towards the centre of the cavity. But, as this would shut up little more than one half of the cavity, the valves are disposed in pairs exactly opposite to each other, by which means the whole cavity is accurately closed."

The distance at which the pairs of valves lie, varies exceedingly. The intervals are often equal, and measure an eighth or a sixteenth part of an inch; but the distance is at times much greater. "I have seen a lymphatic vessel," says Cruikshank, run six inches without a single valve appearing in its cavity. Sometimes the trunks are more crowded with valves than the branches, and sometimes I have seen the reverse of this."

In the course of the absorbents, also, we meet with glands; their form is mostly oval, one end being turned to the thoracic duct, and the other from it; but we are in the same uncertainty concerning their use, and, in some measure, concerning their organisation, as in respect to those of the secernent system. The vessel that conveys the fluid to one of these glands is called a *vas inferens*, and that which conveys it away a *vas efferens*. The vasa inferentia, or those that enter a gland, are sometimes numerous; from fifteen to sixty, or even more, have been observed: they are always, however, more numerous than the vasa efferentia, or those which carry the fluid on towards the thoracic duct. The last are consequently, for the most part, of a larger diameter, and sometimes there is only a single vessel. It is conceived by many physiologists, that the conglobate mass which forms the gland, consists of nothing more than convolutions of the vasa inferentia; whilst others strenuously contend that it is a congeries of cells, or acini, totally distinct from the absorbent vessels that enter into it. Whatever the structure of the lymphatic glands may be, they seem to be powerfully auxiliary to the valves, by abating the back force they have to encounter from some morbid actions, and there is reason to believe that, in this way, like the conglomerate glands of the secernents, they become basins or receptacles.

As in the case of the secernents, we are unacquainted with the means by which the absorbents act. This, in both instances, is said to be a *vis a tergo* — a term which gives us little information in either instance, and is peculiarly difficult of comprehension in the latter. The absorbents possess a very low degree of sensibility, and are but little supplied with branches from the larger trunks of nerves.

Abstruse, however, as the process of absorption is to us at present, we have sufficient proofs of the fact. Of six pints of warm water injected into the abdomen of a living dog, not more than four ounces remained at the expiration of six hours. The water in dropsy of the chest, and even, at times, in ascites, has been completely absorbed; and there is reason to believe that serum, effused into the ventricles of the brain, is occasionally removed by the absorbents, since the symptoms which indicate its presence have been known to disappear, and the patient to recover.

It has been doubted by some physiologists whether there be any absorbent vessels that open on the surface of the body; yet a multitude of facts seem sufficiently to establish the affirmative: but it is not every kind of fluid that can be carried from the skin into the circulating system; and hence their power is by no means universal. Sailors who, when in great thirst, put on shirts wetted with salt water, find considerable relief to this distressing sensation. Dr. Simpson, of St. Andrew's, relates the case of a rapid decrease of the water in which the legs of a phrenitic patient were bathed: and De Haen, finding that his dropsical patients filled equally fast whether they were permitted to drink liquids or not, did not hesitate to assert that they must absorb from the atmosphere. Spirits, and many volatile irritants, seem to be absorbed more rapidly than water, and there can be no doubt that warmth and friction are two of the means by which the power of absorption is augmented. "A patient of mine," says Cruikshank, "with a stricture in the œsophagus, received nothing, either solid or liquid, into the stomach for two months: he was exceedingly thirsty, and complained of making no water.

I ordered him the warm bath for an hour, morning and evening, for a month: his thirst vanished, and he made water in the same manner as when he used to drink by the mouth, and when the fluid descended readily into the stomach." Many medicinal substances have been found to produce their characteristic effects when rubbed into the skin: in this way rhubarb has purged, squills have excited the action of the kidneys, opium has had its sedative effect, and bark is alleged to have checked intermittent fevers.

The use of the absorbents was entirely unknown to the ancients. Galen seems to have been acquainted with some of the absorbent vessels; but regarded them as part of the sanguiferous system, and ascribed the functions both of exhalation and absorption to the open mouths of blood-vessels, especially of veins. In succeeding times secretion and absorption were accounted for on the hypothesis that the blood-vessels, being porous, evacuate the contained fluids by transudation, and imbibe extraneous fluids by capillary attraction. There is, in fact, something extremely plausible in this view of the subject, which, in respect to dead animal matter, is allowed to be true, even in our own day. For, it is well known that a bladder filled with blood, and suspended in the air, is soon permeated by oxygen gas, which changes the deep Modena hue of that portion of the blood in contact with the bladder into a bright scarlet: and thin fluids injected into the blood-vessels of a dead body, transude very generally; insomuch, that glue dissolved in water, and thrown into the coronary veins, will pass into the cavity of the pericardium, and, on gelatinising, assume its figure. And hence it is that bile is often found, after death, to pass through the tunics of the gall-bladder, and tinge the transverse arch of the colon, the duodenum, or the pylorus, with a brown, yellow, or green hue, according to its own colour at the time.

The doctrine of porosity or transudation was very generally supported by physiologists, till the time of Hewson. Even Dr. Hunter and Professor Meckel believed it in respect to certain parts of the body. The experiments of Hewson, J. Hunter, and Cruikshank, have, however, sufficiently shown that living vessels possess the property of confining their fluids in a greater degree than those in which life is extinct.

The ancient hypothesis of absorption by veins, has lately been revived by Magendie, and Flandrin, of Paris, who have made an appeal to experiments which possess some plausibility, and which, although they do not by any means justify all the conclusions derived from them, will probably lead to considerable modification of the established doctrine.

M. Magendie maintains that the only general absorbents are the veins, the lacteals merely absorbing the chyle; — that the lymphatics have no absorbent power whatever; — that the villi in the different portions of the intestinal canal are formed, in part, by venous twigs which absorb all the fluids in the intestines, except the chyle, and these fluids are carried to the heart and lungs directly through the vena portæ, whose function it is minutely to subdivide and mix with the blood the fluids thus absorbed, which subdivision and intermixture is necessary to prevent their proving detrimental.

He further supposes that the cuticle has no power of absorption in a sound state, either by veins or lymphatics; but that, if abraded or strongly urged by the pressure of minute substances that enter into its perspirable pores, the mouths of its minute veins are thus rendered absorbent.

He believes the function of the lymphatics to consist in conveying the finer lymph of the blood directly to the heart, as the veins convey the grosser and purple part; and that they rise, like the veins, from terminal arteries.

Proper lymph, according to Magendie, is that opaline, rose-coloured, or sometimes madder-red, fluid which is obtained by puncturing the lymphatics, or the thoracic duct *after a long fast*. It is every where similar, and hence differs from the fluid of cavities, which is perpetually varying. He supposes the mistake of confounding the two to proceed from a want of attention to this fact.

One of M. Magendie's chief reasons for regarding veins as absorbents, is, that some membranes which absorb actively have no demonstrable lymphatics, as the arachnoid. But, according to Bichât, such membranes have no more demonstrable veins than lymphatics: veins are seen to creep on them, but never to enter.

The experiments of John Hunter are stated to have been repeated by MM. Magendie and Flandrin, and so varied as to exclude all sources of inaccuracy; but the conclusions arrived at by these physiologists are directly opposed to those of Hunter.

Hunter's experiments, which were made on the dog, consisted in emptying portions of the small intestines of their contents, and filling them with warm milk, which was confined by ligatures; the veins connected with these portions of intestine were emptied of their blood by punctures, and the further influx of blood prevented by ligatures on the corresponding arteries: at the expiration of half an hour the lacteals were found quite full of white fluid, but not a drop was discovered in the veins.

These experiments, which were frequently and carefully repeated, convinced physiologists that the lacteals alone are concerned in the absorption of chyle; and it was presumed from analogy, that the process of absorption in other parts of the body is conducted by the lymphatics exclusively of the veins. The experiments of Magendie and Flandrin, made in a similar manner with different substances whose presence could be easily recognised in the blood, afforded results entirely opposed to these conclusions; the foreign substances were found to have entered the system by the veins, and not by the thoracic duct. But the two experiments on which Magendie seems principally to rely, in proof that the veins, and not the lymphatics, are absorbents, are the following: — First, Delille and himself nearly separated the thigh from the body of a dog that had been previously rendered insensible by opium. They left the limb at-

tached by nothing but the crural artery and vein. These vessels were isolated by the most cautious dissection, to an extent of nearly three inches, and their cellular coat was removed lest it might conceal some lymphatic vessels. Two grains of the *upas tiente* were then forcibly thrust into the dog's paw. The effect of this poison was quite as immediate and intense as if the thigh had not been separated from the body: it operated before the fourth minute, and the animal was dead before the tenth. In the second experiment, a small barrel of quill was introduced into the crural artery, and the vessel fixed upon it by two ligatures: the artery was immediately cut all round between the two ligatures. The same was done with respect to the crural vein; yet the poison introduced into the paw produced its effect in the same manner, and as speedily. By compressing the crural vein between the fingers, at the moment the action of the poison began to be developed, this action speedily ceased: it re-appeared when the vein was left free, and once more ceased if the vein were again compressed.

These two experiments are striking at the first view, but it is easy to point out several sources of fallacy which render them entirely inconclusive. Thus it has been justly remarked by Dr. Bostock, that as the poison appears to have been inserted by puncture or incision into the paw of the animal, a portion of it must have been directly introduced into the veins, and received into the circulation; so that there is no need for the supposition of any *absorption* to account for the result; and the facts recorded cannot be admitted to prove either that the veins do, or that the lymphatics do not, exercise this function. But, independently of this, we know that the lymphatics are frequently destitute of valves for the distance of several inches; and Cruikshank has demonstrated that in the dead body the valves of these vessels lose all elasticity and power of resistance, so that fluids are readily transmitted in every direction. Now in the experiments of Magendie we have a mutilated and dying animal, and a part nearly or entirely separated from all its natural connexions, and into which, moreover, a deadly poison has just been introduced — a state of things likely so to affect the vital energy of the vessels under consideration as to preclude all just analogical reasoning with respect to their healthy action; hence they may readily be conceived either to assume an inverted action, or to approximate to the condition of those in a dead body; in either of which cases their contents might find their way into the veins below that part of the limb where the main blood-vessels were divided.

That the lymphatics do not absorb is a doctrine which we apprehend will not be very readily received by physiologists, especially those who are conversant with the phenomena of disease; nor has it been proved, or even rendered in any degree probable, by the experiments hitherto adduced in its favour; but that the veins participate in the function of absorption is a much less questionable proposition. The experiments of Magendie and Flandrin, already alluded to, have been supported by those of Tiedemann and Gmelin. The object of the latter physiologists was, to determine whether any direct communication exists between the alimentary canal and the blood-vessels, except through the medium of the lacteals. With this view they mixed with the food of animals various substances, which by their colour, odour, or chemical re-agencies might be easily detected in the blood or the fluids separated from it. The general results were that colouring matters were ejected from the system without entering either the veins or the lacteals; that odorous substances were detected both in the blood and the urine, but not in the chyle; and that of the saline substances many were found in the blood and urine, and very few in the chyle.

On the whole, an impartial review of what is hitherto known on this subject seems to point to the conclusion that, although modern physiologists have not erred in considering the lacteals and lymphatics as the great apparatus of absorption, there is still much reason to believe that the venous system also ministers to this function — whether throughout its whole extent or only in particular parts, — whether constantly, or only under certain circumstances, are questions which cannot at present be answered, but which further inquiry will probably elucidate.

2. In *Chemistry*, the passage of a gas or vapour into the pores of a liquid or solid substance, or of a liquid into the pores of a solid.

Absorptivity. A term introduced by the French — *absorptivité*. The power of absorption inherent in organic tissues.

Abstemious. (*Abstemius*; from *ab*, from; and *temetum*, wine.) Refraining from wine; in which sense alone the term is used by the ancient writers and by the French: in English it is applied to general temperance in diet.

Abste'ntio. Cælius Aurelianus uses this word to express a suppression, or retention: thus, *abstentio stercorum*, a retention of the fæces which he mentions as a symptom very frequent in satyriasis.

ABSTERGENT. (*Abstergens*; from *abstergeo*, to cleanse.) Abstersive. Applied to a medicament which cleanses or clears away foulness.

Abstinence. (*Abstinentia, æ.* f.; from *abstineo*, to abstain.) The act or habit of refraining from something to which we have a propensity or in which we find pleasure; but the term is more particularly applied to the privation or sparing use of food.

Abstraction. (*Abstractio, onis.* f.; from *abstraho*, to draw away.) In *Physiology*, that power of the mind by which it confines itself to particular ideas to the exclusion of others; also that power by which the mind forms general ideas from those of particular objects.

Abstracti'tius. (From *abstraho*, to draw away.) Abstractitious. A term formerly applied to spirits obtained from plants by distillation.

A'bsus. See *Cassia absus.*

Abuta. See *Cissampelos pareira.*

Abutilon. (From an Arabian word signifying yellow.) See *Sida abutilon.*

Abvacua'tio. A large evacuation of any fluid, as of blood from a plethoric person. This term is so used by some old writers.

Acaca'lis. An Egyptian shrub mentioned by Dioscorides. It is not now known to what plant this name was applied: Belon supposes it to be the *kesmesen* or *chasmesen* of the Levant, the seeds of which are used at Constantinople in diseases of the eyes.

ACA'CIA. *a*, *æ*. f. Ακακια; from α neg. and κακος, bad, because it has no pernicious qualities; or from ακαζω, to sharpen, on account of its sharp spines.) The name of a genus of plants in the Linnæan system. Class, *Polygamia*; Order *Monœcia*. The Egyptian thorn.

Acacia altera trifoliata. The *Spartium spinosum* of Linnæus.

Acacia catechu. The systematic name of the plant, which affords a drug, formerly supposed to be an earthy substance brought from Japan, and therefore called *terra Japonica*, or Japan earth. It was afterwards found to be an extract prepared in India by boiling the wood of a certain tree, and evaporating the decoction by the heat of the sun. This tree was formerly referred to the genus *mimosa*, but is now ascertained to be an acacia, and is called *Acacia catechu*. It grows in great abundance in the kingdom of Bahar, and catechu comes to us principally from Bengal and Bombay. The natives call it *Cutt*, the English who reside there *Cutch*. Besides the common catechu there are two other kinds obtained from the Areca nut which are used by the Indian practitioners. See *Areca catechu*. In its purest state, catechu is a dry, pulverable substance, outwardly of a reddish colour; internally of a dark shining brown, tinged with a reddish hue; in the mouth it discovers considerable astringency, succeeded by a sweetish mucilaginous taste. It may be advantageously employed in most cases where an astringent is indicated; and is particularly useful in alvine fluxes. Besides this, it is employed also in uterine profluvia, in laxity and debility of the viscera in general; and it is an excellent topical astringent, when suffered to dissolve leisurely in the mouth, for sponginess of the gums, aphthous ulcers and similar affections. This extract is the basis of several formulæ in our pharmacopœias, particularly of a tincture; but one of the best forms under which it can be exhibited, is that of a simple infusion in warm water with a proportion of cinnamon; for by this means it is at once freed of its impurities, and improved by the addition of the aromatic.

Catechu has been made the subject of particular examination by Sir Humphrey Davy. That from Bombay is of uniform texture, red brown colour, and specific gravity 1·39; that from Bengal is more friable and less consistent, of a chocolate colour externally, but internally chocolate streaked with red brown, and specific gravity 1·28. The catechu from either place has nearly the same properties. Its taste is astringent, leaving behind a sensation of sweetness. It is almost wholly soluble in water. Two hundred grains of picked catechu from Bombay afforded 109 grains of tannin, 66 extractive matter, 13 mucilage, 10 residuum, chiefly sand and calcareous earth. The same quantity from Bengal; tannin 97 grains, extractive matter 73, mucilage 16, residual matter, being sand, with a small quantity of calcareous and aluminous earths, 14. Of the latter, the darkest parts appeared to afford most tannin, the lightest most extractive matter. The Hindoos prefer the lightest coloured, which has probably most sweetness, to chew with the betel-nut.

Of all the astringent substances we know, catechu appears to contain the largest proportion of tannin; and Mr. Purkis found, that one pound was equivalent to seven or eight of oak bark for the purpose of tanning leather.

Acacia, False. See *Robinia*.

Acacia germanica. German acacia.

1. The name of the German black thorn, or sloe-tree, the *Prunus spinosa* of Linnæus.

2. The name of the inspissated juice of the fruit as made in Germany; which, as well as the tree, is there also called *Acacia nostras*. It has now fallen into disuse.

Acacia gum. See *Acacia vera*.

Acacia indiana. See *Tamarindus*.

Acacia indica. See *Tamarindus indica*.

Acacia nostras. See *Acacia germanica*.

Acacia trefoil. The *Spartium spinosum* of Linnæus.

Acacia vera. 1. The systematic name of the Egyptian thorn, or gum-arabic tree. *Acacia vera; — spinis stipularibus patentibus, foliis bipinnatis, partialibus extimis glandula interstinctis, spicis globosis pedunculatis*, of Wildenow. This tree was formerly supposed to be a species of mimosa. The gum which it affords has received many names: — *Gummi acanthinum; Gummi thebaicum; Gummi scorpionis; Gum-lamac; Gummi senega*, or *seneka*, or *senegalense*.

It affords the gum acacia of the shops, which is imported into this country from Barbary and Morocco, packed in casks; it is in drops or tears, or in small fragments, of a pale straw colour, and more or less transparent. It is generally mixed with gum-senegal, and is most probably indiscriminately collected from several trees. Cairo and Alexandria were the principal marts for gum-arabic till the Dutch introduced the gum from Senegal into Europe, about the beginning of the seventeenth century, and this source now supplies the greater part of the vast consumption of this article. The tree which yields the Senegal gum, grows abundantly on the sands, along the whole of the Barbary coast, and particularly about the river Senegal. There are several species, some of which yield a red astringent juice, but others afford only a pure, nearly colourless, insipid gum, which is the great article of commerce. These trees are from eighteen to twenty feet high, with thorny branches. The gum makes its appearance about the middle of November, when the soil has been thoroughly saturated with periodical rains. The gummy juice is seen to ooze through the trunk and branches, and, in about a fortnight, it hardens into roundish drops, of a yellowish white, which are beautifully brilliant where they are broken off, and entirely so when held in the mouth for a short time, to dissolve the outer surface. No clefts are made, nor any artificial means used by the Moors, to solicit the flow of the gum. The lumps of gum-senegal are usually about the size of partridge eggs, and the harvest continues

about six weeks. This gum is a very wholesome and nutritious food, thousands of the Moors supporting themselves entirely upon it during the time of harvest. About six ounces is sufficient to support a man for a day; and it is, besides, mixed with milk, animal broths, and other aliments.

The acacia gum which comes directly from Egypt and the Levant, only differs from the gum-senegal in being of a lighter colour, and in smaller lumps; and it is also somewhat more brittle. In other respects, they resemble each other perfectly.

Gum acacia is neither soluble in spirit nor in oil; but in twice its quantity of water it dissolves into a mucilaginous fluid, of the consistence of a thick syrup, and in this state answers many useful pharmaceutical purposes, by rendering oily and resinous substances miscible with water. The mucilaginous quality of gum-arabic renders it an excellent demulcent in coughs, hoarsenesses, and other catarrhal affections. It is also very generally employed in ardor urinæ, diarrhœas, and calculous complaints.

2. The name of the expressed juice of the immature pods of the tree, termed *Acacia veravel*. This inspissated juice is brought from Egypt in roundish masses, wrapped up in thin bladders. It is considered as a mild astringent medicine. The Egyptians give it, in spitting of blood, in the quantity of a drachm, dissolved in any convenient liquor, and repeat this dose occasionally. They likewise employ it in collyria, for strengthening the eyes, and in gargles for quinsies. It is now seldom used in Europe, being superseded by catechu, or kino.

Acacia veravel. See *Acacia vera*.

Acacia zeylonica. See *Hæmatoxylum campechianum*.

Acahi. An alchemical term for an aqueous solution of alum.

Acaid. An alchemical name of vinegar.

Acajou. 1. A name of the cashew-nut. See *Anacardium occidentale*.

2. The French call mahogany *bois d'acajou*. See *Swietenia mahogoni*.

Acalai. An alchemical term for salt.

Acalcum. Tin.

Acale'phe. Ακαληφη. The nettle. See *Urtica*.

ACALYCI'NUS. (From α, priv. and καλυξ, a flower-cup.) Acalycine, or without a calyx.

ACA'LYCIS. (From α, priv. and καλυξ, a flower cup.) Without a calyx or flower-cup: applied to plants which have no calyx.

Acalypha. The name of a genus of plants in the Linnæan system. Class, *Monadelphia*; Order, *Monœcia*.

Acalypha indica. A Malabar plant used by the natives against gout and syphilis. Oil in which the plant has been infused is applied by friction.

ACA'MATOS. (From α, neg. and καμνω, to grow weary.) A perfect rest of the muscles, or that disposition of a limb which is equally distinct from flexion and extension. *Galen*.

Acamech. An alchemical term for the superfluous or impure part of silver.

Aca'mpsia, (From α, priv. and καμπτω, to bend.) An inflexible state of a joint. See *Anchylosis*.

Acanor. A term formerly used for a species of furnace.

A'canos. (Ακανος, a spine) The *onopordium*.

ACA'NTHA. (α, æ. i. Ακανθα; from ακη a point.) 1. A thorn or prickle.

2. The spina dorsi.

Acantha'bolus. (From ακανθα, a thorn, and βαλλω, to cast out.) A kind of forceps, for removing thorns, or whatever may stick in the flesh. — *Paulus Ægineta*.

ACA'NTHINUM. (*um*, *i*. n.; from ακανθα, a thorn.) Gum acacia was called *Gummi acanthinum*, because it is produced by a thorny tree. See *Acacia vera*.

Aca'nthulus. (From ακανθα, a thorn.) A surgical instrument to draw out thorns or splinters, or to remove any extraneous bodies from wounds.

ACA'NTHUS. (*us*, *i*. m. Ακανθος from ακανθα, a thorn: so named from being rough and prickly.) The name of a genus of plants in the Linnæan system. Class, *Didynamia*; Order, *Angiospermia*. Bears-breech.

Acanthus mollis. The systematic name of the bears-breech, or brank-ursine. *Acanthus —foliis sinuatis inermibus*, of Linnæus. *Branca ursina* of the shops. The leaves and root abound with a mucilage, which is readily extracted by boiling or infusion. The roots are the most mucilaginous. Where this plant is common, it is employed for the same purposes to which althæa and other vegetables possessing similar qualities are applied among us. The herb-women often sell the leaves of bears-foot, and of cows' parsnip, for the bears-breech. It has fallen into disuse.

Acapatli. See *Iva frutescens*.

Aca'pnon. (From α, priv. and καπνος, smoke.) Marjoram. So called, according to Kraus, because the herb when burnt gives out scarcely any unpleasant smoke.

Aca'rdia. From α, priv. and καρδια, the heart.) The state of a fœtus born without a heart, as in those monstrosities where the whole thorax is wanting. The cases related of absence of the heart in individuals otherwise perfectly formed are doubtless fictitious or erroneous.

Acaricoba. The Brazilian name of the Hydrocotyle umbellatum. See *Hydrocotyle umbellatum*.

Acaro'is resinifera. A name of the tree which affords the Botany Bay gum. See *Botany Bay gum*.

A'caron. The wild myrtle.

Acartum. An alchemical term for minium.

A'CARUS. (*us*, *i*. m.; from α, neg. and κειρω to divide, as though the insect were too small to be divided. The tick, or mite. The name of a very numerous genus of insects. Those which are found on the human body are,

1. The *acarus domesticus*, or domestic tick. This species is observed in the head, in considerable numbers; near gangrenous sores; and on dead bodies.

2. The *acarus scabiei*, or itch tick. This

animal is white, with reddish legs. It burrows not in, but near the exulcerations of the itch, and in the neighbourhood of other ulcers, and adds considerably to their irritation. It is seldom found in the itch of this country; but in warmer climates, and especially in the island of Madeira, it is easily detected.

3. The *acarus autumnalis*, or harvest bug. The bite of this little animal produces inflammation and swelling, accompanied by much itching. The harvest bug is an insect of a globular ovate shape, with an abdomen bristly behind. From the wheals which its bite produces, it has been sometimes called *wheal worm*.

Besides these a multitude of other species are known to most people; as the *acarus ricinus*, or dog tick; the *acarus siro*, or mite; the *acarus dysenteriæ*, or dysentery tick.

The irritation caused by these vermin is relieved by a lotion composed of equal parts of the aromatic spirit of ammonia and water.

ACATALE'PSIA. (From α, neg. and καταλαμβανω, to apprehend.) Acatalepsy. Uncertainty in the diagnosis or prognosis of diseases.

ACATA'POSIS. (From α, neg. and καταπινω, to swallow.) Difficult deglutition.

Acatalis. The berry of the juniper.

Acata'statos. *Acatastaticus*, *Acatastatic*. (From α, neg. and καθιστημι to determine.) A term applied by Hippocrates, 1. To fevers which are irregular in their paroxysms. 2. To turbid urine without sediment.

Acatera. The greater juniper tree.

Acatha'rsia. (From α, neg. and καθαιρω, to cleanse.) 1. An impurity of the blood and humours. 2. The omission of a purgative.

Acatsjavalli. A plant that grows in Malabar. It appears to be the *Cassytha filiformis* of Linnæus. It is astringent and aromatic. Its infusion is used as a fomentation in cases of hemicrania, and its juice mixed with sugar, is esteemed as a remedy for ophthalmia.

ACAU'LIS. (From α, priv. and καυλος, a stem.) Stemless: without stem. Applied to plants destitute of a stem; as *Cypripedium acaule*, and *Carduus acaulis*. This term must not be too rigidly understood.

Acaweria. The name given in Ceylon to the root of the *ophyoxylum serpentinum*. It is bitter, and much used in the East Indies as an antidote to the bite of serpents.

Acazdir. Tin.

Accatum, or accatem. Brass.

ACCELERATION. (*Acceleratio*, *onis*. f.; from *accelero*.) An augmentation of the motion of bodies in general. In physiology and pathology it is applied to an increased activity of the the several functions, but particularly of the circulation and respiration.

Accelerator urinæ. A muscle of the penis. *Ejaculator seminis*; *Bulbo-cavernosus* of Winslow. It arises fleshy from the sphincter ani and membranous part of the urethra, and tendinous from the crus, and beginning of the corpus cavernosum penis; the inferior fibres run more transversely than the superior, which descend in an oblique direction. It is inserted into a line in the middle of the bulbous part of the urethra, where each joins its fellow; the bulb being thus completely enclosed. The use of these muscles is to drive the urine or semen forward, and by grasping the bulbous part of the urethra, to push the blood towards the corpus cavernosum, and glans penis, by which they are distended.

Accent. In Physiology, signifies the different degree of stress laid on syllables according as the voice is raised or dropped in pronouncing them.

Accession. (*Accessio*, *onis*, f.; from *accedo*, to approach.) The accession or commencement of a disease. Applied chiefly to a fever which has paroxysms or exacerbations: thus the accession of fever means the commencement of the paroxysm, or approach of the febrile period.

Accesso'rius. (From *accedo*, to approach.) Accessory; connected with, or dependent upon, anything; as an *accessory symptom*, *accessory muscle*, *accessory nerve*, &c.

Accessorius lumbalis. A muscle of the loins. See *Sacro-lumbalis*.

Accessorius nervus. The name given by Willis to two nerves which ascend, one on each side, from the second, fourth, and fifth cervical pairs of nerves, through the great foramen of the occipital bone, and pass out again from the cranium through the foramina lacera, with the par vagum, to be distributed on the trapezius muscle.

Accident. (*Accidens*, from *accido*, to happen.) A casualty. An unexpected symptom arising in the course of a disease. The French writers use this word synonymously with *symptom*.

Accidental. The French writers call adventitious textures, or such as result from morbid actions, *tissus accidentels*; and the term *accidental*, as applied to these, has been adopted by some English writers.

Acci'piter. (From *accipiter*, a hawk.) A bandage which was put over the nose, so called from its resemblance to the claw of a hawk, or from the tightness of its grasp.

Acclimated. A term recently introduced into our medical language from the French *acclimaté*; it means accustomed to a climate.

Acclimatement. The state of one accustomed to a climate, or the process of becoming so.

ACCLIVIS. A muscle of the belly, so named from the oblique ascent of its fibres. See *Obliquus internus abdominis*.

ACCOUCHEMENT. The French for the act of parturition.

ACCOUCHEUR. The French for a man-midwife.

ACCRETION. (*Accretio*, *onis*. f.; from *ad*, and *cresco*, to grow.)

1. Growth. See *Nutritio*.

2. The growing together of parts naturally separate, as the fingers or toes.

ACCUBA'TIO. (From *accumbo*, to recline.) Childbed; reclining.

Acephalia. (*a*, æ. f.; from α, priv. and κεφαλη, a head.) That variety of partial agenesia or defective development which consists in absence of the head.

ACEPHALOBRA'CHIA. (*a*, *æ*. f. ; from α, priv. κεφαλη, a head, and βραχιων, an arm.) A term applied by Breschet to that variety of partial agenesia which is characterised by absence of the head and arms.

ACEPHALOBRA'CHIUS. (*us*, *i*. m. ; same etymon.) A monster without head or arms.

ACEPHALOCA'RDIA. (*a*, *æ*. f. ; from α, priv. καφαλη, a head, and καρδια, the heart.) A name given by Breschet to that form of partial agenesia characterised by absence of the head and heart.

ACEPHALOCA'RDIUS. (*us*, *i*. m. ; same etymon.) A fœtus born without head or heart.

ACEPHALOCHI'RUS. (*us*, *i*. m. ; from α, priv. κεφαλη, a head, and χειρ, a hand.) A fœtus born without head or hands.

ACEPHALOCY'STIS. (*is*, *idis*, f. ; from α, priv. κεφαλη, a head, and κυστις, a bladder. The acephalocyst, or headless cyst. The name given by Laennec to the visceral hydatid of Linnæus. See *Entozoa*.

ACEPHALOGA'STER. (*er*, *ri*. m. ; from α, priv. κεφαλη, a head, and γαστηρ, the belly. A fœtus born without the head, chest, and superior part of the belly.

ACEPHALOGA'STRIA. (*a*, *æ*. f. ; same etymon.) A term applied by Breschet to that form of partial agenesia, which is characterised by absence of the head, chest, and upper part of the belly.

ACEPHALOPO'DIA. (*a*, *æ*. f. ; from α, priv. κεφαλη, a head, and πους, a foot.) Breschet's term for that form of partial agenesia in which the head and feet are wanting.

ACEPHALO'PODUS. (*us*, *i*. m. ; same etymon.) A fœtus born without head or feet.

ACEPHALORA'CHIA. (*a*, *æ*, f. ; from α, priv. κεφαλη, a head, and ῥαχις, the spine,) The term used by Breschet for that form of partial agenesia in which the head and vertebral column are wanting.

ACEPHALO'STOMUS. (*us*, *i*. m. ; from α, priv. κεφαλη, a head, and στομα, the mouth.) An acephalous fœtus, having at its superior part an aperture resembling a mouth.

ACEPHALOTHORA'CIA. (*a*. *æ*. f. ; from α, priv. κεφαλη, a head, and θωραξ, the chest.) A name given by Breschet to a partial agenesia, consisting in absence of the head and chest.

ACEPHALOTHO'RUS. (*us*, *i*. m. ; same etymon.) A fœtus born without head or chest.

ACE'PHALUS. (Ακεφαλος ; from α, priv. and κεφαλη, a head.) Acephalous. Without a head : applied to a lusus naturæ, or monster, born without a head.

A'CER. (*er*, *eris*. n.) The name of a genus of plants in the Linnæan system. Class, *Polygamia ;* Order, *Monœcia*.

ACER CAMPESTRE. The systematic name of the common maple. This tree yields a sweetish, milky sap, which contains a salt with a basis of lime, possessed, according to Sherer, of peculiar properties. It is white, semi-transparent, not altered by the air, and soluble in 100 parts of cold, or 50 of boiling water. It is from the juices of this plant, and those also of the *Acer pseudo-platanus*, that chemists have obtained an acid which they call the *Acceric acid*.

ACER PSEUDO-PLATANUS. The systematic name of the maple-tree, falsely named sycamore. It is also called *Platanus traga*. This tree is common in England, though not much used in medicine. The juice, if drunk while fresh, is said to be a good anti-scorbutic. All its parts contain a saccharine fluid ; and if the root or branches be wounded in the spring, a large quantity of liquor is discharged, which when inspissated, yields a brown sort of syrup like molasses.

ACER SACCHARINUM. The systematic name of the sugar maple-tree. Large quantities of sugar are obtained from this tree in New England and Canada, which is much used in France. It has been supposed that all Europe might be supplied from the maple of America, which grows in great quantities in the western counties of all the middle States of the American Union. It is as tall as the oak, and from two to three feet in diameter ; puts forth a white blossom in the spring, before any appearance of leaves ; its small branches afford sustenance for cattle, and its ashes afford a large quantity of excellent potash. It requires twenty years to attain its full growth. Tapping does not injure it ; on the contrary, it affords more syrup, and of a better quality, the oftener it is tapped. A single tree has not only survived, but flourished, after tapping, for forty years. Five or six pounds of sugar are usually afforded by the sap of one tree ; though there are instances of the quantity exceeding twenty pounds. The sugar is separated from the sap either by freezing, by spontaneous evaporation, or by boiling. The latter method is the most used. Dr. Rush describes the process ; which is simple, and practised without any difficulty by the farmers.

From frequent trials of this sugar, it does not appear to be in any respect inferior to that of the West Indies. From calculations, grounded on facts, it is ascertained that America is now capable of producing a surplus of one eighth more than its own consumption.

ACER VIRGINIANUM ODORATUM. An old name of the liquid amber.

A'CERATE. (*Acetas*, *atis*. m.) A salt formed by the aceric acid, with a base.

ACE'RATOS. (From α, neg. and κεραω, or κερανυμι, to mix.) Unmixed ; uncorrupted. This term is sometimes applied to the humours of the body by Hippocrates.

ACERB. (*Acerbus ;* from *acer*, sharp.) Applied to a taste compounded of acidity and roughness.

ACE'RIC ACID. *Acidum accricum*. An acid found by Scherer combined with lime in the juice of the common maple (*Acer campestre*), and regarded by that chemist as peculiar ; Gmelin, however, says, that it is merely *malic* acid.

ACE'RIDES. (Ακηριδες ; from α, neg. and κηρος, wax.) An old name for plasters made without wax.

ACEROSE. *Acerosus ;* applied to leaves which are shaped like a needle ; as in *Pinus sylvestris*, and *Juniperus communis*.

ACER'VULUS CEREBRI. A sandy substance of a yellow colour which is frequently found near, or in the substance of, the pineal gland ; it consists of phosphate of lime ; it has not been ob-

served till after the age of puberty, and does not appear to be the product of disease.

Acescent. (*Acescens*; from *acesco*, to grow sour). Substances which undergo the acetous fermentation are said to be acescent when that change is about to take place.

A'cesis. (*is, is.* f.; from ακεομαι, to cure.) A remedy or cure.

Ace'stris. *Acestoris*, or *Acestria*. (From ακεομαι, to cure.) A Greek term for a female physician, or a midwife.

ACETA'BULUM. (*um, i.* n.; so called because it resembles the *acetabulum* or saucer, in which vinegar was held for the use of the table.)

1. The cup-like cavity of the os innominatum, which receives the head of the thigh-bone. See *Innominatum os.*

2. A liquid measure used by the ancients. See *Weights and Measures.*

3. An old name of the Cotyledon umbilicus, or Umbilicus Veneris. See *Cotyledon.*

4. The lobes or cotyledons of the placenta in ruminating animals have been called acetabula.

5. The same name has been given to the mouths of the uterine veins terminating in the placenta.

Aceta'ria. (*a, orum*, pl. n. from *acetum* vinegar). A salad.

Acetarium scorbuticum. A kind of pickle directed by Dr. Bates for scorbutic persons, and made of the *Cochlearia anglica*, a salt prepared from it, and sugar. Thus: ℞. Fol. cochlear. marin. ℥iij. Sacchar. alb. ℥vj. Sal. cochlear. ℥j. Bene contundantur simul, dein adde Succi aurantii, ℥vj.

ACE'TAS. (*as, atis.* f.; from *acetum*, vinegar.) An acetate. A salt formed by the union of the acetic acid with a salifiable base. Acetates are characterised by—

1. The pungent smell of vinegar, which they exhale on the affusion of sulphuric acid.

2. Their yielding, on distillation in a moderate red heat, a very light, odorous, and combustible liquor, called *pyroacetic spirit.*

3. Their being all soluble in water: many of them so much so as to be uncrystallisable.

The acetates commonly employed in the cure of diseases are:

1. The acetate of potash.
2. ——— ammonia.
3. ——— soda.
4. ——— lead.
5. ——— zinc.
6. ——— mercury.
7. ——— morphia.

Acetas ammoniæ. Acetate of ammonia. See *Ammoniæ acetatis liquor.*

Acetas hydrargyri. See *Hydrargyri acetas.*

Acetas morphiæ. See *Opium.*

Acetas plumbi. See *Plumbi acetas*, and *Plumbi acetatis liquor.*

Acetas potassæ. See *Potassæ acetas.*

Acetas sodæ. See *Sodæ acetas.*

Acetas zinci. Acetate of zinc. A salt composed of zinc and acetic acid. It is used by some as an astringent in inflammation of the eyes, and in other cases, diluted in the same proportion as the sulphate of zinc.

Acetate. See Acetas.

Acetate of Ammonia. See *Ammoniæ acetatis liquor.*

Acetate of Potash. See *Potassæ acetas.*

Acetate of Zinc. See *Acetas zinci.*

Acetated vegetable Alkali. See *Potassæ acetas.*

Acetated volatile Alkali. See *Ammoniæ acetatis liquor.*

ACETIFICATION. (*Acetificatio*; from *acetum*, vinegar, and *facio*, to make.) The action or process by which vinegar is made.

Acetite. See *Acetous acid.*

ACETOMETER. An instrument for estimating the strength of vinegars. In the acetometer invented by Messrs. J. and P. Taylor, which has been adopted by the Excise, for determining the rate of duty on vinegar, hydrate of lime is employed to saturate the acid, and the specific gravity of the resulting solution of acetate of lime is made the measure of the strength of the acid. Vinegar, containing 5 parts of real acid in 100 parts, by weight, or saturating 14·5 of crystals of carbonate of soda (the kind called by the London vinegar-makers, No. 24.), is taken as a standard; and, when neutralised by hydrate of lime, an hydrometer stands in it at the mark on the stem which is called *proof.* To keep the stem of the instrument at the same mark, when immersed in stronger acids saturated with lime, it is loaded with a series of weights, each of which indicates 5 per cent. of acid above proof, up to 35, which of course contains $5+35=40$ per cent. of real acetic acid. This is the greatest strength at which the duty is levied by the gallon; that on stronger acids being regulated in a different manner.

Aceto'sa. *a, æ.* f.; sorrel. See *Rumex acetosa.*

ACETOSE'LLA. (*a, æ.* f.; from *acetosa*, sorrel: so called from the acidity of its leaves.) See *Oxalis acetosella.*

Acetous acid. It was formerly supposed by chemists that there was a difference between the *acetic* and *acetous* acids; the salts of the former were therefore called *acetates*, and those of the latter *acetites.* The distinction is now known to be without foundation; the acids are one and the same.

Acetous Fermentation. See *Fermentation.*

Ace'tum. (*um, i.* n.; from *acer*, sour.) Vinegar. The acetic acid is the characteristic product of the acetous fermentation. (See *Fermentation.*) It is also generated during the destructive distillation of vegetable substances; it exists, either in a free state or in combination, with lime or potassa, in the sap of many plants; it is found in several animal fluids, as the sweat, urine, and milk, and is frequently generated by a morbid process in the stomachs of dyspeptic patients. Common vinegar consists of the acetic acid in a very diluted state, mixed with saccharine and mucilaginous matter, and other vegetable impurities.

Many vegetable and animal substances, when combined with water, readily undergo the acetous fermentation. The vinegar used for domestic purposes is obtained in this country chiefly from an infusion of malt, and in France from wine. A good vinegar may be prepared from a solution of sugar in water, in the proportion of eighteen ounces of sugar to each gal-

lon of water. At Gand, vinegar is manufactured from beer. Vinegar, divested of its impurities by distillation, constitutes the *acidum aceticum dilutum* of the present London pharmacopœia, and the ordinary distilled vinegar of the shops: distilled vinegar was formerly called *acetous acid*, on the supposition that it differed chemically from the strong *acetic acid;* the difference, however, consists merely in the inferior purity of the acid, which, in the distilled vinegar, is diluted with water, and impregnated with a small quantity of empyreumatic oil. Acetic acid of considerable strength may be prepared by saturating perfectly dry charcoal with common vinegar, and distilling; the water comes over first, and, as the heat increases, is followed by the acid. Strong acetic acid is also obtained by exposing vinegar to a freezing temperature, when the water congeals while the acid remains liquid, and may be strained off.

The greater part of the acetic acid now used for ordinary chemical purposes is obtained by destructive distillation from wood, and is hence called *pyro-ligneous* acid. This is at first of a dark colour, and rendered very impure by the presence of tar and volatile oil: to free it from these it is treated with chalk, and the resulting acetate of lime is decomposed by digestion with sulphate of soda; the acetate of soda thus obtained is fused at a temperature sufficiently high to expel or char the extraneous matter, but not to decompose the salt: finally, the acetate of soda being obtained pure and crystallised, is decomposed by sulphuric acid, and the acetic acid evolved.

When a pure and concentrated acetic acid is required for chemical purposes, it is most conveniently obtained by decomposing the acetates. The best process consists in slowly distilling acetate of potash with half its weight of the strongest sulphuric acid, the receiver being kept cool with ice. The acetic acid which comes over contains a portion of sulphurous acid, but it may be rendered quite pure by mixing it with a little peroxide of manganese, and re-distilling. Acetate of lead, treated in the same manner, yields the acetic acid rather less concentrated. The acetates of lead and copper may be made to part with their acid by heat alone, but the acid obtained in this way is apt to be partially decomposed; in which case a portion of a peculiar spirit, called the *pyro-acetic*, comes over along with it, and is not easily separated. See *Pyro-acetic spirit*. Other methods of procuring acetic acid are used by chemists, and may be varied according as the purity of the product or the economy of the process is the leading object.

Acetic acid, in its purest and most concentrated state, is transparent and colourless; it has a very sour taste, and a strong and pungent, but agreeable odour. When kept for some time in contact with the skin, it produces redness and vesication. Its specific gravity is 1·062. It is slowly volatilised at common atmospheric temperature, boils at a moderate heat, and easily inflames. It crystallises at 50° F. in rhomboidal plates, the crystals containing 1-5th part of water. When it is passed through a red-hot tube, the greater part is decomposed; but, owing to its volatility, a considerable portion escapes decomposition. Acetic acid has been analysed by Gay Lussac, and Thenard, Berzelius, and Prout.

According to Gay Lussac, and Thenard, it consists of—

Carbon	50·224
Hydrogen	5·629
Oxygen	44·147
	100·

Dr. Prout has found that oxygen and hydrogen exist in this acid, exactly in the proportions which constitute water; his analysis gave 47·05 parts of carbon, and 52·95 of water in 100 of the acid; which agrees with the results obtained by Berzelius, who makes acetic acid to consist of—

Carbon	47·536
Hydrogen	5·822
Oxygen	46·642
	100·

The strength of acetic acid can only be accurately estimated by its neutralising power; the specific gravity affords no criterion.

Acetic acid dissolves resins, gum resins, camphor, essential oils, phosphorus, and the active principles of several important vegetable substances. It unites with all the alkalies, and most of the earths and metallic oxides. Its salts, which are called *acetates*, are all soluble in hot, and most of them in cold water; they are decomposed by sulphuric acid, and destroyed by a high degree of heat. When the deutoxide of barium is digested in acetic acid, it is dissolved without effervescence; and if the baryta be precipitated by sulphuric acid, the acetic acid remains combined with deutoxide of hydrogen.

Acetic acid and vinegar are frequently adulterated with sulphuric acid, which is detected by muriate of baryta or by chalk. Copper is detected in acetic acid by supersaturating it with ammonia, when a blue colour is produced. Lead is thrown down by sulphuretted hydrogen in the form of a dark coloured precipitate; and tin, which is very frequently present, gives a purple precipitate with the nitro-muriate of gold. British vinegars, obtained by fermentation, are allowed by law to contain a little sulphuric acid; but the due proportion is too often exceeded.

The utility of vinegar, as a condiment for preserving and seasoning various animal and vegetable substances used in diet, has long been known. Moderately strong pyroligneous acid has been recommended for preserving meat, but it communicates an empyreumatic flavour, which is not effectually removed by subsequent boiling in water.

At present, vinegar is little used as an internal remedy, though, when properly diluted, it affords a pleasant acidulous drink in cases of fever. Distilled vinegar applied to the nostrils sometimes relieves nervous headache and the faintness occasioned by the heat of crowded rooms, &c. Little faith is now placed in the anti-contagious powers of vinegar, but its vapour, diffused through the apartments of the sick, has a refreshing fragrance, and tends to neutralise disagreeable odours.

As an external application, vinegar is useful

when joined with farinaceous substances, and applied as a cataplasm to sprained joints; it also forms an eligible lotion for superficial inflammations, when mixed with alkohol and water in about equal proportions. Applied to burns and scalds, it is said to be highly serviceable, whether there is loss of substance or not; and it is alleged to quicken the exfoliation of carious bone. Mixed with an infusion of sage, or with water, it forms a popular and excellent gargle for an inflamed throat. An imprudent use of vinegar internally is extremely prejudicial to health. Large and frequent doses injure the stomach, and produce leanness and atrophy. When taken to excess by females, to reduce a corpulent habit, it has sometimes done serious mischief, especially in phthisical constitutions.

Acetum agrestinum solutivum. An old medicine which was prepared by infusing senna leaves, jalap root, aniseseed, and cloves, in verjuice. It was used in small quantities as a condiment added to broths, &c., and was celebrated for the cure of agues and various chronic diseases.

Acetum aromaticum. Aromatic vinegar. A preparation of the Edinburgh pharmacopœia, thought to be an improvement of what has been named *thieves' vinegar.*

Take of the dried tops of rosemary, the dried leaves of sage, of each four ounces; dried lavender flowers, two ounces; cloves, two drachms; distilled vinegar, eight pounds. Macerate for seven days, and strain the expressed juice through paper. Its virtues are antiseptic, and it is a useful composition to smell at in crowded courts of justice, hospitals, &c., where the air is offensive.

Acetum bezoardicum. Several aromatic vinegars were so named in the older pharmacopœias: that of the four thieves, or the *acetum prophylacticum,* was the most celebrated.

Acetum colchici. Vinegar of meadow-saffron. Take of fresh meadow-saffron root sliced, an ounce; acetic acid, a pint; proof spirit, a fluid-ounce. Macerate the meadow-saffron root in the acid, in a covered glass vessel, for three days; then press out the liquor and set it by, that the feculencies may subside; lastly, add the spirit to the clear liquor. The dose is from ʒss to ʒiss.

Acetum distillatum. See *Acidum aceticum dilutum.*

Acetum philosophicum. A preparation used by the alchemists as a solvent of metals. It is described by J. Quercitanus, but so enigmatically, that different conjectures have been formed as to its composition. Schröder considers it as a vinegar prepared from vinous hydromel. It was also called *aqua mercurialis* and *lac virgineum.*

Acetum prophylacticum. *Vinaigre des quatre voleurs. Vinegar of the four thieves.* This once famous preparation derived its name from four thieves, who, during the plague of Marseilles, attended and plundered many of the sick, and escaped the disease, which they attributed to the use of a certain medicated vinegar. One of them being apprehended, saved himself from punishment by revealing the secret. The following is the prescription for this medicine given by Charas:—Take of the tops of common wormwood, tops of Roman wormwood, rosemary, sage, mint, rue, each ʒss; dried lavender flowers, ʒij; garlic, ʒij; calamus aromaticus, cinnamon, cloves, nutmeg, each ʒij; best vinegar, ℔viij. Macerate in the heat of the sun, or in a sand bath, for twelve days, and filter; then add half an ounce of camphor dissolved in spirit of wine. The vinegar of the four thieves acquired great reputation as a prophylactic against contagious diseases; it was taken internally in the dose of a spoonful morning and evening, and applied to the nostrils as a scent. The acetum aromaticum of the present day is a substitute for it.

Acetum radicatum. Radical vinegar: concentrated acetic acid. See *Vinegar.* The druggists generally add a little camphor or some fragrant essential oil to the acid.

Acetum scillæ. Vinegar of squills. Take of squills recently dried, one pound; dilute acetic acid, six pints; proof spirit, half a pint. Macerate the squills with the vinegar in a glass vessel, with a gentle heat for twenty-four hours; then express the liquor, and set it aside until the fæces subside. To the decanted liquor add the spirit. This preparation of squills is employed as an attenuant, expectorant, and diuretic. Dose, xv. to lx. drops.

Aceyte de sal. A remedy for bronchocele used in South America. Roulin found that it contained a portion of iodine.

Achanaca. An African plant used in the kingdom of Mely as an anti-syphilitic.

Achaovan. An Egyptian plant, with flowers resembling the chamomile. Its decoction was used as a deobstruent. *Prosper Alpinus.*

Achaovan abiat. An Egyptian plant mentioned by Prosper Alpinus. It was highly esteemed for its emollient and resolvent virtues. It is probably the *cineraria maritima.*

Achari'ston. (From α, priv. and χαρις, thanks, as above all thanks; invaluable.) A term applied by Galen and the Greek physicians to various antidotes and collyria.

A'che. An old name of the herb smallage.

Acheir. (From α, priv. and χειρ, the hand.) Handless; devoid of hands. *Galen.*

Achi'colum. The *sudatorium* of the ancient baths. See *Balneum.*

ACHILLE'A. (α, *ac.* f. Αχιλλεια; from Achilles, who is said to have discovered the plant or its virtues. 1. The name of a genus of plants in the Linnæan system. Class, *Syngenesia;* Order, *Polygamia superflua.*

2. The pharmaceutical name of the milfoil. See *Achillea millefolium.*

Achillea ageratum. The systematic name of maudlin, or maudlin tansy. This plant, the *ageratum* of the shops, called also *Balsamita fœmina; Eupatorium mesues,* is described by Linnæus as *Achillea — foliis lanceolatis, obtusis, acutoserratis.* It is esteemed in some countries as anthelmintic and alterative, and is given in hepatic obstructions. It possesses the virtues of tansy.

Achillea foliis pinnatis. See *Genipi verum.*

Achillea millefolium. The systematic

name of the common yarrow, or milfoil. Its synonymes are, *Achillea*, *Myriophyllon*, *Chiliophyllon*, *Lumbus veneris*, *Militaris herba*, *Stratiotes*, *Carpentaria*, and *Speculum veneris*.

Achillea — foliis bipinnatis nudis; laciniis linearibus dentatis; caulibus superne sulcatis, of Linnæus. The leaves and flowers of this indigenous plant have an agreeable, weak, aromatic smell, and a bitterish, rough, and somewhat pungent taste. They are both directed for medicinal use, in the Edinburgh Pharmacopœia; in the present practice, however, they are almost wholly neglected.

Achillea ptarmica. The systematic name of the sneeze wort or bastard pellitory, called also *Pseudo-pyrethrum*, *Pyrethrum sylvestre*, *Draco sylvestris*, *Tarchon sylvestris*, *Sternutamentoria*, and *Dracunculus pratensis*. The flowers and roots of this plant, *Achillea — foliis lanceolatis, acuminatis, argute serratis*, have a hot biting taste, approaching to that of pyrethrum. Their principal use is a masticatory and sternutatory.

Achillis chorda. See *Achillis tendo*.

Achillis tendo. The tendon of the gastrocnemii muscles. So called because Achilles is said to have been vulnerable only in this part; or from its strength, the ancients calling every thing Achillean which was remarkably strong; or, lastly, from its conducing to swiftness, which, according to some, the name of Achilles imports. The Tendo Achillis is the strong tendon of the heel which is formed by the junction of the gastrocnemius and soleus muscles, and which extends along the posterior part of the tibia from the calf to the heel. See *Gastrocnemius externus*, and *Gastrocnemius internus*.

When this tendon is unfortunately cut or ruptured, as it may be in consequence of a violent exertion, or spasm of the muscles of which it is a continuation, the use of the leg is immediately lost; and unless the part be afterwards successfully united, the patient must remain a cripple for life. When the tendon has been cut, the division of the skin allows the accident to be seen. When the tendon has been ruptured, the patient hears a sound like that of the smack of a whip, at the moment of the occurrence. In whatever way the tendon has been divided, there is a sudden incapacity, or at least an extreme difficulty, either of standing or walking. Hence the patient falls down, and cannot get up again. Besides these symptoms, there is a very palpable depression between the ends of the tendon; which depression is increased when the foot is bent, and diminished, or even quite removed, when the foot is extended. The patient can spontaneously bend his foot, none of the flexor muscles being interested. The power of extending the foot may still exist, as the peronei muscles, the tibialis posticus, and long flexors, remain perfect, and may perform this motion. The indications are to bring the ends of the divided parts together, and to keep them so, until they have become firmly united. The first object is easily fulfilled by putting the foot in a state of complete extension; the second, namely, that of keeping the ends of the tendon in contact, is more difficult. It seems unnecessary to enumerate the various plans devised to accomplish these ends. The following is Desault's method: — After the ends of the tendon had been brought into contact by moderate flexion of the knee, and complete extension of the foot, he used to fill up the hollows on each side of the tendon with soft lint and compresses. The roller applied to the limbs made as much pressure on these compresses as on the tendon, and hence this part could not be depressed too much against the subjacent parts. Desault next took a compress about two inches broad, and long enough to reach from the toes to the middle of the thigh, and placed under the foot over the back of the leg and lower part of the thigh. He then began to apply a few circles of a roller round the end of the foot, so as to fix the lower extremity of the longitudinal compress: after covering the whole foot with the roller, he used to make the bandage describe the figure of 8, passing it under the foot and across the place where the tendon was ruptured, and the whole was finished by encircling the limb upward with the roller as far as the upper end of the longitudinal compress.

Achillei'on. A sort of sponge used by the ancients for making tents.

Achille'is. αχιλληις. A beautiful species of barley. Hippocrates recommends a decoction of it in ardent fevers and in jaundice.

A'chlys. Αχλυς, darkness, cloudiness. Generally applied to a fog or mist.

1. Hippocrates, *De morb. mulierum*, lib. ii, uses this word to signify air condensed in the womb.

2. Galen applies it to the loss of lustre in the eye of a sick person.

3. Others mean by this term an ulcer, or the scar of one, on the cornea, impeding vision.

4. It signifies also any opacity of the cornea.

Achiote. *Annotto*. See *Bixa orleana*.

Achmam, *Achmadium* or *Achimadium*. Antimony.

A'chne, Αχνη. 1. Inspissated mucus in the eye — *Hippocrates*: or in the fauces — *Galen*. 2. Lint.

A'CHOLUS. (From α, priv. and χολη, bile.) Deficiency of bile.

A'CHOR. (*or, oris.* m. Αχωρ, qu. αχνωρ; from αχνη, bran. This is the most probable etymology but many of the lexicographers derive it from α, priv. and χωρος, space, as occupying but a small compass.) 1. A species of scald-head, called also *Lactumen*, *Abas*, *Cerion*, *Favus*, and *Crusta lactea*. It is called *acor*, from the branny scales thrown off it. It attacks the hairy scalp of the head, for the most part, of young children, forming soft and scaly eruptions. 2. Dr. Willan, in his description of different kinds of pustules, defines the achor, as a pustule of intermediate size between the *phlyzacium* and *psydracium*, which contains a straw-coloured fluid, having the appearance and nearly the consistence of strained honey. It appears most frequently about the head, and is succeeded by a dull white or yellowish scab. Pustules of this kind, when so large as nearly to equal the size of phlyzacia, are termed *ceria* or *favi*, being succeeded by a yellow, semi-transparent, and sometimes cellular, scab, like a honeycomb. The achor differs from the favus and tinea only

in degree. It is called favus when the perforations are large; and tinea when they are like those which are made by moths in cloth: but, generally, by tinea is understood a dry scab on the hairy scalp of children, with thick scales and an offensive smell. When this disorder affects the face, it is called *Crusta lactea*, or milk-scab.

Achori'stos. (Inseparable; from α, priv. and χωριζω, to separate.) Applied by the ancients to a symptom inseparable from any disease, as pain in the side from pleurisy.

Achourou. The Carib name of a species of myrtle. A decoction of the leaves is used by the natives as a remedy for dropsy.

A'CHRAS. The name of a genus of plants in the Linnæan system. Class, *Hexandria*; Order, *Monogynia*. The sapota plum tree.

Achras sapota. The systematic name of the tree which affords the oval-fruited sapota, the seeds of which are sometimes given in the form of emulsion in calculous complaints. It grows in the West India Islands, particularly St. Domingo, and bears a fruit like an apple, which has, when ripe, a luscious taste, resembling that of the marmalade of quinces, whence it is called natural marmalade. The bark of this, and the *Achras mammosa*, is very astringent, and is used medicinally under the name of *Cortex jamaicensis*: it has been recommended as a febrifuge.

Achro'mato'psia. (From α, neg. χρωμα, colour, and οψις, vision.) A term which has been used to designate an incapacity of distinguishing different colours from each other; but the term is a bad one, since from its etymology is would signify inability to perceive any colour at all.

A'cia. (From ακη, a point.) A term used by Celsus, which some believe to mean a needle; others the thread, and others a particular kind of suture.

Aci'cular. (*Acicularis*; from *acicula*, a needle.) Needle-shaped; applied to leaves and to crystals.

Acid. (*Acidum*, *i.* n.; from ακις, a point, on account of its pungent taste.) An acid is usually defined to be a substance which has a sour taste, reddens vegetable blues and neutralises alkalis. This definition, however, is far from being correct; for, although all the more powerful acids possess the properties above mentioned, there are many substances universally admitted to be acids which are deficient in some of them; thus insoluble acids have no taste, and do not redden litmus paper; and carbonic acid affords a familiar instance of an acid which does not destroy the characteristic properties of alkalis. Dr. Turner defines an acid to be "a compound which is capable of uniting, in definite proportion, with alkaline bases, and which when liquid, or in a state of solution, has either a sour taste or reddens litmus paper." This is probably as accurate and comprehensive a definition as can be framed in the present state of chemical knowledge. The composition of the acids is various, nor does there appear to be any one principle upon which their common properties depend. The celebrated Lavoisier supposed that he had found such a principle in oxygen. At the time he advanced this opinion, all the acids whose composition was known, contained this substance, and its presence was hence inferred in others whose composition was unknown. Oxygen was accordingly regarded as the *acidifying principle*; and those bodies which were acidified by combining with it, were styled *acidifiable bases* or *radicals* of the acids. The inaccuracy of this hasty generalisation was first proved by Berthollet; but Sir H. Davy's discoveries entirely subverted the doctrine of Lavoisier. The early experiments of Sir Humphrey had led him to believe that intimately combined water was the real acidifying principle. In 1810, however, he published those views with respect to the constitution of muriatic acid which are now almost universally adopted. He showed that oxymuriatic acid, which till then had been regarded as a compound of muriatic acid and oxygen, is, in effect, a simple substance which he denominated *chlorine* from its colour, and that muriatic acid is a compound of chlorine and *hydrogen*, which he therefore named *hydro-chloric acid*; hence it appeared that hydrogen alone is capable of communicating acid properties to a base, and this has now been placed beyond a doubt by more recent researches on the hydriodic, and hydrocyanic acids, whose constitution seems to be altogether analogous to that of the hydrochloric, and neither of which contains any oxygen. The early opinion of Sir H. Davy, that water is the acidifying principle, was revived in a modified form by Dr. Murray. This chemist supposed that oxygen and hydrogen, the elements of water, are the two great acidifying principles; that their joint agency is necessary to form a very strong acid, and that these elements of water exist separately in combination with the acidifiable bases: hence those acids, which are generally believed to consist of bases acidified by oxygen or some other substance, and a little combined water, are regarded by Dr. Murray as ternary compounds of such bases with oxygen and hydrogen. These views, though ingeniously illustrated and supported by their author, have been justly discarded by chemists, both as destitute of proof, and as introducing an unnecessary complexity into the theory of all chemical actions in which acids are concerned.

While it is sufficiently established that both oxygen and hydrogen are capable of communicating acid properties to certain bases, the fact, that several acids as the chloriodic and chlorocyanic contain neither the one nor the other, is conclusive against either being regarded as the *acidifying principle*; and it is now pretty generally admitted that no substance with which we are as yet acquainted has any title to this appellation. Acids have been arranged, according to the three kingdoms of nature from which they are derived, into mineral, vegetable, and animal; but a large proportion of them are common to the three kingdoms. They have also been divided on a chemical principle, according to the simple or compound nature of their bases; but the present state of chemical knowledge scarcely affords data for forming such an arrangement in a satisfactory manner. The following classification of acids by Dr. Ure, though liable to objections like all others, gives a useful view of the general relations of this class of bodies, as well as a pretty full enumeration of them: —

Division 1st, Acids from inorganic nature, or which are procurable without having recourse to animal or vegetable products.

Division 2d, Acids elaborated by means of organisation.

The first group is subdivided into three families; 1st, Oxygen acids; 2d, Hydrogen acids; 3d, Acids destitute of both these supposed acidifiers.

Family 1st.—Oxygen Acids.

Section 1st, Non-metallic.

1. Boracic.
2. Bromic.
3. Carbonic.
4. Chloric.
5. Perchloric.
6. Chlorocarbonic.
7. Iodous.
8. Nitrous.
9. Hyponitric.
10. Nitric.
11. Hyponitrous.
12. Iodic.
13. Iodo-sulphuric.
14. Hypophosphorous.
15. Phosphorous.
16. Phosphatic.
17. Phosphoric.
18. Hyposulphurous.
19. Sulphurous.
20. Hyposulphuric.
21. Sulphuric.
22. Cyanic.

Section 2d, Oxygen Acids — Metallic.

1. Arsenic.
2. Arsenious.
3. Antimonious.
4. Antimonic.
5. Chromic.
6. Columbic.
7. Manganesic.
8. Manganesous.
9. Molybdic.
10. Molybdous.
11. Selenic.
12. Selenious.
13. Titanic.
14. Tungstic.

Family 2d.—Hydrogen Acids.

1. Fluoric.
2. Hydriodic.
3. Hydrochloric, or Muriatic.
4. Ferrocyanic.
5. Fluotitanic.
6. Hydrobromic.
7. Hydroselenic.
8. Hydrocyanic.
9. Hydrosulphurous.
10. Hydrotellurous.
11. Sulphocyanic.

Family 3d.—Acids without oxygen or hydrogen.

1. Chloriodic.
2. Chlorocyanic.
3. Fluoboric.
4. Fluosilicic.

Division 2d.—Acids of organic origin.

1. Abietic.
2. Aceric.
3. Acetic.
4. Aloetic?
5. Amniotic.
6. Amylic.
7. Benzoic.
8. Boletic.
9. Bombic.
10. Butyric.
11. Camphoric.
12. Capric, Caproic.
13. Carbazotic.
14. Caseic.
15. Cevadic.
16. Cholesteric.
17. Citric.
18. Croconic.
19. Delphinic.
20. Ellagic?
21. Formic.
22. Fulminic.
23. Fungic.
24. Gallic.
25. Glaucic.
26. Hircic.
27. Hydroxanthic.
28. Indigoic.
29. Igasuric.
30. Kinic.
31. Laccic
32. Lactic.
33. Lampic.
34. Lithic or Uric.
35. Malic.
36. Meconic.
37. Menispermic?
38. Margaric.
39. Melassic.
40. Mellitic.
41. Moroxylic.
42. Mucic?
43. Nanceic?
44. Nitro leucic.
45. Nitro-saccharic.
46. Oleic.
47. Oxalic.
48. Pectic.
49. Phocenic.
50. Pinic.
51. Purpuric.
52. Pyrocitric.
53. Pyrolithic.
54. Pyromalic.
55. Pyrotartaric.
56. Rosacic.
57. Saclactic.
58. Sebacic.
59. Silvic.
60. Solanic.
61. Stearic.
62. Suberic.
63. Succinic.
64. Sulpho-naphthalic.
65. Sulphovinic.
66. Tartaric.
67. Vegeto-sulphuric.

The claim of several of the substances enumerated in the last division to be regarded as distinct acids is by no means established.

In the year 1818, M. Thenard published the results of some experiments, in which various acids were apparently oxigenised, but in which they were in reality merely combined with deutoxide of hydrogen or oxigenised water. The same eminent chemist has since extended these interesting experiments, which, however, are of too complex a nature to be here detailed. The general principle on which they were conducted will be found under the head *Hydrogen*.

Acid Aerial. See *Carbonic Acid.*

Acid Animal. Those acids which exist in animal bodies, or can be obtained from them by chemical processes, have been called *animal acids;* but several of these are common to the three kingdoms of nature. The following are peculiar to the animal kingdom:

Allantoic.
Ambreic.
Butyric.
Capric.
Caproic.
Caseic.
Cetic.
Cholesteric.
Delphinic.
Formic.
Hircic.
Lactic.
Margaric.
Oleic.
Purpuric.
Rosacic.
Sebacic.
Stearic.
Uric.

Acid Antimonic. See *Antimony.*

Acid Antimonious. See *Antimony.*

Acid of Ants. See *Formic acid.*

Acid of Apples. See *Malic acid.*

Acid Bath. See *Balneum.*

Acid Dulcified. See *Dulcificatio.*

Acid Factitious. Those acids which were supposed to result only from artificial processes, were formerly so called as opposed to *native* acids which exist in nature ready formed.

Acid Imperfect. Some bases unite with oxygen in different proportions, and form acids varying accordingly in their properties; thus sulphur, with a certain proportion of oxygen, forms sulphurous acid, and with a larger proportion, sulphuric acid: acids so constituted have been named *imperfect* when they contain the smaller proportion of oxygen, and *perfect* when fully saturated with it. The names of the imperfect acids terminate in *ous*, Latinised by *osum*, as *phosphorous acid, acidum phosphorosum;* those of the perfect acids in *ic*, Latinised by *icum*, as *phosphoric acid, acidum phosphoricum.*

Acid of Lemons. See *Citric acid.*

Acid Marine. See *Muriatic acid.*

Acid Marine Aerated. See *Chlorine.*

Acid Marine Dephlogisticated. See *Chlorine.*

Acid of Milk. See *Lactic acid.*

Acid Mineral. Several of the more important acids, as the sulphuric, muriatic, and nitric, are derived chiefly from the mineral kingdom;

and a few acids, as the chromic, tungstic, molybdic, &c., are peculiar to it. In medical language the term *mineral acids* is generally applied to the sulphuric, muriatic, and nitric.

Acid Native. Acids were formerly so called which exist in nature, and can be obtained without any artificial process.

Acid Pefrect. See *Acid Imperfect.*

Acid of tartar. See *Tartaric acid.*

Acid vegetable. Those acids which are either peculiar to vegetable products, or occur much more abundantly in these than any other, are called *vegetable acids.* The following are referred by chemists to this class.

Acetic.	Lactucic.
Benzoic.	Malic.
Boletic.	Meconic.
Caincic.	Mellitic.
Camphoric.	Moroxylic.
Carbazotic.	Mucic.
Citric.	Oxalic.
Crameric.	Pectic.
Croconic.	Pyrogallic.
Ellagic.	Pyromalic.
Gallic.	Racemic.
Igasuric.	Suberic.
Indigotic.	Succinic.
Kinic.	Tartaric.

ACIDIFIABLE. Capable of being converted into an acid by an acidifying principle. Substances possessing this property are called *radicals* and *acidifiable bases.*

ACIDIFICATION. The formation of an acid; also the endowing of any thing with acid properties.

ACIDIFYING. That which combines with an acidifiable substance, and forms with it an acid, is called the acidifying principle.

ACIDIMETRY. The measurement of the strength of acids. This is effected by saturating a given weight of them with an alkaline base; the quantity requisite for the purpose is the measure of their power.

ACIDITY. A substance which has the characteristic properties of an acid is said to possess *acidity.* See *Acid.*

ACIDULOUS. Somewhat acid: subacid. Applied to salts in which the base is combined with such an excess of acid, that they manifestly exhibit acid properties, as the supertartrate and the supersulphate of potassa; and also to mineral waters, which contain so great a quantity of carbonic acid gas, as to render them slightly acid to the taste. See *Mineral Waters.*

Acidum abietis. An acid liquor yielded, along with the essential oil, by distillation of the fresh branches or fruit of the *Pinus sylvestris* of Linnæus. It is not now in use.

Acidum aceticum. See *Acetum.*

Acidum aceticum concentratum. The strong acetic acid. See *Acetum.*

Acidum aceticum dilutum. Dilute acetic acid. This liquor is the *acetum distillatum*; the *acidum acetosum* of the London Pharmacopœia of 1787, the *acidum aceticum* of that of 1815, and the *acidum aceticum dilutum* of the present.

Take of vinegar, a gallon. Distil the acetic acid in a sand-bath, from a glass retort into a receiver also of glass, and kept cold; throw away the first pint, and keep for use the six succeeding pints, which are distilled over.

In this distillation, the liquor should be kept moderately boiling, and the heat should not be urged too far, otherwise the distilled acid will have an empyreumatic smell and taste, which it ought not to possess. If the acid be prepared correctly, it will be colourless, and of a grateful, pungent, peculiar acid taste. One fluid ounce ought to dissolve at least ten grains of carbonate of lime or white marble.

Distilled vinegar is not always prepared in glass vessels, but generally in a copper alembic, to which a worm of pewter is attached as a refrigerator; hence the impurities sometimes found in this acid. An earthenware condensing pipe is preferable, but there is a difficulty in keeping it sufficiently cool, in consequence of its bad conducting power in regard to heat: it might be made of silver, very thin, and would then be liable to no objection, as that metal is not acted on by acetic acid of any strength. A considerable improvement in the distillation of vinegar consists in using the heat of high-pressure steam for the purpose, instead of that of an ordinary open fire. The risk of empyreuma, is thus prevented, and a larger portion may usually be distilled off before any foreign flavour is perceptible.

The usual specific gravity of distilled vinegar is from 1007 to 1009: in the latter case 1000 grains require 145 grains of crystallised carbonate of soda for their saturation. A dilute acid composed of one part by weight of the *acidum aceticum fortius* of the materia medica, and five of water, is, in all respects, preferable to that obtained by the distillation of vinegar, especially for the purposes of pharmacy.

The pharmaceutical preparations of this acid, directed to be used by the new London Pharmacopœia, are—*acetum colchici, acetum scillæ, ceratum plumbi acetatis, liquor ammoniæ acetatis, liquor plumbi acetatis, liquor plumbi acetatis dilutus, oxymel, oxymel scillæ, potassæ acetas,* and the *cataplasma sinapis.*

Acidum acetosum. See *Acetum.*

Acidum æthereum. See *Sulphuric acid.*

Acidum aluminosum. The sulphuric acid.

Acidum catholicon. Sulphuric acid was formerly named *acidum catholicon, universale,* and *primigenium,* because all other acids were supposed to originate from it.

Acidum citricum. See *Citric acid.*

Acidum muriaticum. See *Muriatic acid.*

Acidum nitricum. See *Nitric acid.*

Acidum nitricum dilutum. Take of nitric acid, a fluid ounce; distilled water, nine fluid ounces. Mix them.

Acidum nitrosum. See *Nitrous acid.*

Acidum pingue. Meyer erroneously imagined that during the calcination of carbonate of lime, a principle was disengaged from the fire, which combining with the lime, rendered it caustic; to this supposed agent he gave the name of *acidum pingue.*

Acidum primigenium. See *Acidum catholicon.*

Acidum solis. The *Clyssus antimonii* of Paracelsus. See *Clyssus.*

Acidum suecicum. Swedish acid. The

fluoric acid has been so named because it was discovered by Scheele, who was a native of Swedish Pomerania.

Acidum sulphureum. See *Sulphurous acid.*

Acidum sulphuricum. See *Sulphuric acid.*

Acidum sulphuricum dilutum. Take of sulphuric acid, a fluid ounce and a half; distilled water, fourteen fluid ounces and a half. Add the water gradually to the acid.

Acidum tartari. See *Tartaric acid.*

Acidum tartaricum.

Acidum vitriolicum. See *Sulphuric acid.*

Acidum vitriolicum dilutum. See *Acidum sulphuricum dilutum.*

Acidum universale. See *Acidum catholicon.*

A'cies. Iron or steel.

ACINACIFORMIS. (From *acinaces*, a scimitar or sabre, and *forma*, shape.) Acinaciform; shaped like a sabre: applied to leaves, as those of the *Mysembryanthemum acinaciforme.*

ACINE'SIA. (*a*, *æ*. f: ακινησια, from α, priv. and κινησις, motion.) 1. Loss of motion in the whole body, or a part. 2. The interval of rest between the systole and diastole of the heart. *Galen.*

Aciniformis. *Acinosus.* (From *acinus*, a grape.) Aciniform. Acinose. A name given by the ancient anatomists to the uvea or posterior lamina of the iris, from its colour, and to the choroid coat, from its form.

A'cinus. (*us*, *i*. m.; from *acinus*, a grape.) 1. The minute glandular corpuscles in which the different secretions take place, as in the skin, liver, &c., are called *acini*: they consist, according to Ruysh, of the extremities of arteries united into a globular shape by cellular substance. See *Gland.*

2. Glands which are in the form of clusters, as the pancreas, are sometimes called *acini glandulosi.* 3. The term acinus was formerly applied to a small fleshy granulation. 4. In *Botany*, the small berries which compose the fruit of the mulberry, blackberry, &c., are called *acini.*

Acini biliosi. See *Liver.*

A'cinus. (Ακινος.) 1. A species of thyme mentioned by Dioscorides. 2. The name of a genus of plants of the class *Didynamia*, and order *Gymnospermia.* The *Acinus vulgaris* is common in France on chalky hills, and was formerly employed as a remedy in menorrhagia and diarrhœa.

Acipe'nser. A genus of fish of the order *Chondropterygii.* The sturgeon. There are several species of this fish, which abound chiefly in the rivers of Russia and the Caspian sea. All the species afford isinglass, which is prepared from the sound or air bladder of the fish; that which is made from the *beluga*, or great sturgeon (*Acipenser huso*), is considered the best. See *Ichthyocolla.*

The sturgeon varies in length from 5 to 24 feet, and sometimes weighs as much as 500 pounds. The flesh of the sturgeon is esteemed as a delicacy, and somewhat resembles veal; it is not, however, particularly digestible. The sterlet or small sturgeon, *A. Ruthenus*, is most used for the table. The roe of the sturgeon salted, and otherwise prepared, constitutes *caviare.*

Acma'sticos. (ακμαστικος; from ακμαζω, to be or continue vigorous.) A term applied by the Greeks to a fever which preserves an equal intensity throughout its course; the term is synonymous with ὁμοτονος. According to Galen, (De Differ., Febr. l. ii., c. 2) continued fevers, (πυρετοι συνοχοι) are called ὁμοτονοι, or ακμαστικοι, when they are uniform in their course; επακμαστικοι, when their symptoms gradually increase; and παρακμαστικοι, when they gradually diminish.

A'cme. (*e*, *es*. f.; from ακμη, vigour, maturity.) The height or crisis of a disease. The Greek physicians divided diseases into four stages: 1. Αρχη, the beginning. 2. Αναβασις, the increase. 3. Ακμη, the height or maturity. 4. Παρακμη, the decline.

Acme'lla. See *Spilanthus acmella.*

A'cne. (Ακνη. *Acna*, *æ*. f.) A term used by Aëtius. (Tetrab. ii. serm. iv. c. 13.) synonymously with ιονθος, *varus*, a pimple on the face. Gorræus derives this word from α, priv., and κναω, to scratch, because the pimples do not itch. Föesius doubts whether it be not a corrupt reading for ακμη, which Cassius makes synonymous with *ionthus* and *varus*, and alleges to be so called because it occurs in persons in the prime of life. In Willan's Nosology of Cutaneous Diseases, the name Acne is applied to a genus of the order Tubercula. Acne is defined by Bateman as "an eruption of distinct, hard, inflamed tubercles, which are sometimes permanent for a considerable length of time, and sometimes suppurate very slowly and partially." There are four varieties of Acne; A. simplex, A. punctata, A. indurata, and A. rosacea. This disease usually appears on the face, especially on the forehead and chin, and sometimes also on the neck, shoulders and breast; it seldom descends to the lower part of the trunk, or to the extremities. In its original form it consists essentially in an obstruction to the free passage of the sebaceous matter from the follicles to the surface of the skin; in consequence of which that substance accumulates, hardens, and distends the follicles which contain it, and ultimately causes inflammation and small abscesses. It is very frequent from the age of puberty to the twenty-fifth year of life, and sometimes long after. It is common to both sexes, but the most severe forms of it are seen in young men. It is seldom accompanied by any constitutional disorder, and seems in many instances to be entirely a local affection. The eruption occasionally recedes for a time, but recurs after a short interval, and is especially observed to re-appear when the cutaneous circulation has been unusually excited, as by great heat, violent exercise, or too free a use of wine. The three first species of acne require nearly similar treatment — cooling laxatives, and sometimes light tonics, with stimulant washes to the affected parts. In *A. punctata*, it is often necessary to press out the contents of the little pustules, and in *A. indurata*, poultices are required to bring the indolent tubercles to suppuration.

A. rosacea is a distressing affection from the deformity it occasions, and from its leading to a

suspicion of intemperance, which is frequently without foundation, although in many cases the disease is occasioned by hard drinking. It chiefly attacks the nose and cheeks, which are studded with suppurating tubercles, the surrounding skin being inflamed, and of a shining redness. The nose sometimes becomes monstrously enlarged and disfigured, and the tubercles not unfrequently ulcerate. The disposition to this affection seems, in some instances, to be hereditary. The treatment should consist in a careful regulation of the diet, which should be temperate and unstimulating; attention to the state of the bowels; and saturnine lotions to the inflamed parts.

ACNE'STIS. (Ακνηστις. From α, priv. and κναω, to scratch.) That portion of the spine of the back which reaches from the metaphrenon, or part betwixt the shoulder-blades, to the loins. This part seems to have been originally called so in quadrupeds only, because they cannot reach it to scratch.

ACŒ'LIUS. (From α, priv. and κοιλια, the belly.) Without belly: applied to those who are so wasted, as to appear as if they had no belly.—*Galen.*

ACO'LOGY. (*Acologia, æ.* f.; from ακος, a remedy, and λογος, a discourse.) The doctrine of remedies. The application of the term has usually been restricted, but without reason, to surgical remedies.

ACONIAT. See *Homalium.*

ACO'NDYLUS. (From α, priv. and κονδυλος, a joint.) Without a joint: formerly applied to the stalks of plants which are without a joint.

ACO'NION. (From ακονη, a grinding stone.) A form of medicine for the eyes, used by the ancient physicians, consisting of powders finely levigated.

A'CONITE. See *Aconitum napellus.*

ACONITI'NA. *Aconitia, Aconita.* A narcotic principle first detected in the Aconitum napellus by M. Peschier, of Geneva, and subsequently by M. Brandes, in the A. neomontanum. M. Hesse has recently obtained it by adding hydrated magnesia to a decoction of the dried leaves of the A. napellus, washing the precipitate thus formed with water, drying it, and then treating it with boiling alkohol, which dissolves the aconitine and deposits it on cooling.

Aconitine thus obtained is unerystallisable; white and granular, or in a colourless transparent mass, having a glassy lustre; it is alkaline, inodorous, very fusible, little soluble in water, but readily so in alkohol and ether; it combines with acids, forming unerystallisable salts: it has a bitter acrid taste, which is, however, foreign to the aconitine itself, and may be removed by combining it with acids and decomposing the salts several times in succession. Thus purified it is highly poisonous, the twelfth part of a grain being sufficient to destroy the life of a small bird instantaneously. Two other processes for obtaining aconitine have been since published by Dr. Turnbull, who has warmly recommended its external use in the form of ointment in neuralgic, gouty, and rheumatic cases.

ACONI'TUM. (*um, i.* n. Ακονιτον; from Ακονη, a place near Heraclea, in Bithynia, where it grew abundantly.) Aconite. Monkshood. Wolfsbane. There are several species, which have all a similar poisonous action on the animal economy, but some are stronger than others.

ACONITUM NAPE'LLUS. The species which has been generally regarded as the one used by Stoerk; it appears however that Stoerk's plant, which De Candolle called A. Stoerkianum in honour of him, was a variety of the *A. paniculatum:* the distinction is not very important as the plants agree in their properties. The *Aconitum napellus foliorum laciniis linearibus superne latioribus, linea evaratis,* of Linnæus, is cultivated in our gardens, and grows wild in the alpine forests of Germany and other parts of the north of Europe. It is a perennial plant. Every part is strongly poisonous, and the root is particularly acrid. When first chewed, it imparts a slight sensation of acrimony; but afterwards produces a numbness at the apex of the tongue, and a pungent heat of the lips, gums, palate, and fauces, followed by a general tremor and feeling of chillness. The juice, applied to a wound, seems to affect the whole nervous system. Even by keeping it long in the hand, or on the bosom, unpleasant sypmtoms are said to have been produced. In a poisonous dose the aconite induces convulsions, giddiness, insanity, violent purging, and vomiting, fainting, cold sweats, and death itself. Dr. Stoerk appears to have been the first who gave the wolfsbane internally as a medicine; and since his experiments were published, in 1762, it has been generally and successfully employed in Germany and other countries as a remedy for chronic rheumatism; many cases are related where this disease, though of several years' duration, and having withstood the use of other powerful medicines, as mercury, opium, antimony, hemlock, &c., was in a short time entirely cured by the aconite. Instances are also given of its good effects in gout, scrofulous swellings, venereal nodes, amaurosis, intermittent fevers, paralysis, ulcers, and scirrhus. Aconite is narcotic, diaphoretic, and sometimes, diuretic. Its active principle has been lately found to reside in a peculiar substance which has been named *aconitine.* The leaves only are generally used in medicine. The powder of the dried leaves may be given in the dose of a grain, gradually increased to six or eight grains; the officinal extract prepared from the leaves may be administered in similar doses; and a tincture made by macerating the dried leaves in six times their weight of spirit of wine has been used in the dose of forty drops. All the preparations of this medicine lose their efficacy if long kept.

ACONITUM NEOMONTA'NUM. This species is recommended by the Dublin College of Physicians under the supposition that it is the plant used by Stoerk. It differs but little from the A. Napellus.

A'CORIS. (From α, priv. and κοπος, weariness) A stone mentioned by Pliny. Oil in which this stone had been boiled was used as an unguent against weariness.

A'COROS. The name of a plant in Pliny,

supposed to be the buck-bean, or *Menyanthes trifoliata* of Linnæus.

A'COPUM. (Ακοπον; from α, priv. and κοπος, weariness.) A remedy against weariness. Various medicines used to recruit the system after extreme fatigue were called *acopa pharmaca*. They consisted of ointments and plasters, and also of internal medicines.

A'COR. (*or, oris.* m.; from *acco*, to be sour.) Acidity and acrimony. It is sometimes used to express that sourness in the stomach, which arises from indigestion and produces acid eructations.

ACO'RIA. (*a, æ.* f.; from α, priv. and κορεω, to satiate.) Canine apetite. Inordinate desire for food or drink.

ACORI'TES. (From ακορον, the acorus.) *Acorites vinum*. A wine mentioned by Dioscorides, made with acorus, liquorice, &c.

ACORTINUS. The Lupin. See *Lupinus*.

A'CORUS. (*us, i.* m. Ακορον; from κορη, the pupil, because it was esteemed good for disorders of the eyes.) The name of a genus of plants in the Linnæan system. Class, *Hexandria*; Order, *Digynia*.

ACORUS ADULTERINUS. See *Iris*.

ACORUS ASIATICUS. See *Acorus calamus*.

ACORUS CALAMUS. The systematic name of the sweet-flag, or acorus; which is also called, *Calamus aromaticus*, *Acorus verus*, *Acorus asiaticus*, *Diringa*, *Typha aromatica*, and *Clava rugosa*. *Acorus calamus — scapi mucrone longissimo foliaceo*, of Linnæus. It is a perennial plant, growing in marshes and rivulets over the greater part of Europe and Asia. The root has a moderately strong aromatic smell and a warm pungent bitterish taste. The aromatic principle resides in an essential oil, which may be obtained by distillation, and which, as well as the bitter part, is extracted by infusion in boiling water. The Asiatic and European roots differ slightly in appearance but agree in their properties. The root of the acorus has been employed in medicine since the days of Hippocrates. It is alleged to have been successful in the cure of intermittent fevers, even where the cinchona had failed, and is regarded by many as a useful adjunct to that medicine. It is advantageously combined with bitters in cases of dyspepsia. The dose of the powder of the dried root is from a scruple to a drachm: of the infusion made with ʒvj of the bruised root to ℥xij of boiling water a cupful may be taken three times a day.

ACORUS PALUSTRIS. See *Iris palustris*.

ACORUS VERUS. See *Acorus calamus*.

ACORUS VULGARIS. See *Iris palustris*.

A'cos. (Ακος; from ακεομαι, to cure.) A medic or remedy.

ACO'SMIA. (*a, æ.* f.; from α, neg. and κοσμος, order, ornament.) 1. Irregularity in the critical days of fever, as opposed to κοσμος regularity in those days. *Galen.* 2. Baldness; because bald persons are deprived of the ornament of their hair. *Julius Pollux.*

ACOTYLE'DON. (From α, priv. and κοτυληδων, a cotyledon.) Without a cotyledon: applied in botany to a plant whose seed is not furnished with cotyledons or lobes. In the natural system of Jussieu the Acotyledones form a class which corresponds with the Cryptogamia of Linnæus.

ACOU'METER or ACUMETER. (From ακουω, to hear, and μετρον, a measure.) An instrument invented by Itard for estimating the extent of the sense of hearing.

ACOU'SMA. (ακουσμα, that which is heard.) A depravation of the sense of hearing, in which imaginary sounds are heard.

ACOUS'TIC. (From ακουω, to hear.) 1. Belonging to the ear, or to sound. 2. An acoustic medicine is one used in disorders of the sense of hearing.

ACOUSTIC DUCT. See *Meatus auditorius*.

ACOUSTIC NERVE. See *Portio mollis*.

ACOUSTICO-MALLEUS. A muscle of the internal ear, described by the older anatomists as the third, or external muscle of the malleus; but the greater part of modern anatomists do not recognise the existence of any such muscle.

ACOU'STICUS or ACU'STICUS. See *Acoustic*.

ACQUIRED DISEASES. Diseases which are not hereditary nor congenital, but dependent on some adventitious cause operating after birth.

ACRAI. A kind of satyriasis or nymphomania. *Avicenna*.

ACRAI'PALOS. (From α, priv. and κραιπαλη, an excess in eating or drinking.) Remedial of the effects of a debauch.

ACRA'LEA. (From ακρος, extreme.) The extreme parts of the body, as the legs, arms, nose, ears, &c.

ACRA'NIA. (From α, priv. and κρανιον, the cranium.) Absence of the whole or a part of the cranium.

ACRA'SIA. (From, α, priv. and κρασις, temperament.) Excess in food or drink; intemperance of any kind. *Hippocrates*.

ACRATEI'A. (From α, priv. and κρατος, strength.) Debility; impotence.

ACRATO'MELI. (From ακρατον, pure wine, and μελι, honey.) Wine mixed with honey.

A'CRATOS. (From α, priv. and κερανυμι, to mix.) Unmixed. A term often used by Hippocrates, and applied to the secretions and excretions.

A'CRE, (Ακρη, the top.) The extremity of the nose or any other part.

A'CREA. The same as *acralea*.

ACRIMONY. (*acrimonia*, from *acris*, acrid.) Many diseases were referred by the humoral pathologists to acrimony of the humours. The term is still partially used in medicine.

A'CRIS. *Acrid*. Acrid substances are those which excite, in the organs of taste, a sensation of pungency and heat, and, when applied to the skin, irritate and inflame it.

A'CRIS. (ακρις, the summit of anything.) The prominence of a bone. *Hippocrates*.

ACRI'SIA. (From α, priv. and κρινω, to judge.) A state of disease in which no judgment can be formed, or one in which the prognosis is unfavourable.

A'CRITOS. Acritical. (From α, neg. and κρινω, to judge.) Applied to a disease without a regular crisis, or to a symptom not indicative of a crisis.

ACRIVI'OLA. See *Tropæolum majus*.

ACROBY'STIA. (From ακρος, extreme, and

βυω, to cover. The prepuce, according to most writers; but Kraus thinks it means the operation of circumcision.

Acrocheire'sis. A kind of wrestling, in which the hands of the athletæ were opposed.

ACROCHEI'RIS. (From ακρος, extreme, and χειρ, a hand. Gorræus says, it signifies the arm from the elbow to the ends of the fingers; χειρ signifying the arm, from the scapula to the fingers' ends.

ACROCHO'RDON. (*um*, *i.* n.; from ακρος, extreme, and χορδη, a string. A small hard tumour, or wart, placed on a narrow base, or hanging by a pedicle.

Acrochor'ismus. (From ακρος, extreme, and χορευω, to dance.) A species of dance practised by the Greeks, in which the limbs were violently agitated.

Acrole'nion. (From ακρος, extreme, and ωλενη, the cubit.) See *Olecranon*.

ACROMA'NIA. (*a*, *æ.* f.; from ακρος, extreme, and μανια, madness.) Total or incurable madness.

ACROMIA'LIS. Acromial; appertaining to the acromion.

ACRO'MION. (*Acromium*, *i.* n.; from ακρος, extreme, and ωμος, the shoulder. A process of the scapula or shoulder-blade. See *Scapula*.

ACRO'MPHALON. (*um*, *i.* n.; Ακρομφαλον; from ακρος, extreme, and ομφαλος, the navel.) The centre of the navel to which the umbilical cord is attached in the fœtus.

Acron. Ακρων. The extreme part of a limb.

Acro'nia. (Ακρωνια, from ακρων, an extremity.) The amputation of any extreme part, as of a finger or toe.

Acro'pathus. (Ακροπαθος; from ακρος, extreme, and παθος, a disease.) A term applied by Hippocrates to an *organ* diseased in its extreme part; or to a *disease* situated on the surface or extremities of the body; thus ακροπαθος στομαχος, the os uteri diseased at its external part; ακροπαθοι καρκινοι, cancers situated superficially, or on prominent parts, as opposed to those which are hidden or deep-seated (κρυπτοι, υποβρυχιοι).

Acro'phyton. (From ακρος, excellent, and φυτον, a plant.) The coltsfoot. See *Tussilago farfara*.

Acropo'sthia (*a*, *æ.* f.; from ακρος, extreme, and ποσθη, the prepuce.) The extremity of the prepuce; that part which is removed in circumcision.

Acropsi'lon. (From ακρος, extreme, and ψιλος, naked.) The extremity of the glans penis.

A'crospire. (*Acrospira*; from ακρος, extreme, and σπειρα, anything spiral.) The name given by Grew to the *plumula* of barley developed by germination.

Acrote'ria. (Ακρωτηρια; from ακρος, extreme.) The extremities of the body.

Acroteria'smus. (From ακρωτηριαζω, to amputate an extremity.) The amputation of an extremity.

Acrothy'mion. (From ακρος, extreme, and θυμος, thyme.) A kind of wart described by Celsus as hard and rough, with a narrow base and a broad top, resembling the flower of thyme; it easily splits and bleeds.

Acro'ticus. (From ακρος, extreme.) Affecting the external surface. *Acrotica* is the name given by Dr. Good to the third order of his class *Eccritica*.

Acroti'smus. (From α, priv. and κροτος, the pulse. Acrotism, defect of pulse.

Actæ'a. Acte. Ακταια. Ακτη. Greek names of the elder tree. See *Sambucus*.

Actæ'a. A genus of plants in the Linnæan system. Class *Polyandria*; Order *Monogynia*.

Actæa spicata. *A. Christophoriana*. Herb Christopher. A plant growing in mountain forests in most parts of Europe. It is very acrid; the root is strongly cathartic, and the berries are poisonous.

Actæa racemosa. *Christophoriana Americana*. Black snake-root. Rich-weed. The root of this plant is astringent, and its decoction has been used as a gargle in malignant sore throat.

A'ctine. Ακτινη. The earth-nut. See *Bunium bulbocastanum*.

Actinoboli'smus. (From ακτιν, a ray, and βαλλω, to throw out.) *Iradiatio*. *Diradiatio*. A term employed by the ancient physiologists to designate the instantaneous flow of the animal spirits by which the volitions of the mind are communicated to the different organs.

Action. (*Actio*, *onis*. f.; from *ago*, to act.) The exertion or operation of an active power. The actions or functions of the animal body were distinguished by the older physiologists into the vital, *actiones vitales*, or such as are immediately necessary to life, as circulation and respiration; the animal, *animales*, or those in which the mind is concerned, as sensation and voluntary motion; the natural, *naturales*, or those by which the waste of the body is repaired, as digestion and assimilation; the sexual, *actiones sexus*, or those proper to each sex, as the secretion of semen in the male, and conception in the female; the particular, *privatæ*, or those which are connected with some especial organ, as the contraction of the urinary bladder; general, *publicæ*, or those which minister to the system at large, as the function of the stomach. This arrangement is confused and inaccurate; for the improved classification adopted by modern physiologists, see *Function*. *Morbid actions* are those derangements of the ordinary actions which constitute diseases.

Active. *Activus*. Acting with energy; thus we say an active medicine, an active disease. The term is applied to some particular diseases in a manner not very significant, as *active hæmorrhage*, *active aneurism*.

Acton. A village four miles from London, which has a well that affords a purging water. The water, which resembles that of Epsom, may be drunk in the quantity of from one to three pints in the morning; it was formerly in esteem for the cure of cutaneous affections, but the spring is now no longer resorted to by the public.

Actual. *Actualis*. A term applied to anything which acts immediately; it is, however, usually restricted to red-hot iron or any other

heated body employed as a cautery: a red-hot iron so employed is called the *actual cautery*, while a caustic, or escharotic substance is called the *potential cautery*.

ACTUATION. *Actuatio.* A low latin word used to signify that change wrought by the vital powers on a medicine, or any thing taken into the body, whereby it is endowed with efficacy, or enabled to produce its effect.

ACUA'LE OS. A styloid process.

ACUI'TIO. (From *acuo* to sharpen.) Acuition. The sharpening of an acid liquor by the addition of something more acid; or the augmentation of the strength of a medicine by the addition of something which has similar powers in a greater degree.

ACULEA'TUS. (From *aculeus*, a prickle.) Aculeate; prickly. Applied to animals and vegetables, as to the *Echinus* or sea urchin, and to the stems or other parts of plants which are beset with sharp pointed bodies, or prickles, which separate with the epidermis, as in *Rosa centifolia*. See *Aculeus*.

ACU'LEUS. (*us, i.* m.; from *acus*, a needle.) A prickle. In botany, a sharp pointed body which arises superficially, and peels off with the bark or epidermis of any part of a plant, is called *aculeus*, a prickle, as opposed to *spina*, a thorn, which proceeds from the wood.

ACUMINA'TUS. (From *acumen*, a point.) Acuminate; or terminated by a point somewhat elongated. Applied by botanists to several parts of plants. An acuminate leaf is seen in the *Syringa vulgaris;* an acuminate leaf-stalk, in *Saxifraga stellaris*.

ACUPUNCTURE. (*Acupunctura, æ.* f.; from *acus*, a needle, and *punctus*, a prick.) An operation which consists in the introduction of a needle into any part of the body with a view to the relief or cure of disease. This proceeding is sometimes improperly termed *acupuncturation*. The practice of acupuncture has been used for many ages in China, Japan, and other Eastern countries; but was first made known in Europe by Ten Rhyne, an officer in the Dutch East India Company's service, in the year 1679. It does not appear, however, to have been actually put in effect by any European practitioner till 1810, when Dr. Berlioz, of Paris, made trial of it with so much success that it speedily came into general use. The needles used in the East are of the purest gold or silver, but those employed in Europe are generally made of steel: they are long and fine, and furnished with a knob of sealing wax, or a small handle of wood or ivory. The needle is introduced with a slight semi-rotatory motion, and occasions very little pain; it is passed to the depth of from half an inch to two inches, according to the nature of the part where it is applied, and is allowed to remain from a few minutes to several hours before it is withdrawn. It has been observed by many practitioners, that one needle allowed to remain for a considerable time, is more efficacious than several which are speedily withdrawn. British practitioners confine this operation to muscular, tendinous, and aponeurotic parts; but the Orientals pierce the abdomen with needles for the relief of colic and other affections; and M. Brettonneau declares, that he has passed needles in all directions through the cerebrum, cerebellum, heart, lungs, and stomach of young puppies without any bad effect; Dr. Carraco also succeeded in resuscitating drowned kittens by thrusting a needle into the heart, and recommends a trial of the practice on the human subject, in the worst cases of asphyxia — it certainly ought to be confined to the *very worst*.

Attempts have been made by Berlioz and Sarlandière to increase the efficacy of acupuncture, by conveying the electric and galvanic energies through the needles directly to the diseased parts: but these do not seem to have been attended with any particular success. The operation thus modified has been called *electro-puncture*, or *galvano-puncture*. Acupuncture is employed in a great variety of diseases. In China and Japan it is used in abdominal affections, apoplexy, convulsive diseases of all kinds, fever, gout, rheumatism, gonorrhœa, and many other cases. On the continent of Europe it has been tried with more or less apparent success in most diseases of which pain is the principal symptom, — as rheumatism, neuralgia, gastrodynia, pleurodynia, headach, toothach, &c. In this country, acupuncture is not generally considered worthy of any confidence, except in cases of local pain quite unattended with inflammatory action: that form of chronic rheumatism in which the nerves are chiefly implicated, and which may be termed rheumatic neuralgia, is the disease in which this remedy has been found most unequivocally useful. The practice of making punctures with a needle, to afford exit to the fluid effused in anarsarca and œdema, is as effectual as scarification, and much less dangerous; in this case, the needle ought not to be deeply inserted, the penetration of the cutis is all that is required.

A'CUS .(*us, us.* f.; from ακις, a point.) A needle. Needles of various shapes and sizes are used by surgeons for sutures, and other purposes. The pointed instrument used for making setons, having an eye at one end, is called a seton needle.

ACUS CANNULATA. A trocar.

ACUS INTERPUNCTORIA. *Acus ophthalmica.* A couching needle.

ACUS MOSCHA'TA. The *Geranium moschatum*, or musk geranium of Linnæus.

ACUS PASTORIS. See *Scandix anthriscus.*

ACUS TRI'QUETRA. A trocar.

ACUSTO. An alchemical term for nitre.

ACUTANGULA'RIS. *Acutangulatus.* Acutangular: applied to parts of plants, as *Caulis acutangularis.*

ACUTE. (*Acutus;* from *acuo*, to sharpen.) Sharp. 1. Used by naturalists to designate the shape of objects: thus an acute leaf is one which tapers gradually to a slender, but not a prickly or thorny termination, as in *Rumex acutus.*

2. In *Pathology*, it is applied to a disease which is attended with violent symptoms, and whose course is short: it is opposed to *chronic.*

ACUTENA'CULUM. (*um, i.* n.; from *acus*, a needle, and *tenaculum*, a handle.) The handle for a needle, to make it penetrate easily

when stitching a wound. Heister calls the *portaiguille* by this name.

ACY'ANOBLE'PSIA. (From α, priv. κυανος, blue, and βλεπω, to see.) A defect of vision consisting in incapability of distinguishing the colour of blue

ACYE'SIS. (From α, priv. and κυησις pregnancy.) Vogel thus designates sterility in women.

ADACA. See *Sphæranthus indicus.*

ADÆMO'NIA. (From α, priv. and δαιμων, fortune.) Hippocrates and Galen use this word for uneasiness, restlessness, or anxiety.

ADAL. The part of plants on which their medicinal virtues depend. A barbarous term used by Paracelsus.

ADALI. *Lippia.* A Malabar plant regarded by the Indians as an antidote to the bite of the *Cobra di Capello.*

A'DAMAS. (Αδαμας, from α, neg. and δαμαω, to subdue; *invincible* — from its extreme hardness.) The Diamond; the most precious of gems. It is the hardest substance in nature. It is highly crystalline in its texture, its primary form being an octohedron. Its specific gravity is from 3·4, to 3·6. Its power of refracting light exceeds that of all other substances, except red lead ore and orpiment. The diamond when rubbed shows positive electricity, whether in the rough or polished state; whereas other gems afford negative electricity when rough, and positive when polished. It consists of pure carbon. Diamonds are brought from India and the Brazils. This gem was formerly held to be powerful against poisons and pestilential diseases, and had many medicinal as well as magical virtues ascribed to it.

ADA'MI MORSUS OS. The thyroid cartilage.

ADA'MICA TERRA. From an oriental tradition that Adam was formed of red earth. The name *Adamica terra* has been applied to several kinds of bole or clay, which are of a red colour. See *Bole.*

ADAM'S APPLE See *Pomum adami.*

ADAM'S NEEDLE. See *Yucca gloriosa.*

ADAMI'TA, or ADAMI'TUM. A very hard white calculus. *Paracelsus.* The first term was sometimes used for a vesical calculus, and the second for *lithiasis* or the calculous diathesis.

ADANSO'NIA. (*a*, *æ.*; from *Adanson*, who first described the Æthiopian sour gourd, a species of this genus.) The name of a genus of plants. Class, *Polyandria*; Order, *Monadelphia.* Monkies' bread.

ADANSONIA DIGITATA. This is the only species of the genus yet discovered. It is called the Ethiopian sour-gourd and monkeys' bread, *Baobab* or *Bahobab.* It grows mostly on the west coast of Africa, from the Niger to the kingdom of Benin. The bark is called *lalo*: the negroes dry it in the shade, then powder and keep it in little cotton bags, and put two or three pinches into their food. It is mucilaginous, and generally promotes perspiration. The mucilage obtained from this bark is esteemed a powerful remedy against the epidemic fevers of the country that produces the tree; so is a decoction of the dried leaves. The fresh fruit is also used in the same cases.

ADA'RCE. *Ada'rces.* (Αδαρκης, generally derived from α, priv. and δερκω, to see.) A substance found incrusting the reeds and grass in the marshes on the sea coast of Galatia, and so called from its covering or hiding them. It was formerly in repute for cleansing the skin from tetters, freckles, &c.

ADARTICULA'TIO. The same as *Arthrodia.*

ADDEPHA'GIA. (*a*, *æ.* f.; from αδδην, abundantly, and φαγω, to eat.) A voracious appetite. See *Bulimia.*

ADDER. See *Vipera berus.*

ADDITAME'NTUM. (*um*, *i.* n.; from *addo*, to add.) An additament. An addition to any part, which is sometimes, though not always, found. A term formerly applied synonymously with *epiphysis*, but now only applied to two portions of sutures of the skull. See *Lambdoidal* and *Squamous sutures.*

ADDITAMENTUM COLI. See *Appendix cæci vermiformis.*

ADDUCENS HUMERI. See *Pectoralis major.*

ADDUCENS OCULI. See *Rectus internus oculi.*

ADDUCENT. (*Adducens*; from *ad*, and *duco*, to draw.) Performing the action of adduction; applied to muscles. See *Adduction.*

ADDUCTION. *Adductio.* The action by which a part is drawn towards the axis of the body, or of a limb.

ADDU'CTOR. (From *ad*, and *duco*, to draw.) An adductor muscle is one which performs the adduction of the part into which it is inserted.

ADDUCTOR AD MINIMUM DIGITUM. See *Adductor pollicis manus.*

ADDUCTOR AURIS. See *Retrahens aurem.*

ADDUCTOR BREVIS FEMORIS. A muscle of the thigh, which, with the *adductor longus* and *magnus femoris*, forms the *triceps adductor femoris. Adductor femoris secundus* of Douglas; *Triceps secundus* of Winslow. It is situated on the posterior part of the thigh, arising tendinous from the os pubis, near the symphysis, below and behind the adductor longus femoris, and is inserted, tendinous and fleshy, into the inner and upper part of the linea aspera, from a little below the trochanter minor, to the beginning of the insertion of the adductor longus femoris. See *Triceps adductor femoris.*

ADDUCTOR FEMORIS PRIMUS. See *Adductor longus femoris.*

ADDUCTOR FEMORIS SECUNDUS. See *Adductor brevis femoris.*

ADDUCTOR FEMORIS TERTIUS. See *Adductor magnus femoris.*

ADDUCTOR FEMORIS QUARTUS. See *Adductor magnus femoris.*

ADDUCTOR INDICIS PEDIS. An external interosseous muscle of the fore-toe, which arises tendinous and fleshy, by two origins, from the root of the inside of the metatarsal bone of the fore-toe, from the outside of the root of the metatarsal bone of the great toe, and from the os cuneiforme internum. It is inserted tendinous into the inside of the root of the first joint of the fore-toe. Its use is to pull the fore-toe inwards from the rest of the small toes.

ADDUCTOR LONGUS FEMORIS. A muscle situated on the posterior part of the thigh, which with the *adductor brevis* and *magnus femoris*, forms

the *triceps adductor femoris*. *Adductor femoris primus* of Douglas; *Triceps primus* of Winslow. It arises by a pretty strong roundish tendon, from the upper and interior part of the os pubis, and ligament of its synchondrosis, on the inner side of the pectineus, and is inserted along the middle part of the linea aspera. See *Triceps adductor femoris*.

ADDUCTOR MAGNUS FEMORIS. A muscle which, with the *adductor brevis femoris*, and the *adductor longus femoris*, forms the *triceps adductor femoris*. *Adductor femoris tertius et quartus* of Douglas; *Triceps tertius* of Winslow. It arises from the symphisis pubis, and all along the flat edge of the thyroid foramen, whence it goes to be inserted into the linea aspera throughout its whole length. See *Triceps adductor femoris*.

ADDUCTOR MINIMI DIGITI PEDIS. An internal interrosseous muscle of the foot. It arises, tendinous and fleshy, from the inside of the root of the metatarsal bone of the little toe. It is inserted, tendinous, into the inside of the root of the first joint of the little toe. Its use is to pull the little toe inwards.

ADDUCTOR OCULI. See *Rectus internus oculi*.

ADDUCTOR POLLICIS. See *Adductor pollicis manus*.

ADDUCTOR POLLICIS MANUS. A muscle of the thumb. *Adductor pollicis; Adductor ad minimum digitum*. It arises, fleshy, from almost the whole length of the metacarpal bone that sustains the middle finger; from thence its fibres are collected together. It is inserted, tendinous, into the inner part of the root of the first bone of the thumb. Its use is to pull the thumb towards the fingers.

ADDUCTOR POLLICIS PEDIS. A muscle of the great toe. *Antithenar* of Winslow. It arises, by a long thin tendon, from the os calcis, from the os cuboides, from the os cuneiforme externum, and from the root of the metatarsal bone of the second toe. It is inserted into the external os sesamoideum, and root of the metatarsal bone of the great toe. Its use is to bring this toe nearer to the rest.

ADDUCTOR PROSTA'TÆ. A name given by Santorini to a muscle, which he also calls *Levator prostatæ*, and which Winslow calls *Prostaticus superior*. Albinus, from its office, has very properly called it *Compressor prostatæ*.

ADDUCTOR TERTII DIGITI PEDIS. An external interosseous muscle of the foot, that arises, tendinous and fleshy, from the roots of the metatarsal bones of the third and little toe. It is inserted, tendinous, into the outside of the root of the first joint of the third toe. Its use is to pull the third toe outward.

ADECH. The interior invisible man according to the jargon of Paracelsus.

ADE'CTOS. (Αδηκτος; from α, priv. and δακνω, to bite.) Applied to a medicine which relieves the irritation caused by violent or acrimonious medicines.

ADELODAGAM. A bitter plant used in Malabar against catarrh, asthma, and gout.

ADE'LPHEA. (From αδελφος, a relation.) Cognate. Applied by Hippocrates to diseases which have an affinity to each other — αδελφεα παθηματα.

A'DEN. Αδην. 1. A gland. See *Gland*. 2. A bubo. See *Bubo*.

ADENA'LGIA. (From αδην, a gland, and αλγος, pain.) A pain seated in a gland.

ADENEMPHRA'XIS. (From αδην, a gland, and εμφραξις, obstruction.) A swelling of a gland from the accumulation of humours obstructing its minute vessels.

ADE'NIA. (*a*, *æ*. f.) The name of a genus of plants. Class, *Hexandria*; Order, *Monogynia*.

ADENIA VENENATA. This plant, a native of Arabia, is a strong poison. Its antidote is said to be the *Capparis spinosa*.

ADE'NIFORM. (*Adeniformis*; from αδην, a gland, and *forma*, likeness.) Glandiform; resembling a gland.

ADENI'TIS. (From αδην, a gland.) Inflammation of a gland.

ADENO'GRAPHY. (*Adenographia*, *æ*. f.; from αδην, a gland, and γραφω, to describe.) A description of the glands.

ADENOI'DES (From αδην, a gland, and ειδος, resemblance.) Adenoid; glandiform; resembling a gland.

ADENO'LOGY. (*Adenologia*, *æ*. f. from αδην, a gland, and λογος, a discourse.) The doctrine of the glands; that part of anatomy which treats of the glands.

ADENOMENINGE'A. (From αδην, a gland, and μηνιγξ, a membrane.) Adenomeningeal. A name given by Pinel to the mucous or pituitous fever, because the follicular glands and mucous membrane of the intestines are, according to him, the principal seat of the disorder.

ADENONCO'SIS. (From αδην, a gland, and ογκωσις, a swelling.) The swelling of a gland.

ADENONEURO'SA. (From αδην, a gland, and νευρον, a nerve.) Pinel calls the plague *febris adenoneurosa*, because the disease is seated principally in the nerves and the lymphatic glands of the axilla and groin.

ADENO-PHARYNGE'US. (From αδην, a gland, and φαρυγξ, the pharynx.) This name has been given to some muscular fibres which pass from the *constrictor pharingis inferior* to the thyroid gland. Their existence is not constant.

ADENOPHARYNGI'TIS. (Same etymon.) Inflammation of the tonsils and pharynx.

ADENOPTHA'LMIA.)From αδην, a gland, and οφθαλμος, the eye.) Inflammation of the meibomian glands.

ADENOSCLERO'SIS. (From αδην, a gland, and σκληροω to harden.) A term applied by Swediaur to a hard indolent swelling of a gland, which is not of a schirrous nature.

ADENO'SUS. (From αδην, a gland.) Adenous. Gland-like.

ADENOSUS ABSCESSUS. A hard abscess, resembling a gland.

A'DEPS. (*s*, *is*. m. and f.) Fat. A concrete oily matter contained in the cells of the adipose tissue. (See *Adipose Membrane*.) Fat is of a white or yellowish colour, and is nearly tasteless and inodorous; it differs, however, in its physical properties in different animals, and

in the same animal at different ages; it is white and insipid in young subjects, and has a deeper colour and stronger taste in those more advanced in life. The fat is always solid in the dead body; but Winslow, Haller, and many other writers, have represented it as fluid during life: this opinion, however, may be easily disproved by examining the substance in question during the progress of surgical operations, when it presents itself as a soft and easily compressible solid. The chemical properties of this important animal product have been fully investigated by M. Chevreuil; the following account of his discoveries, originally published in the *Annales de Chimie*, is abbreviated from Dr. Ure's Chemical Dictionary.

By dissolving fat in a large quantity of alkohol, and observing the manner in which its different portions were acted upon by this substance, and again separated from it, it is concluded that fat is composed of an *oily substance*, which remains fluid at the ordinary temperature of the atmosphere; and of another *fatty substance* which is much less fusible. Hence it follows, that fat is not to be regarded as a simple principle, but as a combination of the above two principles, which may be separated without alteration. One of these substances melts at about 45°, the other at 100°; the same quantity of alkohol which dissolves 3·2 parts of the *oily substance*, dissolves 1·8 only of the *fatty substance*: the first is separated from the alkohol in the form of an oil; the second in that of small silky needles.

Each of the constituents of natural fat was then saponified by the addition of potash; and an accurate description given of the compounds which were formed, and of the proportions of their constituents. The *oily substance* became saponified more readily than the *fatty substance*; the residual fluids in both cases contained the sweet oily principle; but the quantity that proceeded from the soap formed of the *oily substance* was four or five times as much as that from the *fatty substance*. The latter soap was found to contain a much greater proportion of the *pearly matter* than the former, in the proportion of 7·5 to 2·9; the proportion of the *fluid fat* was the reverse, a greater quantity of this being found in the soap formed from the oily substance of the fat.

When the principles which constitute fat unite with potassa, it is probable that they experience a change in the proportion of their elements. This change developes at least three bodies, *margarine*, *fluid fat*, and the *sweet* principle; and it is remarkable that it takes place without the absorption of any foreign substance, or the disengagement of any of the elements which are separated from each other. As this change is effected by the intervention of the alkali, we may conclude that the newly formed principles must have a strong affinity for salifiable bases, and will, in many respects, resemble the acids; and, in fact, they exhibit the leading characters of acids, in reddening litmus, in decomposing the alkaline carbonates to unite with their bases, and in neutralising the specific properties of the alkalis.

Having already pointed out the analogy between the properties of acids and the principles into which fat is converted by means of the alkalis, the next object was to examine the action which other bases have upon fat, and to observe the effect of water, and of the cohesive force of the bases upon the process of saponification. The substances which the author subjected to experiment were soda, the four alkaline earths, alumina, and the oxides of zinc, copper, and lead. After giving a detail of the processes which he employed with these substances respectively, he draws the following general conclusions: — Soda, barytes, strontian, lime, the oxide of zinc, and the protoxide of lead, convert fat into *margarine*, *fluid fat*, the *sweet principle*, the *yellow colouring principle*, and the *odorous principle*, precisely in the same manner as potassa. Whatever be the base that has been employed, the products of saponification always exist in the same relative proportion. As the above-mentioned bases form, with margarine, and the fluid fat, compounds which are insoluble in water, it follows, that the action of this liquid, as a solvent of soap, is not essential to the process of saponification. It is remarkable that the oxides of zinc and of lead, which are insoluble in water, and which produce compounds equally insoluble, should give the same results with potash and soda — a circumstance which proves that those oxides have a strong alkaline power. Although the analogy of magnesia to the alkalis is, in other respects, so striking, yet we find that it cannot convert fat into soap under the same circumstances with the oxides of zinc and lead.

It was found that 100 parts of hog's lard were reduced to the completely saponified state by 16·36 parts of potassa.

The properties of spermaceti were next examined: it melts at about 112°; it is not much altered by distillation; it dissolves readily in hot alkohol, but separates as the fluid cools; the solution has no effect in changing the colour of the tincture of litmus, — a circumstance, as it is observed, in which it differs from margarine, a substance which, in many respects, it resembles. Spermaceti is capable of being saponified by potash, with nearly the same phenomena as when we submit hog's lard to the action of potash, although the operation is effected with more difficulty.

The author's general conclusion respecting the fatty matter of dead bodies is that, even after the lactic acid, the lactates, and other ingredients which are less essential, are removed from it, it is not a simple, ammoniacal soap, but a combination of various fatty substances with ammonia, potash, and lime. The fatty substances which were separated from alkohol, had different melting points, and different sensible properties. It follows, from Chevreuil's experiments, that the substance which is the least fusible has more affinity for bases than those which are more so. It is observed, that adipocere possesses the characters of a saponified fat; it is soluble in boiling alkohol in all proportions, reddens litmus, and unites readily with potash, not only without losing its weight, but

without having its fusibility or other properties changed.

Chevreuil has shown that hog's lard, in its natural state, has not the property of combining with alkalis; but that it acquires it by experiencing some change in the proportion of its elements. This change being induced by the action of the alkali, it follows that the bodies of the new formation must have a decided affinity for the species of body which has determined it. If we apply this foundation of the theory of saponification to the change into fat which bodies buried in the earth experience, we shall find that it explains the process in a very satisfactory manner. In reality, the fatty matter is the combination of the two adipose substances with ammonia, lime, and potash: one of these substances has the same sensible properties with margarine procured from the soap of hog's lard; the other, the orange-coloured oil, excepting its colour, appears to have a strong analogy with the fluid fat. From these circumstances, it is probable that the formation of the fatty matter may be the result of a proper saponification produced by ammonia, proceeding from the decomposition of the muscle, and by the potash and lime, which proceeded from the decomposition of certain salts.

The author remarks, that he has hitherto made use of periphrases when speaking of the different bodies that he has been describing, as supposing that their nature was not sufficiently determined. He now, however, conceives that he may apply specific names to them, which will both be more commodious, and, at the same time, by being made appropriate, will point out the relation which these bodies bear to each other. The following nomenclature is accordingly adopted: — The crystalline matter of human biliary calculi is named *cholesterine* from the Greek words χολη, bile, and στερεος, solid; spermaceti is named *cetine*, from κητος, a whale; the fatty substance and the oily substance are named, respectively, *stearine* and *elaïn*, from the words στεαρ, fat, and ελαιον, oil; margarine, and the fluid fat obtained after saponification are named *margaric acid* and *oleic acid*, while the term *cetic acid* is applied to what was named saponified spermaceti. The *margarates*, *oleates*, and *cetates*, will be the generic names of the soaps or combinations which these acids are capable of forming by their union with salifiable bases.

Two portions of human fat were examined, one taken from the kidney, the other from the thigh. After some time, they both manifested a tendency to separate into two distinct substances, one of a solid, and the other of a fluid consistence: the two portions differed in their fluidity and their melting point. These ivatations depend upon the different proportions of stearine and elaïn; for the concrete part of fat is the combination of the two with an excess of stearine, and the fluid part is a combination with an excess of elaïn. The fat of several other animals was then examined, principally with respect to their melting point and their solubility in alkohol; the melting point was not always the same in the fat of the same species of animal.

Chevreuil next examines the change which is produced in the different kinds of fat respectively, by the action of potash. All the kinds of fat are capable of being perfectly saponified, when excluded from the contact of the air. In all of them there was the production of the saponified fat and the sweet principle; no carbonic acid was produced, and the soaps formed contained no acetic acid, or only slight traces of it. The saponified fats had more tendency to crystallise in needles than the fats in their natural state; they were soluble, in all proportions, in boiling alkohol of the specific gravity of ·821. The solution, like that of the saponified fat of the hog, contained both the margaric and the oleic acids. They were less fusible than the fats from which they were formed: thus, when human fat, after being saponified, was melted, the thermometer became stationary at 95°, when the fluid began to congeal; in that of the sheep, the thermometer fell to 118·5°, and rose to 122°; in that of the ox it remained stationary at 118·5°; and in that of the jaguar at 96·5°.

The method of analysis employed, was to expose the different kinds of fat to boiling alkohol, and to suffer the mixture to cool. A portion of the fat that had been dissolved was then separated in two states of combination; one with an excess of stearine was deposited, the other with an excess of elaïn remained in solution. The first was separated by filtration; and, by distilling the filtered fluid, and adding a little water towards the end of the operation, we obtain the second in the retort, under the form of an alkoholic aqueous fluid. The distilled alkohol which had been employed in the analysis of human fat had no sensible odour; the same was the case with that which had served for the analysis of the fat of the ox, of the hog, and of the goose. The alkohol, which had been employed in the analysis of the fat of the sheep, had a slight odour of candle-grease.

All the soaps of stearine were analysed by the same process as the soap of the fat from which they had been extracted: the pearly supermargarate of potash and the oleate were procured from them; but the first was much more abundant than the second. The margaric acid of the stearines had precisely the same capacity for saturation as that which was extracted from the soaps formed of fat. The margaric acid of the stearine of the sheep was fusible at 144°, and that of the stearine of the ox at 143·5°; while the margaric acids of the hog and the goose had nearly the same fusibility with the margaric acid of the fat of these animals.

Chevreuil technically calls spermaceti *cetine*. In the fifth memoir, in which we have an account of many of the properties of this substance, it was stated, that it is not easily saponified by potassa, but that it is converted by this reagent into a substance which is soluble in water, but has not the saccharine flavour of the sweet principle of oils; into an acid analogous to the margaric, to which the name of *cetic* was applied; and into another acid, which was conceived to be analogous to the oleic. Since he wrote the fifth memoir, the author has made the following observations on this subject: — 1. That the

portion of the soap of cetine which is insoluble in water, or the cetate of potash, is in part gelatinous, and in part pearly; 2. That two kinds of crystals were produced from the cetate of potash which had been dissolved in alkohol; 3. That the cetate of potash, exposed under a bell-glass, to the heat of a stove, produced a sublimate of a fatty matter, which was not acid. From this circumstance, Chevreuil was led to suspect that the supposed cetic acid might be a combination, or a mixture of margaric acid, and of a fatty body which was not acid. He accordingly treated a small quantity of it with barytic water, and boiled the soap which was formed in alkohol; the greatest part of it was not dissolved, and the alkoholic solution, when cooled, filtered, and distilled, produced a residuum of fatty matter which was not acid. The suspicion being thus confirmed, Chevreuil determined to subject cetine to a new train of experiments. Being treated with boiling alkohol, a cetine was procured, which was fusible at 120°, and a yellow fatty matter which began to become solid at 89·5°, and which, at 73·5°, contained a fluid oil, which was separated by filtration.

The manner in which the fat is deposited in the cells of the adipose membrane has been disputed among physiologists. Malpighi imagined that it was secreted by minute glands, and discharged through ducts into the cells; but such glands, or ducts, having never been seen, even with a microscope, may be fairly presumed not to exist. Haller and Portal, trusting to the observations of those anatomists who maintained that fat is to be found in the arterial blood, supposed it to be poured into the cells by a sort of filtration from the minute arteries, which have a direct communication with them; but the notion, that the fat already exists in the blood, though entertained by Malpighi, Ruysch, Glisson, and Morgagni, was controverted by Bichat, and is now generally discredited. Mascagni supposed that the arteries deposit a crude oily fluid, the thinner parts of which are taken up by the absorbents, while the more solid remain in the cells, constituting fat. After all, the vessels of the adipose tissue appear to deposit fat much in the same way as the vessels of other tissues deposit their respective materials; and the term *secretion* seems no less applicable in this instance than in any other, the real nature of the process being equally unknown in all.

Fat exists in very various quantity in different individuals, and in the same individual at different periods of life, and under different circumstances of health and disease. It is found immediately under the integuments nearly over the whole body, but is absent in the scrotum, penis, and eyelids, and occurs only in small quantity in the forehead and around the joints. It enters into the interstices of the muscles, and of the fasciculi which compose them. It is abundant at the bottom of the orbits, in the hollow of the cheeks, in the substance of the mammæ, and in other parts: it also abounds in the abdomen, about the kidneys, omentum, and mesentery; but is wanting in the substance of the viscera contained in this and the other great cavities — as the liver, spleen, kidneys, lungs, brain, &c.

The quantity of fat usually increases considerably towards the middle period of life. The uses of this substance are to diminish the effects of pressure and attrition, by filling up the interstices of the frame, and lubricating the parts in which it occurs; to determine the contour of the body; and to form a supply of nourishment, which accumulates during health and abundant nutrition, to be reabsorbed into the system when wasted by disease or abstinence. An excessive deposition of fat constitutes a disease which is named *Polysarcia*.

Adeps anserina. Goose grease. It has been used as an emollient, and also as an emetic.

Adeps præparata. Prepared hog's lard. Lard is prepared for medicinal purposes by cutting it into small pieces, melting with a gentle heat, and straining through linen.

Adeps suilla. Hog's lard.

Adept. See *adepta philosophia*.

Adepta philosophia. (Called *adepta*, from *adipiscor*, to obtain.) That philosophy the object of which is the transmutation of metals and the discovery of an universal remedy. Its followers were called adepts; few are now to be found addicted to so chimerical a pursuit. See *Alchemy*.

Adepta medicina. Medicine which treated of diseases produced by astral influences, was so called by Paracelsus.

ADHESION. (*Adhæsio*; from *adhæreo*, to stick to.) 1. In a general sense, the state of two bodies which are joined together by attraction or the interunion of parts, or the act by which they are so united.

2. In *Surgery*. The reunion of parts that have been divided, by a particular kind of inflammation, called the *Adhesive*. See *Inflammation*.

3. In *Pathology*. The morbid union of parts which are naturally contiguous, but not adherent, by means of adhesive inflammation — as that of the pleura pulmonalis with the pleura costalis. The French writers usually make a distinction between *adhesion* and *adherence*; by the former they designate the *act* or *process of uniting*, by the latter the *state of union*.

Adhesive attraction. See *Attraction*.

Adhesive inflammation. See *Inflammation*.

Adhesive plaster. See *Emplastrum resinæ*.

Adhatoda. (A Zeylanic term, signifying expelling a dead fœtus.) See *Justicia adhatoda*.

Adianthum. See *Adiantum*.

ADIA'NTUM. (*um*, *i*. n. Αδιαντον; from α, neg. and διαινω to grow wet; so called, because its leaves are not easily made wet.) The name of a genus of plants in the Linnæan system. Class, *Cryptogamia*; Order, *Filices*. Maidenhair.

Adiantum æthiopicum. Cape of Good Hope maidenhair. This is used as an astringent and aromatic.

Adiantum album. See *Asplenium murale*.

Adiantum aureum. See *Polytrichum commune*.

Adiantum canadense. See *Adiantum pedatum*.

Adiantum capillus veneris. Maidenhair.

Adiantum vulgare. Adiantum verum. Capillus veneris. The leaves of this plant are somewhat sweet and austere to the palate, and possess mucilaginous qualities. This, as well as the Canadian species, is used in the preparation of the *sirop de capillaire*, which is much esteemed in France against catarrh.

ADIANTUM NIGRUM. See *Asplenium adiantum nigrum.*

ADIANTUM PEDATUM. *Adiantum canadense. Capillus veneris canadensis.* Canada maidenhair. In France this plant is applied to the same purposes as the *Adiantum capillus veneris*, and is more frequently used than the latter for the preparation of the *sirop de capillaire.*

ADIANTUM RUBRUM. See *Asplenium trichomanes.*

ADIANTUM VERUM. See *Adiantum capillus veneris.*

ADIANTUM VULGARE. See *Adiantum capillus veneris.*

ADIAPHORE'SIS. *Adiaphro'sis.* (From α, priv. and διαφορεω, to dissipate.) Defect of cutaneous perspiration.

ADIA'PHORUS. *Adiaphorus.* A term which implies the same as neutral; and was formerly applied to medicines which did neither good nor harm, and to some chemical substances which are neither of an acid nor alkaline nature.

ADIAPNEU'STIA. (α, æ. f.; from α, priv. and διαπνεω, to perspire.) A diminution or obstruction of cutaneous perspiration.

ADIAPTO'TOS. Αδιαπτωτος. An electuary composed of stone parsley, henbane, and white pepper; it was given in colic. *Galen.*

ADIARRHŒ'A. (α, æ. f.; from α, priv. and διαῤῥεω, to flow out or through.) A suppression of any of the necessary excretions. *Hippocrates.*

ADIBAT. Mercury.

A'DICE. Αδικη; from αδικεω, to hurt. The nettle. See *Urtica.*

ADIPOCE'RA. (α, æ. f; from *adeps*, fat, and *cera*, wax. *Adipocere.*) A peculiar substance intermediate in its properties between fat and wax, and closely allied to spermaceti. This substance had been long known to the vulgar under the name of grave-wax, before it became an object of scientific research; and many superstitious notions were connected with it. In the year 1786, MM. Fourcroy and Poulletier observed the substance in question, when examining a piece of human liver which had been ten years exposed to the air; and in the course of the same year, the removal of the bodies from the Cimetière des Innocens in Paris afforded an opportunity of investigating it on an immense scale. At the time of clearing this extensive cemetery, scientific men were appointed by government to direct the precautions necessary for protecting the health of the workmen from the effects of so enormous a mass of putrefying matter. Some thousands of dead bodies had been annually deposited in this place for several centuries: the bodies, enclosed in wooden coffins, were laid side by side in trenches about 30 feet deep: each of these common graves held from 1000 to 1500 bodies, and was usually filled in the course of three years, when it was covered with earth to the depth of about a foot, and, after the lapse of from fifteen to thirty years, reopened for the reception of new bodies. The area of the burying ground was about 7000 square yards; and the whole of this space came at last to be occupied by a mass consisting almost entirely of animal matter, which rose several feet above the natural level of the soil. The first of these large graves had been closed for fifteen years, and was opened in the presence of M. Fourcroy, who gave the result of his observations in a memoir read before the Royal Academy of Sciences, in 1789. The coffins were in good preservation; and when the lids were taken off, the bodies were found flattened, as if they had suffered a strong compression, and leaving a considerable interval between their surface and the lid of the coffin; the linen which covered the bodies adhered to them slightly, and beneath the linen nothing was found but irregular masses of a soft, ductile, greyish-white matter, resembling common white cheese. All the soft parts were converted into this substance, and the bones which it surrounded were easily frangible, and separable by the smallest effort, owing to the destruction of their ligaments. The features of the face were no longer distinguishable; the thoracic and abdominal cavities were obliterated by the collapsing of their parietes upon the spine, and no trace remained of their viscera, which were all confused together, and blended with the common mass of adipocere; the brain had undergone a similar conversion; the scalp was altered in the same manner, but the hair continued attached to it, and retained its natural appearance. These curious phenomena were perfectly familiar to the grave-diggers, who asserted that such changes occurred only in bodies buried in the common graves, and not in those separately interred. The physical properties of the peculiar matter varied somewhat according to circumstances. In bodies lately changed — that is to say, within three or five years — it was soft and very ductile, containing a great quantity of water. In other subjects long since converted into this matter, such as those which occupied the cavities which had been closed thirty or forty years, it was drier, more brittle, and in denser flakes. In several which were deposited in dry earth, portions of the fatty matter had become semitransparent. In its granulated texture, brittleness, and general appearance, this dried matter bore a considerable resemblance to wax. It was also observed that the dry brittle matter, was generally found near the surface of the earth, and the softer and more ductile at a greater depth; which Fourcroy ascribes to the smaller quantity of water present in the former, and to the volatilisation of one of its principles.

In general, that which had been formed for a long time was white, uniform, and contained no foreign substance or fibrous remains; such, in particular, was that afforded by the skin of the extremities. On the contrary, in bodies recently changed, the fatty matter was neither so uniform nor so pure as in the former; but it was still found to contain portions of muscles, tendons, and ligaments, the texture of which, though

altered, was still distinguishable. Accordingly, as the conversion was more or less advanced, these fibrous remains were more or less penetrated with the fatty matter, interposed between the interstices of the fibres; which shows that it is not merely the fat which is thus changed, as might at first be naturally enough supposed. It is true that the fattest bodies, and those parts of the body where fat most abounds, appear to be very readily converted into adipocere; the same is true, however, with respect to the skin and the brain, in neither of which there is any fat.

Fourcroy regards adipocere as an ammoniacal soap, consisting of a peculiar oil combined with ammonia. According to the more recent analysis of M. Chevreuil, adipocere is composed of a large proportion of margaric acid and a little oleic acid, combined with a small quantity of ammonia, potassa, and lime. Adipocere melts at about 127° F. Cold alkohol acts but slightly on it; but boiling alkohol dissolves about one fourth of its weight, which it deposits again on cooling, in the shape of small acicular crystals. It is also dissolved by boiling ether. It is decomposed by the sulphuric and nitric acids, with a production of carbon in the former instance, and of nitric oxide in the latter. It forms imperfect soaps with the alkalis. It is rather less fusible than spermaceti, and more soluble in alkohol. The chemical relations of this substance have not yet been fully ascertained. It is not known under what precise circumstances the ordinary process of putrefaction is superseded by the formation of adipocere. This change has been observed in animal matter after a longer or shorter inhumation, and after long exposure to the air. Dr. Gibbes, of Oxford, found that pieces of lean beef exposed to the water of running streams, were converted into adipocere in a month; and a substance apparently similar has been produced by the action of nitric acid on lean meat by Dr. Gibbes, and more recently by Dr. Bostock. Gay-Lussac and Chevreuil are of opinion that the apparent conversion of muscular fibre into adipocere is deceptive; that the muscle wastes away while the fat remains: in their experiments the fibrin of blood was immersed in water, which was changed every two or three days; at the end of three months it had all disappeared, and there was no formation of adipocere; but muscle and liver, treated in the same manner, afforded a proportion of this substance. These experiments, however, cannot be considered as of much weight, against the extensive observations of Fourcroy above detailed. Dr. Thomson has published an instance of the obvious conversion of the muscles of a dead body into adipocere; and a similar case is recorded by Sir E. Home and Mr. Brande.

A'DIPOSE. (*Adiposus;* from *adeps*, fat.) Fatty; as adipose membrane, &c.

Adipose arteries. This name has been applied particularly to the twigs of the diaphragmatic, capsular, and renal arteries, which supply the fat around the kidneys.

Adipose ducts. See *Adeps.*

Adipose membrane. *Membrana adiposa.* The tissue in the cells of which the animal matter called fat is deposited, and which, till the time of Malpighi, was supposed to be identical with the ordinary cellular membrane. This anatomist suspected it to be a distinct tissue; and his opinion was supported by De Bergen and Morgagni, and confirmed by the minute observations of W. Hunter. The question, however, cannot be considered as altogether decided; and the authority of W. Hunter, Béclard, and other celebrated anatomists, on the one side, is confronted by that of Bichat, Cloquet, Raspail, &c. on the other. Those who regard the adipose membrane as a distinct tissue, describe it as being coarser, and composed of tougher fibres than common cellular membrane, and as consisting of spheroidal masses, varying in diameter from a line to half an inch, according to their situation and the degree of corpulency of the subject, and separated from each other by furrows of various depth; each of these masses is formed of smaller bodies of the same shape, and the latter of still smaller vesicles filled with fat; resembling minute pearls, and agglomerated by a very delicate cellular web. That the adipose differs from the common cellular tissue, is rendered probable by the following, among other considerations: — 1. Fluids introduced into the adipose cells, do not pass into the neighbouring cells, while in the common cellular membrane they permeate freely in all directions: thus, in anasarca, the cellular membrane is thoroughly infiltrated, but the adipose globules undergo no change. 2. If the adipose membrane be exposed to a heat sufficient to melt the fat without injuring the tissue, no fat escapes unless the vesicles containing it are opened; which sufficiently proves the absence of any free communication between them. For an account of the general distribution of the adipose membrane, see the article *Adeps.*

Adipose tissue. See *Adipose membrane.*

ADI'PSIA. (*a*, *æ.* f.; from α, neg. and διψα, thirst.) Absence of thirst. It is mostly symptomatic of some disease of the brain.

ADI'PSON. (From α, priv. and διψα, thirst.) A medicine which allays thirst.

ADI'PSOS. (From α, neg. and διψα, thirst: so called because it allays thirst.) 1. Liquorice. 2. The fruit of the Egyptian palm.

ADJUTO'RIUM. (*um*, *i.* n.; from *ad* and *juvo*, to help.) A name of the *humerus* from its usefulness in lifting up the arm.

ADJUVANT. (*Adjuvans;* from *adjuvo* to assist.) 1. That which assists in the cure or prevention of a disease.

2. An ingredient introduced into a prescription to aid the operation of the principal ingredient or basis. See *Prescription.*

ADNA'TA TUNICA. That portion of the tunica conjunctiva which covers the sclerotic coat of the eye has been called *tunica adnata.*

ADNA'TUS. (From *adnascor*, to grow to.) Adnate; applied to some parts which appear to grow to others; as *tunica adnata, stipulæ adnatæ, folium adnatum.*

ADOLESCE'NTIA. (*a*, *æ.* f.; from *adolesco*, to grow.) Adolescence; youth; the period of life between puberty and the full developement of the frame; extending, in man, from the age of 14 to 25, and in woman from 12 to 21.

ADOLIA. A Malabar plant, of the leaves of which, boiled in oil of sesamum, the natives make a liniment used to facilitate parturition.

ADO'NIS. (*is, idis.* f.; from Αδωνις, the youth from whose blood it was fabled to have sprung.) A genus of plants in the Linnæan system. Class, *Polyandria;* Order, *Polygynia.* Pheasant's eye. The roots of the *A. vernа* and *A. apennina* were formerly supposed to possess emmenagogue properties.

ADO'PTER. A chemical vessel placed between a retort and receiver.

ADOR. Maize or Indian wheat. See *Zea.*

ADOSCULA'TION. *Adosculatio, onis,* f.; from *ad,* and *osculor,* to kiss.) This term is used by some naturalists to express a species of copulation or impregnation by mere external contact between the genital parts of the two sexes, without intromission. This takes place in many birds and fish.

AD PONDUS OMNIUM. To the weight of the whole. These words, placed after the name of any ingredient in a prescription, or pharmaceutical formula, signify that the weight of such ingredient is to equal that of all the others put together.

ADPRE'SSUS. Approximate, contiguous, pressed to, or laid to: applied to branches or leaves when they rise in a direction nearly parallel to the stem, and are close to it; as the branches of the *Genista tinctoria,* and leaves of the *Thlaspi campestris.*

ADRACHNE. See *Andrachne.*

ADRAGA'NTHINE. *Adraganthina.* A name given by Bucholz to a mucilage which forms the greater part of the gum tragacanth. It is the same substance as *cerasine* or *prunine.*

ADRAM. Fossil salt.

ADRARHI'ZA. (ἁδρα ῥιζα, a thick root.) A name of the *Aristolochia.*

ADROBO'LON. (From ἁδρος, large, and βωλος, a mass.) Indian bdellium, which is in larger pieces than the Arabian. See *Bdellium.*

ADSTRICTION. *Adstrictio.* 1. The action or effect of an astringent.

2. Constipation.

ADULT. (*Adultus.* From *adolesco,* to grow.) A term applied to animals or plants that have arrived at a state of maturity.

ADULTERATION. *Adulteratio.* The act of corrupting or debasing a thing that is pure by some improper admixture.

In *Pharmacy,* the fraudulent corruption of drugs or medicines, by substituting ingredients of less value for the sake of greater gain. Dealers in medicine are well acquainted with this practice.

ADU'STUS. (From *aduro,* to burn.) Adust: burnt, parched. This term was formerly applied to the fluids of the body when the serum of the blood was supposed to be dissipated by too great heat in the constitution.

ADU'STIO. (*o, onis.* f.; from *aduro,* to burn.) Adustion. 1. Applied formerly in *Pathology,* to an adust state of the system.

2. In *Surgery,* adustion formerly was used synonymously with cauterisation, and meant the application of any burning substance to the animal body. See *Cautery,* and *Moxa.* The ancient surgeons, especially the Arabians, were remarkably fond of having recourse to adustion in local diseases: but the use of actual heat is admitted only in a few cases by the moderns.

ADVENTI'TIUS. (From *advenio,* to come to.) Adventitious, accidental. Applied. 1. To diseases which are not hereditary nor congenital. See *Acquired diseases.*

2. To tissues which are the product of disease, as false membranes.

ADVERSIFO'LIUS. (From *adversus,* opposite, and *folium,* a leaf.) Having opposite leaves.

ADVERSIFOLIÆ. The name of a class of plants in Sauvages' *Methodus Foliorum.* Valerian, teasel, honeysuckle, &c. are examples.

A'DY. A tree which grows in the island of St. Thomas, called also, *Palma ady,* which affords a considerable quantity of juice that ferments into wine. The entire fruit is called by the Portuguese *caryoces* and *cariosse,* by the natives *abanga.* The fruit externally resembles a lemon, and contains a stone, the kernel of which, if infused in boiling water, gives out an oil of a saffron colour, which becomes hard in the cold, and is used as butter. Of these kernels the inhabitants give three or four several times a day as a restorative.

ADYNA'MIA. (*a, æ.* f. Αδυναμια; from α, priv. and δυναμις, power.) A defect of vital power.

ADYNA'MICUS. (Same etymon.) Adynamic. Asthenic. A term applied to malignant fevers and other diseases attended with great debility.

ADY'NAMON. (From α, neg. and δυναμις, strength.) A kind of weak factitious wine, prepared from must, boiled down with water. The ancient physicians used to give it to patients to whom pure wine might be hurtful.

ÆDŒI'TIS. (From αιδοια, the parts of generation.) Inflammation of the pudenda.

ÆDŒOGRA'PHIA. (From αιδοια, the pudenda, and γραφω, to describe.) The description of the organs of generation.

ÆDŒALO'GIA. (From αιδοια, and λογος, a discourse.) A treatise on the organs of generation.

ÆDŒO'TOMY. (From αιδοια, and τεμνω, to cut.) The anatomy of the organs of generation.

ÆDOPSO'PHIA. (From αιδοια, and ψοφεω, to make a noise.) The escape of wind from the bladder through the urethra, or from the womb through the vagina.

ÆGAGROPI'LUS. (From αιγαγρος, a wild goat, and πιλος, a ball made of hair.) A concretion found in the stomach of goats, deer, cows, &c. consisting of hair which the animal has swallowed in licking itself. These balls were formerly called *Bezoars,* and were believed to possess the same virtues as the Oriental bezoars. See *Bezoar.*

Æ'GIAS *Aigis.* (Generally derived from αιξ, a goat, or from αιγις, the skin of a goat; but Kühn derives it, with much more probability, from αιγις, a shield, the opacity being placed like a shield before the pupil.) A white speck on the cornea which occasions a dimness of sight.

ÆGI'DION. (Probably from its curing the ægis, or opacity of the cornea.) The name of an ancient collyrium.

Æ'GILOPS, *Æ'gylops.* (*ops, opis.* m.;

from αιξ, a goat, and ωψ, an eye: so named from the supposition that goats were very subject to it.) 1. The ancients apply this term to a sore just under the inner angle of the eye. The best modern surgeons seem to consider the ægilops only as a stage of the fistula lachrymalis. Paulus Ægineta calls it anchilops, before it bursts, and ægilops after. When the skin covering the lachrymal sac has been for some time inflamed, or subject to frequent returns of inflammation, the puncta lachrymalia are generally involved, and the fluid, not having an opportunity of passing off by them, distends the inflamed skin, so that at last it becomes sloughy, and bursts externally. This is the state of the disease which is called perfect *ægilops*.

2. A name of the *Bromus sterilis* of Linnæus, which is said to have been given to it from its supposed virtues in curing the disorder so called.

Ægine'tia. A species of *Orobanche*, used in Malabar as a masticatory.

Ægi'rinon. (Αιγειρινον, from αιγειρος, the poplar tree.) A kind of ointment in which the fruit, or catkin, of the poplar was a principal ingredient.

Ægo'ceros. (From αιξ, a goat, and κερας, a horn: so called, because the pods were supposed to resemble the horns of a goat.) See *Trigonella fœnugræcum*.

Ægo'lethron. (From αιξ, a goat, and ολεθρος, destruction, so called from its being thought poisonous to goats.) The ancient name of a plant, which is probably the *Azalea pontica*; though some have supposed it to be the *Ranunculus flammula*, and others the *Lathræa squamaria*.

Ægo'nychon. (From αιξ, a goat, and ονυξ, a hoof; because of the hardness of the seed.) See *Lithospermum officinale*.

ÆGOPHO'NIA. (From αιξ, a goat, and φωνη, voice.) Ægophony. A stethoscopic sound, in which the voice of the patient somewhat resembles the bleating of a goat. It is characteristic of pleurisy accompanied with a *small degree* of effusion; if the effusion become considerable, the peculiar sound is no longer heard.

ÆGOPO'DIUM. (*um*, *i.* n.; from αιξ, a goat, and πους, a foot: from its supposed resemblance to a goat's foot.) A genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Digynia*. Goatweed. The following species was formerly much esteemed: —

Ægopodium podagraria. Goatweed, gout-weed. This plant is sedative, and was formerly used to mitigate the pains of gout, and to relieve piles, but is not now employed. In its earlier state it is tender and esculent.

Ægoproso'pon. (From αιξ, a goat, and προσωπον, a face: so called, according to authors, because goats are subject to defects in the eyes, or from its containing some ingredient named after the goat.) A name of a lotion for the eyes, when inflamed.

Ægyptia muscata. See *Hibiscus abelmochus*.

Ægyptia ulcera. Ulcers of the fauces and tonsils, described by Aretæus as common in Egypt and Syria — Αιγυπτια και Συριακα ἑλκεα.

Ægyptiacum unguentum. A name given to different unguents of the detergent or corrosive kind. We meet with a black, a red, a white, a simple, a compound, and a magistral ægyptiacum. The simple ægyptiacum, which is that usually found in our shops, is a composition of verdigris, vinegar, and honey, boiled to a due consistence. This preparation is first mentioned by Hippocrates, and was probably called Ægyptiacum by him, from his having learned its composition in Egypt, in which country he appears to have travelled. It is improperly called an unguent, as it does not contain any greasy substance.

Ægyptius pessus. The Egyptian pessary. A pessary composed of honey, turpentine, butter, oil of lilies or roses, saffron, and sometimes a little verdigris.

Aeichry'son. (From αει, always, and χρυσος, gold.) A name given to the sempervivum from its shining yellow colour. See *Sempervivum*.

AEIPATHI'A, *Aipathia*. (From αει, always, and παθος, a disease.) An inveterate disease.

Aei'thales. (From αει, always, and θαλλω, to be green.) The house-leek. See *Sempervivum*.

Aeizo'on. (From αει, always, and ζωη, life.) The Sempervivum.

Æon. Αιων. 1. The age of man from birth till death. *Hippocrates*.

2. The spinal marrow.

Æone'sis. (Αιονησις; from αιοναω, to sprinkle.) A sprinkling or washing of the whole body.

Æo'nion. Αιωνιον. The Sempervivum.

Æ'ora. (*a*, æ. f.; from αιωρεω, to lift up, to suspend.) Swinging. A species of exercise frequently used by the ancients. See *Gestation*.

AER. (*er*, *eris*. m. Αηρ.) Air. This term was applied by the older chemists to all permanently elastic fluids; but it is now restricted to that compound which constitutes our atmosphere, all other permanently elastic fluids being called *gases*. See *Atmosphere*.

Aer factitius. Factitious air. A name formerly applied to any gas artificially obtained by a chemical process, as opposed to atmospheric air.

Aer fixus. Fixed air. Carbonic acid gas.

Aer ingenitus. The name given by the older anatomists to the air contained within the cavity of the tympanum, which, before the discovery of the Eustacian tube, was supposed to be originally present in the ear of the fœtus.

Aerated alkaline water. Water impregnated with carbonic acid. See *Carbonic acid*.

Ære'olum, *Æreolus*. An ancient weight equivalent to the sixth part of an obolus, or about two grains. It was the same with the Greek χαλκους.

Aerial acid. Carbonic acid.

Aerial plants. Some genera of plants, as the *epidendra*, *aerides*, &c., absorb much of their food from the atmosphere, so that when they are suspended in the air by a string, without earth or water, they continue to live on imbibed moisture, and blossom for weeks or even months; such are called aerial plants or air plants. They are much used by the Chinese and Japanese as ornaments to their houses.

Aeri'tis. Αεριτις. The Greek name of a plant supposed to be the *Anagallis arvensis*.

A'EROLITH. *Aerolite.* (From αηρ, the air, and λιθος, a stone.) A meteoric stone. See *Meteorolite.*

AEROLO'GIA. (*a, æ.* f.; from αηρ, the air, and λογος, a discourse.) Aerology. That branch of physics which treats of the qualities of the air. The action of the atmosphere on organised bodies is a subject of much importance in physiology.

AERO'MELI. (From αηρ, the air, and μελι, honey.) Mel Aëreum. A name formerly given to a substance which is formed upon the leaves and boughs of trees, and which was believed to descend like dew from the atmosphere; it was also called δροσομελι *mel roscidum*, or *honey-dew.* It is identical with *manna.*

AERO'METER. (From αηρ, air, and μετρον, a measure.) An instrument for making the necessary corrections in pneumatic experiments to estimate the mean bulk of gases. An instrument well adapted to this purpose has been invented by Dr. Marshall Hall.

AEROPHO'BIA. (*a, æ.* f.; from αηρ, air, and φοβος fear.) Dread of air — that is, of a current of air. This symptom is common in hydrophobia, and has been occasionally observed in other diseases, as hysteria and phrenitis.

AERO'SIS. Αερωσις. In the physiology of Galen, this term signifies the process by which the blood was supposed to be attenuated and converted into the vital spirits.

AEROSTATICS. The science which treats of the elevation of bodies in the atmosphere, by means of balloons or bags filled with air lighter than the atmosphere.

AEROSTA'TIO. *Aerostation.* A name given, but not very correctly, to the raising of heavy bodies in the atmosphere, by the buoyancy of heated air, or gases of small specific gravity, inclosed in a bag, which, from being usually of a spherical form, is called a balloon.

ÆRO'SUS LAPIS. So Pliny calls the *Lapis calaminaris*, on the supposition that it was a copper ore.

ÆRU'CA. Verdigris.

ÆRU'GO. (*o, inis.* f.; from *æs.* brass or copper.) The ancient name for the rust of brass; it is now applied to verdigris. See *Ærugo æris.*

ÆRUGO ÆRIS. Verdigris. An impure subacetate of copper. In the south of France, verdigris is prepared on a large scale by covering copper plates with the husks of grapes. The cake which remains in the wine press, after the juice of the grapes is expressed, consisting of the husks and stalks, is moistened with water, and made to undergo the acetous fermentation. It is then disposed in layers alternately with plates of copper, which are placed in jars. At the end of fifteen or twenty days the copper plates are covered with a green efflorescence: they are then moistened with water, and set up in racks: and this is repeated six or eight times at intervals of a week, until a thick coat of verdigris is formed, which is scraped off, and the copper again subjected to the action of the fermented husks till it is completely corroded. Verdigris is a variable mixture of subacetates of copper. In this country it is obtained in a purer state by covering copper plates with cloths soaked in pyroligneous acid. The subacetate of copper, when good, is not deliquescent; it is of a hard, pulverulent, foliaceous texture; of a bluish green colour, and has a styptic and strongly metallic taste. It crystallises in four-sided truncated pyramids. Its specific gravity is 1·78. Distilled water at 60°, dissolves 0·56 parts, while 0·44 remain suspended in the solution in the form of a fine green powder; the dissolved part is a superacetate of copper, and the insoluble powder a subacetate mixed with impurities. Boiling water dissolves verdigris in the proportion of about one fifth, but deposits the greater part on cooling.

Verdigris has been used as an emetic and tonic; it produces the former effect in a dose of one or two grains, and the latter in doses smaller than half a grain; but it is not a safe medicine. In an overdose it proves rapidly fatal; and on dissection the coats of the stomach are found much thickened, and of a green colour: the best antidote is sugar.

Externally applied, the subacetate of copper is detergent, and mildly escharotic; the *Linimentum æruginis* of the present London Pharmacopœia corresponds with the old *Mel Ægyptiacum* or *Oxymel æruginis.*

The verdigris of commerce is variously adulterated, as with sand and other earths; and there is a substance occasionally met with under the name of English verdigris, which is made by triturating sugar of lead and sulphate of copper with a certain quantity of chalk and water, the mixture being dried in cakes, and grape stalks added at discretion.

ÆRUGO PREPARATA. See *Ærugo æris.*

ÆS. (*Æs, æris*, n.; etymology uncertain.) Brass. A combination of copper and zinc.

ÆSCHROMYTHE'SIS. (Αισχρομυθησις; from αισχρομυθεω, to use vile language.) The obscene language of the delirious. This symptom is often very remarkable in puerperal mania and phrenitis.

ÆSCHYNO'MENE. (From αισχυνομαι, to be ashamed.) An epithet of the sensitive plant, from its shrinking from the touch as if ashamed.

Æ'SCHOS. Αισχος. Deformity, whether of the body generally, or of a particular part. *Hippocrates.*

Æ'SCULINE. A new alkaline substance, alleged to have been found in the horsechesnut. It turns out to be nothing but extractive matter and lime.

Æ'SCULUS. (*us, i.* m.; from *esca*, food.) The name of a genus of plants in the Linnæan system. Class, *Heptandria*; Order, *Monogynia.* Horsechesnut.

ÆSCULUS HIPPOCA'STANUM. The systematic name of the common horsechestnut tree; called also *Castanea equina* and *pavina.* *Æsculus — foliolis septenis* of Linnæus. The fruit of this tree, when dried and powdered, is recommended as an errhine. The bark is highly esteemed on the Continent as a febrifuge; and is, by some, considered as being superior in quality to the Peruvian bark. The bark intended for medical use is to be taken from those branches which are neither very young nor very old, and to be

exhibited in similar forms and doses as directed with respect to the Peruvian bark. It rarely disagrees with the stomach; but its astringent effects generally require the occasional administration of a laxative. Some attempts have been made to obtain starch from the horsechestnut, and not without success.

Æseca'vum. Brass.

Æsta'tes. (From *æstas*, summer.) Freckles, which are most visible in summer. See *Ephelis.*

Æsthe'sis. (Αισθησις, from *αισθανομαι*, to feel.) This term has been applied both to *sensibility* and *sensation.*

Æsthete'rium (Αισθητηριον; from *αισθανομαι*, to feel or perceive.) The Sensorium.

Æsthe'ticus. (From *αισθανομαι*, to feel or perceive.) Affecting the senses. The *Æsthetica* form the second order of the Class *Neurotica* of Dr. Good.

ÆSTI'VAL. (*Æstivalis*; from *æstas*, summer.) Belonging to summer. Applied, 1. To diseases which appear in summer.

2. To plants which flower in summer.

ÆSTIVA'TIO. Æstivation. 1. The action of the summer on the animal economy.

2. The particular state of the bud in plants before the evolution of the corolla.

ÆSTUA'RIUM. (*um*, *i.* n.) An apparatus for conveying heat, whether dry, or combined with moisture, to all parts of the body at once; as a stove, or a vapour bath. Ambroise Paré thus calls an instrument which he describes for conveying heat to any particular part.

Æ'STUS. Heat: applied both to the natural sensation when intense, as from the influence of a powerful sun, &c., and to the morbid sensation excited by inflammation or any other cause.

Æstus volaticus. The disease so termed by the early writers was a sudden and fugitive sensation of heat, which left a little redness of the skin; Vogel gave this name to sudden heat or flushing of the face; and in the present day it is applied to the *strophulus volaticus*, or wild-fire rash of children.

Æ'TAS. (*as*, *tis.* f.; *quasi ævitas*, from *ævum*, age.) The ancients reckoned six stages of life.

1. *Infantia vel pueritia*, childhood, which is from birth to the fifth year of our age.

2. *Adolescentia*, youth, reckoned to the eighteenth; and youth properly so called, to the twenty-fifth year.

3. *Juventus*, reckoned from the twenty-fifth to the thirty-fifth year.

4. *Virilis ætas*, manhood, from the thirty-fifth to the fiftieth year.

5. *Senectus*, old age, from fifty to sixty.

6. *Crepita ætas*, decrepit age, which ends in death.

Æthales. See *Aethales.*

Æ'THER. (*er*, *eris*, m.; from *αιθηρ*, pure air, or any highly subtile fluid.) Ether. In *Chemistry*, a volatile liquor obtained by distillation from a mixture of alkohol and a concentrated acid. The ethers are an important class of chemical compounds, which agree in certain general properties, but vary according to the nature of the acid employed in their formation. They are all highly volatile and inflammable, and have a peculiar characteristic odour. The theory of the formation of ether is still a disputed point in chemistry. In a general way, ethers may be divided into those in the formation of which the acid acts merely as a decomposing agent on the alkohol, and those into whose composition the acid itself partly enters. To the first order belong the sulphuric, phosphoric, arsenic, and fluoric; and these are all similar, the result of the process not being influenced by the peculiar properties of the acid employed; to the second order belong the nitric, acetic, muriatic, hydriodic, hydrobromic, hydrocyanic, benzoic, citric, gallic, oxalic, and tartaric. The theory of the formation of ether, is best illustrated in the instance of sulphuric ether, which, as being the most important of this class of bodies, has received a large share of the attention of chemists. See *Æther Sulphuricus.* The sulphuric and nitric ethers are extensively used in medicine, and the acetic occasionally; the rest are not employed medicinally. See *Ether.*

Æther nitrosus. Nitrous ether. This may be obtained by distilling, with a very gentle heat, a mixture of equal weights of alkohol and concentrated nitric acid. The action of these substances on each other is so violent, that it requires to be regulated with the greatest caution. The following process of the Dublin Pharmacopœia, in which the acid is afforded by the decomposition of nitre, is one of the safest and best for procuring nitrous ether.

Take of nitrate of potash, dried and coarsely powdered, a pound and a half; sulphuric acid, a pound; rectified spirit of wine, nineteen fluid ounces. Put the nitrate of potash into a tubulated retort placed in a cold water bath; pour upon it, in small quantities, and at intervals, the sulphuric acid and the spirit previously mixed together, and allow the mixture to become cold. Without any external heat, or, at least, with such a gentle increase of temperature as may be communicated by the addition of a little tepid water to the bath, an ethereal liquor will begin to distil. In a short time the heat of the retort will spontaneously increase, and a considerable ebullition take place, which must be moderated by adding some cold water to the bath. The receiver must also be kept cool with water or snow, and furnished with a proper apparatus for transmitting the very elastic vapour (which rises with great force if the heat be too much increased) through a pound of rectified spirit of wine in a phial, which must be kept cold. The ethereal liquor thus spontaneously distilled is to be put into a glass phial fitted with a ground stopper, and as much carbonate of potash, dry, and in powder, is to be added as may be necessary to neutralise the acid; the phial being closed after each addition, and the neutralisation determined by the test of litmus: about a drachm of the salt is generally sufficient for this purpose; and in a short time the nitrous ether will rise to the surface, and is to be separated by means of a funnel. If the ether is required to be very pure, distil it again from a water bath, at a temperature of 140°, to the quantity of one half. Its specific gravity is to that of distilled water as ·900 to ·1000.

The theory of the formation of nitrous ether is not free from obscurity. According to Thénard, the ether is a compound of alkohol and nitrous acid; and, consequently, the essential part of the action from which it results is the conversion of the nitric into nitrous acid at the expense of a portion of the alkohol, while the remainder of the alkohol combines with the nitrous acid so formed. MM. Dumas and Boullay have advanced a different opinion: according to them, nitrous ether consists of 4 equivalents of carbon, 5 of hydrogen, 1 of nitrogen, and 4 of oxygen; which elements are in proportion to constitute 2 equivalents of olefiant gas, 1 of water, and 1 of hyponitrous acid. In its general properties, the nitrous ether does not differ materially from the sulphuric, but it is more volatile. It is gradually decomposed by keeping; and alkohol, nitrous acid, and a little acetic acid are formed. The same decomposition is immediately effected by mixing it with water or potash, or distilling it at a high temperature. Nitrous ether, though introduced by the Dublin College, is not generally used in medicine, but its action is probably similar to the sulphuric: from its greater volatility, it is still more refrigerant.

ÆTHER RECTIFICATUS. *Æther vitriolicus.* Rectified ether. Take of sulphuric ether, fourteen fluid ounces; fused potash, half an ounce; distilled water, eleven fluid ounces. First dissolve the potash in two ounces of the water, and add thereto the ether, shaking them well together, until they are mixed. Next, at a temperature of about 200°, distil over twelve fluid ounces of rectified ether, from a large retort into a cooled receiver. Then shake the distilled ether well with nine fluid ounces of water, and set the liquor by, so that the water may subside. Lastly, pour off the supernatant rectified ether, and keep it in a well-stopped bottle.

Sulphuric ether, as obtained by distillation from sulphuric acid and alkohol, is combined with water and some alkohol and sulphurous acid. In the above process of rectification, the alkali separates all the acid, while the water unites with the alkohol, and the ether volatilised by the gentle heat passes over into the receiver. The previous addition of a little black oxide of manganese renders the rectification of the ether more complete, by affording oxygen to the sulphurous acid, and thus converting it into sulphuric acid, which is perfectly fixed at the temperature employed in the process.

ÆTHER SULPHURICUS. *Æther vitriolicus; Naphtha vitrioli.* Sulphuric ether. Take of rectified spirit, sulphuric acid, of each by weight, a pound and a half. Pour the spirit into a glass retort, then gradually add to it the acid, shaking it after each addition, and taking care that their temperature, during the mixture, may not exceed 120°. Place the retort very cautiously into a sand-bath, previously heated to 200°, so that the liquor may boil as speedily as possible, and the ether may pass over into a tubulated receiver, to which another receiver is adapted, and kept cold by immersion in ice, or water. Continue the distillation until a heavier part also begins to pass over, and appear under the ether in the bottom of the receiver. To the liquor which remains in the retort, add twelve fluid ounces more of rectified spirit, and repeat the distillation in the same manner.

At the commencement of this process nothing passes over but a fragrant alkohol, but this is followed by the ether as soon as the fluid in the retort begins to boil; when the ether has passed over, white fumes of sulphurous acid arise: at this period the process should be discontinued; for although ether continues to be formed, it is blended with sulphurous acid and a yellowish oil called *sweet oil of wine*, or *ethereal oil*; and if the heat be further continued, olefiant gas is copiously evolved. Sulphuric ether obtained by this process always contains some alkohol, and generally a little sulphurous acid, to free it from which, rectification is necessary. See *Æther rectificatus.* The following exposition of the formation of ether is taken from Dr. Turner's Elements of Chemistry.

To comprehend the theory of the formation of ether, the composition of this substance must be compared with that of alkohol. Ether was analysed by Saussure in the same manner as alkohol; and from the data furnished by his analysis, corrected by Gay Lussac, ether is inferred to consist of carbon, hydrogen, and oxygen, in the ratio of 28 parts or two equivalents of olefiant gas, and 9 parts or one equivalent of water. But alkohol may be viewed as a compound of one equivalent of olefiant gas and one equivalent of water; so that, if from two equivalents of alkohol one of water be withdrawn, the remaining elements are in exact proportion for constituting ether. This is precisely the mode in which sulphuric acid is supposed to operate in generating ether, — an effect which it is well calculated to produce, owing to its strong affinity for moisture. This view was first proposed by Fourcroy and Vauquelin, and accounts for the phenomena in a very satisfactory manner. These chemists, it is true, erred in thinking that the sulphuric acid occasions no other change; since subsequent observation has proved that *sulphovinic acid*, to the constitution of which sulphuric acid is essential, is formed even at the very commencement of the process. Notwithstanding this error, the powerful affinity of sulphuric acid for water, and the consequent abstraction of water or its elements from alkohol, appears to contribute essentially to the production of sulphuric ether, and affords an explanation of several circumstances observable in the process. In the first place, it obviously aids in the formation of sulpho-vinic acid, which is not formed when the materials are diluted. Secondly, it accounts for the disengagement of sulphurous acid and olefiant gas towards the middle and close of the process; for since the elements of the alkohol alone contribute to the formation of ether, while all the sulphuric acid remains in the retort, and most of it in a free state, it is apparent that the relative quantities of alkohol and acid must be continually changing during the operation, until at length the latter predominates so greatly as to be able to deprive the former of all its water, and thus give rise to the

disengagement of olefiant gas. Accordingly it is well known, that if fresh alkohol be added as soon as the production of pure ether ceases, an additional quantity of that substance will be produced. Thirdly, it follows from this doctrine, that the power of the same portion of acid in forming ether must be limited, because it gradually becomes so diluted with water that it is unable to disunite the elements of the alkohol. Lastly, consistently with the same view, it is found that ether, precisely analogous to that from sulphuric acid, may be prepared by digesting alkohol with other acids which have a strong affinity for water, as for example with phosphoric, arsenic, and fluoboric acids.

The production of a peculiar acid in the process of forming ether was first noticed by M. Dabit, about the year 1800. This substance, to which the name of *sulpho-vinic* acid is applied, was subsequently examined by Sertuerner, Vogel, and Gay-Lussac; and the two last mentioned philosophers regarded it as a compound of hyposulphuric acid and a peculiar vegetable matter. Mr. Hennel, however, has given a different view of its nature, the principal points of which have been fully confirmed by Serullas, and Wöhler and Liebig. According to Hennel, sulpho-vinic acid and oil of wine are both composed of sulphuric acid and a carburet of hydrogen. Oil of wine, which has no acid reaction when pure, consists of 2 equivalents of sulphuric acic, 8 of carbon, and 8 of hydrogen. When heated, it parts with half of its carbon and hydrogen, and sulpho-vinic acid remains, consisting of 2 equivalents of sulphuric acid, 4 of carbon, and 4 of hydrogen. Oil of wine is a perfectly neutral compound, in which carburet of hydrogen acts the part of an alkali in neutralising sulphuric acid. In sulpho-vinic acid half the sulphuric acid appears to be neutralised by carburet of hydrogen.

Additional researches by Mr. Hennel have rendered it probable, that sulpho-vinic acid is in reality a stage in the formation of sulphuric ether. That acid is present in greatest quantity when the ingredients are first mixed, and prior to the application of artificial heat, one half of the sulphuric acid being then in combination with carburet of hydrogen; but on distilling the mixture, sulpho-vinic acid diminishes as the quantity of ether increases, until, towards the close of the process, sulpho-vinic acid entirely disappears, and the sulpuric acid, which was previously in combination, is set free. In support of this view, Mr. Hennel remarks, that however the operation may be conducted, the formation of ether is always accompanied or preceded by that of sulpho-vinic acid; and he has added the fact, that on distilling sulpho-vinate of potash with concentrated sulphuric acid, no alkohol being present, ether is generated. It appears, then, that ether may be directly developed from sulpho-vinic acid; that, in the ordinary process, the formation of the latter always precedes that of the former; and that, during the period of ether being generated, sulpho-vinic acid is decomposed. These facts give great plausibility to the opinion of Mr. Hennel; but it does not follow, nor does Mr. Hennel maintain, that ether cannot be generated but through the medium of sulpho-vinic acid. The nature of the difference in the constitution of alkohol and ether, and the production of ether from alkohol and phosphoric acid, justify an opposite inference.

Mr. Hennel has succeeded in obtaining alkohol through the medium of ether. For, when ether and sulphuric acid are heated together, oil of wine and sulpho-vinic acid are among the products; and on distilling sulpho-vinate of potash with sulphuric acid, not concentrated as above, but previously diluted with half its weight of water, alkohol is generated. It hence appears that carburet of hydrogen, at the moment of separation from sulphuric acid, is in a state peculiarly favourable for combining with water; and that, in doing so, it gives rise to alkohol or ether, according to the condition in which it is placed.

Sulphuric ether is a perfectly transparent and colourless liquid: it has a fragrant penetrating odour and a peculiar pungent taste: it is exceedingly volatile, and produces a great degree of cold by its evaporation: it is highly inflammable; burning with a blue flame, and yielding water and carbonic acid. It boils under the ordinary atmospheric pressure, at about 98° F. and *in vacuo* at —20°. When cooled to —46°, it congeals in brilliant transparent plates. Ether combines with alkohol in all proportions, but sparingly with water, 1 part only of ether being taken up by 10 of water. Ether readily dissolves the essential oils, camphor, resins, gum resins, wax, balsams, bitumens, and extractive matter; and combines with a small proportion of sulphur. It is decomposed by sulphuric acid, which converts it into ethereal oil. When the sulphuric and muriatic ethers are mixed in equal proportions, a very rapid evaporation takes place, and a degree of cold considerably below 0° Fahr. is produced. Ether, when most completely rectified, according to the directions of the British Pharmacopœias, has a specific gravity of about ·725; but Lowitz obtained ether of sp. gr. ·632, by divesting it still more completely of its alkohol.

Sulphuric ether acts on the animal economy as a very diffusible stimulant; it is a powerful antispasmodic, and, under certain circumstances, has a narcotic effect. It is used with advantage in spasmodic asthma, hysteria, cramp of the stomach, &c., and occasionally as a cordial in low fevers. The common dose is from ʒ ss. to ʒij.; but, to produce any decided effect, it often requires to be given in larger doses than these, and, from the diffusibility of its stimulus, the dose ought to be frequently repeated, if any continued operation of the remedy be desired. Externally applied, ether may be made to act as a stimulant or a refrigerant: if it be prevented from evaporating by closely covering the place where it is applied, it excites a strong sensation of heat and reddens the skin; in this way it often affords relief in headach and muscular pains: if it be allowed to evaporate freely, it produces extreme cold; and with this view has been applied to the tumour of strangulated hernia to favour its reduction.

Æther vitriolicus. See *Æther sulphuricus.* nd *Æther rectificatus.*

Æthe'rea herba. A name of the *Eryngo ;* ecause it is of a sky-blue colour. — *Turton.*

Æthe'real. *Æthereus.* Appertaining to, r of the nature of, ether.

Æthereal acid. See *Æther.*

Æthereal oil See *Oleum æthereum.*

Æ'THIOPS. A name given by the older hemists to several black powders, on account of their colour.

Æthiops animalis. The powder formed by urning various animals to a cinder, as the edgehog, mole, sparrow, &c.

Æthiops antimonialis. A preparation once n high repute, and still employed by some ractitioners in cutaneous diseases. It is made y triturating two parts of sulphuret of antimony with one of quicksilver. It is given in the dose f a few grains at first, which may be gradually ncreased to half a drachm.

Æthiops auripigmentalis. Was made by riturating sulphuret of arsenic with quicksilver.

Æthiops Jovialis. Was prepared by rub- bing together tin, quicksilver, and sulphur.

Æthiops Martialis. The black deutoxide of iron ; formerly in repute as a tonic, but now neglected.

Æthiops mineralis. Æthiops mineral. See *Hydrargyri sulphuretum nigrum.*

Æthiops narcoticus. A name of the Æthiops mineral.

Æthiops per se. The protoxide of mercury was so called, because it may be formed by merely triturating the mercury for a long time when exposed to the air.

Æthiops vegetabilis. A black powder formed by incinerating the *fucus vesiculosus* in a covered crucible. It contains *iodine,* and has been used in diseases of the glands.

Æthmoid. See *Ethmoid.*

Ætho'lices. (Αιθολικες ; from αιθω, to burn.) Burning pustules on the skin. Some commentators on Hippocrates render this word by *furunculi,* or boils.

Ætho'sma. (From αιθος, shining, and ομμα, a sight or spectacle.) The appearance of flashes of light before the eyes; a symptom common in several diseases.

ÆTHU'SA. The name of a genus of plants of the Linnæan system. Class, *Pentandria* ; Order, *Digynia.*

Æthusa cyna'pium. Fool's parsley. A plant which much resembles parsley. When eaten as parsley often is, in soups and sauces, it produces colic and deleterious effects. It is very common in fields and gardens.

Æthusa meum. The systematic name of the *meum* of the Pharmacopœias; called also *Meum athamanticum, Meu* and *Spignel.* Baldmoney. The root of this plant has been recommended as a carminative and stomachic, and for attenuating viscid humours : it appears to be nearly of the same nature as that of lovage; its smell, however, is rather more agreeable, being somewhat like that of parsneps, but stronger, and its taste is less sweet, and warmer or more acrid.

Aëtioi phlebes. See *Phlebes aëtioi.*

Ætiolo'gia. (From αιτια, a cause, and λογος, a discourse.) Etiology. The doctrine of the causes of diseases. These causes are generally divided by medical writers into *proximate* and *remote ;* and the latter again are distinguished into *predisposing* and *exciting.*

Causa proxima vel *continens,* the proximate cause, is that deranged action from which all the symptoms arise ; it is, in fact, another name for the disease itself.

Causa disponens vel *proegumena,* the predisposing cause, is that state of the system which renders it apt to assume any particular diseased action when the exciting cause is applied ; thus plethora is a predisposing cause of inflammation.

Causa excitans, procatarctica, antecedens, occasionalis, the exciting cause, is that which actually produces the disease ; thus exposure to cold or damp air is the exciting cause of a atarrh.

The distinction between the predisposing and the proximate cause is not always obvious, since what is called the predisposing cause is often hardly to be discriminated from an obscure degree of the disease itself.

AETI'TES. (From αετος, an eagle.) *Lapis aquilæ.* Eagle-stone. A stone so called by the ancients, because it was believed that the eagle carried it to her nest to aid in the hatching of her eggs. It is a hollow stone containing another substance within it ; the shell is of the substance called by modern mineralogists clay-iron stone, and the nucleus of variable composition : the ancients gave different names to the stone, according to the nature of the contained substance. These eagle-stones had wonderful virtues attributed to them, as that of facilitating parturition when bound on the thigh, and preventing abortion when bound on the arm.

Æto'cion. See *Daphne mezereon.*

Æto'lion. See *Daphne mezereon.*

Æto'nychum. See *Lithospermum.*

AFFECTION. (*Affectio, onis.* f.) 1. This term is applied synonymously with disease; thus, an *inflammatory affection,* a *nervous affection,* &c.

2. It is applied to certain conditions of the mind ; thus we speak of the *moral affections.*

Afferentia vasa. See *Vasa afferentia.*

AFFINITY. (*Affinitas, atis.* f.) This term has been used indifferently with attraction, but is commonly restricted to chemical attraction. See *Attraction.*

Affinity of aggregation. See *Attraction.*

Affinity, compound. When three or more bodies, on account of their mutual affinity, unite and form one homogeneous body, then the affinity is termed compound affinity, or attraction ; thus, phosphoric acid will enter into combination at the same time with ammonia and magnesia, forming a phosphate of ammonia and magnesia.

Affinity, disposing. It frequently happens that two substances which are incapable of uniting, or unite with difficulty, are made to combine readily by the addition of a third substance, which has an affinity for the compound formed for their union, though it may have no apparent affinity for either of them separately ; this third substance was formerly said to act by

a disposing affinity, which was considered as a sort of prospective affinity for the compound about to be formed; thus, zinc has so small an affinity for oxygen, that it decomposes water at common temperatures with extreme slowness; but if sulphuric acid be added, the zinc takes oxygen from the water with great rapidity, and the oxide combines with the acid; here the acid exerts a disposing affinity. This doctrine of disposing affinities involves the absurdity, that a substance can exert an affinity for a certain compound before that compound exists. The cases of chemical action referred to are now explained in a different manner. See *Attraction.*

Affinity, divellent. See *Affinity quiescent.*

Affinity, double. Double elective attraction. When two bodies, each consisting of two constituent parts, come into contact, and are decomposed, so that their constituents become reciprocally united, and produce two new compound bodies, the decomposition is said to take place *by double affinity:* thus, if we add a solution of nitrate of potash to one of sulphate of ammonia, the salts change ingredients and sulphate of potash and nitrate of ammonia are formed.

Affinity, elementary. See *Affinity, resulting.*

Affinity, intermediate. When two substances which have no disposition to unite, combine by the agency of a third substance, the combination is said to be effected by an intermediate affinity: thus, oil and water, which will not even mix without the intervention of a third body, are readily combined, by means of an alkali, into the homogeneous substance called soap.

Affinity, quiescent. Kirwan employs the term *quiescent affinity* to designate that by which the principles of each compound adhere to each other; and *divellent affinity*, to distinguish that by which the principles of one body unite and change order with those of the others: thus, sulphate of potash is not decomposed by nitric acid or by lime, when either of these principles is separately presented; but if the nitric acid be combined with lime, this nitrate of lime will decompose the sulphate of potash. In the last case, the affinity of the sulphuric acid for the alkali is weakened by its affinity for the lime. This acid, therefore, is subject to two affinities: the one which binds it to the alkali, called *quiescent;* and the other which attracts it towards the lime called *divellent* affinity.

Affinity, reciprocal. When a compound of two bodies is decomposed by a third, the separated body is in some instances capable of decomposing the new compound, if brought to act on it in large quantity; nitrate of potash, for example, is readily decomposed by sulphuric acid, which unites with the potash and disengages the nitric acid; but if the sulphate of potash thus formed, be subjected to the action of nitric acid *in large quantity*, it will detach a portion of the potash from the sulphuric acid, and form with it nitrate of potash. Such a case is called one of reciprocal affinity.

Affinity, resulting. The affinity exerted by a compound, arising from the modified affinities of its constituents, were called by Berthollet *resulting affinities*, in contradistinction to those of the constituents themselves, which he named *elementary.*

Affinity, simple. Single elective attraction. If a body, consisting of two component parts, be decomposed on the approach of a third, which has a greater affinity for one of those component parts than they have for each other, then the decomposition is said to be effected by *simple* affinity: for instance, if acetic acid be added to a compound of carbonic acid and ammonia, the union which existed between these two bodies will cease; the acetic acid combines with the ammonia, and the carbonic acid is disengaged. When two bodies only enter into chemical union, the affinity which unites them, is also termed *simple* or *single* affinity: thus, sulphur and oxygen combine by simple affinity to form sulphurous acid.

Affinity, vital. The power which regulates the formation of the various solids and fluids from the common circulating fluids, has been called *vital affinity.*

A'ffion. An Arabic name of opium.

AFFLA'TUS. (*us, ûs.* m.; from *afflare*, to blow upon.) 1. A vapour or blast.

2. Applied by some to a species of erysipelas, which attacks suddenly, as if produced by some unwholesome wind blowing on the part.

Affrodina. An alchemical name of copper.

Afragar. Verdigris.

AFFUSION. (*Affusio;* from *affundo*, to pour upon.) The affusion of cold water, in the treatment of fever, was brought into general notice by the late Dr. Currie, of Liverpool, and appears, in his hands, to have been attended with an astonishing uniformity of success. The remedy consists merely in placing the patient in a bathing-tub, or other convenient vessel, and pouring a pailful of cold water upon his body; after which he is wiped dry, and again put to bed. Dr. Currie's experience led him to the following general conclusions with respect to the external application of cold water in fevers.

First. That it is the *low contagious fever* in which the cold affusion is to be employed; the first symptoms of which are a dull headach, with restlessness and shivering; pains in the back, and all over the body; the tongue foul, with prostration of strength; the headach becoming more acute; the heat of the body, by the thermometer, 102° to 105°, or more; general restlessness, increasing to delirium, particularly in the night.

Secondly. That it is *in the early stage of the disease* we must employ the remedy; and generally *in the state of the greatest heat and exacerbation.*

Thirdly. That *affusion*, not *immersion*, is to be employed.

Since the first publication of Dr. Currie's work, the practice of affusion has been extensively tried, and its efficacy has been established in some stages of the disease, in which the author had originally proscribed the practice of it. One of the cautionary injunctions which had been given for the affusion of cold water in fever, was, *never to employ it in cases where the patient had a sense of chilliness upon him*, even

if the thermometer applied to the trunk of the body indicated a preternatural degree of heat. In his last Reports, however, Dr. Currie has given the particulars of a case of this kind, in which the cold affusion was so managed as to produce a successful event.

In fevers *arising from*, or *accompanied by, topical inflammation*, his experience does not justify the use of cold affusion; though, in a great variety of these cases, the warm affusion may be used with advantage. "And," says he, "though I have used the cold affusion in some instances, so late as the twelfth or fourteenth day of contagious fever, with safety and success, yet it can only be employed, at this advanced period, in the instances in which the heat keeps up steadily above the natural standard, and the respiration continues free. In such cases I have seen it appease agitation and restlessness, dissipate delirium, and, as it were, snatch the patient from impending dissolution. But it is in the *early stages* of fever, let me again repeat, that it ought always to be employed, if possible; and where, without any regard to the heat of the patient, it is had recourse to in the last stage of fever, after every other remedy has failed, and the case appears desperate (of which I have heard several instances), can it appear surprising that the issue should sometimes be unfavourable?"

The cold affusion has been adopted with considerable success, in various parts of the world, but, on the whole, it has certainly failed to realise the expectations which it at first excited; and as a means of *cutting short* fever — that is, arresting its progress *in limine* — the cold affusion seems to be no more efficacious than bloodletting, emetics, and other remedies which have been as strenuously recommended, but an extensive trial of which has led most practitioners to the conclusion, that the cutting short of fever is an event not generally to be looked for, and that this disease usually runs its course in spite of any means that may be used to arrest it.

The sponging of the body with tepid water, or vinegar and water, has now in a great measure superseded the use of the cold affusion. It allays febrile heat and restlessness, and frequently induces a gentle moisture on the surface. It is useful in most cases where the skin is hot and dry, but should be avoided where there is any tendency to perspiration; it is particularly serviceable in scarlatina, in which disease the heat of the skin is frequently very intense; it has also been recommended in measles, but its safety in this case is extremely doubtful.

AFTER-BIRTH. See *Placenta.*

AFTER-PAINS. See *Parturitio.*

AGALACTA'TIO. See *Agalactia.*

AGALA'CTIA. (*a*, *æ*. f. Αγαλακτια; from α, priv. and γαλα, milk.) *Agalaxis; Agalactio; Agalactatio.* A defect of milk after childbirth.

AGALA'XIS. See *Agalactia.*

AGA'LLOCHUM. See *Lignum aloes.*

AGA'RICUS. (*us*, *i*. m. Αγαρικος; from Agaria, a region of Sarmatia, or from Agaros, the name of a town, and also of a river of the same province.) Agaric. The name of a genus of plants in the Linnæan system. Class, *Cryptogamia*; Order, *Fungi.*

The agarici are mushrooms with a cap, and gills underneath of a different substance from the cap. They vary greatly in their qualities. The plants of this genus appear to approach nearer to the nature of animal matter than any other productions of the vegetable kingdom; as, besides hydrogen, oxygen, and carbon, they contain a considerable proportion of nitrogen, and yield ammonia by distillation. Prof. Proust has likewise discovered in them the benzoic acid, and phosphate of lime.

The mushrooms, remarkable for the quickness of their growth and decay, as well as for the fœtor attending their spontaneous decomposition, were for a long time neglected by analytical chemists, though capable of rewarding their trouble, as is evinced by the investigations of Messrs. Vauquelin and Braconnot. The insoluble fungous portion of the mushroom, though it resembles woody fibre in some respects, yet being less soluble than it in alkalis, and yielding a nutritive food, is evidently a peculiar product, to which accordingly the name of *fungin* has been given. Two new vegetable acids, the boletic and fungic, were also made known by these researches.

The following species have been submitted to chemical analysis.

Agaricus campestris, an ordinary article of food, analysed by Vauquelin, gave the following results: — 1. Adipocire. On expressing the juice of the agaric, and subjecting the remainder to the action of boiling alkohol, a fatty matter is extracted, which falls down in white flakes as the alkohol cools. It has a dirty white colour; a fatty feel, like spermaceti; and exposed to heat, soon melts, and then exhales the odour of grease. 2. An oily matter. 3. Vegetable albumen. 4. The sugar of mushrooms. 5. An animal matter, soluble in water and alkohol; on being heated, it evolves the odour of roasting meat, like osmazome. 6. An animal matter not soluble in alkohol. 7. Fungin. 8. Acetate of potash.

Agaricus volvaceus afforded Braconnot fungin, gelatin, vegetable albumen, much phosphate of potash, some acetate of potash, sugar of mushrooms, a brown oil, adipocere, wax, a very fugacious deleterious matter, uncombined acid, supposed to be the acetic, benzoic acid, muriate of potash, and a great deal of water.

Agaricus acris, or *piperatus*, was found by Braconnot, after a minute analysis, to contain nearly the same ingredients as the preceding, without the wax and benzoic acid, but with more adipocere.

Agaricus stypticus. From twenty parts of this, Braconnot obtained of resin and adipocere 1·8, fungin 16·7, of an unknown gelatinous substance, a salt of potash, and a fugacious acrid principle, 1·5.

Agaricus bulbosus, was examined by Vauquelin, who found the following constituents: an animal matter insoluble in alkohol; osmazome; a soft fatty matter of a yellow colour and acrid taste; an acid salt (not a phosphate). The

insoluble substance of the agaric yielded an acid by distillation.

Agaricus theiogalus. In this, Vauquelin found sugar of mushrooms; osmazome; a bitter acrid fatty matter; an animal matter, not soluble in alkohol; a salt containing a vegetable acid.

Agaricus muscarius. In this species, Vauquelin found two animal matters similar to those of the last, a fatty matter, sulphate, phosphate, and muriate of potash, and a volatile acid.

Agaricus albus. See *Boletus laricis.*

Agaricus campestris. There are several species of the agaric which go by this term; as the *Agaricus edulis, cantharellus, deliciosus, violaceus,* &c.; but the eatable mushroom of this country is the *Agaricus campestris* of Linnæus. Similar to it in quality is the champignon. See *Agaricus pratensis.* Broiled with salt and pepper, or stewed with cream and some aromatic, they are a great delicacy, and, if not eaten to excess, sufficiently wholesome. Great care should be taken to ascertain that they are of the right sort, and not of a poisonous nature. Catsup is made by throwing salt on mushrooms, which causes them to part with their juice.

None of the following species are known to be dangerous, and they are all sold for food in different parts of Europe. *Agaricus aurantiosus; cantharellus,* the chantarelle; *cortinellus; albellus,* the musk champignon; *eburneus,* the mugnaio; *ericetorum,* the jozzolo; *virgineus,* the petite oreillette; *auricula,* the escoubarbe; *eryngii,* the ciccioli, which grows on the sea-holly; *tristis,* the fungo appassionato; *nivalis,* the fungo dormiente; *socialis,* pivoulade d'Ecosse; *ilicinus; tortilis,* the mousseron de Dieppe; *palomet,* the palombette; *virens,* the verdone; *translucens,* the pivoulade de saule; *deliciosus; subdulcis; piperatus; procerus; cylindraceus; attenuatus; usper; solitarius, incarnatus; vaginatus; aroideus.*

Agaricus cantharellus. The Chantarelle. A species of fungus, esteemed as a delicacy by the French. Broiled with salt and pepper, it has much the flavour of a roasted cockle.

Agaricus chirurgorum. See *Boletus igniarius.*

Agaricus cinnamomeus. Brown mushroom. This species of agaric is of a pleasant smell. When broiled, it has a good flavour.

Agaricus deliciosus. This fungus, well seasoned, and then broiled, has the exact flavour of a roasted muscle. It is in season in September.

Agaricus mineralis. Mountain milk, or rock milk. This mineral is one of the purest of the native carbonates of lime, and is found chiefly in the fissures of limestone rocks. It has been used internally in hæmorrhages, strangury, gravel, and dysenteries; and externally as an application to old ulcers, and to weak eyes.

Agaricus muscarius. Bug Agaric: so called from its known property of destroying bugs. This reddish fungus is the *Agaricus — stipitatus, lamellis dimidiatis solitariis, stipite volvato, apice dilatato, basi ovato,* of Linnæus. It is not much known in this country. Haller relates that six persons in Lithuania perished at one time by eating this kind of mushroom, and that in others it has caused delirium. The following account of the effects of this species on the animal economy is given by Orfila. Several French soldiers ate some mushrooms of the kind above mentioned, at the distance of two leagues from Polosck in Russia. Four of them, who were of a robust constitution, and conceived themselves proof against the consequences under which their feebler companions were beginning to suffer, refused obstinately to take an emetic. In the evening, the following symptoms occurred: anxiety, sense of suffocation, intense thirst, violent griping pains, a small and irregular pulse, universal cold sweats, altered expression of countenance, violet tint of the nose and lips, general trembling, fœtid stools. These symptoms increasing, they were carried to the hospital. Coldness and livid colour of the limbs, a dreadful delirium, and acute pains, accompanied them to the last moment. One of them sunk a few hours after his admission into the hospital; the three others died in the course of the night. On opening their bodies, the stomach and intestines displayed large spots of inflammation and gangrene; and putrefaction seemed advancing very rapidly. Notwithstanding the virulent properties of this fungus, it is used in Russia, Tartary, and Kamtschatka to produce intoxication. The Agaricus muscarius is employed externally to strumous, phagedenic, and fistulous ulcers, as an escharotic.

Agaricus necator. This has a yellowish juice, and is a deadly poison.

Agaricus piperatus. The plant thus named by Linnæus, is the pepper mushroom; also called pepper agaric. It is the *Fungus piperatus albus, lacteo-succo turgens,* of Ray. *Fungus albus acris.* When freely taken, fatal consequences are related by several writers to have been the result. Even when this vegetable has lost its acrid juice by drying, its caustic quality still remains.

Agaricus pratensis. The champignon of Hudson's Flora Anglica. This plant has but little smell, and is rather dry; yet, when broiled or stewed, it has a pleasant flavour.

Agaricus procerus. This is sometimes found in our markets, and is in common use throughout France and Italy. It has various names, as *Mort de froid, Nez de chat, Mazza di tamburo,* &c.

Agaricus Theiogalus. This has a yellowish juice, and is highly poisonous.

Agaricus violaceus. Violet mushroom. This fungus requires much boiling, but when sufficiently done and seasoned, it is very agreeable to the palate.

AGE. See *Ætas.*

AGENE'SIA. (*a, æ.* f.; from α, neg. and γενεσις, generation.) 1. Impotence, sterility.

2. A term applied by Breschet to anomalies of organisation, consisting in absence or imperfect development of parts.

Agent. (*Agens,* from *ago,* to act.) Any thing which acts or produces an effect upon another. In medical language it is usually applied to those causes only which have some particular activity. In pathology, the extraneous causes of disease are called morbific agents, and in therapeutics, medicines and all things used in the treatment of disease are called therapeutical

agents. In chemistry, substances which occasion the decomposition of others are called decomposing agents.

AGERA'SIA. (From α, neg. and γηρας, old age.) The absence of old age, or rather of its ordinary effects. A green and vigorous old age.

AGE'RATUM. (*um*, *i.* n. Αγηρατον; from α, priv. and γηρας, old age: never old, ever green; because its flowers preserve their beauty a long time.) See *Achillea ageratum*.

AGE'RATUS LAPIS. Αγηρατος λιθος. A stone used by cobblers to polish shoes. It was used in medicine by the Greeks, and esteemed astringent and discutient.

AGEU'STIA. (*a*, *æ.* f.; from α, neg. and γευομαι, to taste.) A defect or loss of taste. Dr. Cullen makes two species: the one *organic*, arising from some affection in the membrane of the tongue, by which sapid substances are prevented from coming into contact with the nerves; the other *atonic*, arising without any visible affection of the tongue. Want of taste usually depends on a defective supply of nervous influence, and occurs as a symptom in many diseases. In many acute fevers the taste is totally wanting, but returns on convalescence. Loss of taste is sometimes caused by the habit of smoking or chewing tobacco; and other acrid narcotics have been known to cause it. In all these cases, after the removal of the causes as far as possible, masticatories of mustard, horse-radish, and pyrethrum are occasionally useful; the latter, in particular, has been found beneficial. A tincture of the root is to be mixed with water, and so diluted as to produce a sialagogue effect by washing the mouth with it.

AGGLO'MERATE. (*Agglomeratus*; from *agglomero*, to shape into a ball.) 1. In *Botany*, this term is applied to the stamina of plants when collected in a globular form, as in *Anona triloba*; and to amenta or catkins when of a similar form, as in *Pinus sylvestris*. 2. In anatomy, it is applied to glands in the same sense as aggregate.

AGGLU'TINANT. (From *agglutino*, to glue together.) An external application which unites divided parts by causing them to stick together.

AGGLUTINA'TION. 1. The natural process of adhesion in wounds. 2. The action of an agglutinant.

AGGREGATE. (*Aggregatus*; from *aggrego*, to assemble together.)

1. In *Physics*. When bodies of the same kind are united, the only consequence is, that one larger body is produced. In this case, the united mass is called an aggregate, and does not differ in its chemical properties from the bodies of which it is composed. Elementary writers call the smallest parts into which an aggregate can be divided, without destroying its chemical properties, integrant parts. Thus the integrant parts of sulphate of magnesia are the smallest parts which can be conceived to remain without change; and beyond these, any further subdivision cannot be made without developing the component parts, namely, the alkali and the acid; which are still further resolvable into their constituent principles.

2. In *Botany*, this term is applied to glands, flowers, gems, &c. An aggregate flower is one which consists of a number of smaller flowers or fructifications, collected into a head by means of some part common to them all. An aggregate gem is when two, three, or even more gems appear at the same time.

3. In *Anatomy*. Glands which are clustered together are called *glandulæ aggregatæ*.

AGGREGATION. *Aggregatio*, *onis*, f.; from *aggrego*, to assemble together. See *Attraction*.

Aggregation, attraction of. See *Attraction*.

A'GLIA. Αγλιη. A white cicatrix on the cornea.

AGLUTI'TIO. (From α, neg. and *glutio*, to swallow.) Aglutition; inability to swallow.

A'GMA. Αγμα. A fracture.

AGNACAL. A tree, which, according to Ray, grows about the isthmus of Darien, and resembles a pear-tree, the fruit of which is a great provocative to venery.

AGNA'TA. The same as *Adnata*.

AGNI'NA TUNICA. The *amnion*. See *Amnion*.

AGNO'IA. (From αγνοεω, to be ignorant; not to understand.) The state of a patient who does not recognise those around him.

A'GNUS. The lamb. See *Ovis aries*.

A'GNUS CASTUS. Called *agnus*, from αγονος, sterile, because it was believed to produce barrenness; and *castus*, or chaste, for the same reason. At the Thesmophoria, or feasts in honour of Ceres, the women used to strew their beds with this and other plants which were believed to be favourable to chastity. See *Vitex agnus castus*.

A'GNUS SYTHICUS. See *Polypodium barometz*.

AGO'GE. Αγωγη. 1. The process of reasoning upon diseases from their symptoms.

2. The order, state, or tenour of a disease.

AGOMPHI'ASIS. (From α, priv. and γομφωσις, a particular mode of connexion between bones.) Looseness of the teeth. This word has sometimes been incorrectly written *gomphiasis*.

AGON. (Αγων, a contest.) Among the writers of low Latin, this term signifies the agony of death.

A'GONE. (Αγονη; from α, neg. and γονος, offspring: so called because it was supposed to cause barrenness.) Henbane. See *Hyoscyamus niger*.

AGO'NIA. Αγονια; from α, priv. and γονος, offspring.) Sterility. Impotence.

AGO'NIA. (Αγωνια; from αγων, a contest.) Agony. The struggle which precedes death.

AGONI'STICON. (From αγωνιστης, one who contends.) An epithet applied by the Greek physicians to very cold water which was given in large quantity in fevers to overcome the morbid heat of the blood.

AGO'STOS. (From αγω, to bring or lead.) The fore-arm from the elbow to the fingers; also the palm or hollow of the hand.

AGRE'STA. Verjuice. The juice of unripe grapes, or of wild apples.

AGRESTEN. Tartar before it is purified.

AGRE'STIS. (*is*, *is.*; from *ager*, a field.) 1. Pertaining to the field; the trivial name of many plants.

2. In the works of some old writers it is ap-

plied to a disease which is malignant or intractable.

A'GRIA. (*a*, *æ*. f. Αγρια.) 1. See *Ilex aquifolium*.

2. A pustular disease of the skin accompanied with redness and erosion, and named *αγρια* by the Greeks from its intractability. *Celsus*.

AGRIA'MPELOS. (From *αγριος*, wild, and *αμπελος*, a vine.) The wild vine, or white bryony; and, according to Gerard, the black bryony. See *Bryonia alba*, and *Tamus communis*.

AGRIELÆ'A. *Agrielæos*. (From *αγριος*, wild, and *ελαια*, the olive-tree.) The oleaster, or wild olive.

AGRIFO'LIUM. (*um*, *i*. n.; from *αγριος*, fierce, and *folium*, a leaf, on account of its sharp prickles; or, the word is a corruption of *acifolium*, from *acus*, a needle, and *folium*, a leaf, which last is the more probable origin.) The holly-tree. See *Ilex aquifolium*.

AGRIMO'NIA. (*a*, *æ*. f.; derivation uncertain.) Agrimony.

1. The name of a genus of plants in the Linnæan system. Class, *Dodecandria*; Order, *Digynia*.

2. The pharmacopœial name of the common agrimony. See *Agrimonia eupatoria*.

Agrimonia eupatoria. The systematic name of the common agrimony. *Agrimonia* of the Pharmacopœias. *Agrimonia — foliis caulinis pinnatis, foliolis undique serratis, omnibus minutis interstinctis, fructibus hispidis*, of Linnæus.

1. A common plant in fields about hedges and shady places, flowering in June and July. It has been principally regarded in the character of a mild astringent and corroborant, and many authors recommend it as a deobstruent, especially in hepatic and other visceral obstructions. Chomel relates two instances of its successful use in cases where the liver was much enlarged and indurated. It has been used with advantage in hæmorrhagic affections, and to give tone in a lax and weak state of the solids. In cutaneous disorders, particularly in scabies, we have been told that it manifests great efficacy. For this purpose it was given, infused with liquorice, in the form of tea; but, according to Alston, it should be always exhibited in the state of powder. It is best used while fresh, and the tops, before the flowers are formed, possess the most virtue. Cullen observes that the agrimony has some astringent powers, but that they are feeble; and pays little attention to what has been said in its favour.

A'GRIMONY. See *Agrimonia*.

Agrimony, hemp. See *Bidens tripartita*.

AGRIOCA'RDAMUM. (*um*, *i*. n.; from *αγριος*, wild, and *καρδαμον*, the nasturtium.) Wild garden-cress. See *Lepidium iberis*.

AGRIOCA'STANUM. (*um*, *i*. n.; from *αγριος*, wild, and *καστανον*, the chesnut.) See *Bunium bulbo-castanum*.

AGRIOCI'NARA. (*a*, *æ*. f.; from *αγριος*, wild, and *κιναρα*, artichoke.) Wild artichoke. See *Cinara scolymus*.

AGRIOCOCCIME'LA. (*a*, *æ*. f.; from *αγριος*, wild, *κοκκος*, a berry, and *μηλεσα*, an apple tree.) See *Prunus spinosa*.

AGRIOME'LA. The crab-apple. See *Pyrus malus*.

A'GRION. See *Peucedanum silaus*.

AGRIOPASTINA'CA. (*a*, *æ*. f.; from *αγριος*, wild, and *pastinaca*, a carrot.) Wild carrot, or parsnip.

Agriophy'llon. (From *αγριος*, wild, and *φυλλον*, a leaf.) See *Peucedanum silaus*.

Agriori'ganum. (From *αγριος*, wild, and *ορειγανον*, marjoram.) Wild marjoram. See *Origanum vulgare*.

Agrioseli'num. (From *αγριος*, wild, and *σελινον*, parsley.) Wild parsley, See *Symrnium olusatrum*.

Agriostea'ri. (From *αγριος*, wild, and *στεαρ*, the paste of wheat flour.) Wild field-corn; a species of *Triticum*.

Agriothy'mia. (From *αγριος*, wild, and *θυμος*, disposition.) Furious insanity. *Sauvages*.

Agripa'lma. (From *αγριος*, wild, and palma, a palm-tree.) The herb motherwort, or wild palm. See *Leonurus cardiaca*.

Agripalma Gallis. See *Leonurus cardiaca*.

Agri'ppa. Persons born with the feet foremost were called Agrippæ by the Romans. Pliny says they were so named from their difficult birth, "eos appellavere Agrippas, ut *ægre partos*." Hist. Nat. lib. vii. c. 8. Aulus Gellius derives the word *ab ægretudine et pedibus*, Noct. Att. lib. xvi. c. 16. Other less probable derivations have also been given.

AGROSTE'MMA. (*a*, *æ*. f. Αλρου στεμμα, the garland of the field.) The name of a genus of plants. Class, *Decandria*; Order, *Pentagynia*. Cockle.

Agrostemma githago. This plant has been also called *Nigellastrum*, *Pseudo melanthium*, *Lychnis segetum major*, *Githago*, *Nigella officinarum*, and *Lychnoides segetum*. The corn-cockle. It has no particular virtues, and has fallen into disuse.

Agro'stis. (Αλρωστις, from αλρος, a field.) The name of a genus of grasses. Class, *Triandria*; Order *Digynia*. Bent-grass.

Agro'stogra'phia. (From *αγρωστις*, grass, and *γραφω*, to describe.) A treatise on grasses.

Agru'mina. Leeks; wild onions.

AGRY'PNIA. (*a*, *æ*. f.; from *α*, priv. and *ὑπνος*, sleep.) Watchfulness; sleeplessness.

Natural sleep is a torpitude of the voluntary organs of the animal frame, produced by a general exhaustion of sensorial power, in consequence of its expenditure in the various activities of the waking state. Hence, if such exhaustion do not take place, natural sleep cannot ensue, though morbid sleep undoubtedly may, as produced by other causes.

Now it often happens, that, from an energetic direction of the mind to a particular subject, the sensorial power continues to be supplied, not only in more than usual quantity, but for a more than usual length of time; and, in consequence of this additional supply, there is no exhaustion at the ordinary period, and therefore no sleep. Severe grief is often a stimulus of this kind; under the influence of which a morbid redundancy of sensorial power is continually

generated, and attended with morbid excitement of the general system, from day to day, and from night to night, till the frame is worn out by protracted watchfulness and sensorial erethism. And it is astonishing to witness in various instances how long the frame will support itself before it is worn out, or the irritation that prevents sleep sufficiently subsides for its return, particularly where the patient is labouring under the influence of overwhelming passions, or of depressing pain. A hemicrania has kept a person awake for three months; and a melancholy state of the mind for fourteen months. Excessive joy has often a similar affect, though seldom in an equal degree, or for so long a period of time. When the mind is intensely occupied with some particular pursuit, the energy of the will operates as a continued stimulus to the sensorium, so that the usual exhaustion of the nervous system does not take place at the accustomed period. This is remarkably the case in the study of the abstract sciences, or those of a more strictly intellectual nature, as the higher branches of the mathematics.

Where the determination of the mind to a particular object is extremely intense, by far the greater part of the sensorial power is expended on the mental operation; and, consequently, the frame at large, with the exception of those organs which have a necessary connexion with such operation, is so far drawn upon for a contribution of sensorial power, that it labours under a degree of torpitude, and is scarcely sensible to the world around it: this constitutes the state called mental abstraction.

Sleep may be retarded also by any kind of bodily uneasiness or disquiet; and hence, an aching coldness of the extremities, an uneasy sensation at the stomach, or an absence of the common pleasurable feeling with which we ordinarily prepare ourselves for sleep, will prevent it; "and on this account," as Darwin observes, "if those who are accustomed to wine at night take tea instead, they cannot sleep. And the same evil happens from a want of solid food for supper to those who are accustomed to use it; as, in these cases, there is an irksome or dissatisfied feeling in the stomach." Hence, also, too great an anxiety or desire for sleep, is another cause of its suspension, as this only adds to the corporeal disquiet; the mind ought to be as quiescent as the body, and the will, instead of commanding or interfering, should tranquilly resign itself to the general intention.

Where uneasiness of this kind has been allowed to continue for several nights in succession, the sleeplessness is apt to become chronic, and to be converted into a habit. There have been instances in which vigilance has continued for a month without intermission; for six months; and even for three years. Some individuals, owing to peculiarity of constitution, require very little sleep.

Mr. Gooch gives us a singular case of a man who never slept, and yet enjoyed a very good state of health till his death, which happened in the seventy-third year of his age: he had a kind of dozing for about a quarter of an hour once a day, but even that was not sound.

The cure of agrypnia demands a particular attention to its cause. Where this consists in mental affliction or anxiety, comparatively little can be done; narcotics are sometimes serviceable, but more frequently they fail in their hypnotic effect, or increase the restlessness. Where sleep is prevented by chronic painful affections of the body, narcotics are more available, but unfortunately they all lose their effect by continued use.

In the sleeplessness arising from over-exertion of mind, or a deviation from the ordinary habits of the individual, the obvious indication is rest in the one instance, and a return to habitual usages in the other.

A dry imperspirable state of the skin is a frequent cause of sleeplessness; and in such cases a warm or tepid bath, or even a pediluvium, before going to bed, will often be of great service. Nothing banishes sleep more effectually than coldness of the feet; and where this exists, it should always be obviated by the application of a convenient vessel filled with hot water.

The lulling sounds of music, or the cadence of an agreeable voice in reading, have been tried as concomitants, and not unfrequently with success. A pillow of hops has also been highly praised for its power of conciliating sleep, but its use has not been attended with much success. Soft, gentle, and general friction, especially where there is any chill or rigidity of the limbs, will frequently produce a very soothing effect; and this, too, without combining it with the external use of opiates, as proposed by De la Prada, and various other writers.

Musk was the favourite medicine of Thilenius, and hyoscyamus of Stoerck; but a free and exhilarating glass of wine, as proposed by Fordyce, will often answer much better than either of them. In many cases of disquiet, and particularly those connected with the state of the stomach, it might be well to try the hypnotic powers of the nutmeg, as warmly recommended by Dr. Cullen. The effect of this medicine was witnessed by Bontius in the East Indies, and his experience has since been confirmed by practitioners in Europe. In the case recited by Dr. Cullen, the person had swallowed more than two drachms by mistake, and the effect was a drowsiness, commencing an hour afterwards, which gradually increased to a complete stupor and insensibility. After this he was delirious, and continued to be alternately stupid and delirious for several hours; but in six hours from the attack, he was pretty well recovered from every symptom.

Where, however, the morbid habit is too rigidly established to give way to any lighter means, we must forcibly break through it by the use of opium, till the habit itself be overcome, when all narcotics should be gradually omitted.

The wakefulness so common to old people, is hardly a disease: they have but little activity, and hence require but little sleep. A third part of the vessels, perhaps, that took a share in the general energy of the middle of life, is obliterated, and the wear and tear of those that remain are much less. The pulse beats feebly; the muscles of respiration act less forcibly; the

stomach digests a smaller portion of food — for only a smaller portion is required; the intellect is less active; the corporeal senses less lively, and a minuter quantity of nervous energy is generated by the brain and its dependencies: and hence, though there is far more weakness than in earlier life, there is a less proportionate expenditure of vital power, and hence a smaller necessity for sleep.

AGRYPNOCO'MA. (*a, atis.* n.; from *αγρυπνος*, sleepless, and *κωμα*, a lethargy.) A lethargic kind of watchfulness, which is usually accompanied with muttering delirium. It is synonymous with *coma-vigil.* This state is frequent in bad cases of typhus.

AGUE. An ague or intermittent fever is a disease consisting of febrile paroxysms which completely subside, and return at stated periods. During the intermissions the patient is generally quite free from fever, but a degree of languor and inaptitude to exertion frequently remain. The febrile paroxysm of an ague consists of three periods or stages — the *cold*, the *hot*, and the *sweating*; and these follow in regular succession.

The *cold* stage commences with a sense of debility and sluggishness in motion, frequent yawning and stretching, and an aversion to food. The face and extremities become pale, the features shrink, the bulk of every external part is diminished, and the skin over the whole body appears constricted, as if cold had been applied to it. At length, the patient feels very cold, and universal rigours come on, with pains in the head, back, loins, and joints, nausea, and vomiting of bilious matter; the respiration is short, frequent, and anxious; the urine is almost colourless; sensibility is greatly impaired; the thoughts are somewhat confused; and the pulse is small, frequent, and often irregular. In a few instances, drowsiness and stupor have prevailed to a degree amounting to complete coma; but this is by no means usual.

These symptoms abating after a short time, the second stage commences with an increase of *heat* over the whole body, redness of the face, dryness of the skin, thirst, pain in the head, throbbing in the temples, anxiety and restlessness; the respiration is fuller and more free, but still frequent; the tongue is furred, and the pulse has become regular, hard, and full. If the attack has been very severe, delirium may occur at this period.

When these symptoms have continued for some time, a moisture breaks out on the forehead, and by degrees becomes a sweat, which at length extends over the whole body. As the perspiration continues, the heat of the body abates, the thirst ceases, and most of the functions are restored to their ordinary state. This constitutes the third stage.

It must, however, be observed, that in different cases these phenomena prevail in different degrees, and their mode of succession varies; that the series of them may be more or less complete; and that the several stages, as to the time they occupy, may be in different proportions to one another.

When an ague has taken place, and discovered its *type*, that is to say, the law it observes with reference to the period of its recurrence, it generally continues true, not merely to the same interval, but to the same length and severity of paroxysm, through the whole course of the disease; the character of the cold stage determining that of the hot, and both together that of the sweating stage. The time that elapses from the commencement of one paroxysm of ague to the commencement of another is called the *interval*; the time that elapses from the termination of one paroxysm to the commencement of another is called the *intermission.* Of the causes which determine the difference of type in intermittent fevers we are entirely ignorant; sometimes it seems to depend upon the season or the temperament of the atmosphere, so that all who have agues in the same place, or at the same time, have them of the same kind. Sometimes, on the contrary, it seems chiefly to depend on age, idiosyncrasy, or the particular condition of the constitution at the time; for different individuals, even at the same place, and under the same roof, exhibit different forms of disease.

It is from this difference in the period of recurrence of the febrile paroxysm, that agues are divided by nosologists into distinct species, which may all be comprised in the following:—

1. The *quotidian.*
2. The *tertian.*
3. The *quartan.*
4. The *irregular ague.*
5. The *complicated ague.*

1. Of the *quotidian.* The interval of this species of ague is about twenty-four hours, the paroxysm commencing in the morning. This is the *αμφημερινος, amphemerinus*, of the Greeks. This genuine quotidian is of less frequent occurrence than the other species, but it has a considerable resemblance to that variety of the complicated ague which has generally been denominated a double tertian, and with this it is often confounded. It is distinguishable, however, to an attentive eye, by the regularity of its paroxysm, which is true to itself on every return; while, in the double tertian, the alternate paroxysms only are true to each other.

2. Of the *tertian ague.* The interval of this species is forty-eight hours: and it is called the tertian, because it appears every third day. The fit generally commences about noon, and seldom lasts so long as twelve hours. This is the *τριταῖος, tritæus*, of the Greek writers. It occurs most frequently in the spring and summer months. The chill during the cold fit is intense, with severe shivering, and chattering of the teeth. It is, however, of shorter duration than that of the quartan, and sometimes passes off in less than half an hour; and is succeeded, first, by nausea or vomiting, and afterwards by a pungent penetrating heat, frequent respiration, urgent desire for cold drink, wakefulness, headache, and sometimes delirium. At length a moisture on the skin, gradually increasing to a copious sweat, breaks forth: the urine commonly deposits a lateritious sediment, and there is often some looseness of the bowels. The entire paroxysm sometimes ceases in six hours,

but more commonly extends to eight or ten: if it exceed twelve, as it does occasionally in the autumn, the disease usually passes into a spurious tertian.

3. Of the *quartan ague.* The interval in this is about seventy-two hours, and the usual duration of the fit, which generally begins about noon, is under nine hours. This is the τεταρταῖος, *tetartæus,* of the Greek writers. It is rarely found in the spring season, but is common in autumn; it commences usually about four or five in the afternoon. The cold fit is less vehement than in the *tertian,* but of longer duration, and will sometimes continue for two hours, but usually without sickness or diarrhœa. It yields a heat that is rather troublesome from its dryness than from its intensity, and which is rarely succeeded by a sensible perspiration. There is a heaviness or dulness of the head, rather than an acute pain. During the intermission, there are mostly pains in the limbs. It is chiefly in this species of ague that the spleen and liver become enlarged and indurated; the enlargement of the spleen, in cases of protracted intermittent, is so common that the organ thus diseased is vulgarly called the *ague cake:* it sometimes attains a great magnitude.

4. Of the *erratic* or *irregular ague.* In this species, the duration of the intermission is greater than in any of those above mentioned. The chief varieties are,

1. *Quintanus,* or five-day ague.
2. *Sextanus,* or six-day ague.
3. *Septanus,* or seven-day ague.
4. *Octanus,* or eight-day ague.
5. *Nonanus,* or nine-day ague.
6. *Decimanus,* or ten-day ague.
7. *Vagus.* Vague and irreducible to any definite law.

Many others might be added, but this is unnecessary. Irregular agues are frequently found to persevere with more obstinacy than those of an ordinary type.

5. Of the *complicated ague.* There are numerous examples of ague which at first seem altogether irregular, but which, when attentively watched, are found to consist, as it were, of several agues of the same type, each of which observes its own fixed period of recurrence, so that the paroxysms of one ague take place during the intermissions of another, thus communicating to the whole case the appearance of an irregularity which does not really exist. With a little attention, such cases may always be referred to the quotidian, tertian, or quartan type. The principal forms of complicated ague are, the double tertian, having a paroxysm every day, with the alternate paroxysms similar to one another. The double tertian, with two paroxysms every other day. The triple tertian, with two paroxysms on one day, and another on the next. The double quartan, with two paroxysms on the first day, none on the second and third, and two again on the fourth day. The double quartan, with a paroxysm on the first day, another on the second, but none on the third. The triple quartan, with three paroxysms every fourth day. The triple quartan, with a paroxysm every day, every fourth paroxysm being similar.

When agues arise in the spring of the year, they are called vernal; and when in the autumn, they are known by the name of autumnal. Intermittents often prove obstinate, and of long duration, especially in warm climates: they not unfrequently resist every mode of cure, so as to become very distressing to the patient; and by the extreme debility which they induce, often give rise to other chronic complaints.

It seems to be pretty generally acknowledged, that marsh miasmata, or the effluvia arising from stagnant water or marshy ground, when acted upon by heat, are by far the most frequent exciting cause of this fever: it is by no means improbable, however, that other causes may sometimes operate in its production. In marshes, the putrefaction of both vegetable and animal matter is always going forward; and hence it has been generally conjectured, that vegetable and animal putrefaction impart a peculiar quality to the effluvia arising from them. We are not yet acquainted with all the circumstances which are requisite to render marsh miasma productive of intermittents; but it may be presumed that a moist atmosphere has a considerable influence in promoting its action. See *Contagion.* A poor diet, great fatigue, long watching, grief, much anxiety, exposure to cold, lying in damp rooms or beds, wearing damp linen, the suppression of some long-accustomed evacuation, or the recession of eruptions, have been ranked among the exciting causes of ague; but it is more reasonable to suppose that these circumstances act only by inducing a state of body which predisposes to the disease. By some it has been imagined that an intermittent fever may be communicated by contagion; but this supposition is by no means consistent with general observation.

One peculiarity of ague is, its great susceptibility of renewal from very slight causes, as from the prevalence of an easterly wind, even without the repetition of the original exciting cause. It would appear that a disposition is left in the habit, which favours the recurrence of the complaint. In this circumstance, intermittents differ from most other fevers, as it is well known, that after a continued fever has once occurred, and been removed, the person affected is by no means so liable to a fresh attack of the disorder, as one in whom it had never taken place.

Ague is not generally a dangerous disease; in a few instances the cold or congestive stage has been so intense as to overwhelm the powers of life, but such an occurrence is extremely rare.

Patients are seldom destroyed in intermittents by visceral inflammation, as frequently happens in continued fever; but when agues continue for any length of time, they are apt to induce other complaints, such as dyspepsia, organic diseases of the abdominal viscera, dropsical swellings, and general debility, which sometimes bring the case to a fatal termination. In warm climates, particularly, intermittents are very apt to terminate in this manner, if not quickly removed; and, in some cases, they degenerate into continued fevers. When the

paroxysms are of short duration, and leave the intervals quite free, we may expect a speedy recovery; but when they are long, violent, and attended with much anxiety and delirium, the event is more doubtful. Relapses are very common at the distance of five or six months, or even a year; autumnal intermittents are more difficult to remove than vernal ones, and quartans more so than those of any other regular type.

The appearances observed on dissection in fatal cases of intermittent fever are just such as might be expected from the continual derangement of vascular action, and congestion of blood in deep-seated parts: enlargement of the spleen and liver; various lesions arising from chronic inflammation throughout the intestinal canal; pulmonary congestion; increased vascularity of the brain, spinal cord, and their membranes; serous effusion in the head, chest, or abdomen, particularly the latter: these are all evidently the effects of the disease; but morbid anatomy cannot be considered as having hitherto thrown any light on its proximate cause, or the pathological state on which it essentially depends.

The treatment of an intermittent fever resolves itself into,

1. Those means which may be employed during a paroxysm, to arrest its progress, or to mitigate its violence.

2. Those which may prevent a return of the paroxysm, and effect a permanent cure: this forms of course the more important part of the plan; but it is sometimes necessary to palliate urgent symptoms.

An ague is sometimes cured by administering a remedy just as a paroxysm is about to begin. When a fit is commencing, or shortly expected, we may try to obviate it by some of those means which excite movements of an opposite description in the system. An emetic will sometimes answer the purpose, by determining the blood powerfully to the surface of the body; or a full dose of opium, assisted by the pediluvium, &c.: ether also, and various stimulant remedies, will often succeed; but these may perhaps aggravate, should they not prevent the fit: strong impressions on the mind, &c. have likewise been occasionally employed with effect. When any of the above means have been found successful in preventing one paroxysm, they should again be resorted to when the patient is threatened with another, and in this way the disease is often entirely subdued. Should the paroxysm have already come on, and the cold stage be very severe, cordial diaphoretics, in repeated moderate doses, may assist in bringing warmth to the surface: when, on the contrary, great heat prevails, the antiphlogistic plan is to be pursued; and it may be sometimes advisable, when an organ of importance is much pressed upon, to take some blood locally, or even from the general system, if the patient is plethoric and robust: where the perspirations are too profuse, acidulated drinks may be exhibited, keeping the surface moderately cool at the same time. During the intermission we are to use those medicines which have the power of preventing the return of the paroxysm, and which are for that reason called *febrifuge*. A variety of vegetable and mineral tonics have acquired reputation in this way, but the only two which are at all to be depended upon are *bark* and *arsenic*. Whatever be the remedy employed, it is of the utmost importance to prepare the patient for its exhibition; for it seldom happens that the intermittent can be cured until the stomach and bowels are well cleared from undigested or other offending matters; and, what is of equal importance, until every other disease is removed which may be increased by tonics; obstructions of the biliary system and inflammatory conditions of the viscera should be carefully attended to, or the subsequent treatment may be injurious instead of beneficial: the practitioner should be especially on his guard against administering bark when there is the smallest degree of local inflammation. Of all febrifuges, cinchona is decidedly the best: its almost unfailing efficacy, when properly exhibited and duly retained on the stomach, has long been known; but much inconvenience formerly resulted from the bulky form in which practitioners were obliged to prescribe it. It seldom required less than an ounce of the powder, and often more, to insure the patient against a return of the paroxysm; and the presence of so much woody matter frequently irritated the digestive organs when weak, and excited vomiting and diarrhœa: on the other hand, the powder was the only form in which the remedy could be introduced in sufficient quantity to produce the desired effect, during the intermission, with any degree of certainty. The discovery of quinine, and its salts, has obviated this difficulty. The sulphate, which is considered on the whole the best preparation, is given in doses of from two to four grains or more every three hours, during the intermission; the quantity given, as well as the frequency of the dose, being varied according to circumstances by the judgment of the practitioner. The sulphate of quinine, administered in the cases to which it is properly applicable, and with the necessary precursory measures, will hardly ever be found to fail.

The next remedy is arsenic, which is in very general use, but is much inferior to the bark both in efficacy and safety. Its effects should be cautiously watched, as it proves a dangerous remedy in an over-dose, by producing inflammation of the bowels. The truth is, that in obstinate cases, arsenic will frequently fail to overcome the ague, unless given in doses so large as to induce danger of its poisonous effects. The tasteless ague drop has, nevertheless, cured many thousands. The active base of this preparation is the arseniate of potash; and analogous to it is the liquor arsenicalis of the London Pharmacopœia. Its ordinary dose is five drops, gradually increased to twenty, given three times a day between the paroxysms.

All the tonic bitters, and some metallic salts which have a tonic operation on the system, have at different times been recommended in the cure of ague; it may, however, be safely said, that, with the exception of bark and arsenic, they will fail in a dozen instances for one in which they succeed: the *salicine*, or alkaloid of

the willow bark, may probably be included in this affirmation, since, though much extolled at first, it seems, on further investigation, to possess but slight febrifuge virtues.

When ague occurs in debilitated constitutions, or has induced debility by its violence or long continuance, a generous diet and a pretty free use of wine is often necessary during the intermission.

Ague cake. The popular name for a tumour, consisting of an enlarged spleen, which projects under the false ribs on the left side. It occurs in patients who have suffered from protracted ague.

Ague complicated. See *Ague.*

Ague drop. The medicine sold under the name of Fowler's tasteless ague drop is a solution of arseniate of potash in water. The regular substitute for the quack medicine is the liquor arsenicalis.

Ague-free. A name given by some to sassafras, on account of its supposed febrifuge virtue.

Ague quartan. See *Ague.*

Ague quotidian. See *Ague.*

Ague tertian. See *Ague.*

AGUI'OS. (From α, priv. and γυιον, a member.) Wanting limbs. *Hippocrates.* Weak, feeble. *Galen.*

AGUL. See *Hedysarum Alhagi.*

AGU'STINE. (*Agustina, æ.* f.; from α, neg. and γευσις, taste.) A name given by Tromsdorff to a substance found by him in the Saxon beryl, and which he supposed to be a peculiar earth, capable of forming insipid salts with the acids. This substance, however, was ascertained by Vauquelin to be merely phosphate of lime.

AGY'RIAS. (From αγυρις, a collection.) An opacity of the crystalline lens.

AGY'RTES. (Αγυρτης; from αγυρις, a crowd.) A name given by the Greeks originally to one who pretended to inflict or cure diseases, expiate crimes, &c. by incantations and mysterious ceremonies. The word afterwards came to be applied to any itinerant quack or mountebank.

AHME'LLA. See *Achmella.*

AHOVAI. See *Thevetia.*

AHUSAL. Orpiment.

AIGLE. A city of Normandy, near which is the chalybeate spring of Saint Xantin, which was much frequented in the 16th and 17th centuries, but is now no longer resorted to.

AIMO'RRA. A plant mentioned by Dioscorides, supposed to be the *Anthemis tinctoria.*

AIR, ATMOSPHERIC. See *Atmosphere.*

Air, alkaline. See *Ammonia.*

Air, azotic. See *Nitrogen.*

Air-bag. See *Folliculus,* and *Vesica natatoria.*

Air, fixed. See *Carbonic acid.*

Air, fluoric. See *Fluoric acid.*

Air, heavy inflammable. See *Carburetted hydrogen.*

Air, hepatic. See *Hydrogen sulphuretted.*

Air, inflammable. See *Hydrogen.*

Air, marine. See *Muriatic acid.*

Air, nitrous. See *Nitrogen.*

Air, nitrous dephlogisticated. See *Nitrogen.*

Air, phlogisticated. See *Nitrogen.*

Air, phosphoric. See *Hydrogen phosphuretted.*

Air, sulphurous. See *Sulphurous acid.*

Air, vital. See *Oxygen.*

AIRA. Αιρα 1. Lolium, or darnel.

2. A genus of grasses. Class, *Triandria;* Order, *Digynia.* Hair-grass.

AIX LA CHAPE'LLE. Said to have been called *Aquis-granum* by the Romans, after its founder, Severus Granius, a commander among the Belgæ in the reign of Hadrian. It is now the chief town of the district of Aix la Chapelle, one of the divisions of the Prussian province of the Lower Rhine, and is called by the Germans, Aachen or Acken. It has a sulphureous water, the most striking feature of which is the unusual quantity of sulphur it contains. The whole, however, is so far united to a gaseous basis, as to be entirely volatilised by heat; so that none is left in the residuum after evaporation. The colour of the water is pellucid, its smell sulphureous, and its taste saline, bitterish, and rather alkaline. This water is found to contain, in 1000 grammes, 28·54 cubic inches of sulphuretted hydrogen gas, 18·05 cubic inches of carbonic acid gas, 0·1304 grammes of carbonate of lime, 0·440 grammes of carbonate of magnesia, 0·5444 grammes of subcarbonate of soda, 2·3697 grammes of muriate of soda, 0·2637 grammes of sulphate of soda, and 0·0705 of silica. The temperature of the water varies considerably in the different springs, and according to the distance from the source. In the well of the hottest bath, it is, according to Lucas, 136°, Monet, 146°; at the fountain where it is drunk, it is 112°. This thermal water is much esteemed on the Continent, for a variety of complaints. It is found essentially serviceable in the numerous disorders of the stomach and biliary organs, that follow a life of high indulgence in the luxuries of the table; and in nephritic cases. As this water is of a stimulating nature, it should be avoided in cases where an inflammatory disposition prevails. The water of Aix la Chapelle is more extensively employed as a hot bath than as an internal remedy. It possesses temperature of any degree that can be borne, a strong impregnation of sulphur, and a quantity of alkali, which gives it a soft soapy feel, and renders it more detergent than common water. From these circumstances, the baths are found of particular service in stiffness and rigidity of the joints, consequent upon gout and rheumatism, and in paralytic cases. The sulphureous impregnation renders it highly active in most cutaneous affections, and here the internal use of the water should accompany that of the bath. The water of Aix la Chapelle is also much employed in the distressing debility which follows a long course of mercury and excessive salivation. It is one of the few natural waters that are hot enough to be employed as a vapour bath, without the addition of artificial heat. With regard to the dose of this water, or the degree of heat for its external application, it is in all cases best to begin with small quantities and low degrees of heat, and gradually increase them, according to the effect produced on the constitution. The usual time of the year for drinking these waters is from the beginning of May to the middle of

June, or from the middle of August to the latter end of September. The factitious water of Aix la Chapelle, *Aqua Aquisgranensis*, is made by adding hydrosulphuretted water ʒiv., carbonate of soda gr. xx., and muriate of soda gr. ix., to ʒxvij. ss. of pure water.

Aix. A city of Provence. It has thermal springs, slightly impregnated with saline matter.

Aix. A town of Savoy. It has warm sulphureous springs.

Aïzo'on. (From αει, always, and ζωον, alive.) 1. The sempervivum or houseleek.

2. The name of a genus of plants of the family of the *Ficoideæ*.

Ajararath. Lead.

Ajava. The Indian name of a seed used as a remedy for the colic.

Ajuga, or Abiga. 1. The ground pine. See *Teucrium chamæpitys*.

2. The name of a genus of plants in the Linnæan system. Class, *Didynamia*; Order, *Gymnospermia*.

Ajuga pyramidalis. Upright bugloss, or middle consound; called also *Consolida media*, and *Bugula*. This plant, *Ajuga — caule tetragono foliis radicalibus maximis* of Linnæus, is slightly astringent and bitter, and has been recommended in *phthisis*, *aphthæ*, and *cynanche*.

Ajuga reptans is said to possess similar properties with the preceding.

Akibot. Sulphur.

Ako'logy. See *Acology*.

Al. The Arabic article which nearly corresponds with the definite article in English. It is prefixed to some words to denote pre-eminence in the thing signified, as *Alkali*, *Alkermes*.

Ala (*a*, *æ*. f.; a wing.) 1. In *Anatomy*, applied to many parts, as *ala*, the arm-pit, *alæ nasi*, the lateral cartilages of the nose, *alæ uteri*, the broad ligaments of the uterus, &c.

2. In *Botany*. *a*. The angles which the leaves or their stalks form with the stem or branches of the plant from which they arise, are called *alæ* or *axillæ*.

b. The two lateral petals of papilionaceous flowers placed between the *vexillum* and the *carina*, are termed *alæ*.

c. The term *ala* is also applied to an appendage of some seeds, consisting of a membranous prolongation from the side of the seed. According to the numbers of these appendages, seeds have been distinguished into,

Monopterygia: one-winged, as in *Bignonia*.

Dipterygia: two-winged, as in *Betula*.

Tripterygia: three-winged.

Tetrapterygia: four-winged.

Polypterygia: or *Molendinacea*: many-winged, windmill-winged.

d. The borders formed on the stem of a plant by decurrent leaves, are called *alæ*.

Ala auris. The upper and outer part of the external ear.

Ala interna minor. See *Nymphæ*.

Ala nasi. The cartilage of the nose which forms the outer part of the nostrils.

Ala vespertilionis. That part of the ligament of the womb which lies between the Fallopian tube and the ovarium; so called from its resemblance to the wing of a bat.

Alabaster. *Alabastrites*. Αλαβαστριτης. Two mineral substances are so called: the *calcareous* alabaster, or calc-sinter, which is a carbonate of lime, and the *gypseous* alabaster, or *gypsum*, which is a sulphate of lime; the former is the alabaster of the ancients, used by them, as well as the moderns, for the purposes of sculpture; it was once supposed to possess discutient virtues, and entered into the composition of an ointment called *unguentum alabastrinum*.

Alaba'stri. The leaves forming the calyx of some flowers have been so called, before the expansion of the bud, from their resemblance to an *alabastrum*, or alabaster box for containing ointments. Pliny applies the term to the calycine segments of the rose.

Alacab. Sal ammoniac.

Alæformis. (From *ala*, a wing, and *forma*, shape.) Alæform; wing-shaped. See *Pterygoid*.

Alafor, *alafort*, *alafi*. An alchemical term for alkali.

Alagao. A shrub which grows in the Philippine Islands, of which the natives make cataplasms for diseases of the head and belly, for tumours, and for ulcers.

Alagas os. A name of the sacrum and coccyx.

Alahabar, alarari. Lead.

Ala'lia. (From α, priv. and λαλεω, to speak.) Defect of articulation.

Alana terra. See *Tripolis*.

Alandahal. See *Cucumis colocynthis*.

Alanfuta. An Arabian name of a vein between the chin and lower lip, which was formerly opened to prevent fœtid breath.

Ala'ntine. See *Inuline*.

Alaqueca. The Indian name of a stone which is supposed by the natives to have the power of arresting hæmorrhage when externally applied. It is a sulphuret of iron.

Ala'res venæ. The superficial veins at the bend of the arm.

Alaria ossa. The wing-like processes of the sphenoid bone.

ALA'RIS. (From *ala*, a wing.) Formed like, or belonging to a wing.

Alaris externus. A name of the external pterygoid muscle; so called because it takes it rise from the wing-like process of the sphenoid bone.

Alartar. Oxide of copper.

Alasalet. Sal ammoniac.

Alastror. Lead.

Alatan. Litharge.

Alate'rnus. See *Rhamnus alaternus*.

ALA'TUS. (From *ala*, a wing.) Winged. Applied,

1. In *Botany*, to stems and leaf-stalks, when the edges or angles are longitudinally expanded into leaf-like borders; as in the stems of *Xanthium acanthium*, *Lathyrus latifolius*, &c., and the leaf-stalk of the orange tribe, &c.

2. In *Pathology*, to one whose scapulæ project backwards like the wings of a bird.

Alau'da. (*a*, *æ*. f.; a lark.) The name of a genus of birds of the order *Passeres* of Linnæus.

Alauda arvensis. The field-lark. The flesh of this and several other species forms a light and nutritious food, and is by many esteemed a delicacy.

Alaurat. Nitre.

Albadara. The sesamoid bone of the great toe, to which many extraordinary virtues were attributed by the superstition of the Rabbins.

Albagenzi, *albagiari*. Arabic names of the os sacrum.

Albamentum. The white of an egg.

Albanum. The saline part of urine.

Alban Saint. A village in the department of the Loire, where there is an acidulous chalybeate spring.

Albaras. The Arabic name for the alphos of the Greeks.

Albaras alba. See *Leuce*.

Albaras nigra. See *Lepra Græcorum*.

Albaras. An alchemical name of arsenic.

A'lba pituita. See *Leucophlegmatia*.

Alba'tio, *dealbatio*, *albificatio*. The process of whitening, to which the alchemists attached great importance in the transmuation of metals.

Albeston. Quicklime.

Albetad. Galbanum.

Albica'ntia corpora. *Corpora albicantia Willisii*. Two small rounded bodies or projections from the base of the brain, of a white colour. See *Cerebrum*.

Albinism. The anomaly of organisation which characterises the albino. See *Albino*.

Albi'no. A Spanish term, originally applied to white children born of negro parents, or rather to the children of negroes who remain white, for the offspring of blacks in general have little discoloration of the skin when first born, or for several weeks after.

The whiteness of the surface in the albino is not similar to that of the uncoloured parts of the skin in a fair European, but is pallid and deathlike, communicating a very peculiar and unpleasant appearance to the individual. The hair of the albino is white in every part of the body: the iris is of a pale rose colour, owing to the absence of its natural pigment; and for the same reason the eye connot bear a strong light, and vision is very imperfect in the day-time. The albinos of Africa are said to sleep through the day, and go abroad at night, when they see with great accuracy. They are generally of a feeble constitution, and possess little energy of body or mind. The peculiarity of organisation in the albino consists in a defective formation of the rete mucosum, and especially in the absence of its natural colouring matter; the rete mucosum is not absent, since, if it were, the red cutis would shine through the cuticle, which is very delicate in the albino, and the colour of the surface would be more ruddy instead of paler than in ordinary individuals.

It was at one time a subject of inquiry whether albinos formed a distinct variety of the human race, or were merely instances of anomalous organisation; and the former opinion derived some support from its being found that male and female albinos, who not unfrequently intermarried, produced an offspring with imperfections similar to their own. The question, however, has long been set at rest, since albino children have been found in most parts of the world, the offspring of parents of all tribes and colours.

Albinism is not of frequent occurrence in Europe, but at least eleven examples have been recorded. Two by De Saussure, four by Buzzi, one by Helvetius, one by Maupertuis, and three by Dr. Traill. It is singular that all these were males; and still more so, that the female offspring of the same families were, without an exception, destitute of the albino degeneracy. The three described by Dr. Traill were part of a family of six, the daughters of which were entirely free from the defect. How far this malorganisation is capable of hereditary transmission among Europeans is not known; nor, indeed, does there yet appear to have been an opportunity of forming an intermarriage between a male and a female of this kind, as not a single albino female has yet been observed in this quarter of the globe.

The same delicacy of constitution that distinguishes the negro albino is also found in the European, as exemplified in Dr. Traill's account of one of the three already alluded to. "The oldest of these albinos," says he, "is nine years of age, of a delicate constitution, slender, but well formed both in person and in features: his appetite has always been bad; he frequently complains of a dull pain in his forehead; his skin is exceedingly fair; his hair flaxen and soft; his cheeks have very little of the rose in them. The iris and pupil of his eyes are of a bright red colour, reflecting in some situations an opaline tinge. He cannot endure the strong light of the sun. When desired to look up, his eyelids are in constant motion, and he is incapable of fixing his eye steadily on any object, as is observed in those labouring under some kinds of slight ophthalmia, but in him is unaccompanied by tears. His mother says, that his tears never flow in the coldest weather, but when vexed they are shed abundantly. He goes to school, but generally retires to the darkest part of it to read his lesson. His disposition is very gentle; he is not deficient in intellect. His whole appearance is so remarkable, that some years ago a person attempted to steal him, and would have succeeded in dragging him away, had not his cries brought him assistance."

Albino skin. Albinism, as it has occasionally occurred in Europe, has been treated of by some as a disease under the name of albino skin. See *Albino*.

Albi'num. See *Gnaphalium dioicum*.

Albor. Urine.

ALBORA. A disease described by Paracelsus as a complication of the morphew, serpigo, and leprosy.

Alborca. Mercury.

Albotat. White lead.

Albotim, *Albotai*. Turpentine.

ALBUGI'NEUS. (From *albus*, white.) A term applied by anatomists to certain parts on account of their whiteness; as *tunica albuginea oculi*, *tunica albuginea testis*. Chaussier uses this term to designate one of the four fibres

which he considers as elementary. (*Fibre albuginée.*) See *Fibre elementary.* Gauthier calls one of the four layers into which he divides the rete mucosum, *membrana albuginea profunda*, and another *membrana albuginea superficialis.* See *Rete mucosum.*

ALBU'GO. (*o, inis.* f.; from *albus*, white.) 1. The white of the eye.

2. A white opacity of the cornea. See *Leucoma.*

Albugo ovi. The white of an egg.

Albuhar. White lead.

Album balsamum. The balsam of copaiba. See *Copaiba.*

Album canis. See *Album Græcum.*

Album græcum. The dung of dogs, which, from exposure to the air, becomes white like chalk. It consists chiefly of phosphate of lime, and was formerly applied as a discutient, to the inside of the throat, in quinsies, being first mixed with honey; medicines of this kind have long since justly sunk into disuse.

Album nigrum. The dung of mice. It was formerly used against epilepsy, and as a purgative.

Album olus. See *Valeriana locusta.*

Album Rhasis. An ointment composed of cerusse and hog's lard, named after the Arabian physician Rhazes.

ALBU'MEN. (*en, inis.*) 1. A substance so named from the albumen, or white of an egg, which consists almost entirely of it. It enters largely into the composition of the animal fluids and solids. It abounds in the serum of the blood, the vitreous and crystalline humours of the eye, the fluid of dropsy, and the substance called coagulable lymph. It is not, however, peculiar to the animal kingdom. Rouelle and Fourcroy have found it in the green feculæ of plants in general, especially in those of the cruciform order, in very young plants, and in the fresh roots of trees. According to Seguin, it exists in particularly large quantity in vegetables which ferment without yeast, and afford a vinous liquor; and this chemist was led to infer from his experiments that albumen is the true fermenting principle, and that its action in this way is more powerful in proportion to its solubility.

The white of eggs consists of albumen in a liquid form, and sufficiently pure for all ordinary purposes, being combined only with a little water and a trace of soda and saline matter. In this state it is a glairy fluid, without smell or taste, and easily soluble in *cold* water, but not in hot, since it begins to coagulate at 134°. When exposed, in a thin stratum, to a current of air, it concretes into a solid transparent substance, which is soluble in water; and if kept dry, may be preserved for any length of time without putrefaction. The principal characteristic of albumen is its coagulability by heat. It coagulates at 160° F., and at 212° it shrinks and dries into a horny mass. When diluted with water it does not coagulate so easily; and when once coagulated, it becomes entirely insoluble in water; but is again rendered soluble by the addition of a pure alkali. The acids and metallic oxides coagulate albumen. On the addition of concentrated sulphuric acid, it becomes black, and exhales a nauseous smell; but if a gentle heat be applied, the precipitate is redissolved, and a solution of a beautiful red colour is formed: this fact was discovered by Dr. Hope. Strong muriatic acid gives a violet tinge to the coagulum, and at length becomes saturated with ammonia. Nitric acid, at 70° F. disengages a large quantity of azotic gas; and if the heat be increased, hydrocyanic acid is formed; after which carbonic acid and carburetted hydrogen are evolved, and the residue consists of water containing a little oxalic acid, and covered with an oil of a lightish yellow colour. Mr. Hatchett found that albumen, when macerated for a month in diluted nitric acid, was converted into a substance possessed of the leading properties of gelatine. If dry potash or soda be triturated with albumen, either liquid or solid, ammoniacal gas is evolved, and the residuum if calcined yields a prussiate of the alkali. Albumen is precipitated by the nitro-muriates of tin and gold, acetate of lead, nitrate of silver, and tannin; but its most delicate test appears to be the bichloride of mercury, or corrosive sublimate. According to Dr. Bostock, a single drop of a saturated solution of this substance occasions a precipitate in water containing $\frac{1}{2000}$ of albumen.

On exposure to the atmosphere in a moist state, albumen passes speedily into putrefaction.

Solid albumen may be obtained by agitating the white of egg with ten or twelve times its weight of alkohol, which abstracts the water that held the albumen in solution, and precipitates in the form of white insoluble flocculi. Albumen thus obtained is like fibrine, solid, insipid, inodorous, denser than water, and without action on vegetable colours. It dissolves in potash and soda more easily than fibrine; but less easily in acetic acid and ammonia. Several hypotheses have been advanced to account for the coagulation of albumen. Dr. Thomson and Mr. Brande are of opinion that it is retained in a liquid form by the presence of a portion of free alkali, and that its coagulation is caused by the abstraction of the alkali; to which Dr. Bostock objects, with apparent justice, that the quantity of alkali is too inconsiderable for the end assigned. Mr. Brande has, indeed, supported his hypothesis by an experiment in which liquid albumen was subjected to the action of the voltaic pile; the result was the evolution of coagulated albumen at the positive pole, and of pure soda at the negative. M. Lassaigne, however, attributes this phenomenon to the decomposition of muriate of soda, the acid of which coagulates the albumen. On the whole, the cause of the coagulation of albumen seems to reside in its weak affinity for water, which is easily overcome by the stronger re-agents, and also by the expansive power of heat.

According to Gay-Lussac and Thenard, albumen consists of,

Carbon	... ...	52·883
Hydrogen	... ...	7·540
Oxygen	... ...	23·872
Nitrogen	... ...	15.705
		100·000

Dr. Prout's analysis gives,	
Carbon	50
Hydrogen	7·78
Oxygen	26·67
Nitrogen	15.55
	100·00

From its coagulability, albumen is much used for the purpose of clarifying liquids.

Orfila recommends the white of eggs as the best antidote to corrosive sublimate; and as albumen forms precipitates with the solutions of almost all the metallic salts, it might probably be useful against other metallic poisons.

2. A vegetable principle which bears a close analogy to animal albumen; and, like it, is coagulable by heat. It is soluble in cold water, insoluble in alkohol, and very sparingly soluble in acids. It is dissolved by alkaline solutions, and precipitated from them by acids. Chloride of mercury and ferrocyanate of potash act upon it in the same manner as on animal albumen.

It contains nitrogen, and, when moist, easily passes into putrefaction. Vegetable albumen was detected by Vogel in the bitter almond, and in the sweet almond by Boullay; Einhof found it in wheat, barley, rye, peas, and beans; and it appears to be a general ingredient in emulsive seeds.

3. In *Botany*. A substance which forms the chief bulk of some seeds, as corn, coffee, &c., and which is of various consistence, being feculent, farinaceous, horny, or ligneous. This part seems to be destitute of vascularity; it never rises out of the ground, nor assumes the office of leaves, being destined solely to nourish the germinating embryo, till its roots perform their office. It is apparently wanting in several tribes of plants, as those with compound and cruciform flowers, and, according to Gaertner, in the *Cucurbitaceæ*. Some few leguminous plants have it, and a great number of others, which, like them, have also cotyledons. We are not, however, to suppose, that so important an organ is in any instance altogether absent; where it seems to be so, the farinaceous matter destined to nourish the embryo is doubtless lodged in the cotyledons, the sweet taste of which, as they begin to germinate, often evinces its presence. The albumen of different seeds varies much in appearance and qualities; in the date palm, it is nearly as hard as stone; in the nutmeg it is remarkable for its eroded variegated appearance, and aromatic properties.

Albumen ovi. The white of an egg.

ALBU'RNUM. (*um, i. n.*; from *albus*, white.) The soft white substance, which, in trees, is found between the *liber*, or inner bark, and the wood. In process of time, it acquires solidity, becoming itself the wood. While soft, it performs a very important part in the functions of growth, which ceases when it becomes hard. A new circle of alburnum is annually formed over the old, so that a transverse section of the trunk presents a pretty correct register of the tree's age, each zone marking one year. From its colour and comparative softness, it has been called, by some writers, the *Adeps arborum*. The alburnum is found in largest quantity in trees that are vigorous. In an oak six inches in diameter, this substance is nearly equal in bulk to the wood.

ALCAHEST, *Alkahest, Alcaest*. Some say this word is derived from the Arabic, others that it was invented by Paracelsus, who compounded it of the German words *all*, all, and *geist*, spirit; and others again, that it is a corruption of *alkali est*. Paracelsus signified, by this term, a liquor capable of removing every kind of obstruction. Van Helmont used the same term to designate an universal solvent, capable of reducing every substance in nature to a state of purity. The alchemists differed greatly as to the mode of preparing this wonderful fluid.

Alcahest glauberi. A thick liquid obtained by detonating nitre on hot coals, which converts it into subcarbonate of potash.

Alcahest respurii. This was formed by detonating nitre with metallic zinc, and treating the residuum with water. The water contained the alcahest.

Alcahest zwelferi is acetic acid obtained by distillation from verdigris.

A'lcali. See *Alkali*.

ALCALISA'TION. See *Alkalisation*.

Alcaloid. See *Alkaloid*.

ALCA'NNA. This name has been given to three plants. 1. To the *Lawsonia inermis*. 2. To a species of *Filaria*. 3. To the *Anchusa tinctoria*.

Alcaol. The solvent for the preparation of the philosopher's stone.

Alce, Alces. Αλκη. The elk. See *Cervus alces*.

A'LCEA. Αλκεα. The name of a genus of plants in the Linnæan system. Class, *Monadelphia*; Order, *Polyandria*. Hollyhock.

Alcea ægyptiaca villosa. See *Hibiscus abelmoschus*.

Alcea indica. See *Hibiscus abelmoschus*.

Alcea rosea. Common hollyhock. The flowers of this beautiful plant are said to possess astringent and mucilaginous virtues. They are seldom used medicinally.

Alcebric vivum. Sulphur.

Alcharith. Mercury.

Alchemia. See *Alchemy*.

ALCHEMI'LLA. (*a, æ.* f.) 1. The name of a genus of plants in the Linnæan system. Class, *Tetrandria*; Order, *Monogynia*. Ladies' mantle.

2. The pharmacopœial name of the ladies' mantle. See *Alchemilla vulgaris*.

Alchemilla vulgaris. Ladies' mantle. This plant, *Alchemilla — foliis lobatis*, of Linnæus, was formerly esteemed as an astringent in hæmorrhages, fluor albus, &c. It is fallen into disuse.

A'LCHEMIST. (*Alchemistus, i.* m.; from *alchemia*.) One who practises the mystical art of alchemy.

A'LCHEMY. *Alchemia; Alchimia; Alkima*. A pseudo-science which had for its objects the transmutation of the baser metals into gold and silver, — the discovery of a panacea or universal remedy, — an alcahest, or universal menstruum, — an universal ferment, and many other

absurdities. The alchemists ascribed to their art a very high antiquity; and various forged treatises bearing the names of Hermes, Solomon, and other ancient sages, are still extant. The earliest authentic record of the existence of such a pursuit, is to be found in an edict of the Roman emperor Diocletian, commanding all books which treated of the art of making gold and silver to be burnt. In the fifteenth century, alchemy was very generally cultivated throughout Europe; and however chimerical in itself, we are indebted to its followers for many important discoveries in chemistry, for the introduction of metallic substances into the materia medica, and for a great revolution in the science of medicine, which set the minds of men free from the thraldom in which they had so long been held by the authority of Galen.

ALCHITRAN. 1. Oil of juniper. 2. The residuum of a distillation.

ALCIBIA'DIUM, or ALCI'BIUM. The herb *echium* was so called, because Alcibius is said to have discovered its efficacy against the bite of a viper.

ALCIMAD. Antimony.

ALCOB. Sal ammoniac.

ALCOFOL. Antimony.

A'LCOHOL. See *Alkohol.*

ALCOHOLO'METER. See *Alkoholometer.*

ALCOHOLAT. A term formerly applied to distilled spirits.

ALCOL. Vinegar.

ALCOLA. 1. An Arabic name of aphthæ, or the thrush. 2. A term applied by Paracelsus to the sediment of urine.

ALCOLITA. Urine.

ALCONE. Brass.

ALCOR. Oxide of copper.

ALCUBRITH. Sulphur.

ALCORNOCO. The bark of an unknown South American tree, which has been introduced into Europe of late years, and extolled by some as a specific in phthisis: it is slightly astringent and bitter, but appears to have little medicinal activity of any kind.

A'LCYON. A bird of the swallow tribe, a native of Cochin China and the Philippine Islands. The nests of these birds, which are cemented with a gelatinous matter, possess nutritious properties, and are much esteemed in China as an article of diet: they have been recommended in medicine as analeptic and aphrodisiac.

ALCYO'NIUM. Ἀλκυόνιον, Ἀλκυονεῖον. Bastard sponge. A marine production, which is thus characterized by Lamouroux: — "A polymorphous polype-bearing animal, formed of a fleshy animated mass, sometimes inert, sometimes sensible, and filled with retractile polypyi which expand on its surface. In the dry state this mass appears composed of fibres reticulated and interlaced at the centre, radiating to the circumference, and covered with a firm cellular, coriaceous, or cretaceous covering." Various species of alcyonium are found on the sea shore. The ashes of this substance were formerly employed as a dentifrice; they were also believed to promote the growth of hair, and were used against baldness.

ALDABARAM. See *Albadara.*

ALDER. See *Betula alnus.*

Alder, berry-bearing. See *Rhamnus.*

Alder wine. See *Betula alnus.*

ALE. *Cerevisia;* called also *Liquor cereris,* and *Vinum hordeaceum.* A fermented liquor made from malt and hops, and chiefly distinguished from beer, made from the same ingredients, by the quantity of hops used therein, which is greater than beer, and therefore renders the liquor more bitter, and fitter for keeping. Ale, when well fermented, is a wholesome beverage, but seems to disagree with those subject to asthma, or any disorder of the respiration, or irregularity in the digestive organs. The old dispensatories enumerate several medicated ales, such as *Cerevisia oxydorica,* for the eyes; *Cerevisia antiarthritica,* against the gout; *Cephalica, Epileptica,* &c. See *Cerevisia.*

ALEC. Vitriol.

ALECHARITH. Mercury.

ALECTO'RIUS. (From αλεκτωρ, a cock.) Alectorius lapis, or Alectoria, was a peculiar stone supposed to be sometimes found in the stomach or liver of the cock or capon when aged. Many extraordinary virtues were attributed to it; but these, as well as the existence of the stone, are imaginary, no stone being found in the stomach of the bird, except the pebbles it may have swallowed.

ALEI'MMA. (From αλειφω, to anoint.) An ointment.

ALEI'PHA. (Same etymon.) An ointment or medicated oil.

ALELÆ'ON. (From ἅλς, salt, and ελαιον, oil.) A compound of salt and oil, applied by the ancients to tumours.

ALE'MBIC, or ALAMBIC. (Alembicus. This word is generally derived from the Arabic article *al,* and the Greek αμβιξ, a pot.) An alembic is a chemical utensil, called also a Moorshead, made of glass, metal, or earthenware, adapted to receive volatile products from retorts, and consisting of a body, to which is fitted a conical head with a beak descending laterally, to be inserted into a receiver.

ALEMBIC. Lead.

ALEMBROTH. (A Chaldee word signifying the key of art.) The alchemists gave the name of *sal alembroth* to a preparation made by dissolving equal parts of corrosive sublimate and sal ammoniac in distilled water, and adding carbonate of soda as long as any precipitate is formed. The precipitate is the sal alembroth, which is to be washed, and kept in a dark place. It is a muriate of mercury and ammonia, and is the same with the *Hydrargyrum præcipitatum album* of the present London Pharmacopœia. It was called by various names, as *sal philosophorum et artis, sal sapientiæ, clavis artis chemicæ, sal mercurii, sal fusionis, sal fixionis,* &c.

ALEMBROTH DESICCATUM. *Sal tartari,* or carbonate of potash.

ALEMZADAT, ALEMZADAR. Sal ammoniac.

ALES. A compound salt.

A'LETRIS. A genus of plants of the class *Hexandria,* and order *Monogynia.*

ALETRIS FARINOSA. Stargrass. A plant common in the United States of America: it is a strong bitter, and is used as a tonic and stomachic.

ALEU'RON. (Αλευρον; from αλεω, to grind.) Flour.

ALEXANDERS. See *Smyrnium*.

Alexanders, round-leaved. See *Smyrnium*.

ALEXA'NDRIA. (*a, æ.* f.; so called from the place of its growth.) *Alexandrina.* The bay-tree, or laurel of Alexandria. See *Prunus lauro-cerasus.*

ALEXICA'CUM. (*um, i.* n.; from αλεξω, to drive away, and κακον, evil.) An antidote, or amulet, to resist poison.

ALEXIPHA'RMIC. (*Alexipharmicus;* from αλεξω, to expel, and φαρμακον, a poison.) A term applied by the ancients to medicines which were supposed to fortify the system against poisons, or to obviate their effects when taken.

ALEXIPHARMACUM. (Same etymon.) An alexipharmic medicine.

ALEXIPYRE'TICUS, ALEXIPY'RETUS. (From αλεξω, to drive away, and πυρετος, a fever.) Possessed of febrifuge power.

ALEXIPYRETICUM, ALEXIPYRETUM. (Same etymon.) A febrifuge medicine.

ALEXIR. See *Elixir.*

ALEXITE'RIUM. (*um, i.*; Αλεξητηριον, from αλεξω, to aid.) The Greeks used this term for a remedy of any kind, but it was applied chiefly to alexipharmics.

ALFACTA. Distillation.

ALFATIDE. *Alfol.* Sal ammoniac.

ALFUSA. Tutty.

A'LGA. (*a, æ.* f.) A sea-weed.

ALGÆ. 1. The name of one of the seven *families* or natural tribes into which the whole vegetable kingdom is divided by Linnæus in his *Philosophia Botanica.* He defines them plants, the roots, leaves, and stems of which are all in one. Under this description are comprehended all the sea-weeds, and some other aquatic plants.

2. In the sexual system of plants, *Algæ* constitutes the third *order* of the class *Cryptogamia.* From their admitting of little distinction of root, leaf or stem, and the parts of their flowers being equally incapable of description, the genera are distinguished by the situation of what is supposed to be the flowers or seeds, or by the resemblance which the whole plant bears to some other substance.

The parts of fructification of the *Algæ* are in *calycules,* of which there are three varieties:—

1. *Pelta,* the target; a flat, oblong fruit, seen in the *Lichen caninus.*

2. *Scutella,* the saucer; a round, hollow, or flat fruit, as in *Lichen stellaris.*

3. *Tuberculum,* the tubercle; an hemispherical fruit, observable in *Lichen geographicus.*

In the fuci, the parts of fructification are sometimes in hollow bladders; and in some of the salvæ, they are dispersed through the whole substance of the plant.

ALGALI. Nitre.

ALGALIE. A word of Arabic origin, signifying a catheter, or sound.

ALGARAB. The name given by Avicenna to *anchylops.*

ALGAROTH. (So called from its inventor Victor Algarotti, a physician of Verona.) When the chloride of antimony (butter of antimony) is thrown into water, the metallic oxide is precipitated in the form of a white powder, which is the powder of Algaroth. It was also called *Algarot, Algeroth, Mercurius vitæ, Pulvis angelicus, Mercurius mortis.* It is violently emetic in doses of two or three grains, and is preferred by many for making the emetic tartar.

ALGE'DO. (*o, inis.* f.; from αλγος, pain.) A violent pain about the anus, perinæum, testes, urethra, and bladder, arising from the sudden stoppage of a virulent gonorrhœa.

ALGE'MA. (Αλγημα; from αλγεω, to be in pain.) Pain of any kind.

ALGEMET. Charcoal.

ALGERIE, ALGERIE. Lime.

ALGEROTH. See *Algaroth.*

ALGIDA FEBRIS, *Febris horri'fica, Febris que'rquera.* A malignant remittent, characterised by icy coldness of the surface. See *Febris remittens.*

A'LGOR. (*or, oris,* m.; from *algeo,* to shiver with cold.) The feeling of coldness which is general in the first stage of fevers.

ALGUADA. An Arabic name of the *alphos.*

ALHAGI. See *Hedysarum.*

ALHANDAL. The Arabian name for *colocynth.*

ALHASBA. An Arabic name of the *measles.*

ALHENNA. See *Lawsonia inermis.*

ALI'BILIS. Fit for the purposes of nutrition. The nutritive portion of the chyme, as distinguished from the excrementitious, has been called *alibile.*

A'LICA. (*a, æ.* f.; from *alo,* to nourish.) A kind of corn, probably the same with what we call spelt. The same name seems to have been applied to a drink or pottage made from this corn.

A'LICES. The spots which appear on the skin at the commencement of the eruption of the smallpox, and which afterwards become pustules.

ALIENA'TIO MENTIS. Alienation of mind. Pinel restricts this term to *insanity,* exclusive of those derangements of the intellect which are secondary or symptomatic of some other disease; as delirium, &c.

ALIENA'TUS. Alienate. A leaf is so termed when the first leaves give way to others totally different from them, as in many of the *Mimosæ* of New Holland.

A'LIFORM. (*Aliformis;* from *ala,* a wing, and *forma,* resemblance.) Wing-like. A name given by anatomists and naturalists to some objects, on account of their shape; as aliform muscles, &c. See *Ala.*

ALIMENT. (*Alimentum, i.* n.; from *alo,* to nourish.) Any substance, which, being subjected to the action of the digestive organs, is, generally speaking, capable of affording nourishment to the body. Organised matter, or that which has possessed life, seems to be alone capable of assimilation with the animal system: hence every aliment must necessarily be derived from the animal or vegetable kingdom. There are, however, certain inorganic substances, such as water, common salt, lime, &c., which, though incapable by themselves of nourishing, appear, when administered in conjunction with alimentary substances, to contribute essentially to nutrition. With respect to water, indeed, it is a question whether it may not undergo decom-

position in the body, and be made directly subservient to the nutrition of the solid parts. The consideration, therefore, of the materia alimentaria, embraces not only all the varieties of animal and vegetable food, but also those things which, in concert with them, promote their digestion, or correct some of their deleterious properties.

In respect to their nature, aliments differ from each other, according to the proximate principles which predominate in their composition. They may be distinguished into nine classes : —

1st, *Farinaceous :* wheat, barley, oats, rice, rye, maize, potato, sago, salep, peas, haricots, lentils, &c.

2d, *Mucilaginous :* carrot, beet-root, turnip, asparagus, cabbage, lettuce, artichoke, cardoons, pompions, melons, &c.

3d, *Sweet :* the different sorts of sugar, figs, dates, dried grapes, apricots, &c.

4th, *Acidulous :* oranges, gooseberries, cherries, peaches, strawberries, raspberries, mulberries, grapes, prunes, pears, apples, sorrel, &c.

5th, *Fatty* and *oily :* cocoa, olives, sweet almonds, nuts, walnuts, the animal fats, the oils, butter, &c.

6th, *Caseous :* the different sorts of milk, cheese, &c.

7th, *Gelatinous :* tendinous parts, as calf's foot; some fishes; and the flesh of young animals generally.

8th, *Albuminous :* the brain, eggs, &c.

9th, *Fibrinous :* the flesh and the blood of different animals.

To these may be added,

10th, *Condiments :* as salt, pepper, mustard, horseradish, vinegar, &c.

We understand by *drink*, a liquid which, being introduced into the digestive organs, quenches thirst, and repairs the habitual loss of our fluids; the drinks ought to be considered as real aliments.

Drinks consist of,

1st, Water of different sorts — spring water, river water, water of wells, &c.

2d, The juices and infusions of vegetables, as orange juice, tea, coffee, &c. ; and some animal fluids, as whey.

3d, Fermented liquors : the different sorts of wine, beer, cider, perry, &c.

4th, The alkoholic liquors : brandy, rum, hollands, &c.

Few aliments are used exactly in the form in which nature presents them : they are generally prepared in such a manner as to be more agreeable to the palate, or more readily acted upon by the organs of digestion. This is the legitimate object of the art of cookery ; an art to which no small importance has been attached by the civilised nations of the ancient and modern world, but which, in its ministration to epicurism, has too often converted a necessary function into a degrading vice, and the means of health into sources of disease.

ALIMENTA'RIUS. Alimentary; nourishing; belonging to food.

ALIMENTA'TION. *Alimentatio.* The reception of nourishment.

ALIMENTARY CANAL. *Canalis alimentarius.* Alimentary duct : a name given to the whole conduit through which the food passes from the mouth to the anus. The presence of this duct may be said to form the true characteristic of an animal. Plants receive their nourishment by the numerous fibres of their roots, but have no common receptacle for the food, nor canal for carrying off the excrements. But in every animal, however low in the scale of being, we observe an internal apparatus adapted to these purposes, though in some its construction is so simple that the same aperture which admits the food gives egress to the excrementitious matter.

ALIMENTARY DUCT. 1. The alimentary canal. See *Alimentary canal.*

2. The thoracic duct is sometimes so called. See *Thoracic duct.*

ALINDE'SIS. (Αλινδησις; from αλινδεω, to roll.) A species of exercise in use among the ancient Greeks : it consisted in rolling in the dust after having anointed the body with oil.

ALINTHISAR. An Arabic term, which signifies elongation of the uvula.

ALIPÆ'NOS. (From α, priv. and λιπαινειν, to become fat.) The term applied by Galen to persons who were lean : and hence to external remedies which were of a dry nature, as powders, &c.

ALIPA'SMA. A corruption of *Lipasma*, which see.

ALIPATA. A tree which grows in the Philippine Islands, and is reputed to be highly poisonous; the juice, which is milky, and the smoke of the wood, are said to cause blindness.

ALI'PTA. (Αλειπτης; from αλειφω, to anoint.) The person who anointed the ancient athletæ.

ALI'PTICA. That department of ancient medicine which treated of inunction.

Alisanders. The same as *Alexanders.*

ALI'SMA. The name of a genus of plants in the Linnæan system. Class, *Hexandria ;* Order, *Polygynia.* Water plantain.

ALISMA PLANTAGO. The systematic name of the water plantain, the root of which has been used in Russia for the cure of hydrophobia.

ALITU'RA. The process of assimilation or nutrition.

ALIZARI. A name for madder.

ALIZARINE. A peculiar colouring matter obtained by Robiquet from the root of madder.

ALKAFIAL, ALKAFIEL. Antimony.

ALKAHEST. See *Alcahest.*

ALKALE. *Oleum gallinæ.* Pullet's fat.

ALKALE'SCENT. *Alkalescens.* Slightly alkaline; manifesting in a small degree the properties of an alkali.

A'LKALI, or ALCALI. (From the Arabic, *al*, denoting the essence or totality of any thing, and *Kali*, the plant from which soda was originally procured.)

An alkali is a substance which changes vegetable blue colours to green, and which combines with acids so as to neutralise their properties more or less perfectly, and to form salts. Three alkalis, *Potash*, *Soda*, and *Ammonia*, have been known to chemists from a very early period ; and the two former have been styled *fixed*, and the

latter *volatile*. Of late years the list of alkalis has been augmented by a numerous and interesting class of vegetable substances which have been called by some *alkaloids*, because they possess some of the more striking characteristics of the alkalis, but vary considerably in their general properties. Lime, baryta, and strontia, were referred by Fourcroy to the class of alkalis, because they agree with them in causticity, solubility in water, and in their effects on vegetable colours: magnesia also agrees with the alkalis in the last particular: but these earths differ so completely from the alkalis in other properties, as their infusibility by heat, their insolubility in alkohol — and the insolubility of their carbonates in water — that they have been kept separate under the title of *alkaline earths*. The three principal alkalis, potash, soda, and ammonia, agree in the following properties: — They have an acrid and peculiar taste, and are highly caustic; they change vegetable blue colours to green, and yellow to brown; they render oils miscible with water, forming *soaps*; they are highly soluble in water, and have a great affinity for it; they are also largely soluble in alkohol; they combine with acids, forming salts; their carbonates are soluble in water, and retain the alkaline property of acting on vegetable colours.

When Lavoisier proclaimed oxygen as the acidifying principle, G. Morveau conjectured hydrogen to be the alkalifying principle, from its entering into the composition of ammonia: this view of the subject was soon upset by the discoveries of Sir Humphry Davy, who demonstrated that potash and soda are metallic oxides. Dr. Murray extended his peculiar view of the relations of oxygen and hydrogen to acidity, to the subject of alkalinity, but his speculations on these two points are not characterised by his usual soundness of judgment, and have made no impression. There is no reason to suppose that any particular substance or substances have the power of imparting alkalinity. On this subject Dr. Ure has the following judicious observations: — "It is the mode in which the constituents are combined, rather than the nature of the constituents themselves, which gives rise to the acid or alkaline condition. Some metals, combined with oxygen in one proportion, produce a body possessed of alkaline properties: in another proportion, of acid properties. And, on the other hand, ammonia and prussic acid prove that both the alkaline and acid conditions can exist independent of oxygen. These observations, by generalising our notions of acids and alkalis, have rendered the definitions of them very imperfect. The difficulty of tracing a limit between the acids and alkalis is still increased, when we find a body sometimes performing the functions of an acid, sometimes of an alkali. Nor can we diminish this difficulty by having recourse to the beautiful law discovered by Sir H. Davy, that oxygen and acids go to the positive pole, and hydrogen, alkalis, and inflammable bases to the negative pole. We cannot, in fact, give the name of acid to all the bodies which go to the first of these poles, and that of alkali to those that go to the second; and if we wished to define the alkalis by bringing into view their electric energy, it would be necessary to compare them with the electric energy which is opposite to them. Thus we are always reduced to define alkalinity by the property which it has of saturating acidity, because alkalinity and acidity are two correlative and inseparable terms. Gay Lussac conceives the alkalinity which the metallic oxides enjoy, to be the result of two opposite properties, the alkalifying property of the metal, and the acidifying of oxygen, modified both by the combination and by the proportions." The able chemist just quoted arranges the alkalis into three classes: —

1st, Those which consist of a metallic basis combined with oxygen. These are three in number — potash, soda, and lithia.

2d, That which contains no oxygen, viz. ammonia.

3d, Those containing oxygen, hydrogen, and carbon. To this class belong all the vegetable alkalis, or alkaloids, which form the active principle of particular plants, as morphia, quinia, strychnia, &c.

The composition and chemical relations of the individual alkalis will be found under their respective heads.

Alkali, caustic volatile. See *Ammonia.*

ALKALI CAUSTICUM. Caustic alkali. The alkalis in a pure state possess a high degree of causticity, which they lose when combined with the carbonic or other acids; the alkalis when pure are therefore called *caustic*. Caustic potash is used in surgery for the purpose of making issues.

ALKALI FIXUM. See *Potash* and *Soda.*

Alkali, fossil. See *Soda.*

Alkali, mineral. See *Soda.*

Alkali, native vegetable. See *Alkaloid.*

Alkali, phlogisticated. Prussian alkali. When a fixed alkali is ignited with bullock's blood, or other animal substances, and lixiviated, it is found to be in a great measure saturated with prussic acid: from the theories formerly adopted respecting this combination, it was called phlogisticated alkali.

Alkali, Prussian. See *Alkali, phlogisticated.*

Alkali, vegetable. See *Potash.*

Alkali vegetabile salitum. The muriate of potash.

Alkali, volatile. See *Ammonia.*

ALKALID. *Alkes. Æs ustum:* Oxide of copper.

ALKALI'NITY. (*Alkalinitas;* from *alkali.*) The property communicated to bodies by the presence of an alkali.

ALKALI'NUS. *Alkalinus.* Applied to a substance partaking of the nature of, or having in its composition, an alkali. Under the name of alkalina, Dr. Cullen includes those medicines which are usually called antacids.

Alkaline earths. See *Alkali.*

Alkaline salts. See *Alkali.*

ALKALISA'TION. *Alkalisatio.* The communication of alkaline properties to any substance.

ALKALI'METER. The name of an instrument for determining the quantity of alkali in the impure potash and soda of commerce.

A'LKALOID. (From *alkali*, and εἶδος, resemblance.) A class of vegetable substances possessed of alkaline properties, and in which the medicinal activity of many plants is found to reside. The first substance of this kind was discovered by Sertuerner, who published an account of morphia in the year 1803. A second memoir by the same chemist, in 1816, drew general attention to this interesting class of bodies, which have since been investigated by Robiquet, Pelletier, Caventou, and others. The term alkaloid is objectionable, as being of hybrid etymology and vague signification; and the substances in question are now generally classed with the alkalis. The following account of their common properties, and of the general method by which they may be separated from their vegetable combinations, is taken from Dr. Turner's Elements of Chemistry.

All the vegetable alkalis, according to the researches of Pelletier and Dumas, consist of carbon, hydrogen, oxygen, and nitrogen. They are decomposed with facility by nitric acid and by heat, and ammonia is always among the products of the destructive distillation. They never exist in an insulated state in the plants which contain them; but are apparently in every case combined with an acid, with which they form a salt more or less soluble in water. These alkalis are for the most part very insoluble in water, and of sparing solubility in cold alkohol; but they are all readily dissolved by boiling alkohol, being deposited from the solution, generally in the form of crystals, on cooling. Most of the salts are far more soluble in water than the alkalis themselves, and several of them are remarkable for their solubility.

The late M. Serullas observed that iodic acid is disposed to form, with most of the vegetable alkalis, supersalts, which are very insoluble in alkohol; and he proposed this property as a test of vegetable alkalis. It suffices to dissolve a vegetable alkali, especially quinia or cinchonia, or any of their salts, in alkohol, and to add drop by drop a solution of iodic acid, so that it may be in excess: a supersalt is generated, which, though in very minute quantity, is immediately precipitated. The iodic acid, being itself insoluble in alkohol, should be diluted with water until it ceases to give a precipitate with strong alkohol. The aqueous solution of chloride of iodine, which contains iodic acid, may be substituted for the pure acid. It should be remembered in employing this test, that all the iodates are of sparing solubility; — that a little potash dissolved in alkohol, would give a precipitate on the addition of iodic acid. Care should be taken, also, in drying the iodate of a vegetable alkali, since when strongly heated these salts detonate with violence.

As the vegetable alkalis agree in several of their leading chemical properties, the mode of preparing one of them admits of being applied with slight variation to all. The general outline of the method is as follows. — The substance containing the alkaline principle is digested, or more commonly macerated, in a large quantity of water, which dissolves the salt, the base of which is the vegetable alkali. On adding some more powerful salifiable base, such as potash or ammonia, or boiling the solution for a few minutes with lime or pure magnesia, the vegetable alkali is separated from its acid, and, being in that state insoluble in water, may be collected on a filter and washed. As thus procured, however, it is impure, retaining some of the other principles, such as the oleaginous, resinous, or colouring matters with which it is associated in the plant. To purify it from these substances, it should be mixed with a little animal charcoal, and dissolved in boiling alkohol. The alkoholic solution, which is to be filtered while hot, yields the pure alkali, either on cooling or by evaporation; if not quite colourless, it should again be subjected to the action of alkohol and animal charcoal. In order to avoid the necessity of employing a large quantity of alkohol, the following modification of the process may be adopted. The vegetable alkali, after being precipitated and collected on a filter, is made to unite with some acid, such as the acetic, sulphuric, or muriatic, and the solution boiled with animal charcoal until the colouring matter is removed. The alkali is then precipitated by ammonia or some other salifiable base.

The following substances have been brought forward of late years as native vegetable alkalis, but the title of several of them, to be so considered is more than doubtful:

Aconitine.	Corydalin.	Hyoscyama.
Æsculine.	Crotonine.	Morphia.
Althea.	Curaria.	Picrotoxia.
Atropia.	Cynopia.	Populine.
Brucia.	Daturine.	Salicine.
Buxine.	Delphia.	Sanguinaria.
Capsicine.	Digitalia.	Solania.
Cinchonia.	Emetia.	Strychnia.
Coneine.	Esenbeckine.	Veratria.
Corticine.	Eupatorine.	

A further notice of these bodies will be found under their respective titles.

A'LKANET. See *Anchusa tinctoria*.

Alka'nna. See *Anchusa*.

Alkanna vera. See *Lawsonia inermis*.

Alkant. Mercury.

Alkantum. Oxide of copper, or, according to some writers, arsenic.

Alkasa. A crucible.

ALKEKE'NGI. The Arabian name of the winter-cherry. See *Physalis alkekengi*.

ALKERMES. An Arabic term, denoting a celebrated remedy, of the form and consistence of a confection, whereof the kermes is the basis. See *Kermes*.

Alkima. See *Alchemy*.

Alkitram. Pitch.

Alkitran. The Arabic name of a resin obtained from the cedar. See *Cedria*.

Alkoel. Sulphuret of lead. The same name has been given to *lapis lazuli*, and to antimony.

Alky plumbi. Sugar of lead.

A'lkohol. (From the Arabic article *al*, and the word *kohol*, which signifies antimony. The Eastern women pencil the margin of their eyelids with a powder consisting of antimony very finely levigated; whence *alkohol* came to be ap-

plied to any very subtile powder, and to any thing brought to the highest degree of tenuity, especially *spirit of wine*.) This word has been variously written Alcohol, Alcahol, Alkahol, Alchool, Alcool, Alkol, Alcol.

Alkohol is the characteristic product of that species of fermentation called the *vinous*, and constitutes the intoxicating principle of all vinous and spirituous liquors, as wine, ale, brandy, &c.; but, as it was first procured from wine, it has retained the name of spirit of wine. Alcohol, in combination with a variable proportion of water and essential oil, constitutes the different kinds of ardent spirits so much used in almost every country of the globe. In the West Indies it is distilled from the juice of the sugar cane, and is well known under the name of *rum*. In France it is procured from weak wine, in the form of *brandy*. In Holland, the spirit called *Hollands* is made from a mixture of wheat or rye and malted barley. In England, *gin* is prepared from malted barley, rye, and potatoes; and in Scotland and Ireland, *whisky* is obtained from the same materials and from oats.

Dr. A. T. Thomson has given the following table of the principal alkoholic liquors:—

Names.	Materials from which they are distilled.	Countries producing them.
Agua ardiente -	Pulque, the fermented juice of the Agave -	Mexico.
Arrack - -	Coarse palm sugar, named jaggery, fermented with the bark of the Mimosa *leucophlea*: also from rice and the fermented juice of the palm	India.
Var. Mahwah Arrack.	Flowers of the Madhuca tree, Bassia *butryacea*	India.
Tuba - -	Palm wine - - - - - - -	Philippine Islands.
Araka - -	Koumis, fermented mare's milk - -	Tartary.
Araki - - -	Dates - - - - - - - -	Egypt.
Arika - -	Fermented cow's milk, a variety of Koumis -	Tartary, Iceland.
Brandy - -	Wine, figs, peaches, Persiman apple, mulberries, and sometimes other fruits - -	Europe, Asia, N. and S. America: wherever wine is made.
Var. Lau - -	Rice - - - - - - - -	Siam.
Rakia - -	Husks of grapes mixed with aromatics -	Dalmatia.
Rossolio - -	A compound of brandy, Ros-solis, and other plants - - - - - - -	Dantzic.
Troster - -	Husk of grapes, fermented with barley and rye	On the Rhine.
Sekis-kayavodka	Lees of wine and fruit - - - - -	Scio.
Geneva Hollands -	Malted barley and rye, rectified on Juniper berries - - - - - -	Holland.
Var. Gin - -	Malted barley, rye, potatoes, rectified with turpentine - - - - - -	England.
Goldwasser - -	Wheat, barley, and rye, rectified with aniseeds, cinnamon, and other spices - - -	Dantzic.
Kirchwasser - -	Machaleb cherry - - - - -	Switzerland.
Maraschino - -	Macarska cherry - - - - -	Zara, capital of Dalmatia.
Rum - - -	Cane sugar and molasses - - - -	West Indies and South America.
	Maple sugar - - - -	North America.
Var. Slatkaia trava	A sweet grass - - - - - -	Kamschatka.
Show-choo - -	The lees of Mandarin, a wine made from boiled rice - - - - - -	China.
Vino meresel - -	Palque, the fermented juice of the Agave *Americana* - - - - - - -	Mexico.
Whisky - -	Malted and raw barley, rye, oats, and potatoes	Scotland and Ireland.
——— - -	Sloes - - - - - - - -	South of France.
Y-wer-a - - -	The root of the Teeroot, baked, pounded, and fermented - - - -	Sandwich Islands.

Whatever be the substance used for the distillation of alkohol, it must be previously subjected to the vinous fermentation, which occasions that change in the combination of its elements by which alkohol is formed. It was, indeed, at one time maintained by Fabroni, that alkohol does not really exist in the fermented liquors from which it is obtained, but is formed during their distillation. The question has, however, been set at rest by the experiments of Gay Lussac and Brande. M. Gay Lussac agitated wine with litharge in fine powder till the liquid became perfectly limpid, and then saturated it with carbonate of potash; the alkohol immediately separated and floated on the top. Again, he distilled wine *in vacuo*, at a temperature of 59° F., and alkohol came over. Mr. Brande added a solution of acetate of lead to wine, to precipitate the tartaric acid and colouring matter, and then treated it with carbonate of potash to remove the water and free acid; the alkohol floated on the top, and was found to correspond in quantity with that obtained by distillation from the same quantity of wine.

Common alkohol, or spirit of wine, the *rectified spirit* of the Pharmacopœias, is procured by distilling whisky or any other ardent spirit; but in this state it contains a large proportion of water, to free it from which an additional process is required.

The strong alkohol of the London Pharmacopœia is directed to be made thus:—Take of rectified spirit, a gallon; subcarbonate of potash, three pounds. Add a pound of the subcarbonate of potash, previously heated to 300°, to the spirit, and macerate for twenty-four hours, frequently stirring them; then pour off the spirit, and add to it the rest of the subcarbonate of potash heated to the same degree; lastly, with the aid of a warm bath, let the alkohol distil over: keep it in a well-stopped bottle. The specific gravity of alkohol is to the specific gravity of distilled water, as 815 to 1000.

In the Dublin process, muriate of lime is used instead of the subcarbonate of potash. Common rectified spirit usually contains about 15 per cent. of water, to free it from which is the object of the above process. The alkaline carbonate, having a much more powerful affinity for water than the alkohol, abstracts it from the latter, and prevents it from rising in distillation; by this means the alkohol is obtained in a state sufficiently concentrated for all pharmaceutical purposes, though it still contains about 7 per cent. of water. The muriate of lime, recommended by the Dublin College, is preferable to the carbonate of potash, since its affinity for water is stronger.

Different processes have been recommended for obtaining alkohol in the highest possible degree of concentration, or *absolute* alkohol, as it is technically termed. Other substances which have a strong affinity for water have been substituted for the carbonate of potash or muriate of lime: Gay Lussac uses pure lime, or baryta; and dry alumina is also well adapted to the purpose.

Alkohol of moderate strength may be divested of a great deal of its water by inclosing it in an ox's bladder, coated with isinglass, and suspended over a sand bath; the water exudes through the pores of the bladder, and the strong alkohol remains: it is doubtful, however, if this process is much to be depended upon for obtaining a very concentrated spirit.

Alkohol, when as pure as it can be obtained, is a clear and colourless fluid, of a penetrating odour and a hot pungent taste. It is highly volatile, and produces a considerable degree of cold by its evaporation. It boils at about 176° F. The specific gravity of its vapour, according to Gay Lussac, is 1·613. It has been subjected to a temperature of — 91° without freezing: Mr. Hutton asserts that he froze it at — 110°; but his process having been kept secret, the fact must be regarded as doubtful. M. Byssy, however, has succeeded in freezing alkohol of sp. gr. 0·85° by the evaporation of liquid sulphurous acid *in vacuo*. Alkohol is highly inflammable, and burns at 300° F. with a pale bluish flame; its combustion is unattended with any smoke, and the sole products are water and carbonic acid. When passed through a red-hot porcelain tube it is resolved into carburetted hydrogen, carbonic oxide, water, and a small proportion of carbon. Alkohol has a very strong affinity for water, combining with it in every proportion; it even separates the water from several salts when they are dissolved in it, and precipitates the solid matter. The combination of alkohol and water is attended with condensation and an increase of temperature, the thermometer rising nearly twenty degrees when equal parts of alkohol and water are mixed. Renard, however, found that when the alkohol employed is of a particular specific gravity, its combination with water is attended with an increase, instead of a diminution, of volume. On mixing alkohol, of specific gravity 0·9707, with an equal quantity of pure water, he found the specific gravity of the resulting fluid to be 0·9835. The reason of this exception to the general rule has not hitherto been explained.

Most of the acids act upon alkohol with the aid of heat, and give rise to that peculiar class of fluids denominated *ethers*. (See *Æther*.)

Alkohol dissolves all the alkalis, but none of the earths or metallic oxides. It dissolves about 60 parts of sulphur when both the sulphur and the alkohol are in a state of vapour. Of the salts, those which are insoluble, or sparingly soluble, in water, are insoluble in alkohol. All the deliquescent salts, except carbonate of potash, are soluble in alkohol; and most of the efflorescent salts are insoluble. Many vegetable principles, as volatile oils, camphor, resins, balsams, sugar, and extractive matter, are soluble in alkohol; and the gum resins, though insoluble in alkohol or water separately, are soluble in diluted alkohol; hence, this menstruum, both in its concentrated and diluted state, is an agent of great importance in pharmacy. Absolute alkohol, diluted with a certain proportion of water, constitutes the *proof spirit* used for making the medicated spirits and many of the tinctures ordered in the Pharmacopœias. According to the London and Dublin Colleges, the specific gravity of proof spirit should be to that of distilled water as 930 to 1000; the Edinburgh College fixes it at 935: the former may be obtained by mixing four parts of rectified spirit with three of water; the latter, by mixing equal parts of each. The solubility of certain substances in alkohol has been shown by Mr. Graham to depend on the formation of definite compounds which are soluble in that fluid; he found that the chlorides of calcium, manganese, and lime, and the nitrates of lime and magnesia, unite in definite proportions with alkohol, forming crystallisable compounds, which are deliquescent and soluble both in water and alkohol. From the analogy of these compounds to hydrates, Mr. Graham proposes to call them *alcoates*.

Alkohol has been analysed by several eminent chemists. M. Saussure, jun., transmitted the vapour of absolute alkohol through a red-hot porcelain tube, and, on examining the products, obtained of carbon, 51·98; oxygen, 34·32; hydrogen, 13·70. MM. Dumas and Boullay have more lately given an analysis of alkohol, which was effected by passing it over ignited oxide of copper; according to them, it consists

of carbon, 52·37; oxygen, 34·61; hydrogen, 13·31.

From these analyses, which are considered the most accurate, the real composition of alkohol is inferred to be, 2 equivalents of carbon, 1 of oxygen, and 3 of hydrogen; which would give in 100 parts —

Carbon	52·17
Oxygen	34·79
Hydrogen	13·04
	100·00

From the same proportions, alkohol may be regarded as consisting of one equivalent or 14 parts of olefiant gas, and one equivalent or 9 parts of water; the equivalent of alkohol, therefore, is 23.

Alkohol absolute. Alkohol as free from water as it can be obtained is called absolute alkohol. (See *Alkohol.*)

ALKOHOLO'METER. Any instrument for measuring the quantity of absolute alkohol contained in a given quantity of an alkoholic fluid. Sikes's or Dicas's hydrometer is generally used in England for this purpose.

ALKOSOR. Camphire.

ALKYMIA. Powder of basilicon.

ALLABOR. Lead.

ALLAMA'NDA. A genus of plants, of the Class *Pentandria*, and Order *Monogynia*.

ALLAMANDA CATHARTICA. A shrub of Guiana, the infusion of whose leaves is said by Linnæus to be useful in *colica pictonum*.

ALLA'NTOIC ACID. This acid was discovered by Vauquelin and Buniva, but received a wrong name, owing to a mistake as to its source; they found it in what they imagined to be the *liquor amnii* of the cow, and, therefore, called it *amniotic acid:* Dzondi and Lassaigne have shown that it exists in the fluid of the *allantois*, not in that of the *amnios;* it is, therefore, now called *allantoic acid.* By gently evaporating the fluid which contains it, the acid is deposited in the form of white acicular crystals. It is very sparingly soluble in water, but forms soluble salts with the alkalis.

ALLA'NTOID MEMBRANE. (*Allantoides;* from αλλας, a sausage, and ειδος, likeness, so called from its shape.) *Membrana allantoides. Allantois. Membrana farciminalis.* A membrane of the fœtus, which exists in most of the *mammalia.* It is situated between the chorion and amnion; it communicates with the bladder by the canal termed the *urachus*, and contains the urine of the fœtus. It has been much disputed among anatomists, whether this membrane exists in the human subject, or in the ape, dog, cat, hedgehog, and some other animals. The membrane called *vesicula umbilicalis* in the human species is not to be found during the whole period of gestation like the allantois, but disappears in the course of the third month; it is doubtful whether it communicates with the bladder, and, consequently, whether it contains urine; it has therefore been generally considered as connected with the nutrition of the fœtus: some, however, contend that it is a real allantois, and does communicate with the bladder. The vesicula umbilicalis is sometimes called *tunica erythroides*, especially in those of the inferior animals in which it exists.

ALLA'NTOIS. See *Allantoid.*

ALLANTOTO'XICUM. (From αλλας, a sausage, and τοξικον, a poison.) A poison developed in putrid sausages made of blood and liver. It often proves speedily fatal. *Kraus.*

ALLA'SIA. A tree that grows on the coast of Mosambique. A cataplasm made of its leaves and applied to the loins is said to facilitate parturition.

ALLELUI'A. (From two Hebrew words, signifying Praise the Lord.) The wood-sorrel, *oxalis acetosella*, was so called because the Alleluia was sung in churches at the time when its leaves first appear above the ground. *Blancard.*

ALL-GOOD. See *Chenopodium bonus-henricus.*

ALL-HEAL. See *Stachys*, and *Hypericum.*

ALLIA'CEOUS. (*Alliaceus;* from *allium*, garlic.) Pertaining to garlic.

ALLIA'RIA. (*a, æ.* f.; from *allium*, garlic: from its smell resembling garlic.) See *Erysimum alliaria.*

ALLICAR. Vinegar.

ALLICOA. Petroleum.

ALLIGATU'RA. The act of bandaging a wound.

ALLIO'TICUM. (From αλλοιοω, to alter, or change.) An alterative medicine was so called, which consisted of various antiscorbutics.

A'LLIUM. Garlic. The name of a genus of plants in the Linnæan system. Class, *Hexandria;* Order, *Monogynia.*

ALLIUM CEPA. The onion: called also *Cepa. Allium:—scapo nudo infernè ventricoso longiore, foliis teretibus*, of Linnæus. Dr. Cullen says, onions are acrid and stimulating, and possess very little nutrient power. In bilious constitutions they generally produce flatulence, thirst, headach and febrile symptoms; but where the temperament is phlegmatic, they are of infinite service, by stimulating the system and promoting the secretions, particularly expectoration and urine. Onions have been recommended as possessing antiscorbutic properties. Externally, they are employed in poultices, to promote suppuration, and suppression of urine in children is said to be relieved by applying them roasted to the pubes.

ALLIUM PORRUM. The leek or porret. *Porrum.* The expressed juice of this plant possesses diuretic qualities, and is given in the cure of dropsy, calculous complaints, asthma and scurvy. The fresh root is much employed for culinary purposes.

ALLIUM SATIVUM. Garlic. Called also *Allium*, and *Theriaca rusticorum. Allium:—caule planifolio bulbifero, bulbo composito, staminibus tricuspidatis*, of Linnæus. This species of garlic, according to Linnæus, grows spontaneously in Sicily; but, as it is much employed for culinary and medicinal purposes, it has been long very generally cultivated in gardens. Every part of the plant, but more especially the bulb, has a pungent acrimonious taste, and a peculiarly offensive strong smell. These properties depend on an essential oil which may be obtained by distilling the plant with water; it is of a ropy

consistence and yellow colour, and is heavier than water; it blisters the skin when applied to it. The active principle of garlic is partially extracted by water, alkohol, and acetic acid. Cadet obtained from 1406 parts of fresh garlic 801 parts of water, 520 of mucilage, 48 of fibrous matter, and 37 of vegetable albumen. In addition to these, Bouillon la Grange detected sulphur and sugar. The odour of garlic is extremely penetrating and diffusive; for when this substance is taken into the stomach, its scent pervades the whole system, and is discoverable in the breath, urine, and perspiration. In its medicinal properties, garlic is nearly allied to the onion, but possesses greater activity. By stimulating the stomach, they both favour digestion, and may, therefore, be considered as useful condiments for phlegmatic people, or those who have a languid circulation, and sluggish secretions; but these vegetables, in their acrid state, may prove very injurious to individuals of an inflammatory or irritable habit; by boiling in water, however, they are rendered bland, and nearly divested of their stimulating properties. Garlic is stimulant, expectorant, diaphoretic, and diuretic; it has also been praised as an anthelmintic. It has long been in estimation as an expectorant in pituitous asthmas, and other pulmonary affections, unattended with inflammation. Its utility as a diuretic in dropsies is attested by unquestionable authorities; and it has been successfully administered in agues and in low fevers. Bergius says quartans have been cured by it; he began by giving one bulb, or clove, morning and evening, adding every day one more, till four or five cloves be taken at a dose: if the fever then vanishes, the dose is to be diminished, and it will be sufficient to take one or two cloves, twice a-day, for some weeks. Garlic has likewise been found of advantage in scorbutic cases; and, in calculous disorders, has been imagined to exercise a lithontriptic virtue. The penetrating acrimony of garlic renders its external application useful in many disorders, as a rubefacient, and it is more especially applied to the soles of the feet, to cause a revulsion from the head or chest, as practised and recommended by Sydenham. As soon as an inflammation is excited, the garlic catapalasm should be removed, and one of bread and milk be applied, to obviate excessive pain. Garlic has also been variously employed externally, to tumours and cutaneous diseases; and, in certain cases of deafness, a clove, or small bulb of this root, wrapt in gauze or muslin, and introduced into the meatus auditorius, has been found an efficacious remedy. Garlic may be administered in different forms: the cloves may be swallowed entire, after being dipped in oil; or, where this cannot be done, cutting them into pieces, without bruising, and swallowing these, will be found to answer equally well, and to produce no uneasiness in the fauces. On being beaten up, and formed into pills, the active parts of this medicine soon evaporate. The dose of garlic in substance is from ʒss. to ʒij., or, from one to six cloves, twice or thrice a day. The expressed juice may be given in the quantity of ʒss. in any appropriate vehicle. Rosenstein used to give an infusion of the bulb in milk to children, as a vermifuge. Garlic, when taken in excess, occasions febrile excitement, and derangement of the digestive organs, and frequently produces discharge of blood from the rectum in persons subject to haemorrhoids. The syrup and oxymel of garlic, which formerly had a place in the British Pharmacopœias, are now expunged.

Allium victoriale. *Victorialis longa.* The root, which, when dried, loses its alliaceous smell and taste, is said to be efficacious in allaying the abdominal spasms of gravid females.

Allœo'sis. (Αλλοιωσις from αλλοιοω, to change.) A change in the constitution.

Allœo'ticus. (From αλλοιοω, to change.) Applied to a medicine capable of effecting a change in the constitution—αλλοιωτικα φαρμακα, alterative medicines.

Allopathi'a. (From αλλος, other, and παθος, a disease.) Allopathy. The effect of a medicine which cures a diseased action by establishing another of a different kind. It is opposed to *Homœopathy.*

Allo'phasis. (From αλλος, other, and φαω, to speak.) Delirium: incoherence.

Allotriophagi'a. (*a*, *æ.* f.; from αλλοτριος, foreign, and φαγω, to eat.) Depraved appetite; a desire to eat things improper for food. See *Pica.*

ALLOY. 1. Where any precious metal is mixed with another of less value, the assayers call the latter the alloy, and do not in general consider it in any other point of view than as debasing or diminishing the value of the precious metal.

2. Chemists have applied this term to metallic compounds in general. Thus brass is called an alloy of copper and zinc; bell metal an alloy of copper and tin.

Every alloy is distinguished by the metal which predominates in its composition, or which gives it its value. Thus articles of English jewellery are ranked under alloys of gold, though most of them deserve to be placed under the head of copper. When mercury is one of the component metals, the alloy is called *amalgam.* Thus we have an amalgam of gold, silver, tin, &c. Alloys are not, as far as is hitherto known, regulated by any definite laws as to the proportions in which metals combine to form them.

ALLSPICE. See *Myrtus pimenta.*

ALMA. An alchemical term for water.

Almagra. *Bolum cuprum.* 1. Red earth, or ochre, formerly used as an astringent.

2. In alchemical language, the operation of washing, or, the substance washed.

3. A name for the white sulphur of the alchemists.

Almaranda. *Almakis.* Litharge.

Almarcab. Litharge of silver.

Almarcarida. Litharge of silver.

Almargen. *Almarago.* Coral.

Almarkasita. Mercury.

Almartak. Powder of litharge.

Almatatica. Copper.

Almelilektu. A word used by Avicenna, to express a preternatural heat less than that of fever, and which may continue after a fever.

Almecasite. *Almechasite.* Copper.
Almene. Rock salt.
Almisadir. Sal ammoniac.
Almizadir. Verdigris.
ALMOND. See *Amygdalus.*
Almond, bitter. See *Amygdalus.*
Almond, sweet. See *Amygdalus.*
Almond paste. This is made of four ounces f blanched bitter almonds, the white of an egg, ose water, and rectified spirits, equal parts, as uch as may be sufficient. It is a cosmetic for oftening the skin and preventing chaps.
Almonds of the Ears. A popular name for he external glands of the neck situated near he ears.
Almonds of the Throat. See *Tonsils.*
Almuri. A cathartic preparation, mentioned y Rhazes.
Alnec. Tin.
Alneric. Sulphur vivum.
A'LNUS. (*us, i.* f.) The alder. The harmacopœial name of two plants:—
1. *Alnus rotundifolia.* The common alder-ree. See *Betula alnus.*
2. *Alnus nigra.* The black or berry-bearing lder. See *Rhamnus frangula.*
A'LOE. (ë, ës. f.; αλοη, derivation uncer-ain.) The name of a genus of plants in the Linnæan system. Class, *Hexandria;* Order, *Monogynia.* The aloe.
Aloë caballina. See *Aloë perfoliata.*
Aloë guiniensis. See *Aloë perfoliata.*
Aloë perfoliata. The systematic name of the plant from which the socotorine or zocotorine aloe of the shops is obtained. Linnæus defines the plant thus: *Aloë—foliis caulinis dentatis, amplexicaulibus vaginantibus, floribus corymbosis cernuis, pedunculatis subcylindricis.* The aloes is the inspissated juice of this plant. It is brought over, wrapt in skins, from the Island of Socotora, in the Indian Ocean. It has a bright surface, and the edges and small fragments are translucent. In the lump, it is of a yellowish red or purple colour; when reduced to powder, it is of a golden hue. It is hard and friable in cold weather; but in summer it softens very easily between the fingers. It is extremely bitter, and has also some aromatic flavour, but not enough to cover its disagreeable taste. Its smell is rather agreeable, being somewhat similar to that of myrrh. Of late this sort has been very scarce, and its place is in a great measure supplied by another variety, brought from the Cape of Good Hope, which is said to be obtained from the *Aloë spicata* of Linnæus, by inspissating the expressed juice of the leaves; whence it is termed, in the London Pharmacopœia, *Extractum aloës spicatæ.*

The *Aloë hepatica, vel Barbadensis,* the common, or Barbadoes, or hepatic aloes, was thought to come from a variety of the *Aloë perfoliata* thus described: —*floribus pedunculatis, cernuis corymbosis, subcylindricis, foliis spinosis, confertis, dentatis, vaginantibus, planis, maculatis:* but Dr. Smith has announced, that it will be shown, in Sibthorp's *Flora Græca,* to be from a distinct species, the *Aloë vulgaris* or true αλοη of Dioscorides; and it is therefore termed, in the London Pharmacopœia, *Aloës vulgaris extractum.* The best is brought from Barbadoes in large gourd-shells, an inferior sort in pots, and the worst in casks. It is darker coloured and less shining than the socotorine; it is also drier and more compact, though sometimes the kind imported in casks is soft and clammy. To the taste it is intensely bitter and nauseous, being almost wholly without that aroma which is observed in the socotorine. To the smell it is strong and disagreeable.

The *Aloë caballina, vel Guiniensis,* or horse-aloes, is easily distinguished from both the foregoing by its strong rank smell; in other respects it agrees pretty nearly with the hepatic, and is now not unfrequently sold in its stead. Sometimes it is prepared so pure and bright as scarcely to be distinguishable by the eye, even from the socotorine, but its offensive smell and the absence of all aromatic flavour betray it. This aloe is not admitted into the Pharmacopœias, and is employed chiefly by farriers.

The general nature of these three kinds is nearly the same. Their particular differences depend on the proportion which the extractive matter bears to the resin in their composition. The smell and taste reside principally in the extractive matter, on which also the medicinal virtues of the drug depend. Twelve ounces of Barbadoes aloes yield nearly 4 ounces of resin, and 8 of extractive matter. The same quantity of socotorine aloes yields 3 ounces of resin, and 9 of extractive matter. Besides these principles, all the kinds of aloes contain a small proportion of vegetable mucus. The extractive matter has been called by Braconnot the resinous bitter principle. The socotorine aloes yield by distillation a volatile oil which is not obtained from the Barbadoes. The several kinds of aloes are dissolved almost entirely by boiling water, but the resin is deposited as the solution cools. Their solubility is increased by the addition of alkalis or their carbonates. All the kinds of aloes are soluble in proof spirit.

Aloes are a well-known stimulating purgative. Their medium dose is from 5 to 15 grains, nor does a larger quantity operate more effectually. Their effect is exerted on the large intestines; and principally on the rectum: this, however, does not seem to arise so much from any thing specific in the operation of the drug as from its slow solubility; for when it is administered in a dissolved state, as that of decoction, little of this peculiar effect is observed. In small doses, long continued, aloes often produce much heat and irritation, particularly about the anus, sometimes occasioning a bloody discharge; and hence to those who are subject to piles, and to women in a state of pregnancy, their exhibition has been productive of considerable mischief: on the contrary, persons of a phlegmatic constitution frequently derive great benefit from their use as a laxative. The efficacy of this medicine in jaundice is very considerable, as it proves a succedaneum to the bile, of which there is a defective supply. Aloes, therefore, may be considered as injurious where inflammation or irritation exists in any of the viscera, in pregnancy, and in habits disposed to piles; but highly serviceable in most hypochondriacal and dyspeptic

affections, especially those connected with deficient secretion of bile. Dr. Cullen says, "If any medicine be entitled to the appellation of a *stomach purge*, it is certainly aloes. It is remarkable with regard to it, that it operates almost to as good a purpose in a small as in a large dose; that one or two grains will produce one considerable dejection, and 20 grains will do no more, except it be that in the last dose the operation will be attended with gripes, &c. Its chief use is to render the peristaltic motion regular, and it is one of the best cures in habitual costiveness. There is a difficulty we meet with in the exhibition of purgatives, viz. that they will not act but in their full dose, and will not produce half their effect if given in half the dose. For this purpose we are chiefly confined to aloes. Neutral salts in half their dose will not have half their effect; although even from these, by large dilution, we may obtain this property; but besides them, and our present medicine, I know no other which has any title to it, except sulphur. Aloes sometimes cannot be employed. It has the effect of stimulating the rectum more than other purges, and with justice has been accused of exciting hæmorrhoidal swellings, so that we ought to abstain from it in such cases, except when we want to promote them."

Aloes are too nauseous to be given in powder. They are most frequently exhibited in the form of pill, combined with purgatives, aromatics, bitters, or other medicines, according to the effect desired to be produced. The best liquid form is the Decoctum aloës compositum of the London Pharmacopœia, which is an excellent stomachic laxative, and has little disagreeable flavour. The officinal preparations of aloes are the following: —

1. Pilulæ Aloës.
2. Pilulæ Aloës Compositæ.
3. Pilulæ Aloës cum Asafœtida.
4. Pilulæ Aloës cum Colocynthide.
5. Pilulæ Aloës cum Myrrha.
6. Tinctura Aloës.
7. Tinctura Aloës Ætherialis.
8. Tinctura Aloës et Myrrhæ.
9. Vinum Aloës.
10. Extractum Aloës.
11. Decoctum Aloës Compositum.
12. Pulvis Aloës Compositus.
13. Pulvis Aloës cum Canella.
14. Pulvis Aloës cum Guaiaco.
15. Tinctura Aloës Composita.
16. Extractum Colocynthidis Compositum.
17. Tinctura Benzoini Composita.

Aloë depurata. An old preparation made by infusing aloes for several days in water, to which lemon juice was sometimes added, then filtering off the clear liquor and evaporating it to the consistence of an extract. It is not now used.

Aloë insuccata. A preparation similar to the preceding, but made with the addition of the juice of some herbs, as borage, bugloss, &c.

Aloë lota. The same as *Aloe depurata*.

Aloë socotorina. See *Aloë perfoliata*.

Aloë zocotorina. See *Aloë perfoliata*.

Aloëda'rium. Αλοηδαριον. A name given by the Greeks to various cathartic compounds containing aloes as a principal ingredient.

Aloëphangin.æ pilulæ. See *Pilulæ Alephanginæ*.

ALOES. The English name of the inspissated juice of the aloe plant. See *Aloë perfoliata*.

Aloes, Barbadoes. See *Aloë perfoliata*.

Aloes, common. See *Aloë perfoliata*.

Aloes, hepatic. See *Aloë perfoliata*.

Aloes, horse. See *Aloë perfoliata*.

Aloës, lignum. See *Lignum aloës*.

Aloes, socotorine. See *Aloë perfoliata*.

Aloes, spiked. See *Aloë perfoliata*.

Aloes wood. See *Lignum Aloës*.

ALOE'TIC. *Aloëticus*. Appertaining to aloes. Applied to a medicine in which aloes is the chief or fundamental ingredient.

Aloetic acid. Braconnot has given the name of aloïc or aloëtic acid to a substance obtained by treating aloes with sulphuric acid. Chevreuil regards it as artificial tannin.

ALOGOTROPHI'A. (From αλογος, disproportionate, and τρεφω, to nourish.) A term employed by some writers to designate an unequal nutrition of different parts of the body, especially of the bones in *rachitis*. This acceptation of the term is, however, as Kühn observes, contrary to the analogy of the Greek language; for as αγελαιοτροφια signifies the feeding of flocks, so αλογοτροφια should signify the feeding of brute animals, from αλογος, irrational, and τρεφω, to nourish; moreover the word αλογοτροφειον was actually used by the Greeks to denote a place where brute animals are fed: hence *alogotrophia*, as a pathological term, is altogether misapplied.

Alohar. *Alohoc*. Mercury.

Alomba. *Alooc*. Lead.

ALO'PECES. (From αλωπηξ, a fox.) The psoæ muscles have been so called, probably because they are particularly strong in the fox.

ALOPE'CIA. (*a*, *æ*. f.; from αλωπηξ, a fox: because the fox is subject to a distemper that resembles it.) Falling off of the hair, not only from the scalp, but from the beard and eyebrows. Galen distinguishes it from ordinary baldness, which arises merely from deficiency of the nutrient fluid in the hair; while the αλωπηκια is caused by acrimony of the humours. In modern medical language, the term *alopecia* has been loosely applied to any kind of baldness. See *Baldness*.

Alosa, or Alausa. See *Clupea alosa*.

Alosat. Quicksilver.

Alosohoc. Quicksilver.

Alouchi. The name of a gum obtained from the Canella alba.

Alpam. A Malabar shrub, from which an ointment for the itch is prepared. The juice of the leaves mixed with that of the calamus is used against the bite of serpents.

A'lphiton. αλφιτον. Any kind of flour, especially barley-meal.

Alphite'don. (αλφιτηδον; from αλφιτον, barley-meal.) A fracture in which a bone is broken into small fragments.

ALPHO'NSIN. (So called from the name of its inventor, Alphonso Ferri, a Neapolitan physician.) The name of an instrument for extracting balls. It consists of three branches, which separate from each other by their elasti-

city, but are capable of being closed by means of a tube in which they are included.

ALPHO'SIS. The name given by Good to the albino-skin.

A'LPHUS. (*Alphus.* Αλφος; from αλφαινω, to change: because it changes the colour of the skin.) A species of leprosy. See *Lepra.*

ALPI'NI BALSAMUM. Balm of Gilead, the Balsamum of the ancients, has been so called, because Prosper Alpinus wrote a learned treatise upon it. See *Amyris Gileadensis.*

ALRACHAS. Lead.

ALRATICA. An Arabic word used by Albucasis, to signify a partial or total imperforation of the vagina.

ALSAMACH. An Arabic name for the external auditory foramen.

ALSECH. An alchemical name for *Alumen plumosum* — which see.

ALSI'NE. (*e, es.* f.; from αλσος, a grove: so called because it grows in great abundance in woods and shady places.) The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Trigynia.* Chickweed. The *Alsine media,* or common chickweed, is now referred to the genus *Stellaria.* See *Stellaria.*

ALTAFOR. Camphire.

ALTAMBUS. A barbarous term for the venous blood of man. *Ruland.*

A'LTERATIVE. *Alterans;* that which re-establishes the healthy functions of the animal economy, without producing any sensible evacuation by perspiration, purging, or vomiting.

ALTERCUM, or ALTERCANGENON. An ancient name of henbane. See *Hyoscyamus.*

ALTERNÆ PLANTÆ. Alternate-leaved plants. The name of a class of plants in Sauvages' *Methodus foliorum.*

ALTE'RNANS. Alternate. See *Alternate.*

ALTERNATE. *Alternatus.* In *Botany,* applied to branches and leaves when they stand singly on each side, in such a manner that between every two on one side there is but one on the opposite side; as on the branches of the *Althæa officinalis,* and *Rhamnus catharticus,* and leaves of the *Malva rotundifolia.*

ALTHÆ'A. (*a, æ.* f.; from αλθω, to heal: so called from its supposed healing virtues.) 1. The name of a genus of plants in the Linnæan system. Class, *Monadelphia;* Order, *Polyandria.* Marshmallow.

2. The pharmacopœial name of the marshmallow. See *Althæa officinalis.*

ALTHÆA OFFICINALIS. The systematic name of the marshmallow; called also *Malvaviscus* and *Aristalthæa. Althæa: —foliis simplicibus tomentosis,* of Linnæus.

This plant is indigenous throughout Europe, growing in moist places, and especially in salt marshes; it abounds in mucus, and is useful as a demulcent in coughs, catarrhs, dysuria, &c. Both the root and leaves are employed medicinally. Althæa is generally used in decoction. (See *Decoctum Althææ.*) The roots and leaves were formerly in esteem among surgeons, for making emollient cataplasms and fomentations. The officinal preparations now used are the decoction and the syrup. To make the former, two or three ounces of the fresh root may be boiled in a sufficient quantity of water to a quart, to which one ounce of gum arabic may be added.

ALTHANACA. *Althanacha.* Orpiment.

ALTHEA, or ALTHEINE. An alkaline substance found by Braconnot in the marshmallow. It appears to be the same with aspargin.

ALTHEBEGIUM. An Arabian name for a sort of swelling, which is observed in cachectic and leuco-phlegmatic habits.

ALTHEBEN. An Arabic name for pterygium or pannus. See *Pterygium.*

ALTHE'XIS. (From αλθω, to cure, or heal.) Hippocrates uses this word to signify the cure of a distemper.

ALUACH *Aluech.* Tin.

A'LUDEL. The older chemists used an apparatus for subliming various substances, which consisted of a number of globular vessels of glass or earthenware, placed one above another, communicating by means of an aperture in the upper part of each, which received a neck projecting from the vessel immediately above it. Each of these vessels was called an aludel.

ALUM. The salt commonly known by this name is a double sulphate of alumina and potassa. It occurs in a native state in a few places, in the form of an efflorescence on the surface of bituminous schistus, as at Göttwig in Austria; or mingled with the soil in volcanic districts, as in the Solfaterra near Naples. The greater part of the alum found in commerce is prepared artificially from certain minerals called alum ores. The most productive of all these ores is the *alumstone,* or sulphuretted clay of La Tolfa, near Civita Vecchia in Italy. In several places on the Continent, as at Schwemsal in Saxony, Hesse, and Liége, alum is procured from *pyritaceous clay.* In this country there are extensive alum mines, at Hurlett near Paisley, and at Whitby in Yorkshire, in both of which the ore is an *aluminous schistus,* containing a large quantity of pyrites. The ancients were probably unacquainted with the salt which we call alum; the στυπτηρια of the Greeks, or *alumen* of the Romans, seems to have been green vitriol, or at least to have contained a large quantity of that material. The first regular alum works established were at Roccha or Edessa in Syria, and from this source Europe was supplied till the fifteenth century.

The production of alum from any of these ores, results from a decomposition of the ore, and the union of some of its elements in the proportions which constitute the salt. The ores consist of sulphur combined with iron in various proportions, alumina, potash, and bituminous matter. By mere exposure to the atmosphere, the ore will undergo a spontaneous decomposition; the sulphur, taking oxygen from the air is converted into sulphuric acid; and this combining with the alumina and potash, forms alum, which effloresces on the surface. The proportion of alkali in the ore, however, is insufficient for the formation of a large quantity of the salt; and for this reason, as well as for the sake of expedition, an artificial process is necessary. The ore is first calcined with a low heat, which destroys the bituminous matter, and

partially oxidises the sulphur; it is then exposed to air and moisture, whereby the remainder of the sulphur is converted into sulphuric acid; a supersulphate of alumina is thus formed, which is extracted by lixiviation, and the solution concentrated: impure carbonate of potash, or some other salt of potash, is added; and the supersulphate of alumina and potash, or alum, is obtained by crystallisation, and purified by recrystallisation from a solution in boiling water.

Alum has been manufactured by Chaptal and others directly from its component parts, by subjecting clay to the action of sulphuric acid.

The best alum is the Roman, which is prepared at La Tolfa. According to Berzelius, this is the only kind which is free from an impregnation of iron. It is in irregular crystallised masses, efflorescent on the surface. The English is in large hard masses, less crystalline, and not efflorescent. The roch alum which is brought from the Levant is in small pieces, of a pale rose colour.

Alum has a sweetish and very astringent taste. Its specific gravity is about 1·71. It is soluble in five parts of water at 60° F., and in rather more than its own weight of boiling water. It crystallises in octohedrons, or segments of the octohedron. When the crystals are exposed to a gentle heat, they undergo the watery fusion; and when to a stronger heat, they swell, part with all their water, which amounts to nearly 50 per cent., and subside into a white, opake, friable, spongy, substance; this is the *alumen exsiccatum* or *alumen ustum* of the Pharmacopœias. Alum is decomposed by the alkalis and alkaline earths, which precipitate the alumina: acetate of lead, the salts of mercury, muriate of lime, &c. effect a double decomposition.

When alum in powder is calcined with an equal weight of brown sugar or flour, it forms the spontaneously inflammable substance known by the name of *Homberg's pyrophorus*. According to the analysis of Berzelius, alum consists of —

Sulphuric acid	34·33
Alumina	10·86
Potash	9·81
Water	45·00
	100·00

Or,

Sulphate of alumina	36·85
Sulphate of potash	18.15
Water	45·00
	100·00

According to Dr. Thomson, the atomic constitution of alum is 3 atoms of sulphate of alumina, 1 atom of sulphate of potash, and 25 atoms of water.

Besides the sulphate of alumina and potash, or common alum of commerce, there are two other kinds of alum, one of which is a sulphate of alumina and soda, and the other a sulphate of alumina and ammonia.

Soda alum may be made by adding sulphate of soda to a solution of sulphate of alumina; crystals are obtained by evaporation, similar in appearance to those of common alum, and not differing materially in their properties, except in being much more soluble in water.

Ammonia alum may be prepared by adding sulphate of ammonia to a solution of sulphate of alumina. It agrees in its general properties with common alum; it is more soluble in water than that made with potash, and less so than soda alum: when potash or soda is added in excess, it is decomposed, and ammonia is evolved.

In medicine, alum is internally employed as an astringent in cases of passive hæmorrhage; in those of an active character it is less applicable: the dose is from 5 to 20 grains every hour or two till the bleeding is restrained. It is useful in protracted diarrhœa, and has been recommended in diabetes and leucorrhœa; but in the two latter cases it has little efficacy. Although its primary effect on the bowels is to induce constipation, it has frequently an opposite effect if continued in small doses; hence Dr. Percival found it serviceable in *colica pictonum*, and other chronic disorders of the bowels attended with obstinate costiveness. The dose advised in these cases, is from 5 to 20 grains, repeated every four, eight, or twelve hours. When duly persisted in, it proves gently laxative, and mitigates the pain.

As an astringent tonic, alum may be given in the dose of 10 grains made into a bolus, three times a day. Another mode of administering it is in the form of whey, which is made by boiling two drachms of powdered alum, for a few minutes, in a pint of milk; a teacupful three times a day. Alum conjoined with nutmeg has been successful in intermittent fever, when given in a large dose an hour or more before the accession of the paroxysm; it has also been recommended as an auxiliary to the cinchona in the same cases, and in confluent small-pox with bloody pustules.

Externally, alum is much employed by surgeons as an astringent lotion for the eyes. From 2 to 5 grains to an ounce of rose water, forms a proper collyrium. It is also applied as a styptic to bleeding vessels; as a mild escharotic to fungous ulcers, and as an astringent to those with flabby granulations. A small piece of alum briskly agitated with the white of an egg forms a coagulum, which, enclosed between two pieces of linen, has been recommended as an application to the eye in some cases of ophthalmia.

Alum is much used an as an ingredient in gargles for sore throat, relaxation of the uvula, and aphtha; and injections for gleet, leucorrhœa, &c.

The officinal preparations of alum are:

1. *Alumen exsiccatum.*
2. *Solutio sulphatis cupri composita.*
3. *Liquor aluminis compositus.*
4. *Pulvis aluminis compositus.*

Alum, compound solution of. See *Liquor aluminis compositus.*

Alumboti. Oxide of lead.

Alumen catinum. An old name for fixed alkali.

Alumen exsiccatum. Dried alum. Expose alum in an earthen vessel to the fire so

nat it may dissolve and boil, and let the heat be ontinued and increased until the boiling ceases. ee *Alum*.

ALUMEN FACTITIUM. See *Alum*.

ALUMEN LIQUIDUM. The substance so called y the old writers, appears to be the same with ie rock butter of modern mineralogists. It is lum mixed with alumina and oxide of iron.

ALUMEN PLUMOSUM. This name has been iven ro three substances. 1. To the fibrous ariety of native alum, which was also called *lumen nativum trichites*.

2. To the fibrous amianthus.

3. To fibrous gypsum.

ALBUMEN ROMANUM. See *Alum*.

ALUMEN RUBRUM. The Roman alum, which s of a reddish colour.

ALUMEN RUPEUM. *Native alum*.

ALUMEN RUTILUM. See *Alumen rubrum*.

ALUMEN SACCHARINUM. A cosmetic prepared ith alum, rose water, and the white of eggs.

ALUMEN USTUM. See *Alum*.

ALU'MINA. (*a*, *æ*. f. ; from *Alumen*, of hich it is the base.) Alumine: called also arth of alum, *argil*, or *argillaceous earth*.

This substance is very widely diffused over the lobe in the shape of clay, loam, and other simiar productions, which are composed of alumina ombined with water, and mixed with silica and arious extraneous matters. It enters largely nto the composition of slate and many other ninerals; and two of the most beautiful of the gems, the sapphire and ruby, are almost entirely omposed of it.

Berzelius gives the following directions for obaining pure alumina from common alum.—The lum is to be repeatedly dissolved in boiling vater, and crystallised, to free it of a small quanity of oxide of iron, which it retains with some enacity. Its exemption from this impurity is roved by the alum being soluble without reidue in a solution of caustic potash ; if any of he oxide be present, it is either immediately precipitated, or deposited in a few hours in the orm of yellow flocculi. When the alum is purified, it is to be dissolved in boiling water, nd a solution of carbonate of potash added till o further precipitate is occasioned ; a slight xcess of the carbonate is then to be added, and the vhole digested with a gentle heat, to decompose portion of subsulphate of alumina which was t first thrown down. The precipitate is to be ollected on filtering paper; it is then to be carefully washed, and dissolved in hydrochloric acid iltering the liquor if it be not perfectly clear. Lastly, by the addition of pure ammonia, or arbonate of ammonia, a precipitate is formed, vhich, when well washed, consists of pure ydrate of alumina, and by exposure to a red eat is converted into pure alumina. A simpler rocess has been proposed by Gay Lussac, which consists in exposing ammonia alum to a strong eat, by which the sulphuric acid and ammonia re driven off and the earth left pure.

Alumina is white, inodorous, and insipid. It dheres to the tongue. It is insoluble in water, ut has nevertheless a strong affinity for it, as is roved by the avidity with which it absorbs oisture from the atmosphere, and the high degree of heat necessary to decompose the hydrate. It does not affect vegetable colours; but this argues nothing with respect to its acid or alkaline nature, because it is a necessary consequence of its insolubility.

Alumina resists the strongest heat of a furnace, and merely undergoes a diminution of volume — from which circumstance it was employed by Mr. Wedgwood for the construction of his pyrometer. (See *Pyrometer*.) When exposed in small quantity to the action of the oxy-hydrogen blowpipe, it is fused into a transparent glass. Alumina unites readily with most acids, except the carbonic, forming salts, of which the most important are the sulphate, which enters into the composition of alum, and the acetate, which is largely employed as a mordant in calico printing. Alumina also combines readily with potash, soda, lime, baryta, and strontia ; but sparingly with ammonia.

The researches of Sir Humphrey Davy rendered it probable that alumina, like other earths, was a metallic oxide, and the base has since been obtained in a separate form ; it is called *aluminum* or *aluminium*. See *Aluminum*.

Great difference of opinion exists among chemists with respect both to the composition and the combining proportion of alumina. The case is thus stated by Dr. Turner : " Dr. Thomson, after comparing the results of a considerable number of analyses, has fixed on 18; Mr. Phillips, from his observations, adopts 27 ; and according to the experiments of Berzelius, 25·7 is the correct equivalent of alumina. The same discordance prevails in regard to its composition: Dr. Thomson considers alumina to consist of 1 atom of alumina and 1 atom of oxygen ; while Berzelius believes it to be composed of 2 atoms of the metal to 3 atoms of oxygen. The argument of Berzelius is founded on the close similarity in form and character between the compounds of alumina and peroxide of iron, in consequence of which he argues that the former must have the same atomic constitution as the latter ; and as the peroxide of iron is admitted to consist of 2 atoms of iron and 3 atoms of oxygen, the same view, he contends, should be applied to alumina. This mode of reasoning, justified as it is by a large and increasing collection of facts, establishes a decided preference in favour of the opinion of Berzelius."

ALUMINOUS. *Aluminsous*. Pertaining to or partaking of the nature of alum.

Aluminous acid. So called because it exists in alum. See *Sulphuric acid*.

Aluminous water. Waters impregnated with particles of alum.

ALU'MINUM, or ALUMI'NIUM. (*um*, *i*. n.) The metallic base of alumina. Sir Humphrey Davy found, that when the vapour of potassium was brought into contact with pure alumina at a white heat, potash was generated ; this showed that alumina is an oxidised body, and the analogy of other earths led to the inference that it is the oxide of a metal. The justness of this inference was demonstrated by M. Woehler, who succeeded in separating the metallic substance. The following account of his discoveries is given by Dr. Ure.

"M. Woehler has discovered a method of preparing aluminum, founded on the inoxidability of this metal by water; and he makes chloride of aluminum, for the purpose of procuring the metal from it, by the following process. Alumina precipitated by excess of carbonate of potash, was well washed and dried, and then made into a thick paste with powdered charcoal, sugar, and oil: this paste was then heated in a covered crucible till all the organic matter was destroyed. By these means, any substance is mixed very intimately with carbon. The product, while it was hot, was put into and made to fill a porcelain tube, which was placed in a furnace of an oblong form. One end of the tube was connected with another tube containing fused chloride of calcium, and this with an apparatus for the disengagement of chlorine: the other end of the tube opened into a small tubulated receiver, provided with a conducting tube. When the apparatus was full of chlorine, the tube and its contents were made red-hot. The chloride of aluminum was readily formed; a small portion was carried over with oxide of carbon, which fumed strongly on coming into contact with the air. The chlorine was long retained by the mass of matter. The receiver contained chloride of aluminum in the state of powder. After an hour and a half, the chloride obstructed the end of the tube (although an inch in diameter) which passed into the receiver: this caused the stoppage of the process.

On taking the apparatus to pieces, it was found, that all that part of the tube which passed through the furnace was filled with chloride of aluminum, and it weighed more than an ounce. It consisted partly of an aggregation of long crystals, and partly of a firm mass, of a pale yellowish-green colour, semitransparent, and of a lamellated and distinctly crystalline texture. When brought into contact with the air, it fumed feebly, gave a smell of muriatic acid, and soon became a transparent fluid. When thrown into water, it dissolved with strong hissing, accompanied with so much heat, that the fluid, when its quantity is small, boils rapidly. Its fusing and vaporising points appear to be the same.

Chloride of aluminum may be preserved without any alteration in naphtha: when heated with this fluid, it liquefies, and sinks to the bottom of the vessel in the form of a reddish brown liquid, upon which potassium exerts no action.

When an attempt is made to heat chloride of aluminum with potassium in a tube, the action is so strong, and the extrication of heat is so considerable, that the apparatus is instantly broken. M. Woehler, therefore, employed a small platina crucible, the cover of which was kept on by a wire of the same metal. At the moment of reduction, the crucible became intensely red-hot, both within and without, although it was but slightly heated: the metal of the crucible was not sensibly acted on. Some small pieces of potassium, of about the size of a pea, and not more than ten at once, are placed in the crucible, and upon them are put an equal number of pieces of chloride of aluminum of the same size. The crucible is to be heated with the spirit-lamp, at first gently, and afterwards more strongly, and until the spontaneous incandescence of the matter ceases. Excess of potassium is to be avoided; for, after it was oxidised, it would dissolve a portion of the aluminum. The reduced mass is generally completely fused, and is of a blackish-grey colour. When all is cold, the crucible is to be thrown into a large vessel of water: a grey powder is soon deposited, which, when looked at in the sunshine, appears to be entirely composed of small metallic plates. The powder is to be washed with cold water, and then dried. It is the metal of alumina.

Aluminum somewhat resembles platinum in powder. Some small scaly coherent particles were discerned, which had the colour and splendour of tin. Under the burnisher it readily assumes the appearance of this metal. Rubbed in an agate mortar, it seems to be a little compressible, and unites into larger scales, with a metallic lustre; and it leaves in the mortar traces of a metallic appearance. When heated in the air till it is ignited, it inflames, and burns with great rapidity. The product is the white oxide of aluminum in a hard mass. Reduced to powder, and blown upon in the flame of a candle, each particle suddenly becomes an inflamed point, the splendour of which is not less than that of the sparks of iron burning in oxygen gas. In pure oxygen gas, aluminum burns with so dazzling a light that the eyes can scarcely bear it; the heat generated is so considerable, that the oxide produced is partly fused. The particles which have been fused are yellowish, and as hard as corundum; they do not merely scratch, but they cut glass. In order that aluminum may burn in oxygen gas, it must be heated to redness.

Aluminum is not oxidised by water; and this fluid may spontaneously evaporate from the metal, without its being in the least tarnished. When, however, the water is nearly at its boiling point, the metal is slowly oxidised, and hydrogen is liberated.

Sulphuric and nitric acids, when cold, do not act upon aluminum: when heated, concentrated sulphuric acid readily dissolves it, and without the disengagement of sulphurous acid. The sulphuric solution did not by evaporation give the smallest crystal of alum.

Aluminum dissolves in even a weak solution of caustic potash, with the evolution of hydrogen, and the same solution takes place in ammonia.

When aluminum is heated to dull redness and exposed to a current of chlorine, it inflames, and is converted into chloride, which sublimes as fast as it is formed.

Sulphuret of aluminum is formed by letting sulphur drop upon aluminum in a state of vivid ignition. It is semi-metallic in appearance, and, when polished, is of a shining iron-black colour. M. Woehler formed also the phosphuret, seleniuret, arseniuret, and telluret of aluminum."

ALUSAR. Manna.

ALU'SIA. (*a*, *æ*. f.; from αλυσις, a wandering.) Illusion, hallucination.

The name given by Dr. Good to a genus of diseases, including *Alusia Elatio*, Sentimentalism, or mental extravagance; and *Alusia Hypochondrias*, Hypochondrism, or low spirits.

ALVEA'RIUM. (*um, i.* n. *Alveare*, or *Alvearium*, a bee-hive.) The meatus auditorius externus of the ear which contains the wax.

A'LVEO-LABIA'LIS. The name given by Chaussier to the buccinator muscle.

ALVE'OLAR. *Alveolaris.* Appertaining to the alveoli, or sockets of the teeth.

ALVEOLA'TUS. (From *alveolus*, a little cavity.) *Alveolate;* having small cavities.

ALVE'OLUS. (*us, i.* m.) A diminutive of *alveus*, a cavity.) The socket of a tooth.

A'LVEUS AMPULLA'SCENS. The tumid part of the thoracic duct at its commencement from the *receptaculum chyli.*

ALVEUS COMMUNIS. The common duct, or communication of the ampullæ of the semicircular canals of the ear, is so termed by Scarpa.

ALVIDU'CUS. (From *alvus*, the belly, and *duco*, to draw.) Having the power of purging.

ALVI FLUXUS. A diarrhœa.

A'LVINE. (*Alvinus;* from *alvus*, the belly.) Appertaining to the belly.

Alvine concretions. See *Enterolithus.*

A'LVUS. (*us, i.* f. and sometimes m. *ab alluendo, quâ sordes alluuntur.*) The belly.

Alvus astricta. Costiveness of the bowels.

Alvus fluida. Looseness of the bowels.

A'LYCE. (Αλυκη; from αλυω, to be anxious.) Morbid anxiety and restlessness. *Hippocrates.*

A'LYPON. 1. A plant described by Mathiolus, which is generally supposed to be the *globularia alypum* of Linnæus. See *Globularia.*

2. A plant mentioned by the Greek physicians, and probably the same with the above. It was a drastic purgative, and produced a discharge of black bile. Its name, αλυπον, or αλυπιας, is compounded of α, priv. and λυπη, pain, apparently from its relieving pain, for Aëtius prescribes the αλυπιας as one of the ingredients in a purgative which he says is excellent for removing the pain of gout. (*Tetrabib.* iii. *serm.* 1. cap. 46. The root and seeds were both used in medicine.

ALY'SMUS. (Αλυσμος; from αλυω, to be anxious.) The anxiety and inquietude that accompany many states of disease.

ALY'SSUM. (*um, i.* n.; from α, neg. and λυσσα, *rabies canina:* so called, because it was thought to prevent or cure hydrophobia.) Madwort. See *Marrubium alyssum.*

ALYSSUM GALENI. See *Marrubium.*

ALYSSUM PLINII. See *Galium album.*

ALYSSUM VERTICILLATUM. The *Marrubium verticillatum.*

ALZEMAFOR. Cinnabar.

ALZOFAR. Oxide of copper.

AMADOU. A species of *Boletus* found on the trunks of old trees. It is generally said to be the *Boletus igniarius*, but is more probably the *B. Fomentarius.* It is boiled in water to remove the epidermis and porous parts, and extract the soluble matter: it is then dried and beat with a mallet to loosen its texture. It has now the appearance of very spongy doe-skin leather. It is lastly impregnated with a solution of nitre, and dried, when it is called spunk, or German tinder. This substance is in general use on the Continent instead of tinder, and most smokers carry their *amadou*, flint, and steel, constantly about with them. The common amadou is called *red; black* amadou is the same substance rolled in gunpowder to render it more combustible.

AMA'LGAM. (*Amalgama:* this word has been derived from ἁμα, together, and γαμειν, to marry, or from ἁμα and μαλαττω, to soften; Kraus says it is of Arabic origin.) A substance produced by mixing mercury with a metal, the two being thereby incorporated into a soft mass. See *Mercury.*

AMALGAMA'TION. The process by which an amalgam is formed.

AMAME'LIS. Αμαμηλις. A fruit which Galen says is a species of medlar. The name seems to have been given to various fruits by different authors.

AMANDINUS LAPIS. A stone regarded by the ancients as a universal antidote to poisons.

AMANI'TA. In modern botany, a genus of fungi, some species of which are edible and others poisonous.

AMANITÆ. Αμανιται. A name given by the ancients to edible fungi, as mushrooms, &c.

AMANI'TINE. *Amanitina.* Letellier has given this name to the poisonous principle of fungi, which, however, he has not been able to separate from other matters with which it is associated.

AMA'RA DU'LCIS. Bitter sweet. See *Solanum dulcamara.*

AMARA'CINA UNGUENTA. See *Amaracum.*

AMA'RACUM. Αμαρακον. Αμαρακος. A fragrant herb, named after Amaracus, perfumer to Cinyras, king of Cyprus. It is said that this Amaracus, while carrying a box of ointment, fell down and broke the box, whence arose so powerful an odour that he died of it, and was changed into the herb *sampsucum*, which was thenceforth named after him, *amaracum.* From the same fable, the most fragrant ointments were called *unguenta amaracina.* The plant amaracum is generally supposed to be the same with marjoram, but this is uncertain.

Amaranth, esculent. See *Amarruthus.*

AMARA'NTHUS. (*us, i.* m.; from α, neg. and μαραινω, to decay: because the flower, when plucked, does not soon decay.) The name of a genus of plants in the Linnæan system. Class, *Monœcia;* Order, *Pentandria.*

AMARANTHUS BLITUM. Is used as a pot herb in many parts of France, where it is called *la blette.*

AMARANTHUS OLERACEUS. Esculent amaranth. The leaves of this, and several other species, are eaten in India as cabbage is here.

AMARE'LLA. The *polygala vulgaris* is so called by Gesner, on account of its bitterness.

AMA'RINE. *Amarina.* A name given by some to the bitter principle of vegetables.

AMA'RUS. Bitter. The principal bitters used medicinally are,

1. The pure bitters: *gentiana lutea, humulus lupulus,* and *quassia amara.*

2. Styptic bitters: *cinchona officinalis, croton cascarilla, quassia simarouba.*

3. Aromatic bitters: *artemisia absinthium, anthemis nobilis, hyssopus*, &c.

Amato'ria febris. (From *amo*, to love: so called because it occurs during that period of life in which the amatory passion has great influence. Chlorosis has been so called.

Amatorium virus. See *Philtrum*.

AMATO'RIUS. (From *amo*, to love.) The oblique muscles of the eye have been called *musculi amatorii*, from their use in ogling.

AMAURO'SIS. (*is*, *is*. f. Αμαυρωσις; from αμαυροω, to obscure.) *Gutta serena. Suffusio nigra.* A diminution or total loss of sight, arising from a paralysis of the retina or optic nerve. Amaurosis may exist independently of any visible lesion of structure in the eye, or it may be complicated with cataract or any other affection. The subject of amaurosis, which has been laboriously treated by many eminent writers, is much too extensive to be entered upon here at any length.

Without the least inclination to depreciate the valuable labours of Beer and others, it may, perhaps, be said with truth, that all which is certainly known on the subject might be brought into a comparatively small compass. Amaurosis is in general characterised by dilatation of the pupil and immobility of the iris. These, however, are not constant symptoms. In some cases, where the amaurosis has been complete, the iris has readily obeyed the stimulus of light; and in others, the pupil, so far from being dilated, has been rigidly contracted. Professor Beer attaches considerable importance to the state of the pupil, as indicative of the particular cause from which the disease has arisen; but there is here considerable scope for the exercise of imagination, and general experience does not seem to verify Beer's observations on this subject. Amaurosis may be confounded with cataract, especially that kind denominated black cataract, and that in which only the posterior surface of the capsule of the lens is opake: but a careful examination, facilitated, if necessary, by dilating the pupil with belladonna, will always enable us to detect the cataract. There is, moreover, something very characteristic in the appearance of an amaurotic eye: there is a total want of the natural expression; the eye rolls unmeaningly, and the patient is unable to direct it at will towards any particular object. In simple amaurosis, also, the humours of the eye are perfectly clear; and when we look into the organ, the bottom of it frequently appears as if it were of a dead white or a sea-green colour. Amaurosis may attack both eyes at the same time, or one may not become affected for many years after the other: sometimes the disease remains entirely confined to one eye during life; but when one eye has been long amaurotic, the other rarely escapes some degree of the same affection. Amaurosis may take place in an instant; in which case a person is said, in common language, to be struck blind; or it may become complete in a few days or weeks from the time when the first dimness of sight is perceived; or what is most frequently the case, it may come on very gradually, and not amount to complete blindness for several years. These are circumstances to which it is of great importance to attend, because they often throw much light on the cause and treatment of the disease.

Amaurosis sometimes assumes an intermittent form, occurring at regular or irregular intervals. Sometimes it prevails during certain hours of the day; at others it occurs once a month. Richter mentions the case of a man who became blind every other day at noon, and recovered his sight at the same time on the following day. The amaurosis was accompanied with falling down of the upper eyelid from paralysis of its levator muscle. Whenever this man took bark, the duration of the blindness was doubled; he lost his sight for forty-eight hours, and could see only for twenty-four. Amaurosis is sometimes a complication of ague, appearing and disappearing with the paroxysms of that disease; occasionally, also, it accompanies the attacks of hysteria, and other convulsive affections, and subsides on their cessation. At the commencement of amaurosis, the patient is usually annoyed with the delusive appearance of motes or small insects floating before his eyes: these are called *scotomata*, or *muscæ volitantes*, and are chiefly perceived by the patient when he looks at white or highly illuminated objects. As the disease increases, these little dark bodies become connected together into a kind of network,—*visus reticulatus*: this appears black when the eye is exposed to a strong light; but shining, and of a silvery or golden hue, in the dark. It is not uncommon, also, for the patient to see all objects indistinctly, as if in a dazzling, tremulous, and iridescent light; while, in the dark, flashes of fire appear to dart before his eyes. As the amaurosis becomes complete, these symptoms gradually subside.

The causes of amaurosis are extremely various; but they may all be considered as operating directly on the optic nerve and retina, so as to injure their organisation, or as affecting their function merely by sympathy with other organs. It is to be observed that the optic nerve, though the principal, is not the only nerve concerned in the sense of vision: the great sympathetic communicates both with the retina and the nerves of the iris; the agency of the fifth pair is essential to the perfect function of the retina, as proved by Magendie and Desmoulins; and Mr. Mayo has shown that the third pair is necessary to the motions of the pupil. From these extensive nervous connexions, it may easily be conceived that disease, whether organic or sympathetic, of any of these nerves, may materially influence the vision, and impair or destroy the function of the retina.

Amaurosis has been attributed to a vast variety of causes, especially by the German writers. The most frequent are—

1. *Morbid changes of structure in the optic nerve, or parts of the brain connected with it.*—Such changes may occur as the result of chronic inflammation, or may arise from causes of which we have no knowledge. The parts of the brain with which the optic nerves are connected at their origin are, of course, subject to the same lesions as the rest of the cerebral substance. The optic nerve itself has been found shrivelled and

uch diminished in size, and the retina is some-nes thickened and indurated.

2. *Compression of the nerves.* — A temporary ressure may be exerted on the origin of the erves by an increased flow of blood to the ead, and hence amaurosis has occurred after olent coughing, severe vomiting, or laborious urturition. The effect of this cause may be ansient or otherwise, according to circum-ances. Permanent compression of the nerves ay arise from hydrocephalus, exostosis at the se of the cranium, and tumours in the sub-ance of the brain or in the course of the optic erve. The retina may also be subjected to ressure in morbid states of the eye-ball, as in opsy of the eye, and congestion of the vessels the choroid coat.

3. *External injuries.* — Thus the optic nerve ay be severed by a wound, or so injured in its xture as to destroy its function. A violent ow on the eye has been known to produce naurosis, most probably from the effect of con-ssion on the delicate structure of the nerve; d injuries of any of the branches of the fifth ir — as the supra-orbitary or infra-orbitary — ve frequently occasioned amaurosis by a sym-thetic effect.

4. *Exhaustion of the power of the visual nerves by er excitement.* — Thus people are struck blind v lightning, or by looking too long at a bright n; and those who have occasion to exercise eir sight much on minute objects, especially y candle-light, often become amaurotic.

5. *Inflammatory affections of the retina.* — nflammation of the retina seldom occurs except n connexion with that of the other internal tex-ures of the eye: it may be acute or chronic, but likely to induce permanent amaurosis only in s far as it occasions a change of structure.

6. *Derangement of the digestive organs.* — This a very common cause of sympathetic amaurosis: ndeed, there are few dyspeptic patients who are ot aware, in their own person, of the great in-uence of the gastric functions upon vision. What particular morbid states of the digestive rgans are most liable to affect the retina is not nown. Worms have frequently caused amau-osis; and most persons of a bilious habit have ften experienced a momentary abolition of ght from what is commonly called an overflow f bile.

7. *Suppressed secretions and discharges, and the dden cure of some cutaneous diseases.* — The ppression of the menstrual or hæmorrhoidal ux, or of the secretion of milk in women; the rying up of old ulcers; the sudden cure of orrigo, psora, &c.; the arrest of a catarrh, and her circumstances which may be supposed to ve an analogous effect on the system in pro-ucing general or local plethora or congestion, e generally recognised by pathologists among e causes of amaurosis. The recorded in-ances in which they have actually proved so re, however, fewer than the common opinion f their prevalence would lead one to suppose.

8. *The influence of narcotics and other poisonous bstances.* — Various agents, which exert a seda-ve power on the whole nervous system, affect e sight more or less if their use be long per-sisted in, and in some cases have occasioned complete amaurosis. The influence of bella-donna on the nerves of vision is familiar to all practitioners. Stramonium has the same effect in a high degree. Henbane and opium are also very inimical to vision; and tobacco in a few cases has produced similar bad consequences. Lastly, the poison of lead, and some other dele-terious substances, appear in certain cases to have produced amaurosis.

9. *The rheumatic or gouty diathesis.* — Rheu-matic and gouty forms of amaurosis have been described by recent authors, and Beer has de-tailed minutely the symptoms which he con-ceives to be characteristic of each; such cases, however, are scarcely yet sufficiently familiar to practitioners to justify any very positive conclu-sions respecting them.

10. *Congenital malformation.* — Some indivi-duals have been born blind, in whom there was no visible defect in the construction of the eye, nor opacity in any of its humours; and who were free of all indications of cerebral disease: such instances of amaurosis are probably refer-rible to some original imperfection in the or-ganisation of the optic nerve or retina.

The disposition to amaurosis seems in many instances to be hereditary. Beer traced it in several families. In one of them it pre-vailed through three successive generations, and especially in the females who had not borne chil-dren, the disease appearing at the time of the cessation of the menses. The same distinguish-ed author observes that dark eyes are more fre-quently affected with amaurosis than light ones, in the proportion of upwards of twenty to one. The prognosis in this disease is generally unfa-vourable. When it is congenital, or dependent or organic lesion, it is totally incurable; when it comes on at an advanced period of life, or when it has been of long continuance, and in-creased gradually to complete blindness, little reasonable hope of success can be entertained: on the other hand, when the patient is young and the blindness not complete, when the attack has been sudden, when the disease has not been of long standing, and especially when it is peri-odical, judicious treatment will often effect a cure.

The treatment should always have particular reference to the cause of the disease, where this can be ascertained. When it is connected with increased vascular action, general and local bloodletting should be had recourse to, and followed up by the use of counter-irritants, as blisters behind the ears and on the back of the neck, issues, setons, and the moxa; the appli-cation of cold to the head by means of the shower bath, or the *douche*, should not be neg-lected; active purgatives are clearly indicated, and an antiphlogistic regimen should of course be enjoined. When it arises from genuine paralysis of the optic nerve, in consequence of over excitement or any other cause, bloodletting and all debilitating measures are highly injurious, and tonic treatment is required; blisters should be repeatedly applied; and electricity should have a fair trial, since it has been highly extolled in this form of the disease, and at all events can

do no harm when judiciously regulated. It has been recommended to apply different external stimulants to the ball of the eye, as the vapour of ammonia or other pungent substances, and cold stimulating collyria; but very little can be reasonably expected from such measures: Mr. Travers declares that he has never seen decided benefit arise from any of them.

When amaurosis appears to depend on disorder of the digestive organs, the principal treatment is that generally applicable to dyspepsia. Many eminent foreign practitioners, and several in this country, recommend the repeated use of active emetics, especially the tartrate of antimony, in this case; Beer, Travers, and Lawrence are, however, opposed to the use of emetics; and British practitioners, in general, are not partial to it. Blisters are serviceable in this as in other forms of amaurosis; indeed, they can scarcely be misapplied in any instance of the disease, except in those obviously incurable cases which render all treatment nugatory.

In addition to those methods of treating amaurosis, which may be styled rational, various remedies have at different times been brought forward, which have been used empirically. Such are mercury, iron, and cinchona, when used without any specific indication — musk, camphor, and the whole class of antispasmodics — leopard's-bane and some other narcotics — phosphorus — pulsatilla — eye-bright — rue, &c. In the employment of the more active of these empirical remedies (if, indeed, it be thought worth while to employ them at all), the practitioner should be very careful that there is nothing in the state of the system to contra-indicate their use, lest he aggravate the disease he attempts to cure, and even entail new maladies upon the patient.

The internal use of strychnine has been recommended in that form of amaurosis which consists simply in loss of nervous power; and its reputed success in other cases of paralysis justifies a trial of it in this. Mr. Liston, Dr. Short, and Dr. Heatheote have applied strychnine externally with apparent benefit. The cuticle, raised by a blister, was removed from the temples, and from one eighth to one fourth of a grain applied daily to the denuded surface on each side, the quantity being gradually increased to a grain, and in one instance to three grains; half the latter quantity, however, is as much as will generally be requisite or safe: repeated blisters and applications of the strychnine will sometimes be required.

Various errhines have been extolled in the cure of amaurosis, but little confidence is placed in them by scientific practitioners. They may, indeed, be useful where the disease is connected with suppression of the mucous secretion from the nostrils; the best, in this case, is that recommended by Mr. Ware, consisting of ten grains of turbeth mineral, well mixed with a drachm of common sugar; a small pinch of it generally produces a copious discharge of mucus.

Amazo'nius. Αμαζονιος. The name of a kind of pastil, or lozenge, described by Galen, and formerly used against flatulency and vomiting; it was composed of aniseed, wormwood, myrrh, pepper, smallage, castor, opium, and cinnamon.

Ambar. *Amber.* See *Succinum.*

A'MBE. (*Ambe, es.* f.; Αμβη, the rim or margin of any thing.) A machine invented by Hippocrates for reducing dislocations of the shoulder; and so called, because its extremity is rounded to fit into the axilla. The ambe is the most ancient mechanical contrivance for the above purpose, but it is not used at present.

AMBER. See *Succinum.*

Amber seed. See *Hibiscus.*

A'MBERGRIS. (*Ambragrisea, æ.* f.) A substance, found in irregular masses, floating on the sea near the islands of the Indian Ocean, and many tropical shores. There was at one time much diversity of opinion as to its origin — some supposing it to be a vegetable, and others a mineral production; but it is now well known to be discharged from the intestines of the *Physeter macrocephalus*, or spermaceti whale, for it is found abundantly within them on opening the animal. As it has been chiefly observed in diseased whales, it is generally supposed to be a morbid product. Since no large mass has ever been found, which did not contain a greater or smaller quantity of the beaks of the *Sepia octopus*, which is a common food of this species of whale, there can be little doubt of its originating in the intestines of the whale; for if it were only occasionally swallowed and ejected it would be frequently found without such admixture.

Ambergris is found in masses of various size, generally small, but sometimes so large as to weigh near two hundred pounds. When first taken from the whale, it is not so hard as it afterwards becomes on exposure to the air. Dr. Ure gives the following account of its physical and chemical properties. "Its specific gravity ranges from 780 to 926. If good, it adheres like wax to the edge of a knife with which it is scraped, retains the impression of the teeth or nails, and emits a fat odoriferous liquid on being penetrated with a hot needle. It is generally brittle; but, on rubbing it with the nail, it becomes smooth like hard soap. Its colour is either white, black, ash-coloured, yellow, or blackish; or it is variegated, namely, grey with black specks, or grey with yellow specks. Its smell is peculiar, and not easy to be counterfeited. At 144° it melts, and at 212 is volatilised in the form of a white vapour. But, on a red-hot coal, it burns, and is entirely dissipated. Water has no action on it; acids, except nitric, act feebly on it; alkalis combine with it, and form a soap; æther and the volatile oils dissolve it; so do the fixed oils, and also ammonia, when assisted by heat; alkohol dissolves a portion of it, and is of great use in analysing it, by separating its constituent parts. According to Bouillon la Grange, who has given the latest analysis of it, 3820 parts of ambegris consist of adipocire 2016 parts, a resinous substance 1167, benzoic acid 425, and coal 212. But Buchoitz could find no benzoic acid in it. I examined two different specimens with considerable attention. The one yielded benzoic

id, the other, equally genuine to all appearance, forded none."

Pelletier and Caventou have found ambergris consist principally of a substance very analogous to cholesterine, and to which they have iven the name of *ambreine*. From its high rice ambergris is variously counterfeited. It as been alleged to possess stimulant and ntispasmodic virtues, but it appears to be early inert, and it is now scarcely used except y the perfumer.

Ambide'xter. (From *ambo*, both, and *dexter*, ght.) 1. As a *substantive*, one who uses both nds with equal facility.

2. As an *adjective*, ambidextrous; possessed f the power of using both hands with equal cility. It is of great advantage to a surgeon be ambidextrous.

AMBLO'SIS. (Αμβλωσις. *Amblosis, is.* ; from αμβλοω, to miscarry.) A miscarage.

AmbLo'ticus. (From αμβλωσις) Amblotic, aving the power to cause abortion.

Amblyo'gmos. See *Amblyopia.*

AMBLYO'PIA. (*a, æ.* f.; Αμβλυωπια, from αμβλυς, dull, and ωψ, the eye.) Αμβλυωγμος. μβλυωσμος. Hippocrates means by this word ie dimness of sight, to which old people are ubject. Paulus, Actuarius, and the best modern writers, make amblyopia synonymous ith incomplete amaurosis. See *Amaurosis.*

AMBLYO'SMUS. See *Amblyopia.*

A'MBON. Αμβων, the margin or tip of the ockets in which the heads of bones are lodged.

A'MBRA. 1. Amber. See *Succinum.*

2. Ambergris.

AMBRAGRI'SEA. See *Ambergris.*

Ambreas. *Ambreate.* A salt formed by the ombination of the ambreic acid with a base.

Ambreic acid. An acid obtained by Pelletier and Caventou, by treating ambreine with itric acid.

AMBREINE. (*Ambreina, æ.* f.; from *mber.*) A fatty substance forming the basis f ambergris; it differs but little from cholesrine.

Ambro'sia. (Αμβροσια.) 1. A name given several plants, as tansy, wormwood, the herb otrys, &c.

2. The name of several compound medicines, hich were all of the alexipharmic kind.

A'mbulans. (From *ambulo*, to walk.) A rm applied to some erratic diseases, as *Erysi-las ambulans*, &c.

Ambulo. *Flatus furiosus. Vareni.* This ame has been given to a flatulent distension of e abdomen, attended with pain, and affecting e cavity unequally, sometimes in one part, and metimes in another.

AMBU'STIO. (*o, onis.* f.; from *amburo*, to urn.) A burn, or scald, which is a lesion of me part of the body, occasioned by the application of heat; but the latter term is applied ly where this is conveyed through the medium a fluid. Burns may be divided, according to the gree of injury sustained, into three kinds. 1. uch as merely excite an inflammation of the skin, tended, or not, with slight vesication, and which, it be not very improperly treated, almost always shows a tendency to resolution. 2. Those which affect the vitality of the cutis, causing detachment of the cuticle and suppuration of the cutaneous surface. 3. Those in which the vitality of the integuments is either immediately destroyed, or so injured that sloughing ensues.

When the heat is very great, or when it is long applied, the parts beneath the skin may, of course, be disorganised to any extent.

A more complex classification of burns has lately been introduced by Baron Dupuytren; but the above seems sufficient for all practical purposes, and has the advantage of being an index to the three kinds of treatment most generally adopted in these cases.

The degree of danger arising from burns is determined by a variety of circumstances. These are judiciously commented upon by Mr. Samuel Cooper, in his First Lines of the Practice of Surgery, as follows:

"1. The extent of the injured surface. A scald or burn of considerable extent often proves fatal immediately, or in a few hours, without the patient ever having rallied from the collapse. 2. The depth of the injury is another consideration influencing the prognosis. The deeper the effects of the burn extend the greater the peril. 3. The situation of burns is also to be taken into the account; those of the head, neck, chest, and abdomen, *cæteris paribus*, being more dangerous than such as affect only the extremities. Scalds of the pharynx and larynx are remarkable for their fatality. 4. The age of the patient makes also a vast difference; infants being often carried off by convulsions, and very nervous persons sinking apparently from want of power in the system to bear the shock inflicted upon it; and delicate individuals, and others who lead irregular lives, or are of a gross corpulent habit, being far less capable of bearing the consequences of severe burns, than strong healthy individuals more careful in their mode of living. 5. In estimating the danger of burns, however, a judgment is not to be formed abstractedly either from the extent of a burn, or from its probable depth, but with reference to its extent and depth together, joined with other circumstances already specified. In fact, a burn of the worst or sloughing kind, if it be of little extent, and the patient's constitution good, may be attended with no severe indisposition whatsoever, while the most superficial scald, if extensive, may prove fatal; and the risk of this termination will be greater in proportion as the patient's age, or previous state of health and mode of living, may render him an unfavourable subject for the accident. 6. In delivering a judgment respecting the degree of danger from a burn, we are not to hold out too favourable a view on first inspection of the case, because when the eschars and sloughs come away, the mischief may be deeper and more extensive than first appearances might lead us to expect. 7. In the process by which suppurating wounds and ulcers heal, there is a principle in the animal economy exemplified, by which the contraction and absorption of granulations are brought about during and for some time after cicatrization. It is in consequence of this con-

traction of granulations that the circumference of the ulcer is powerfully drawn towards the centre, and the degree and force with which this happens are perhaps greater in the sores produced by burns than in those resulting from any other cause. Hence the healing of ulcerated burns is liable to be followed by hideous disfigurement and contraction of parts, and even by a complete and permanent interruption of their functions. Thus, when the forehead or eyebrow is burnt, the eyelids are likely to become everted, *ectropium* may take place, and the eyeball, being deprived of its natural screen, may have its functions considerably impaired, or even destroyed, by repeated attacks of chronic inflammation, terminating in opacity of the cornea. In burns of the neck, if the patient live, the contraction of the granulations frequently brings on a wry neck, and, in worse cases, the chin is absolutely pulled down to the sternum, and fixed in this position."

There has been great want of unanimity among surgeons, with respect to the treatment of burns, which has been the subject of some preposterous views, and much empirical practice. The true cause of the inconstancy of practitioners to the ordinary principles of their art in this instance appears to be, that *slight* burns have a strong disposition to get well of themselves, and generally do so under any treatment that is not extravagantly bad, while *severe* burns are a most intractable class of injuries, and too frequently prove fatal in spite of the best treatment; hence surgeons, disheartened at the want of success attending the application of common scientific principles, have had recourse to *plans* of treatment, which, though they may be apparently sanctioned by the facility of cure in the slighter cases, amount in reality to prescribing for an abstraction instead of the individual case before us — a proceeding which has never led, and never can lead, to general success in any department of the healing art. The principal of these plans are the following.

Mr. Cleghorn's Plan. Mr. Cleghorn was a brewer at Edinburgh, who was induced to direct his attention to the treatment of burns from the frequency of these accidents among his own men. His method consisted in the immediate application of vinegar, which was continued for some hours, until the pain abated, and was repeated if the pain returned. In cold weather the vinegar was always warmed, that it might not occasion any chilliness. When there had been destruction of parts, the vinegar was succeeded by a poultice, which was applied for six, or at most eight hours, when it was taken off, and the injured surface entirely covered with finely powdered chalk, so as to absorb all moisture; the poultice was then reapplied. The chalk and the poultice were applied every night and morning till the cure was complete. If the poultices produced too much relaxation of the parts, a plaster or ointment containing acetate of lead was applied, but the chalk was still sprinkled on the sores. A moderately generous diet was allowed, and no medicine given. If the bowels were confined they were opened by laxative articles of food, as prunes, &c.; but purgatives were never allowed, on account of the disturbance they gave the patient, and the debility induced by them.

Sir James Earl's Plan. This consisted in the appliation of cold water or ice as long as the parts remain hot and painful. The practice is an old one, and recommended by Rhazes and Avicenna.

Baron Larrey's Plan. This eminent surgeon dresses all deep burns with saffron ointment, spread on fine old linen, which he finds to relieve the pain. When suppuration takes place, ointment of styrax is applied instead of the former, to promote the detachment of the eschars, and check the disposition to slough: when these ends are accomplished, the saffron ointment is again used, and for this dry lint, and strips of linen spread with simple cerate are gradually substituted. If the granulations rise too high they are touched with nitrate of silver, or bathed with a weak solution of oxymuriate of mercury or sulphate of copper. A light nutritious diet is allowed, with emollient beverages taken warm, as almond emulsion with nitre, hydromel, rice ptisan, &c. M. Larrey is entirely opposed to cold and repellent applications.

Dr. Kentish's Plan. This is founded on a strange theory. Dr. Kentish holds that any part of the system having its action increased to a very high degree, must continue to be excited, though in a less degree, either by the stimulus which caused the increased action, or by some other having the nearest similarity to it, until by degrees the extraordinary action subsides into the healthy action of the part. From this view arise two indications; the action of the part is to be gradually diminished, and the action of the system increased to meet it, as it were, half way, thereby restoring what Dr. Kentish calls the *unity of action*. To fulfil these indications, the strongest alkohol, oil of turpentine, &c. are applied to the burn as hot as the sound parts can bear, and these are succeeded by less stimulating applications, until the parts act by natural stimuli; while the actions of the whole system are increased by the internal use of ether, ardent spirits, wine, opium, &c. It is unnecessary to go further into the details of this plan; the hypothesis on which it is founded is unsupported by any kind of evidence, and that part of the treatment which relates to the indiscriminate use of internal stimuli can scarcely fail to be pernicious in a majority of instances.

A practice has lately been introduced into this country from America, of dressing superficial burns with raw cotton, carded or thinly spread out, and applied directly to the injured surface. This treatment has been extended by Dr. Anderson, of Glasgow, to burns of all kinds, from the slightest to the most severe; this gentleman insists on not removing the cotton, unless we are compelled by circumstances, until the new cuticle is formed, and the parts can bear exposure; but if this advice were followed, as Mr. S. Cooper has justly remarked, the discharge would in many instances form with the cotton a mere mass of putridity.

Another method which has come into vogue

is to sprinkle the injured surface with wheat flour, whereby the discharge is absorbed, and a kind of artificial scab formed, which is allowed to remain till the parts beneath are entirely healed, and is then removed by means of a poultice.

Setting aside all these exclusive plans, the most rational and successful treatment of burns seems to be that founded on the actual condition of the parts in the three degrees of injury mentioned at the commencement of this article. When the burn or scald is quite superficial, and the integuments merely inflamed, the inflammation is to be relieved by the application of cold water or cooling lotions. It is to be observed, however, that when the pulse is feeble and the skin cold, or when the burn, though superficial, is extensive, or situated on the trunk, cold applications are improper, and we may use the liniment recommended by Sir Astley Cooper, consisting of equal parts of oil of turpentine, lime water, and linseed oil, resorting afterwards to cooling applications and antiphlogistic treatment, when re-action is sufficiently established. When the cuticle has been detached, and suppuration thus rendered necessary, there is no better general application than the *linimentum aquæ calcis*, or Carron oil, though, when the part is very hot and painful, a poultice will frequently be found to give more effectual relief. In burns attended with destruction of parts, the treatment is the same with that of sphacelus; the separation of the sloughs is to be promoted by emollient poultices; and as the injured part is liable during this process to assume every variety of action, stimulating or soothing remedies must be applied according to circumstances: when the sores are languid and the sloughs detached slowly, a certain proportion of turpentine mixed with the dressings will be found useful; and when the ulcers are irritable, anodyne fomentations, or the hemlock or carrot poultice, are necessary to restore a healthy action. With respect to turpentine, which has been very indiscriminately applied to all kinds of burns, it may be remarked, that in slight and superficial injuries of this sort it may occasion some unnecessary pain and excitement, but can seldom do any serious mischief, since it is by no means easy to counterwork the restorative energies of nature when they are but little impaired; and that in those cases where the texture of the parts is destroyed, the application of the turpentine at an *early period* will do neither good nor harm, since it does not come in contact with any raw surface.

Slight burns require little constitutional treatment; laxatives and attention to diet are generally all that is required. With respect to those of a more serious description, the following summary of practice is given by Mr. Samuel Cooper: —

"With regard to the *internal treatment*, when a scald or burn is of a severe description, *the first stage of danger*, the danger from the shock on the system, the period of irritation, as Dupuytren terms it, immediately presents itself, sometimes accompanied by violent agitation of the nervous system, but still more frequently by shiverings, paleness, stupor, coldness, weak pulse, and collapse. Now opium, brandy, ammonia, or ether may be given. Cold applications are to be avoided, bottles of hot water may be put to the feet and epigastrium, and the patient kept covered. The warm bath for children is in this stage particularly recommended by Dupuytren. When the collapse goes off, and fever and inflammation come on, we are to adopt antiphlogistic treatment, bleed young robust subjects, and administer opium.

"The second period of great suffering and danger is when the eschars and sloughs are beginning to loosen: the *stage of elimination*, as it is named by French surgeons. The constitutional disturbance now runs high, and, when the patient is strong and young, bleeding is often necessary, together with leeches and opium.

"The third stage of danger is that of suppuration, when the profuse discharge may be such as the patient cannot safely bear; purgatives and astringent lotions are now proper to check it, followed by bark, dil. sulph. acid, a moderate quantity of wine and opium. For the diarrhœa to which burnt patients are subject in the suppurative stage, Dupuytren prefers giving half a grain of opium, and one of sulphate of zinc, three or four times a day.

"The fourth stage of danger is, when hectic symptoms have been induced by the long duration of the effects of the injury, the irritation, pain, discharge, &c. Here we must act according to the principles explained in the article on hectic fever, support the strength, give opium, &c. The occasional complications of burns, phlegmonous erysipelas, tetanus, and the determination of blood to internal organs, will of course demand their particular remedies."

In the foregoing article we have given a mere sketch of the subject, a full exposition of which cannot be expected in a work like this.

Ambuya-Embo. The name of a Brazilian species of aristolochia, a decoction of which is used by the natives against obstructions, &c.

Ameli. A Malabar shrub of an unknown genus. The decoction of its leaves is said to be useful in colic, and its root boiled in oil is applied to tumours as a discutient.

Ame'lla. The same as achmella.

AMENORRHŒ'A. (*a*, *æ*. f.; from α, priv. μην, a month, and ῥεω, to flow.) An obstruction of the menses in women from other causes than pregnancy or advanced age. The menses should be regular as to quantity and quality; and in ordinary constitutions it is essential to health that they should observe the monthly period. When they are obstructed, nature sometimes makes efforts to obtain for them some other outlet; but such vicarious discharges ill supply the place of the natural function, and the general health always suffers in a greater or less degree. See *Menstruation*. When these efforts are not made, or when they are ineffectual, the consequence may be chlorosis, pulmonary diseases, spasmodic affections, hysteria, epilepsy, &c. according to the general habit and disposition of the patient.

Amenorrhœa involves two distinct cases.

1. *Emansio mensium*; Retention of the

menses; when the menses do not appear at the period of life at which they may be naturally expected. See *Chlorosis.*

2. *Suppressio mensium;* Suppression of the menses; when the menses, after appearing and continuing as usual for a while, cease from some cause not connected with pregnancy or advanced age.

Suppression of the menses sometimes occurs suddenly, in consequence of exposure to cold, strong emotions of the mind, and other causes capable of producing a strong impression on the system, and coming into operation during the menstrual period, or immediately before it. In such cases, if the patient be healthy, the natural state of things is often easily restored: if constriction of the cutaneous vessels be the cause, a pediluvium and a diaphoretic before going to bed, may bring back the menses in a few hours; if the suppression be attended with febrile excitement, a moderate venesection and a saline purgative will prove beneficial: occasionally, however, these means fail, and the amenorrhœa becomes chronic; or some acute disease may ensue, on recovery from which the constitution is restored to its former state or not, according to circumstances. In other cases suppression of the menses is symptomatic of various diseases — generally those which induce great debility,— as pthisis, organic affections of the viscera, an extreme degree of dyspepsia, &c., or those which involve great derangement of the nervous functions, as hysteria and epilepsy: in such cases the amenorrhœa can only be cured by the removal of the original affection, and is not the most important object of attention. Debility of the uterine system, arising from natural defect or from accidental circumstances, may also be a cause of suppression of the menses; it is probable that in the case of unmarried females the non-performance of those functions which nature has assigned to the reproductive system, frequently occasions local atony and constitutional disease. The treatment of chronic suppression is nearly the same with that of retention of the menses. See *Chlorosis.*

Amenta'ceæ plantæ. Amentaceous plants. A division of plants in the natural arrangements of botanists. See *Vegetable Kingdom.*

AMENTA'CEUS. Amentaceous: having an amentum or catkin; as the willow, birch, beech, poplar, &c.

AME'NTIA. (*a*, *æ.* f.; from α, priv. and *mens*, the mind.) Imbecility of mind in which the relations of things are either not perceived, or not recollected. When it originates at birth, it is called *amentia congenita*, natural idiotism; when from the infirmities of age, *amentia senilis*, dotage, or second childishness; and when from some accidental cause, *amentia acquisita.*

AMEN'TUM. (*um*, *i.* n.) 1. A catkin; called also *Julus*, *Nucamentum*, *Catulus.* A species of inflorescence, consisting of a simple peduncle covered with numerous chaffy scales, under which are the flowers or parts of fructification. Catkins are divided into,

Cylindrical: as in *Corylus avellana*, *Beta alba*, *Alnus.*

Globose: as in *Fagus sylvatica*, *Platanus orientalis*, *Urtica pilulifera.*

Ovate: as in the female *Pinus sylvestris.*

Filiform: as in *Fagus pumila*, and *Castanea pumila.*

Attenuate, slender towards the end: as in *Fagus castanea.*

Thick: as in *Juglans regia.*

Imbricate, scaly: as in *Juniperus communis*, and *Salix fusca.*

Paleaceous, chaffy: as in *Pinus sylvestris.*

Naked: the scales being so small that the parts of fructification appear naked, as in *Excoccaria.*

2. A name of the *Alumen scissum.* — *Ruland.*

American balsam. See *Myroxylon peruiferum.*

AMETHY'STUS. (Αμεθυστος, from α, priv. and μεθυω, to be drunk.) 1. *Amethysta medicamenta.* Medicines used to prevent or remove the effects of excess in wine.

2. The amethyst. A well-known gem of a rich purple or violet colour; it was formerly supposed to prevent drunkenness.

Ami'culum. The amnion has been so called.

A'MIDINE. A substance produced, according to Saussure, when the paste of starch is kept for a long time with or without exposure to the air. Caventou says that the amidine is formed at once by the action of the hot water on the starch.

A'midum. See *Amylum.*

Aminæ'um vinum. A wine much esteemed by the ancients. It was the produce of Aminea, a district of Campania. Galen also mentions an *Aminæum neapolitanum* and an *Aminæum siculum.* There seems likewise to have been a factitious wine of the same name.

A'mma. See *Hamma.*

A'MMI. (Αμμι, *Ammi*, *mi.* n.; from αμμος, sand, from its likeness to little gravel-stones; or, according to others, from αμις, *matula*, on account of its possessing diuretic properties.) 1. The name of a genus of plants in the Linnæan system.

2. The pharmacopœial name of the herb bishop's weed, of which there are two sorts. See *Sison ammi*, and *Ammi majus.*

Ammi majus. The systematic name for the *Ammi vulgare* of the shops. The seeds of this plant, *Ammi — foliis inferioribus pinnatis, lanceolatis serratis; superioribus multifidis, linearibus*, of Linnæus — are less powerful than those of the *Sison ammi*, but used to be exhibited for the same purposes.

Ammi verum. See *Sison ammi.*

Ammi vulgare. See *Ammi majus.*

A'mmion. Αμμιον. Minium. Red lead.

Ammochio'sia. (From αμμος, sand, and χεω, to pour.) A remedy for drying the body by immersing it in sand heated by the rays of the sun. It was used by the Greeks chiefly in dropsy. — *Aëtius* — *Oribasius.*

AMMO'NIA. (*a*, *æ.* f.; so called because it is obtained from sal ammoniac.)

Ammoniacal Gas. Volatile Alkali. Alkaline Air. Ammonia in a liquid form was known to chemists from an early period under the name

of *spirit of hartshorn*, but its existence as a gas was first made known by Dr. Priestley, who described it as *alkaline air*.

The elements of ammonia exist abundantly in animal substances, and when these are decomposed either by putrefaction or the agency of heat, ammonia is formed and evolved in large quantity; thus bones yield it copiously by distillation. It may also be obtained in considerable quantity from coal soot, but it is now usually procured by the decomposition of muriate of ammonia or sal ammoniac.

The following account of the chemical properties of ammonia is taken from Dr. Turner's Elements of Chemistry: —

Ammoniacal gas is colourless; it has a strong pungent odour, and acts powerfully on the eye and nose. It is quite irrespirable in its pure form, but when diluted with air, it may be taken into the lungs with safety. Burning bodies are extinguished by it, nor is the gas inflamed by their approach. Ammonia, however, is inflammable in a low degree; for when a lighted candle is immersed in it, the flame is somewhat enlarged, and tinged of a pale yellow colour, at the moment of being extinguished; and a small jet of the gas will burn in an atmosphere of oxygen. A mixture of ammoniacal and oxygen gases detonates by the electric spark; water being formed, and nitrogen set free. A little nitric acid is generated at the same time, except when a smaller quantity of oxygen is employed than is sufficient for combining with all the hydrogen of the ammonia.

Ammoniacal gas, at the temperature of 50° F. and under a pressure equal to 6·5 atmospheres, becomes a transparent colourless liquid. It is also liquefied, according to Guyton Morveau, under the common pressure, by a cold of 70 degrees below zero of Fahrenheit; but there is no doubt that the liquid which he obtained was a solution of ammonia in water.

Ammonia has all the properties of an alkali in a very marked manner. Thus it has an acrid taste, and gives a brown stain to turmeric paper; though the yellow colour soon reappears on exposure to the air, owing to the volatility of the alkali. It combines also with acids, and neutralises their properties completely. All its salts suffer decomposition by being heated with the fixed alkalies or alkaline earths, such as potash or lime, the union of which with the acid of the salt causes the separation of its ammonia. None of the ammoniacal salts can sustain a red heat without being dissipated in vapour or decomposed, a character which manifestly arises from the volatile nature of the alkali. If combined with a volatile acid, such as the muriatic, the compound itself sublimes, unchanged by heat; but when united with an acid which is fixed at a low red heat, such as the phosphoric, the ammonia alone is expelled.

Hydrogen and nitrogen gases do not unite directly, and therefore chemists have no synthetic proof of the constitution of ammonia. Its composition, however, has been determined analytically with great exactness. When a succession of electric sparks is passed through ammoniacal gas, it is resolved into its elements; and the same effect is produced by conducting ammonia through porcelain tubes heated to redness. The late A. Berthollet analysed ammonia in both ways, and ascertained that 200 measures of that gas, on being decomposed, occupy the space of 400 measures, 300 of which are hydrogen, and 100 nitrogen. Dr. Henry has made an analysis of ammonia by means of electricity, and his experiment proves beyond a doubt that the proportions above given are rigidly exact.

	Grains.
Now since 150 cubic inches of hydrogen weigh	3·230
and 50 of nitrogen	15·075
100 cubic inches of ammonia must weigh	18·305

and it is composed by weight of

Hydrogen	3·230	3	or 3 equialents,
Nitrogen	15·075	14	or 1 equivalent.

Its equivalent, therefore, is 17.

The specific gravity of ammonia, according to this calculation, is 0·5902, a number which agrees closely with those ascertained directly by Sir H. Davy and Dr. Thomson. When ammonia and mercury are subjected together to the action of galvanism, a singular substance results, which is called the *ammoniacal amalgam*; an account of this is given in the article *nitrogen*.

Ammoniacal gas has a powerful affinity for water, and for this reason must always be collected over mercury. Owing to this attraction, a piece of ice, when introduced into a jar full of ammonia, is instantly liquefied, and the gas disappears in the course of a few seconds. Sir H. Davy, in his Elements, stated that water at 50° F., and when the barometer stands at 29·8 inches, absorbs 670 times its volume of ammonia; and that the solution has a specific gravity of 0·875. According to Dr. Thomson, water at the common temperature and pressure takes up 780 times its bulk. By strong compression, water absorbs the gas in still greater quantity. Caloric is evolved during its absorption; and a considerable expansion, independently of the increased temperature, occurs at the same time.

The concentrated solution of ammonia, commonly though incorrectly termed *liquid ammonia*, is made by transmitting a current of the gas, as long as it continues to be absorbed, into distilled water, which is kept cool by means of ice or moist cloths. The gas may be prepared from any salt of ammonia by the action of any pure alkali or alkaline earth; but muriate of ammonia and lime, from economical considerations, are always employed. The best proportions are equal parts of muriate of ammonia and well-burned quicklime, considerable excess of lime being used, in order to decompose the muriate more expeditiously and completely. The lime is slaked by the addition of water; and as soon as it has fallen into powder, it should be placed in an earthen pan and be covered till it is quite cold, in order to protect it from the carbonic acid of the air. It is then mixed in a mortar with the muriate of ammonia, previously reduced

to a fine powder; and the mixture is put into a retort or other convenient glass vessel. Heat is then applied, and the temperature gradually increased as long as a free evolution of gas continues. The ammonia should be conducted by means of the safety tube of Welter into a quantity of distilled water equal to the weight of the salt employed. The residue consists of muriate of lime, or strictly chloride of calcium, and lime. The most convenient method of procuring ammoniacal gas on a small scale for chemical experiments is by applying a gentle heat to this strong solution of ammonia in a glass vessel; the gas is soon evolved in a very pure state.

The concentrated solution of ammonia, as thus prepared, is a clear colourless liquid, of specific gravity 0·936. It possesses the peculiar pungent odour, taste, alkalinity, and other properties of the gas itself. On account of its great volatility it should be preserved in well-stopped bottles, a measure which is also required to prevent the absorption of carbonic acid. At a temperature of 130° F. it enters into ebullition, owing to the rapid escape of pure ammonia; but the whole of the gas cannot be expelled by this means, as at last the solution itself evaporates. It freezes at about the same temperature as mercury.

The following table, from Sir H. Davy's Elements of Chemical Philosophy, shows the quantity of real ammonia contained in 100 parts of solutions of different densities, at 59° F. and when the barometer stands at 30 inches. The specific gravity of water is supposed to be 10,000:—

Table of the quantity of real Ammonia in solutions of different densities.

100 parts of sp. gravity.		Of real Ammonia.	100 parts of sp. gravity.		Of real Ammonia.
8750	contain	32·5	9435	contain	14·53
8875		29·25	9476		13·46
9000		26·00	9513		12·40
9054		25·37	9545		11·56
9166		22·07	9573		10·82
9255		19·54	9597		10·17
9326		17·52	9619		9·60
9385		15·88	9692		9·50

The presence of free ammoniacal gas may always be detected by its odour, by its temporary action on yellow turmeric paper, and by its forming dense white fumes, muriate of ammonia, when a glass rod moistened with muriatic acid is brought near it.

The preparations of ammonia now used in medicine are,

1. Solution of ammonia. See *Ammoniæ liquor.*

2. Solution of subcarbonate of ammonia. See *Ammoniæ subcarbonatis liquor.*

3. Subcarbonate of ammonia. See *Ammoniæ subcarbonas.*

4. Solution of acetate of ammonia. See *Ammoniæ acetatis liquor.*

5. Muriate of ammonia. See *Ammoniæ murias.*

6. Ammoniated iron. See *Ferrum ammoniatum.*

7. Several tinctures and spirits into the composition of which ammonia enters.

Ammonia acetata. See *Ammoniæ acetatis liquor.*

Ammonia muriata. See *Ammoniæ murias.*

Ammonia præparata. See *Ammoniæ subcarbonas.*

Ammoniaco-magnesian phosphate. See *Calculus.*

AMMONI'ACUM. (Αμμωνιακον. *Ammoniacum, i.* n.; so called because it grew near the temple of Jupiter Ammon in the deserts of Lybia, or from αμμος, sand, because it grows in sandy wastes. The derivation, however, is the same either way; because the god Αμμων was so named from the situation of his temple among the sands.) See *Heracleum gummiferum.*

Ammoniacum sal. (Same etymon.) So called because it was brought by the way of Egypt from the confines of the Lybian desert. *Sal Ammoniac.* See *Ammoniæ murias.*

Ammoniæ acetatis liquor. Solution of acetate of ammonia; formerly called *Aqua ammoniæ acetatæ.* Take of subcarbonate of ammonia, two ounces; dilute acetic acid, four pints. Add the acid to the salt, until bubbles of gas shall no longer arise, and mix. The effervescence is occasioned by the escape of carbonic acid gas, which the acetic acid expels, and neutralises the ammonia. Four pints of distilled vinegar, of the usual strength (specific gravity 1·009), require about seven drachms of the recently prepared subcarbonate of ammonia of the pharmacopœia for their saturation; but the strength of the distilled vinegar, and the composition of the subcarbonate, are both liable to vary; so that the best method of proceeding consists in adding the subcarbonate to the distilled vinegar, till the tests of turmeric and litmus show that it is neutralised. The solution thus prepared is generally of a brownish tint, but it may be rendered colourless and pellucid by filtering it through a little well-burned and recently powdered charcoal. Acetate of ammonia is extremely soluble in water and alkohol, and very difficult to crystallise. M. De Lassone obtained it crystallised by sublimation in slender, flattened, sharp-pointed crystals an inch in length, and of a pearly white colour. They are very deliquescent, and have a cool sweetish taste. Berzelius says that if a saturated solution be made with the aid of heat in a closed bottle, and allowed to cool slowly, it will deposit crystals.

This preparation was formerly known in the shops under the name of *spirit of Mindererus.* When assisted by a warm regimen, it proves an excellent and powerful sudorific; and, as it operates without quickening the circulation, or increasing the heat of the body, it is admissible in febrile and inflammatory diseases, in which the use of stimulating sudorifics is attended with danger. It may be given singly, or combined with opium, camphor, antimonials, nitre, &c. Its action may be determined to the kidneys, by walking about in the cool air, especially if it be combined with diuretics. The common dose is half an ounce; in which quantity, however, it may induce nausea if the stomach be irritable.

t is used externally in stimulating and discu-ient lotions.

AMMONIÆ BICARBONAS. See *Ammoniæ sub-arbonas.*

AMMONIÆ CARBONAS. See *Ammoniæ sub-arbonas.*

AMMONIÆ LIQUOR. Liquor of ammonia ; he *alkali volatile causticum* and *aqua ammoniæ ouræ* of former Pharmacopœias. Take of mu-iate of ammonia eight ounces ; lime newly pre-ared, six ounces ; water, four pints. Pour on he lime a pint of the water ; then cover the essel, and set them by for an hour ; then add he muriate of ammonia, and the remaining wa-er previously made boiling hot, and cover the essel again ; strain the liquor when it has ooled ; then distil from it twelve fluid ounces of the solution of ammonia into a receiver cooled o the temperature of 50°. The specific gravity of this solution should be to that of distilled wa-er, as 0·960 to 1000.

Lime is capable of decomposing muriate of ammonia at a temperature much below that of boiling water ; so that when the materials are mixed, a solution of ammonia and of muriate of lime is obtained. This being submitted to dis-illation, the ammonia passes over with a certain portion of the water, leaving behind the muriate of lime dissolved in the rest. The proportion of water directed seems, however, unnecessarily great, which obliges the operator to employ larger vessels than would otherwise suffice. But the process now directed is certainly much easier, more economical, and more uniform in its results, than that of former Pharmacopœias.

This preparation is colourless and transparent, with a strong peculiar smell ; it parts with the ammonia in the form of gas, if heated to 130 degrees, and requires to be kept from the contact of atmospheric air.

The solution of ammonia is stimulant and antacid, and is given in doses of from 10 to 20 drops in hysteria, syncope, cardialgia, &c. Externally applied it is rubefacient ; a liniment composed of one part of the solution and two of olive oil, is in common use as a liniment in cynanche tonsillaris, being rubbed on the skin, and applied round the throat spread on a piece of flannel ; when applied to the skin undiluted, it raises a blister, sometimes instantaneously, and is therefore useful when it is desirable to establish a strong counter-irritation in a short time. Taken internally in an over dose it is rapidly fatal ; the best antidote is vinegar.

AMMONIÆ MURIAS. *Ammonia muriata. Sal ammoniacus*, or *ammoniacum.* Sal ammoniac. A salt formed by the combination of muriatic acid with ammonia. This salt is found native in volcanic regions, where it appears in efflorescent, crystalline, and other forms; as at the Solfaterra, Vesuvius, Ætna, Hecla, the Lipari Islands, &c. It occurs in the vicinity of burning beds of coal, both in Scotland and England. The native sal ammoniac, however, is not used for economical purposes, as the salt can be procured in greater abundance by cheap and easy artificial processes.

In Egypt it is made in great quantities. In that country the dung of the camel and other animals is in common use as fuel. The soot is put into large round bottles, a foot and a half in diameter, and terminating in a neck two inches long. The bottles are filled up with this matter to within four inches of the neck. Each bottle holds about forty pounds of soot, and affords nearly six pounds of salt. The vessels are arranged in a furnace, with the upper part of each standing out, so as to be kept comparatively cool by the air. A fire of camel's dung is then kindled, and continued for three days and nights. On the second and third day the salt is sublimed into the upper part of the bottles, which are then broken, and the muriate taken out in cakes.

All Europe used formerly to be supplied with sal ammoniac from Egypt, but the salt is now manufactured on a very large scale in France, England, and other countries, and the importation of it from Egypt has ceased. The following account of the processes in general use is taken from Dr. Ure's Chemical Dictionary : —

" The ordinary mode of manufacturing sal ammoniac in Europe, is by combining with muriatic acid the ammonia resulting from the igneous decomposition of animal matters in close vessels. Cylinders of cast-iron are charged with bones, horns, parings of hides, and other animal matters ; and being exposed to a full red heat, an immense quantity of an impure liquid carbonate of ammonia distils over. Mr. Minish contrived a cheap method of converting this liquid into sal ammoniac. He digested it with pulverised gypsum, or simply made it percolate through a stratum of bruised gypsum ; whence resulted a liquid sulphate of ammonia, and an insoluble carbonate of lime. The liquid, evaporated to dryness, was mixed with muriate of soda, put into large glass balloons, and decomposed by a subliming heat. Sal ammoniac was found above in its characteristic cake, while sulphate of soda remained below.

" M. Leblanc, of St. Denis, near Paris, invented another ingenious method. He used tight brick kilns, instead of iron cylinders, for holding the materials to be decomposed. Into one he put a mixture of common salt and oil of vitriol ; into another, animal matters. Heat extricated from the first muriatic acid gas, and from the second ammonia ; which bodies being conducted by their respective flues into a third chamber lined with lead, and containing a stratum of water on its bottom, entered into combination, and precipitated in solid sal ammoniac on the roof and sides, or in liquid at the bottom.

" In the 20th volume of the *Annales de Chimie*, a plan for employing bittern or muriate of magnesia to furnish the acid ingredient is described. A process on the same principle was some time ago commenced at Borrowstounness in Scotland, by Mr. Astley. He imbued in a stove-room heated by brick flues, parings of skins, horns, and other animal matters, with the muriate of magnesia, or mother water of the sea-salt works. The matters thus impregnated and dried were subjected in a close kiln to a red heat, when the sal ammoniac vapour sublimed, and was condensed either in a solid form into an adjoining

chamber or chimney, or else into a stratum of water on its bottom. Muriate of magnesia at a red heat evolves muriatic acid gas; an evolution probably aided in the present case by the affinity of ammonia.

"From coal soot likewise a considerable quantity of ammonia, in the state of carbonate and sulphate, may be obtained, either by sublimation or lixiviation with water. These ammoniacal products can afterwards be readily converted into the muriate, as above described. M. Leblanc used a kettle or eolipile for projecting steam into the leaden chamber, to promote the combination. It is evident that the exact neutralisation essential to sal ammoniac might not be hit at first in these operations; but it could be afterwards effected by the separate addition of a portion of alkaline or acid gas. As the mother waters of the Cheshire salt works contain only $3\frac{1}{2}$ per cent of muriate of magnesia, they are not suitable, like those of sea-salt works, for the above manufacture."

The greater part of the sal ammoniac used in London is brought from the north of England, but an inferior kind is also imported from the East Indies.

Ammoniacal muriate has a pungent, acrid, and cool taste. Its crystals are of a tetrahedral form, and a number of them are sometimes united together in an acute angular direction, so as to exhibit a plumose appearance. This salt is sometimes, but not frequently, found in cubic crystals in the middle of the concave part of the sublimed cakes. Muriate of ammonia has a degree of ductility, which causes it to yield under the hammer, or even the fingers, and makes it difficult to reduce to powder. Muriate of ammonia is totally volatile, but a strong fire is requisite to sublime it. It is liable to no alteration from air; it may be kept for a long time without suffering any change. It is soluble in 3·25 parts of water at 60°, and in its own weight of boiling water. Its solution in cold water is attended with a great reduction of temperature, hence it is mixed with ice to form freezing mixtures. Its specific gravity is about 1·450. According to Berzelius, it is composed of equal volumes of ammoniacal gas and muriatic acid gas. If these two gases be presented to each other the muriate is immediately formed, and falls down in the form of a white powder. Sal ammoniac was formerly much more used in medicine than it is at present, and was given in different doses as a purgative, emetic, diuretic, and sudorific. It is now hardly ever used internally; it may, however, be given in the dose of a drachm to act as a diuretic or diaphoretic, according as its operation is determined to the kidneys or the skin. Externally applied it is an excellent discutient, and is frequently used by surgeons as an ingredient in lotions for indolent tumours, chilblains, &c. Dissolved with its own weight of nitre in eight parts of water, it forms an excellent refrigerant application. It has been much disputed whether the sal ammoniac of the ancients was the same substance with that to which we give the name, or whether it was not *rock salt*.

Ammoniæ nitras. A salt called also *Alkali volatile nitratum*, *Sal ammoniacus nitrosus*, *Ammonia nitrata*, composed of the nitric acid and ammonia, the virtues of which are internally diuretic and deobstruent, and externally resolvent and sialogogue.

Ammoniæ spiritus aromaticus. See *Spiritus ammoniæ aromaticus*.

Ammoniæ spiritus compositus. See *Spiritus ammoniæ aromaticus*.

Ammoniæ spiritus fœtidus. See *Spiritus ammoniæ fœtidus*.

Ammoniæ spiritus succinatus. See *Spiritus ammoniæ succinatus*.

Ammoniæ subcarbonas. Subcarbonate of ammonia. This preparation was formerly called *ammonia præparata*, and *sal volatilis*, or *sal volatile*. It is made thus:—Take of muriate of ammonia, a pound; of prepared chalk, dried, a pound and a half. Reduce them separately to powder; then mix them together, and sublime in a heat gradually raised, till the retort becomes red.

In the above process, muriate of ammonia is decomposed by carbonate of lime, and a compound of carbonic acid, ammonia, and water is obtained, which may be termed a *hydrated sesquicarbonate of ammonia*; for it consists of 1 proportional of ammonia, $1\frac{1}{2}$ of carbonic acid, and 1 of water: or if we double these numbers, to avoid the fraction, its composition will stand thus:—

2 proportionals of ammonia		$17 \times 2 = 34$
3	carbonic acid	$22 \times 3 = 66$
2	water - -	$9 \times 2 = 18$
		118

Such appears from the experiments of Mr. R. Phillips, to be the nature of the compound called subcarbonate of ammonia. In the formation of this salt the carbonic acid is derived from the chalk, and the ammonia from the muriate, the water being formed at the expense of the oxygen of the lime, and the hydrogen of the muriatic acid; the residue in the retort being chloride of calcium.

This salt is prepared on the large scale by wholesale manufacturers, and ocurs in the market cheap and pure. Large quantities are also made from the products of the distillation of coal in gas works: this, however, is rarely pure. It should be kept in well-stopped bottles, for when exposed to the air it gradually parts with its ammonia, loses its pungency, and effloresces, ultimately passing into a *hydrated bicarbonate* of ammonia.

When very pure, subcarbonate of ammonia has a crystalline form, but the crystals are seldom very regular, and are so small, that it is difficult to determine their figure. Its specific gravity is 0·966. The taste and smell of this salt are the same with those of pure ammonia, but much weaker. It turns the colour of violets green, and that of turmeric brown. It is soluble in rather more than twice its weight of cold water; and in its own weight of hot water; but is volatilised by a boiling temperature. Heat readily sublimes, but does not decompose it.

It used to be prepared by the destructive distillation of animal and other substances, in large iron pots, with a fire increased by degrees to a

trong red-heat, the aqueous liquor that first omes over being removed, that the salt might ot be dissolved in it. Thus we had the *salt of hartshorn, essential salt of vipers, salt of soot*, &c. If the salt were dissolved in the water, it was alled *spirit* of the substance from which it was btained. When procured in this manner, however, it was much contaminated by a fœtid animal il, from which it required to be subsequently urified.

Sir H. Davy has shown that its component arts vary, according to the manner of preparing t. The lower the temperature at which it is ormed, the greater the proportion of acid and ater. Thus, if formed at the temperature of 300°, it contains more than fifty per cent. of alali; if at 60°, not more than twenty per cent.

Subcarbonate of ammonia is stimulant, antaid, diaphoretic, and in large doses emetic. In ysteria, and some other nervous affections, t acts as an antispasmodic in virtue of its timulating power. In the dose of from five to wenty grains, it is given advantageously to neuralise acidity and allay nausea in dyspepsia; n the quantity of half a drachm or more it geerally excites vomiting, but it has nothing to recommend it as an emetic, and is seldom used with his intention. It is sometimes combined with guiac to increase its diaphoretic effect. The ommon smelling salts of the shops which are pplied to the nostrils to remove faintness, consist of this salt with the addition of some fragrant substance.

Ammoniæ subcarbonatis liquor. Solution of subcarbonate of ammonia. Take of subcarbonate of ammonia, four ounces; distilled water, a pint. Dissolve the subcarbonate of ammonia in the water, and filter the solution through paper. This solution possesses the virtues of the salt, but it spoils by keeping, and seems to be an unnecessary preparation. The dose is from ʒss to ʒi. See *Ammoniæ subcarbonas.*

Ammoniæ sulphuretum. See *Sulphuretum ammoniæ.*

Ammoniæ tartras. See *Tartras ammoniæ.*

Ammoniated copper. See *Cuprum ammoniatum.*

Ammoniated iron. See *Ferrum ammoniatum.*

Ammoniated iron, tincture of. See *Tinctura ferri ammoniati.*

Ammoniated copper, liquor of. See *Cupri ammoniati liquor.*

Ammo'nion. (From αμμος, sand.) Aëtius uses this term to denote a collyrium of great virtue in many diseases of the eye, and which was said to remove sand or gravel from the eyes.

AMMO'NIUM. (*um, i.* n.; because the base of *ammonia.*) Berzelius has given this name to a supposed metal which he conceives to be the base of ammonia. See *Ammonia* and *Nitrogen.*

AMMONIURET. (*Ammoniuretum, i.* n.) A compound of ammonia, and a metallic oxide: as ammoniuret of gold, silver, zinc, &c.

Amna alkalisata. A name given by Paracelsus and others to natural saline waters.

AMNE'SIA. (*a, æ.* f.; from α, priv. and μνησις, memory.) Forgetfulness.

AMNE'STIA. (*a, æ.* f.; from α, priv. and μνησις, memory.) Forgetfulness. Loss of memory.

Amnic acid. See *Amniotic acid.*

A'MNION. (There has been much confusion about this term, *amnios* and *amnion* having been used indifferently. The fact is thus. Αμνιον is a substantive, which meant originally a vessel for receiving the blood of the victim at sacrifices; and was afterwards applied also to the membrane immediately enclosing the fœtus: αμνειος is an adjective, derived from αμνος, a lamb, and applied to the internal membrane of the ovum, from its tenderness — αμνειος υμην, *membrana agnina.*) The innermost membrane of the ovum, which immediately surrounds the fœtus. It lines the chorion, covers the placenta, and is reflected on the umbilical cord, which it invests as far as the navel, where it terminates. It is pellucid, and without any appearance of vessels or regular fibres; it is very thin in the early stage of pregnancy, but becomes considerably stronger in the latter months. It contains a thin watery fluid, in which the fœtus is suspended. This fluid is called the liquor amnii, or water of the amnion, and in popular language *the waters.* The actual quantity of fluid keeps increasing till the end of pregnancy, but relatively to the size of the ovum the quantity is much greater at an early period. At the time of parturition it generally amounts to about two pints, but not unfrequently to double that quantity, and in some cases has accumulated to such an extent as to be productive of serious inconvenience; at other times it scarcely amounts to six ounces. It is usually in the largest quantity when the child has been some time dead, or is born in a weakly state. This fluid is generally transparent, often milky, and sometimes of a yellow, or light brown colour, and very different in consistence. It has a slightly saline taste. It contains a great proportion of water with some albumen and gelatine, muriate of soda, phosphate of lime, and perhaps some other saline matters. It was formerly imagined that the fœtus was nourished by this fluid, of which it was said to swallow a portion frequently; and it was then asserted, that the qualities of the fluid were adapted for its nourishment. But there have been many examples of children born without any passage to the stomach, and a few of children in which the head was wanting, but which nevertheless have arrived at the full size. Such cases prove that this opinion is erroneous. The obvious uses of the amniotic fluid are, to afford the fœtus a yielding medium, which does not restrain its motions, while it protects it from external shocks and injuries; and to act as a soft but powerful wedge for the dilation of the os uteri and vagina at the time of parturition. Instances have been recorded, in which the waters of the ovum are said to have been voided so early as the sixth month of pregnancy, without prejudice either to the parent or child; but the reality of these cases seems to be doubtful, because when the membranes are intentionally broken, the uterus never fails to expel its contents when all the water is evacuated.

Amnio'tic acid. *Acidum amnioticum.* See *Allantoic acid.*

AMO'MIS. The fruit of the plant now called *Matonia cardamomum*.

AMO'MUM. The name of a genus of plants in the Linnæan system. Class, *Monandria*; Order, *Monogynia*.

AMOMUM CARDAMOMUM. The former systematic name for the *Cardamomum minus*. See *Matonia cardamomum*.

AMOMUM GRANUM PARADISI. The systematic name of the plant which affords the grains of paradise. It has also been called *Cardamomum majus*, and *Cardamomum piperatum*.

Grains of paradise, or the greater cardamom seeds, are contained in a large brown triangular pod. The seeds are angular, and of a reddish brown colour, smaller than pepper, and resemble very much the seeds of the *Cardamomum minus*. They are extremely hot, and similar in virtue to pepper.

AMOMUM PLINII. The *Solanum*.

AMOMUM RACEMOSUM. See *Matonia cardamomum*.

AMOMUM VERUM. See *Matonia cardamomum*.

AMOMUM VULGARE. See *Sison Amomum*.

AMOMUM ZINGIBER. A former systematic name of the plant which affords ginger. See *Zingiber officinale*.

A'MOR. (*or, oris.* m.) Love. See *Pathemata animi*.

AMO'RGE. See *Amurca*.

AMO'RPHA. A genus of plants of the class *Diadelphia*, and order *Decandria*. There is only one species known, which has very irregularly shaped flowers, whence its name αμορφη, shapeless. It grows in America, and the bruised root is said to be good for the toothache.

AMPAC. An East Indian tree, which affords a very odoriferous resin; the leaves are used to medicate baths.

AMPELOSA'GRIA. (*a, æ.* f.; from αμπελος, a vine, and αγριος, wild.) See *Bryonia*.

AMPHEMERI'NUS. Αμφημερινος. (From αμφι, about, and ἡμερα, a day.) Occurring daily. Applied by the Greeks to a quotidian ague — πυρετος αφημερινος.

AMPHIARTHRO'SIS. (From αμφι, both, and αρθρωσις, an articulation: so called from its partaking both of diarthrosis and synarthrosis.) A mixed kind of articulation, in which the articular surfaces of bones are united by an intermediate substance, in a manner which admits of a small degree of motion. The junction of the vertebræ by the intervertebral cartilages is of this kind. Some use the term synonymously with *synchondrosis*.

AMPHI'BIA. A class of animals, embracing what have been usually termed the *Batrachia*. They are vertebrated animals with cold blood and naked skin; they are oviparous, and most of them undergo a metamorphosis, adapting them to a transition from an aquatic to an atmospheric medium of respiration. See *Animal Kingdom*.

AMPHI'BIUS. (From αμφι, both, and βιος, life; as being capable of two modes of life.) *Amphibious*. This term has been variously applied: 1. To animals which at one period of their existence live entirely in the water, breathing by means of gills, and at another respire air, and are frequently on land; as frogs.

2. To animals which, although they respire air, are capable of diving under water for a great length of time; as seals.

3. To those land animals which frequent the water; such as the hippopotamus.

4. To the class of reptiles in general, or to an order of that class.

5. To plants which grow indifferently on the land or in the water; as the *Polygonum amphibium*.

By late naturalists, the term Amphibia has usually been restricted to those animals otherwise called *Batrachia*, and which have been considered by some as an order of the class Reptilia, and by others as an independent class, to which rank they seem perfectly well entitled. See *Amphibia* and *Animal Kingdom*.

AMPHIBLESTROI'DES. (From αμφιβληστρον, a net, and ειδος, resemblance. An epithet given by the Greek anatomists to the hyaloid membrane surrounding the vitreous humour of the eye. Some have erroneously supposed that it refers to the retina.

AMPHIBRA'NCHIA. (From αμφι, about, and βραγχια, the fauces.) The tonsils, and parts adjacent to them. *Hippocrates*.

AMPHI'DEON. (Αμφιδεον, participle neuter of αμφιδεω, to bind around.) A name of the os uteri.

AMPHIDIARTHRO'SIS. (From αμφι, both, and διαρθρωσις, a moveable articulation.) A name given by Winslow to the articulation of the lower jaw with the os temporis, because it partakes of the nature both of ginglymus and arthrodia.

A'MPHIPLEX. Αμφιπληξ. The perinæum. — *Rufus Ephesius*.

AMPHIPNEU'MA. (From αμφι, about, and πνευμα, breath.) A great difficulty of breathing. — *Hippocrates*. "Circumcirca urgens spiratio dici videtur." — *Foesius*.

APHISMI'LA. (From αμφι, on both sides, and σμιλη, an incision-knife.) A dissecting knife, with an edge on both sides. — *Galen*.

AMPHISPHA'LSIS. Αμφισφαλσις. Circumduction; the movement by which the head of the thigh bone, when dislocated, is restored to its proper position.

A'MPHORA. See *Weights and Measures*.

AMPHORIC RESONANCE. A stethoscopic sound, which is a variety of the metallic tinkling. See *Metallic Tinkling*.

AMPHI'STOMA. (From αμφι, on both sides, and στομα, a mouth.) The name given by Rudolphi to a genus of intestinal worms, the species of which are found principally in birds.

AMPLEXICAU'LIS. (From *amplector*, to embrace, and *caulis*, a stem.) Amplexicaul. Embracing or clasping the stem. *Folium amplexicaule* is a leaf, the base of which surrounds the stem, as in *Papaver somniferum* and *Carduus marianus*; the leaf stalk sometimes embraces the stem at its base, as in *Senecio hirsutus*.

AMPU'LLA. A large-bellied bottle.

1. In *chemistry*, all bellied vessels have been so called, as bolt-heads, receivers, cucurbits, &c.

2. In *anatomy*, the term is applied by Scarpa o the dilated part of the membranaceous semi-ircular canals in the ear.

3. In *botany*, it signifies a small membrana-eous bag attached to the roots and the immers-d leaves of some aquatic plants, rendering them uoyant.

4. In *pathology*, some writers use it synony-nously with *bulla*, a bleb, or watery bladder on ie skin; hence pemphigus has been called *'bris ampullosa.*

AMPU'LLULA. (*a*, æ. f.; diminutive of *mpulla.*) Applied by anatomists to a canal or ag, which is a little enlarged in the centre; and y Lieberkuhn to the tumid extremities of the illi of the intestines.

AMPUTA'TION. (*Amputatio, onis.* f.; om *amputo*, to cut off.) A surgical operation, hich consists in the removal of a limb, or por-on of a limb, or any projecting part, as the enis, by means of a cutting instrument. In ie case of a tumour, the term *excision* or *extirpa-'on* is generally used.

A'MULET. *Amuletum, i.* n. (From *amo-or*, to remove or repel.) *Periamma. Periapton.* Gems and stones carved into various forms, or ngraved with mystical characters, pieces of aper inscribed with certain words, and other milar absurdities, were formerly worn sus-ended from the neck, or carried about the per-on, from a belief that they had the power of onferring some particular gift, as of strength, ourage, eloquence, &c., or of averting some evil. These were called amulets, and were much used s prophylactics against different diseases.

AMU'RCA. (αμοργη, from αμεργω, to press ut.) The dregs of the olive, after the oil has een pressed from it; recommended by Hippo-rates and Galen as an application to ulcers.

A'MYCHE. (Αμυχη, from αμυσσω, to crape or vellicate). A slight exulceration, xcoriation, or abrasion of the skin. — *Hippo-rates.*

AMY'CTICUS. (From αμυσσω, to vellicate.) Applied to irritating medicines used to excite orpid parts into action. — *Cœlius Aurelianus.*

AMYE'LIA. (From α, priv. and μυελος, mar-ow.) A monstrosity consisting in partial or otal absence of the spinal marrow.

AMY'GDALA. (*a*, æ. f. Αμυγδαλη, gene-ally said to be so called from αμυσσω, to carify, because when the outer green portion s removed, certain fissures resembling lacera-ions appear on the shell. It is quite as probable, owever, that it is derived from αμυσσω in ano-her sense, namely, that of irritating the air assages and exciting cough, which almonds, if aten with the husks, are well known to do.)

1. The fruit called the almond. See *Amyg-'alus communis.*

2. The tonsils are called *Amygdalæ*, from heir shape.

AMYGDALA AMARA. The bitter almond. See *Amygdalus communis.*

AMYGDALA DULCIS. The sweet almond. See *Amygdalus communis.*

AMYGDALA'TUM. Almond emulsion.

AMYGDALÆ OLEUM. See *Amygdalus.*

AMYGDA'LEÆ. A tribe of the natural family of the ROSACEÆ, of which the genus *Amygdalus* is the type.

AMY'GDALUS. (*us, i.* m.; from *amygd-dala.*) The name of a genus of plants in the Linnæan system. Class, *Icosandria*; Order, *Monogynia.* The almond-tree.

AMYGDALUS COMMUNIS. The systematic name of the plant which affords the almond. *Amygdalus — foliis serratis infimis glandulosis, floribus sessilibus geminis*, of Linnæus.

The almond tree is a native of Syria and Barbary, but is now abundant throughout the south of Europe, and grows even in England, though here the fruit seldom ripens. Sweet almonds are more in use as food than as medicine; but they are difficult of digestion. The trees which produce the bitter and sweet almonds differ from each other in no respect except in the taste of the kernel of their fruit. The medicinal qualities of almonds depend upon the oil which they contain in the farinaceous matter, and which they afford on expression, nearly in the proportion of half their weight. It is very similar to olive oil; perhaps rather purer, and is used for the same purposes. The oil thus obtained is more agreeable to the palate than most of the other expressed oils, and is therefore preferred for internal use, being sometimes employed as a demulcent in coughs, hoarseness, nephritic pains, &c. The milky fluid formed by triturating almonds with water is called an emulsion, which, when properly sweetened, is agreeable to the palate, and is the most common form in which almonds are taken internally as a medicine: it is a good demulcent, but it is chiefly used as a vehicle for more active remedies. The officinal preparations of sweet almonds are the expressed oil, the confection, and the emulsion; to the latter, the addition of gum-arabic is sometimes directed, which increases its demulcent effect.

Bitter almonds yield a large quantity of fixed oil, perfectly similar to that obtained from sweet almonds, but the matter remaining after the expression of the oil, is more powerfully bitter than the almond in its entire state. Great part of the bitter matter dissolves, by the assistance of heat, both in water and rectified spirit; and a part rises also with both menstrua in distillation. Bitter almonds have been long known to be poisonous to several brute animals; and some authors have alleged that they are also deleterious to the human species; this does not seem to be generally the case; in some peculiar constitutions, however, the smallest quantity of them taken into the stomach will produce nettle rash, and other unpleasant consequences.

The poisonous principle obtained from them by distillation, is equally destructive to man and brutes; it is, in fact, no other than prussic acid, which is contained in the essential oil, and communicates to the almond its peculiar flavour. (See *Hydrocyanic acid.*) The symptoms attendant on poisoning by the distilled oil have been thus enumerated by Dr. Granville, in his Treatise on Prussic Acid;—"Stupor and numbness, with oppression and a sense of weight at the summit of the head; yawning, and an irresistible disposition to sleep; vertigo and dizziness of sight. All or any of these preliminary symp-

toms, according to the quantity of the poison taken, are generally observed by the practitioner, if sent for in time. The pulse is found to be rather strong at first, but flags soon after, and becomes either frequent, wiry, and small, or slow and vibrating. A paralytic state of the extremities is next remarked, the pupil remains unalterably dilated, the sensibility of the organs of sense is greatly diminished. Every animal function seems impaired, except respiration, which is very rarely indeed accelerated or difficult. Vomiting and hiccough shortly precede the aggravation of every nervous symptom, when life ebbs fast, and becomes at last extinct." The essential oil of bitter almonds proves fatal in very small doses. Mr. Brodie found that a single drop applied to the tongue of a cat caused immediate convulsions, and death in five minutes; and the same gentleman himself experienced severe effects from merely touching his tongue with the end of a probe that had been dipped in it.

From various experiments, it appears that this and analogous poisons operate upon the nervous system; that through the medium of the nerves, the influence of the poison is conveyed to the brain, the functions of which are more or less impaired; that the organs of respiration are thus secondarily affected, but that the action of the heart continues for a long time unimpaired, circulating venous blood. Hence, if respiration be artificially performed, so as to aërate the blood, it sometimes happens that the animal permanently recovers.

Essential oil of bitter almonds is largely prepared for the use of perfumers, confectioners, and cooks, who generally use what is called essence of almonds, or a solution of ʒij. of the oil, in ʒvj. of alkohol: this is also the most convenient form for pharmaceutical purposes. One hundred weight of the bitter almond cake remaining in the press after the separation of the fixed oil, is put into the still, with about 100 gallons of water, this large proportion being necessary to prevent the formation of a mucilaginous magma, from which the volatile oil will not pass off, and which often, if brought to boil, rises up into the head and worm of the still. The quantity of oil obtained is liable to much variation, 1 cwt. of cake yielding from 2 ounces to $2\frac{3}{4}$ by weight. Mr. Hennel has found that the hydrocyanic acid contained in this oil, and on which its deleterious properties depend, may be separated by digesting the oil with red oxide of mercury, which is converted into a cyanuret. A simple water is distilled from bitter almonds, after the oil is pressed out, which is impregnated with the essential oil, and has the same poisonous qualities as the laurel water, which also derives its deadly power from the presence of prussic acid. Bitter almonds are seldom used in medicine. Bergius, however, relates a case of ague which was cured by them after the bark had failed; and Dr. A. T. Thomson states that he has employed them with the best effect in pulmonary and dyspeptic affections, hooping-cough, and asthma; and that he has found the emulsion an excellent lotion in acne rosacea and impetigo.

Amygdalus persica. The systematic name of the common peach-tree. The fruit is known to be grateful and wholesome, seldom disagreeing with the stomach, unless eaten to excess, when effects similar to those of the other sweet-acid fruits may be produced. The flowers, including the calyx, as well as the corolla, are the parts of the persica used for medicinal purposes. These have an agreeable but weak smell, and a bitterish taste. Boulduc observes, that when distilled, without addition, by the heat of a water-bath, they yield one-sixth of their weight, or more, of a whitish liquid, which communicates to a considerable quantity of any other liquid a flavour like that of the kernels of fruits. These flowers have a cathartic effect, and have been successfully given to children as a vermifuge. For this purpose a drachm of the dried, or half an ounce of the fresh flowers infused in water is the proper dose. The leaves of the peach are also said to possess an anthelmintic power, and to have been given with invariable success both to children and adults. Since, however, the leaves and flowers of this plant manifest, in some degree, the qualities of those of the lauro-cerasus, they ought to be used with caution.

Amyla'ceous. Possessing the properties of starch.

A'mylic acid. When starch moistened with water is subjected to a gentle heat in a retort with an equal weight of peroxide of manganese, a volatile acid, having an odour resembling that of prussic acid, comes over. Its discoverer, M. Tünnermann, has named it *Amylic acid*. Its claim, however, to be considered as a distinct acid requires further investigation.

A'myline. See *Amidine*.

A'mylum. (*um*, *i.* n. Αμυλον, from α, priv. and μυλη, a mill; because the ancients made it from unground wheat.) Starch. A white insipid substance, insoluble in cold water, but forming a jelly with boiling water. It exists chiefly in the white and brittle parts of vegetables, particularly in tuberose roots, and the seeds of gramineous plants. It may be extracted by pounding these parts, and agitating them in cold water, when the parenchyma, or fibrous parts, will first subside; and these being removed, a fine white powder, diffused through the water, will gradually fall down, which is the starch. Or the pounded or grated substance, as potatoes, acorns, horse-chesnuts, &c., may be put into a hair-sieve, and the starch washed through with cold water, leaving the grosser matters behind. Farinaceous seeds may be ground and treated in a similar manner. Oily seeds require to have the oil expressed from them before the farina is extracted.

Starch is one of the constituent parts in all mealy farinaceous seeds, fruits, roots, and other parts of plants. Our common starch is made from wheat. It is not necessary that the grain be first bruised in mills. The entire corn, well cleansed, is soaked in cold water until the husks separate; and the grains, having become quite soft, give out, by pressure, a milky fluid. The grains are then taken out of the water by means of a sieve, put into a coarse linen sack, and

nsferred into the treading-tub, where they e trodden, after cold water has been poured on them.

By this operation the starchy part is extracted, d renders the water milky. The water is now awn off, running through a sieve into the set- ng tub. Fresh water is poured upon the ains, and the same operation is continued till e water in the treading-tub is no longer ren- red milky. The starch is then left to subside m the water that holds it suspended; during hich, especially in a warm season, the mucila- nous saccharine matter of the flour, dissolved the water, goes into the acetous fermentation. rom this cause the starch grows still purer and hiter. The water is next let off from the starch, nich is again several times washed with clear sh water; and the remaining moisture is ffered to drip through linen cloths supported hurdles, upon which the wet starch is placed. hen the starch has entirely subsided, it is rapt in, and wrung between these cloths, or essed, to expel still more of the remaining quid.

It is afterwards cut into pieces, which are laid airy places on slightly burnt bricks to be mpletely dried, partly by a free current of r, and partly by the bricks imbibing their oisture. Lastly, the outer crust is scraped off, nd they are broken into smaller pieces.

Several substances agreeing in essential naracters with the starch of wheat have long een used as common articles of food, especially n the diet of children and invalids. One of the mmonest and most pleasant is the arrow-root ee *Maranta arundinacea*), but for which the arch obtained from potatoes is often substi- uted. Another is sago, obtained from the pith f several species of palm. Tapioca and cassava, hich are procured from the *Jatropha manihot*, e also principally starch, and analogous to ese is salep, the root of our *Orchis mascula*.

If starch be subjected to distillation, it gives it water impregnated with empyreumatic etous acid, a little red or brown oil, a great al of carbonic acid, and carburetted hydrogen as. Its coal is bulky, easily burned, and leaves very small quantity of potash and phosphate of me. If when diffused in water it be exposed a heat of 60° F., or upward, it will ferment nd turn sour; but much more so if it be not eed from the gluten, extractive, and colouring atter. Thus, in starch-making, the farina rments and becomes sour, but the starch that oes not undergo fermentation is rendered the urer by this process. Some water already oured is mixed with the flour and water, which gulates the fermentation, and prevents the ixture from becoming putrid; and in this state is left about ten days in summer, and fifteen winter, before the scum is removed, and the ater poured off. The starch is then washed t from the bran, and dried, first in the open r, and finally in an oven.

With boiling water starch forms a nearly ansparent mucilage, emitting a peculiar smell. his mucilage may be dried, and is then semi- ransparent, much resembling gum, all the pro- ucts of which it affords. When dissolved, it is much more easily digested and nutritious than before.

Both acids and alkalis combined with water dissolve it. It separates the oxides of several metals from their solutions, and takes oxygen from many of them. It is found naturally com- bined with all the immediate principles of vege- tables, and may easily be united with most of them by art.

When starch is triturated with iodine, it forms combinations of various colours. When the proportion of iodine is small, these com- pounds are violet; when somewhat greater, blue; and when still greater, black.

We can always obtain the finest blue colour, by treating starch with an excess of iodine, dis- solving the compound in liquid potash, and precipitating by a vegetable acid. The colour is instantaneously produced on pouring a solu- tion of iodine into a liquid which contains starch diffused through it. Hence iodine and starch are excellent tests for each other. Besides these combinations, it appears that there is another of a white colour, in which the iodine exists in very small quantity. All of them possess pecu- liar properties.

Starch is not affected in the cold by water, alkohol, or ether; but dissolves readily when triturated with water containing potash.

Starch is convertible into sugar by diluted sulphuric acid. To produce this change we take 2000 parts of starch, diffuse them in 8000 parts of water, containing 40 parts of strong oil of vitriol; and boil the mixture for 36 hours in a basin of silver or lead, taking care to stir the materials with a wooden rod during the first hour of ebullition. At the end of this time, the mass, having become liquid, does not require to be stirred, except at intervals. In proportion as the water evaporates, it ought to be replaced. When the liquid has been sufficiently boiled, we add to it chalk and animal charcoal, then clarify with white of egg, filter the mixture through a flock of wool, and concentrate the liquid till it has acquired a syrupy consistence. After this, the basin must be removed from the fire, in order that, by cooling, the greater part of the sulphate of lime may fall down. The pure syrup is now to be decanted off, and evaporated to the proper dryness. The greater the quantity of acid employed, the less ebullition is required to convert the starch into saccharine matter.

The preceding process was discovered by Kirchoff, of Petersburgh.

The presence of sulphuric acid is not indis- pensable for obtaining sugar from starch. It may also be obtained by leaving the starch to it- self, either with or without the contact of air, or by mixing it with dried gluten. At the same time, indeed, several other products are formed. M. Théodore de Saussure has published some interesting observations on this subject. He found that when starch is brought to the state of a pulpy mass, by mixing it with twelve parts of boiling water, and then left to sponta- neous decomposition, the products are, 1st, a sugar, like the sugar of grapes; 2d, Gum, like that from roasted starch; 3rd, Amidine, a body whose properties are intermediate between

those of starch and gum ; and 4th, an insoluble substance, like ligneous matter. When the starch is fermented by dried gluten, it yields —

	Without contact of air.	With contact of air.
Sugar -	47·4	49·7
Gum - -	23·0	9·7
Amidine -	8·9	5·2
Amilaceous lignin	10·3	9·2
Lignin with charcoal	- -	0·3
Undecomposed starch	4·0	3·8

Potato starch differs perceptibly from that of wheat ; it is more friable ; and is composed of ovoid grains about twice the size of the other.

As starch forms the greater part of flour, it cannot be doubted but that it is the principal alimentary substance contained in our bread. In a medical point of view, it is to be considered as a demulcent ; and accordingly it forms the principal ingredients of an officinal lozenge for catarrhs, and a mucilage prepared from it often produces excellent effects, especially in the form of clyster, in dysentery and diarrhœa. Milk and starch, with the addition of suet finely shreded and incorporated by boiling, was the soup employed by Sir John Pringle in dysenteries, where the mucous membrane of the intestines had been abraded. Externally, surgeons sometimes apply it as an absorbent in erysipelas.

A'MYOS. (From α, priv. and μυς, a muscle.) Applied to a limb so emaciated that the muscles scarcely appear. — *Hippocrates.*

A'MYRIS. (*is, is.* f. ; from α, intensive, and μυρον, an odoriferous ointment, from its entering into the composition of such ointments.) The name of a genus of plants in the Linnæan system. Class, *Octandria ;* Order, *Monogynia.* Two species are used in medicine.

AMYRIS ELEMIFERA. The systematic name of the plant from which the resin called *gum-elemi* is supposed to be obtained. It is described by Linnæus, *Amyris — foliis ternis quinato-pinnatisque subtus tomentosis.* This plant is a native of Carolina and the Brazils. The resin is most esteemed when softish, somewhat transparent, of a pale whitish colour, inclining a little to green, and of a strong, though not unpleasant smell. It is only used in an officinal ointment, the *Unguentum Elemi compositum*, and is now seldom, if ever, to be found genuine in the shops.

AMYRIS GILEADENSIS. The systematic name of the balsam, or balm of Gilead, or balsam of Mecca plant, the medicinal produce of which has been called by a variety of names, as *Opobalsamum, Balsamum genuinum antiquorum, Balsamelæon, Ægyptiacum balsamum, Balsamum Asiaticum, Balsamum Judaicum, Balsamum Syriacum, Balsamum e Mecca, Balsamum Alpini, Oleum balsami, Carpobalsamum*, and *Xylobalsamum. Amyris — foliis ternatis integerrimis, pedunculis unifloris lateralibus*, of Linnæus. This tree is a native of Abyssinia and Arabia. The fruit is termed *carpobalsamum* in the old pharmacopœias, and the wood of the branches *xylobalsamum*. The best balm of Gilead is a spontaneous exudation from the tree, and is held in such high estimation by the Turks, that it is rarely, if ever, to be met with genuine among us. The medicinal virtues of this drug have been highly extolled, and no doubt much exaggerated. It is very little used in Europe, and in this country the Canadian balsam is generally substituted for it. The common balsam of Mecca is scarcely used ; but its qualities seem to be very similar to those of the balsam of Tolu, with perhaps more acrimony. The dose is from 15 to 20 drops.

ANA. In medical prescriptions it means "of each." See *A.*

ANA'BASIS. (From αναβαινω, to ascend.) The first period of a disease or that of increase. — *Galen.*

ANABA'TICUS. (From αναβαινω, to ascend or increase.) Increasing or augmenting ; formerly applied to a continued fever, the symptoms of which gradually increase in severity.

ANABE'XIS. (From αναβηττω, to cough up.) An expectoration.

ANABLE'PSIS. (From ανα, again, and βλεπω, to see.) The recovery of sight after it has been lost.

ANA'BOLE. (*e, es.* f. ; from αναβαλλω, to reject.) The discharge of any thing by vomiting. — *Galen.*

ANABROCHI'SMOS. (*Anabrochismus ;* from ανα, with, and βροχος, a running knot.) The removal of the eye-lashes, when they irritate the eye, by means of a hair knotted round them. — *Hippoc., Galen, Paulus.*

ANABRO'SIS. (*is, is.* f. ; αναβρωσις, from αναβρωσκω, to corrode.) A corrosion of the solid parts, by sharp and biting humours. — *Galen.*

ANACA'RDIUM. (*um, i.* n. ; from ανα, as denoting similarity, and καρδια, a heart : so called from a fancied resemblance between its fruit and the heart of a bird.) The name of a genus of plants. Class, *Enneandria ;* Order, *Monogynia.*

ANACARDIUM OCCIDENTALE. The cashew-nut ; called also *Acajou* and *Acajuba.* The kernel of this is bland, and has an agreeable flavour, but the woody husk in which it is enveloped contains an oil so acrid as to blister the skin. This oil is a good marking ink, as anything written with it on linen or cotton is of a brown colour, gradually growing blacker, and is extremely durable.

ANACARDIUM ORIENTALE. The Malacca bean. See *Avicennia tomentosa.*

ANACATHA'RSIS. (*is, is.* f. ; from ανα, upwards, and καθαιρω, to purge.) An expectoration of mucus, or a purgation by spitting. In this sense the word is used by Hippocrates and Galen.

Blancard denotes, by this word, the operation of medicines which act upwards, as emetics, expectorants, &c.

ANACATHA'RTICUS. (*Anacatharticus ;* from ανακαθαιρω, to purge upwards.) Anacathartic. Promoting expectoration, or vomiting.

ANACHIMUS. An alchemical term for a spirit.

ANACHRE'MPSIS. Αναχρεψις. Expectoration. — *Hippocrates.*

ANA'CLASIS. (*is, is.* f.; from ανακλαω, to nd back.) A recurvature of any part, as of a int, of a fractured limb, &c.

ANA'CLISIS. (*is, is.* f.; from ανακλινω, recline.) *Decubitus.* The attitude of a sick erson in bed, which affords important indica- ons in several diseases. See *Physiognomy.*

ANACOLLE'MA. (From ανακολλαω, to glue gether.) An epithem made of agglutinant sub- ances, and applied to the forehead. — *Galen.*

ANACOLUPPA. A Malabar plant which is sed by the natives to cure epilepsy, and as an- dote to the bite of the *naja.* It is probably the apania nodiflora.

ANACONCHYLI'SMOS. (From ανακογχυλιζω, gargle.) A gargarism. — *Galen.*

ANACTE'SIS. (From ανακταομαι, to re- over.) Restoration of strength; recovery from ckness. — *Hippocrates.*

ANADIPLO'SIS. (From αναδιπλοω, to duplicate.) The reduplication of the paroxysm agues of a double type.

ANADO'SIS. (From ανα, as denoting dis- ibution, and διδωμι, to give.) The distribution f nourishment over the whole body. — *Galen.*

ANA'DROME. (From ανα, upwards, and δεμω, to run.) The translation of a pain from ie lower to the upper parts of the body.

ANÆ'MIA. (*a, æ.* f.; from α, priv. and ιμα, blood.) Exsanguinity. Deficiency of lood. The general cause of such deficiency is æmorrhage; but there is a remarkable disease, he leading feature of which is an insufficient ormation of blood. This disease has not ge- erally attracted the attention of practical writers, hough the minor degrees of it are by no means ncommon. Dr. Mason Good, in his Study of Medicine, has given a full and interesting ac- ount of it, under the name of *Marasmus an- æmia,* from which the following is taken. The lisease is thus defined:—

"Face, lips, and general surface ghastly pale; ulse quick and feeble; appetite impaired; alvine vacuations irregular, black, and fetid, occasion- lly with severe gripings; languor and emacia- ion extreme."

The most striking peculiarity of the affection s that the bloodlessness of the exterior precisely orresponds with that of the interior; since dis- ections show that the largest and deepest ves- els are nearly as destitute of blood as those on he surface. It is in this ghastly pallor of the whole exterior, as directly expressive of the same ondition within, that this disease chiefly differs rom the atrophy of want, of waste, and of de- ility.

The disease itself has often been referred to, nd, at times, described, by the old writers, as Becher, Albert, and Janson; and still more ately by Hoffman, De Haen, and Isenflamm. Several of their cases, however, consist of no- hing more than an exhausted state of the blood- vessels from hæmorrhage or other profuse eva- cuations; in one case, indeed, from hæmorrhoids. And hence, Lieutaud and Isenflamm undertook, in the middle of the last century, to distinguish the real disease from those which were thus confounded with it; tracing out the separate causes and symptoms, and marking them by different names; as *Anæmia chlorosis,* and *Anæ- mia consecutiva,* which were the appellations of Lieutaud; and *A. vera,* and *A. spuria,* which were those of Isenflamm. These distinctions, how- ever, seem to have made less impression on the world of medicine than they ought to have done: for we find M. Sauvages, in the first edition of his Nosologia Methodica, published two years subsequently to Lieutaud's Summary, following Strach and Ramazzini, in describing anæmia, if, indeed, he has described it all, as a modification of spurious chlorosis, or pallor, under the name of *Chlorosis rhachialgica.*

Of late years, however, more light has been thrown upon this very extraordinary malady by the contributions of several writers, and particularly of Professor Halle, of Paris, and Dr. Combe, of Edinburgh. Nothing can be more different than the occupations, habits, and modes of life of two distinct classes of indivi- duals who are hereby brought forward as the subjects of anæmia. And yet the close resem- blance, and, allowance being made for inciden- tal circumstances, we may say the identity, of the symptoms exhibited in situations so perfectly unlike, furnish an adequate proof of identity in the disease.

The most strictly idiopathic example, and the one most free from influential incidents, is that of Dr. Combe. The patient was forty-seven years of age; was born in the country; and for the most part had been occupied in agricultural employments; he was married, but without a family; was leading a regular and temperate life; had enjoyed perfect health ever since child- hood, and had never been blooded. At the time of his applying to Dr. Combe for advice he had been unwell for about two months, or something more; his chief complaint having been loss of strength, and uneasiness in the head. "I was much struck," says Dr. Combe, "by his peculiar appearance. He exactly re- sembled a person just recovering from an at- tack of syncope. His face, lips, and the whole extent of the surface were of a deadly pale co- lour: the albuginea of his eye blueish: his motions and speech were languid: he com- plained much of weakness: his respiration, free when at rest, became hurried on the slightest exertion: pulse eighty and feeble: tongue co- vered with a dry fur: the inner part of the lips and fauces nearly as colourless as the surface." His bowels were very irregular, though gene- rally relaxed: the stools very dark and fetid; urine copious and pale; appetite impaired, and latterly a rejection of almost every kind of food; constant thirst; no pain referrible to any part, nor any determinable derangement of struc- ture.

These symptoms continued with little varia- tion for about three months, with the exception of a short time, during which he appeared to be im- proving. Yet upon the whole the disorder gained ground; the feeble pulse was easily excited; a copious perspiration followed upon any exer- tion; the veins on the arms and neck could be felt on making pressure, but the colour of the blood did not appear through the skin. At one time an affection of the liver was suspected; at

another, from the thirst and great flow of urine, *diabetes mellitus;* but none of these indications were stationary. Tonics were of no service; a sea voyage which was tried, and the use of chalybeate waters, were equally ineffectual. He grew gradually weaker, continued to lose flesh, but, with a strong resemblance to the delusive confidence of phthisis, his spirits remained for the most part undepressed, and he still looked forward to a speedy recovery. Meanwhile all the symptoms were deteriorating, and the constitution was evidently sinking under their pressure. In about six months from the period of his application for relief the œdema extended over his face and upper extremities, distinct signs of effusion into the chest presented themselves, and he died with all the symptoms of hydrothorax.

The body was examined thirty-six hours after death. The waxy pallor of the surface remained unchanged: the subcutaneous fat was scanty, of a pale yellow, and semi-fluid. Not a drop of blood escaped on dividing the scalp; the dura mater was pale, presented few vessels, and those empty. The pia mater was equally pale; its blood-vessels contained a pale serum and a considerable quantity of air. The lateral sinuses were moderately filled with a pale fluid blood; the arteries at the base were empty. The substance of the brain was very soft and pultaceous, mapped with very few vessels. The lungs were of a pale gray, without any marks of gravitated blood. The heart when cut into was of a pale colour, and did not tinge the linen when rubbed upon it; it appeared like flesh macerated many days in water. The right ventricle contained a pale coagulum. The left side was wholly empty. The coronary arteries were sound. The inner coat of the aorta was of a fine red colour for some inches, without any turgescence or ossification. All the valves were sound. A considerable moisture bedewed the viscera of the abdomen. The liver was of its proper size and structure, but of a light brown colour; there was no exudation of blood on cutting into its substance. The spleen was the only viscus of its usual colour: it was very soft, and its contents, when pressed, turned out as from a sac. The kidneys were nearly bloodless: the pancreas of a pale reddish hue. The stomach and intestines were perfectly sound, thin, showing no vessels, and transparent. The muscular substance throughout the body was, like that of the heart, very pale, and exuded no blood, but only a pale serum, when cut into. The arteries were universally empty, as were also the jugular, humeral, and femoral veins. The lower cava alone, with the exception of the lateral sinuses, contained any appreciable quantity of blood.

Besides these appearances, about three pounds of a lemon-coloured serum were found effused in the thorax, and a considerable ossification, about an inch long, rough and irregular, was traced in the plicæ of the duræ mater near the vertex; and these were almost the only morbid phenomena, with the exception of such as relate to the sanguiferous system. Dr. Combe justly regards the first as a mere consequence of the disease; while he thinks it may admit of a doubt whether the second had any connexion with the bloodless state of the system. In truth it seems to have been an incidental concomitant.

It is impossible to conceive a more total exhaustion of the vital fluid from the entire system than in this singular case; and instead of wondering at the deadly waxiness of the complexion, the feebleness of the pulse, the utter debility and emaciation which this incarnate ghost must have presented, the greater and almost the only wonder is how the living principle could so long have remained attached to so exhausted a receiver, and the sensorial energy have derived its means of recruit; at a time, too, when all the functions, in the midst of their feebleness, were urged on by the force of the morbid excitement to the performance of double duty: the pulse was quickened, the animal spirits maintained above the standard of sober health; the peristaltic action, though irregular, for the most part accelerated, the perspiration redundant, and the urine often profuse.

The post-obit examination, while it unveils little or nothing of the proximate cause of the disease, discloses to us most manifestly the inroad that had been made upon the general substance of the frame from the want of a due supply of nourishment, and how completely every organ had been living upon itself, and the whole had been living upon the remnant of the blood almost to its last drop. The fault does not, therefore, seem to have been so much in the secernent system, or assimilating powers, as in the lacteals or digestive function.

It was the opinion of Ruysch, that this commencing portion of the catenated organ of supply gradually loses its power with the advance of years, and that in old age it entirely ceases to act: so that being himself, at the time of writing, in this very season of life, he conceived he was then living, and had been living, for a long period, upon himself: upon such nourishment as the fat, blood, flesh, parenchyma, and even brain can produce when melted down by the action of the absorbents. And he farther conceived that, from the little wear and tear which usually takes place in old age, the flame of life might be kept burning for a considerable term by the fuel hereby supplied; the growing emaciation being a pretty correct measure of the material consumed.

How far such may have been the fact with Ruysch himself, or with any other person in the ordinary advance of life, we need not at present examine: but something very like it appears to have occurred in the extraordinary malady before us. We have seen that the digestive function was habitually impaired, and that at length, food of all kinds was rejected from the stomach; and we shall find by other instances presently, that the stomach, under the influence of this disease, seems to be always, even at its best estate, capricious or fastidious. But the lacteals seem to have participated in the same infirmity; and to have laboured under an atony so considerable, that they transmitted whatever aliment might have been subacted very imperfectly, or not at all, into the

course of the circulation. And hence, while the blood actually in existence was perpetually drained off in support of the different organs and their respective functions, a small quantity only of an unelaborated fluid was able to reach the heart and larger arteries, which were, in consequence, pale and empty, or only partially supplied with a thin, watery, and scarcely tinged liquid. And, in confirmation of this idea, we shall find in the sequel of our examination that the mesentery, in various instances, gives signs of disorder, and appears enlarged even to an external examination, while the hypochondria are free from such affection.

Such then seems to have been the proximate cause, though undeveloped by dissection, if we may be allowed to hazard a conjecture upon a subject involved in so much obscurity. Yet the exciting cause seems still more effectually to elude our penetration: for the constitution of the individual seems to have been strong and hearty, and every thing in his situation, occupation, and habits of life apparently concurred in promising him a long continuance of health.

In various cases of the disease, however, that have occurred, we have some degree of insight into the occasional as well as the proximate cause. Particular allusion is here made to the endemic appearance of this complaint at Anzain, near Valenciennes, as described by Professor Halle in M. Corvisart's Journal.

At Anzain is a large coal-mine reaching to two or three adjoining villages. It was in one of the galleries of this mine that the complaint made its appearance, and to this it was confined, though no difference had hitherto been detected between the contaminated gallery and the rest. It is of the same depth, being a hundred and twenty fathoms from the level ground, and excavated in the same manner, but is longer, and hence does not so readily admit of an afflux of pure air. Its temperature is 64° Fahrenheit; it exhales an odour of sulphuretted hydrogen gas, which renders respiration difficult. Some caustic mineral, perhaps some metallic salt, appears to be dissolved in the water that drips from the mine, as it produces blains or blisters on any part of the body to which it is applied. Yet the water has been occasionally drunk to allay thirst, and the mine had been worked for eleven years without any such complaint as that before us: and it is hence obvious that some new combination of vapour, incapable of detection by the senses, had found vent into the atmosphere of the gallery; or some new mineral substance had become dissolved in its percolating water; which had a direct power of loosening and destroying the tone of the restorative system, at the commencement of its chain.

The symptoms, in their general features, were strikingly similar to those we have just described; and seem only to have been modified by the peculiarity of the exciting cause, being often, though by no means always, accompanied from the first with severe gripings, and more violent affection of the abdominal viscera, and hence more rapid in their progress. Dr. Combe is inclined to think, from these symptoms, that this disease was not a strict idiopathic anhæmia, but a modification of rhachialgia, the colic of lead or arsenic, and that it is hence more nearly allied to the chlorosis *rhachialgica* of Sauvages than to the anhæmia *chlorosis* of Lieutand. But in no instance do I find the back-bone-ache, or spine-ache, from which rhachialgia derives its name, and by which, together with an extension of this aching over the upper and sometimes the lower extremities, with a strong tendency to paralysis, it is specifically distinguished. Neither indeed is the colic pain itself to be regarded as a pathognomic sign, or necessary attendant: for of the four patients who were sent for examination and treatment from Anzain to Paris, while two suffered from it, the other two were without any such symptom. Nor did the treatment usually found most serviceable in rhachialgia prove of much, if indeed of any, benefit in the anhæmia of Anzain; so that the medical superintendents, who had at first embraced this idea, found themselves obliged to abandon such a course, and the view of the disease on which it was founded, and to regard it as a direct exemplification of idiopathic anhæmia.

At the time of opening their correspondence with the School of Medicine at Paris, fifty patients, all belonging to the same gallery, had been attacked with the disorder, three of whom had died, and the number of patients was almost daily increasing, notwithstanding that the gallery was at this time shut up. Some of the sufferers had been ill for fifteen, others for twelve, others for eight months: and many were recent cases. It was obvious, however, that those were the most unfortunate subjects, and affected with the highest degree of severity, who had been attacked while actually employed in the gallery: while those who did not complain till it was closed, passed through the disease, not indeed with celerity, but in a more favourable way. So that the disorder seemed to admit of division into two distinct states or varieties, an acute and a chronic.

The general symptoms under the former, independently of those of colic, were pallor of skin, great emaciation, weak, feeble, quick, contracted pulse, palpitations of the heart, anhelation; extreme debility, so as to render walking difficult; bloated countenance, habitual perspiration, especially at night; stools black or greenish. These symptoms often continued without much change for many months, sometimes for upwards of a year; when they became united, manifestly from augmented weakness, with headache, frequent faintings, intolerance of light and sound.

Where colic was an accompaniment, there was much griping pain in the stomach and intestines, inflation of the abdomen, and at times, towards the close, purulent stools.

Four patients were selected out of the aggregate body to be sent to the School of Medicine at Paris for examination and advice. They were all young; their ages being from sixteen to twenty-one; one of them had worked in the mine for six years, the others for ten or eleven; and as they had all been ill for nearly a twelvemonth, it is obvious that they had been attacked while labouring in the gallery; and were hence

regarded as having received the complaint in its acute form.

We have already observed that of these four, two had experienced colic pains from the first, and two had not been troubled with them. The pulse varied from 70 to 104 strokes in a minute, but the stroke was extremely feeble, and scarcely perceptible; the least excitement, moreover, would accelerate it almost beyond the power of counting.

The stomach appears to have been generally capricious; they could relish food if allowed to exercise a choice; but one of them was subject to frequent vomiting; and, in all, the digestion was manifestly imperfect, as the food was partially discharged with little change, intermixed with black or greenish feces. The mesentery, as we have already observed, seemed considerably enlarged to the touch, but was destitute of pain on pressure: nor did the enlargement extend to any other region.

So extreme was the weakness that none of these patients were able to walk more than a few steps without palpitation of the heart, and being compelled to sit down, and especially on mounting a staircase. Yet the same delusive hope, that often accompanies consumption, and appeared, as we have already observed, in Dr. Combe's patient, was generally conspicuous in the cases before us. Even the death of one of them did not seem to destroy this enviable feeling in the rest. "We were afraid," says Professor Halle, "lest the melancholy fate of the first patient should have had an influence on the minds of his companions; but we had here no difficulty to encounter. The hope that the opening of his body would put us upon a more successful mode of treatment, predominated in their minds, without taking away their regret for his loss."

The individual who thus fell a sacrifice seems to have been attacked with more than ordinary severity at the very onset of the disease; and was one of those who had to contend with the pains of colic in addition to the specific symptoms. Mercurial inunction was early tried, but abandoned in a few days from its being found to quicken the pulse and increase the tendency to fever. When he reached Paris he had been ill for eleven months, having previously been employed in the mine for a period of eight years. He at length gave manifest proofs of hectic fever, the remissions of which became gradually shorter, till at length the fever assumed a continued type. But though the skin was burning hot it did not lose its paleness, nor was the slightest blush discernible on the tongue, the lips, or the conjuctiva: a remark which is indeed equally applicable to all the rest. He seems to have sunk under the pressure of debility alone, his most prominent symptoms at last being those of great difficulty of breathing, a feeble and intermitting pulse, and cold extremities.

The appearances on dissection were, as nearly as may be, those of Dr. Combe's patient, as we have already described them. The parenchymatous viscera were all pale, diminished, and shrivelled, with the exception of the heart, which preserved its natural size. Even the spleen, which, in the preceding case, retained its proper colour, and does not seem to have undergone any change of size, was here of a reduced magnitude, and of the same spongy softness observed in the preceding case.

The almost utter bloodlessness of all the vessels, however, formed the predominant feature. "In the three cavities all the vessels, as well arteries as veins, were destitute of coloured blood, and contained only a small quantity of serous fluid. No blood was found in the aorta, as far as its crural subdivisions, nor in the accompanying veins, nor in the system of the hepatic vessels, nor in any of the sinuses of the brain. Upon making a deep incision into the flesh of the thighs, there flowed out a small quantity of liquid and black blood, but from no other part whatever. The flesh of the muscles which cover the thorax was exceedingly red, but that of the extremities much less so. And we are told that the same destitution of blood which distinguished this case, occurred also in all the other dissections that were made at any time: so that the want of colour in the interior precisely corresponded with that of the surface, and of the whole capillary system. "This condition, therefore," observes M. Halle, "may be regarded as peculiarly dependent on the disease; as exhibiting itself by manifest signs during its entire progress; and as reaching its height when it is on the point of terminating, and has reached its last stage."

From the extensive spread of the malady there was a pretty ample opportunity of putting various plans of treatment to an effective test; and the opportunity was not neglected.

Mercury, as we have already observed, did not seem to answer. Two cases recovered under its use: but in general it produced febrile excitement; and hence no credit was given to it even in the instances of restoration. Emetics, sudorifics, acids, sedatives, tonics, and stimulants were all tried simultaneously, or in succession. But by far the most successful, as, indeed, the most rational plan, and that most corresponding with the nature of the proximate cause we have endeavoured to illustrate, consisted in a combined employment of the two last of these classes, stimulant and tonic medicines, with a free use of opium where the tormina required it, and the employment of gentle laxatives on the return of constipation. The best stimulants appear to have been camphor and æther; the best tonics, bark and iron. While this plan was continued, the patients generally improved in strength, lost their palpitation on walking, and evinced a slight return of colour; and in every instance in which this process was discontinued at too early a period, they appear to have relapsed; and only to have renewed their advantage upon a return to the same treatment. The diet was generous and nutritious as it ought to be, and altogether harmonised with the other therapeutical intentions.

ANÆSTHE'SIA. (*a*, *a*. f. Αναισθησια; from *a*, priv. and *αισθανομαι*, to feel.) Loss of the sense of touch. Diminished or lost sense of feeling. The sense of touch or feeling is often diminished, and sometimes destroyed; occasional

and local numbness is common with most people. Pressure from a bandage, or from one limb resting long upon another, will produce a partial diminution of the sensific power of the nerves, which, however, soon returns when the pressure is removed; the limb in this state is said in common language to be asleep. The irregular flux of the sensorial power, on its first return, produces a sense of prickling, as though needles were in the part, and pushing in every direction. When numbness occurs without obvious pressure, it shows a tendency to a paralytic state, and should be watched. There is sometimes a total loss of the sense of touch, mostly partial, but sometimes general over the whole surface of the body. These are very rare cases; they evidently depend on loss of function of the posterior columns of the spinal cord, whether as connected with apoplexy, palsy, hysteria, &c., or arising from organic affection of the cord itself. The treatment must, of course, be regulated by the cause, when this can be ascertained. In some slight cases of numbness in particular parts the affection of the nerves seems to be local, and benefit is derived from friction and topical stimulants.

ANAGA'LLIS. 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Monogynia*.

2. The pharmacopœial name of the *Anagallis arvensis*.

ANAGALLIS ARVENSIS. The systematic name for the *Anagallis — foliis indivisis, caule procumbente*, of Linnæus. Scarlet Pimpernel. A beautiful little plant common in most parts of Europe. It has been considered as antispasmodic and stomachic, but does not seem to possess any activity.

ANAGARGALI'CTA. Αναγαργαλικτα. A gargle or wash for the throat.

ANAGARGARI'STUM. Αναγαργαριστον. A gargle.

ANAGLY'PHE. (From αναγλυφω, to engrave.) The name given by Herophilus to a part of the fourth ventricle of the brain, from its resemblance to the style used by the ancients for writing. See *Calamus scriptorius*.

ANA'GRAPHE. (From αναγραφω, to write or prescribe.) A prescription or receipt.

ANA'GYRIS. Αναγυρις. A genus of plants of the class *Decandria*, and order *Monogynia*.

ANAGYRIS FŒTIDA. This plant grows in Italy and the south of France. Its wood exhales a very fetid odour. Its leaves are strongly cathartic.

A'NAL. (*Analis*; from *anus*, the fundament.) Appertaining to the anus, or extremity of the great gut.

ANALE'NTIA. A term forged by Paracelsus to denote a species of epilepsy.

ANALE'PSIA. This term has been unmeaningly used to signify an epilepsy arising from affection of the stomach — *quasi læsio a conversiva ad caput*, say the editors of Castelli, and cite John of Gadesden, but he is a semi-barbarous writer.

ANALE'PSIS or ANALE'PSIA. (From αναλαμβανω, to restore.) A recovery of strength after sickness.

ANALE'PTIC. (*Analepticus*; from αναλαμβανω, to restore.) That which recruits the strength which has been lost by sickness.

ANALOGOUS. A term applied by G. St. Hilaire to the organs of different animals which have the same *anatomical relations*, how muchsoever they may apparently differ in structure or function. Thus every organ which is supported by an os hyoides, and, in its turn, supports a trachea, is a *larynx*; and all such organs are *analogous*.

ANALO'SIS. (*is, is.* f. Αναλωσις; from αναλισκω, to consume.) A consumption or atrophy.

ANA'LYSIS. (*is, is.* f. Αναλυσις; from αναλυω, to resolve.) The resolution of any substance into its constituent elements. The processes and experiments which chemists have recourse to are extremely numerous and diversified, yet they may be reduced to two kinds, which comprehend the whole art of chemistry. The first is, *analysis*, or decomposition; the second, *synthesis*, or composition. In *analysis*, the parts of which bodies are composed are separated from each other; thus, if we reduce cinnabar, which is composed of sulphur and mercury, and exhibit these two bodies in a separate state, we say we have decomposed, or analysed cinnabar. But if, on the contrary, several bodies be mixed together, and a new substance be produced, the process is then termed chemical composition, or *synthesis*; thus, if, by fusion and sublimation, we combine mercury with sulphur, and produce cinnabar, the operation is termed chemical composition, or composition by synthesis. Chemical analysis consists of a great variety of operations. In these operations, the most extensive knowledge of such properties of bodies as are already discovered must be applied, in order to produce simplicity of effect, and certainty in the results. Chemical analysis can only be executed with success by one who is in possession of a considerable number of simple substances in a state of great purity, and of certain bodies, whether simple or compound, which detect the presence of others by their immediate, obvious, and characteristic effect upon them; and which on that account are called *tests* or *re-agents*. The word analysis is often applied by chemists to denote that series of operations, by which the component parts of bodies are determined, whether they be actually separated, and exhibited apart from each other, or whether their distinctive properties be exhibited by causing them to enter into new combinations, without the perceptible intervention of a separate state; and, in the chemical examination of bodies, analysis or separation can scarcely ever be effected, without synthesis taking place at the same time.

ANAMNE'STICUS. (Αναμνηστικος; from αναμιμνησκω, to remember.) Anamnestic. Applied to medicines which were supposed to strengthen the memory. It is almost unnecessary to say that no medicine has any such specific operation.

A'NANAS. The pine-apple. See *Bromelia ananas*.

ANAPETI'A. Αναπετεια. An expansion of the orifices of vessels or canals. — *Galen*.

Anaphalanti'asis. (From αναφαλαντιας, bald.) A falling off of hair from the eyebrows.

Ana'phora. (From αναφερω, to bring up.) The bringing up of any thing by the mouth, as spitting of blood.

Anaphone'sis. (Αναφωνησις; from ανα, and φωνη, the voice.) Vociferation; the loud exercise of the voice, which was practised by the ancients to strengthen the lungs.

ANAPHRODI'SIA. (α, æ. f.; from α, priv. and αφροδισια, sexual intercourse.) Impotence. Want of the generative power. See *Sterility*.

Anaphro'meli. (From α, priv., αφρος, froth, and μελι, honey.) Clarified honey.

ANA'PLASIS. (Αναπλασις, *confirmatio, reparatio*; from αναπλασσω, to form anew, to restore.) Hippocrates uses this term to signify the reunion of a fractured bone.

ANAPLERO'SIS. (Αναπληρωσις, *repletio*; from αναπληροω, to fill up.) The restitution of parts that have been destroyed, as the incarnation of an abscess, or the healing of a wound attended with loss of substance.

Anaplero'ticus. (Same etymon.) Incarnative, applied to a medicament which favours the restoration of the lost substance of a part.

Anapleu'sis. (From αναπλεω, to float.) The exfoliation and casting off of dead portions of bone. The looseness of carious teeth. — *Hippocrates. Paulus Ægineta.*

ANAPNEU'SIS. (From αναπνεω, to respire.) Respiration.

ANA'PNOE. Αναπνοη. Respiration.

Ana'ptysis. Αναπτυσις. Expectoration.

Anarrhegnu'minos. (From αναῤῥηγνυμι, to break again.) A term applied by Hippocrates to ulcers which heal prematurely and break out again — αναῤῥηγνυμινα ἑλκεα.

ANARRHOE'A. (From ανα, upwards, and ῥεω, to flow.) A flux of humours, from below upwards. — *Schneider de Catarrho.*

Anarrho'pia. (Αναῤῥοπια, from ανα, upwards, and ῥεπω, to tend.) A flux of humours, from below upwards. — *Hippocrates.*

A'NAS. (*as, atis.* f.; *à nando*, from *nare*, to swim.) 1. A duck or drake.

2. The name of an extensive genus of birds in the Linnæan system of ornithology, of the order *Anseres*. It comprehends the swan, goose, duck, teal, and widgeon.

Anas anser. The goose, called also *Anser domesticus*. The flesh of the tame goose is a favourite article of food, but is very apt to disagree with weak stomachs; its digestion is facilitated by a small quantity of brandy, or other alkoholic spirit.

Anas cygnus. The swan. The flesh of the young swan or cygnet is tender, and is reckoned a great delicacy.

Anas domestica. The tame duck. The flesh of this bird is difficult of digestion, and requires the addition of stimulating condiments, to enable weak stomachs to digest it.

ANASA'RCA. (From ανα, throughout, and σαρξ, the flesh.) This word has been mistaken by some for a noun of the first declension, but, as Külm has justly observed, it is indeclinable, σαρκα being the accusative of σαρξ.)

Anasarca consists in a collection of serous fluid in the cellular membrane immediately under the skin. As the accumulation of serum increases, the skin often becomes inflamed and thickened, and presents an appearance resembling that of erysipelas. From the free communication between all parts of the cellular tissue, the fluid gravitates towards those which are most dependent, and the lower extremities often become excessively swollen. The distended cuticle at last gives way, and affords an outlet of the effused fluid, which, however, continues to be poured into the cellular tissue with great rapidity.

The cellular membrane and the shut cavities of the body are constantly moistened by a small quantity of serum, which is exhaled by the capillary arteries. When this is secreted in too great quantity, or is not duly re-absorbed by the lymphatic vessels, its accumulation gives rise to the disease in question. Anasarca may, therefore, be considered as resulting from a morbid action of the exhalent arteries, or some cause which interferes with the function of the absorbents; the latter is by much the more frequent, inasmuch as anasarca, in the majority of cases, is symptomatic of visceral diseases, which are attended with obstruction of the venous circulation, and induce general dropsy. A torpid state of the lymphatic vessels is assigned as a frequent cause of anasarca; but this supposition, though probably true in some cases, is evidently destitute of proof in any.

Anasarca sometimes occurs as an idiopathic affection, and, as such, may assume a *sthenic* or an *asthenic* form; acute anasarca, however, is generally accompanied with inflammation of some of the viscera, and most frequently of the lungs. The acute form is thus described by Dr. Abercrombie: —

"The disease comes on suddenly, and generally affects persons in the vigour of life. It is usually ascribed to sudden exposure to cold, especially after the body has been previously overheated. The first symptom is an oppression and uneasiness in breathing, and in a short time, frequently in a few hours, or in the course of the same day, this is followed by the dropsical swelling. The affection of the breathing varies considerably in different cases. In some cases there is only a feeling of oppression or tightness in breathing, without pain or cough; in others, there is pain increased by a full inspiration, with sharp painful cough; and in others there is great oppression of breathing, preventing the patient from lying down, except in one particular posture, or even preventing him from lying down at all. The pulse is, in some cases, a little frequent, but in others it is not above the natural standard. It is sometimes of good strength, but frequently rather weak, and in some cases irregular. This anasarcous swelling is commonly observed first in the face; from thence it extends downwards upon the trunk of the body, and then to the extremities. This progress was in one case so remarkable, that even at night, after the patient had been sitting up through the whole day, he was affected with a great degree of anasarca down

to the middle of the legs, while the feet and ancles were free from it: next day the feet and ancles were affected also. This peculiarity, however, does not occur universally, for in some cases the swelling is first observed in the legs; but in general the face is affected at a very early period. The urine is scanty and high coloured: in some cases it is coagulable; in others there is no trace of albumen. If the disease be now allowed to go on, the swelling increases, and the breathing becomes more and more oppressed: it may be fatal in a few days, or it may be drawn out to several weeks."

The diagnosis of this form of anasarca requires some attention, since the oppression of the breathing, being often unattended with fever or acute pain, might lead to the supposition that effusion had taken place into the pleuræ or pericardium; but the suddenness of the affection, and the signs afforded by auscultation, will easily enable us to detect the real nature of the case.

In the treatment of this affection active antiphlogistic practice is indicated. In most instances moderate bleeding, with purgatives, will suffice; but it is sometimes necessary to carry the use of the lancet to a great extent.

The asthenic form of anasarca very seldom occurs as an idiopathic disease; in a few instances, however, it seems to be so, from the absence of any other disease to which it can be considered as secondary.

It is most common among the poor who inhabit ground-floors, and other dark and damp apartments, where the air is not free, and is most frequent in spring and autumn, when the weather is cold and moist. The general predisposing causes are a lymphatic temperament, insufficient nourishment, excess in the use of spirituous liquors, a sedentary life, depressing passions, exhaustion from long abstinence, excessive evacuations of blood, and the debility induced by other diseases, whether acute or chronic, as diarrhœa, dysentery, rheumatism, chlorosis, palsy, scurvy, syphilis.

Anasarca, with debility, comes on, in general, slowly, and with symptoms denoting a deficiency of vital energy. The infiltration of the cellular membrane is generally observed first in the lower extremities; sometimes the face is puffy, and the swelling gradually extends to the rest of the body. The pulse varies; the skin becomes pale, frequently of a milky whiteness; its heat commonly diminishes; it is soft to the touch, though without its natural moisture; and, as its elasticity is lessened, it is easily depressed, and retains the mark of the finger. The swelling of the legs is most evident in the evening, and after the patient has been long in the upright position, but after lying down diminishes or disappears. As this preternatural accumulation of fluid gains ground, distending the skin, compressing the vessels, the nerves, the muscles, &c., the mobility of the body is diminished, the vital actions of the skin are altered; and the slightest cause will produce ulceration, erysipelas, and gangrene. The urine is generally scanty and deep red, depositing a copious sediment. There is usually great thirst.

Besides these primary forms of anasarca, there is a consecutive form which supervenes after exanthematous diseases, and especially scarlet fever, of which it is by no means an unfrequent sequela. The affection, in this case, seems to be of an inflammatory character, and connected with deficient cutaneous transpiration. From a number of cases which have come before him, Dr. Copland has been led to conclude that it is "dependent on excrementitial plethora arising out of the suppressed or imperfectly restored functions of the skin, and other eliminating or depurating organs: that an incomplete or suppressed eruption will not occasion it unless the internal secretions and excretions be also impeded; that exposure to cold, or to a cold and humid air, or even to humidity alone, will favour its occurrence, although it frequently appears without those aids, and even in very different states of the atmosphere; that it is more immediately induced by febrile, or generally excited vascular action, arising out of an impeded or interrupted secretion and excretion, and a consequent morbid state of the blood and increase of its fluid parts, accompanied by deficient power or tone of the extreme vessels and exhaling pores, either absolutely or relatively, to the action of the heart and arteries."

The character of this consecutive affection appears to vary greatly in different epidemics: in some it has been found exceedingly intractable and fatal, while, as it generally presents itself in this country, it is not of much importance, and yields readily to a few brisk cathartics, or even subsides spontaneously as the patient gains strength. It is not to be supposed, however, that anasarca is the only form of dropsy that is liable to supervene on scarlatina and other exanthems; the affection is often of a much more serious nature, and fluid is effused into the abdomen, thorax, or ventricles of the brain. This consecutive anasarca is much more frequent in children than in adults.

It has been already stated that anasarca is most frequently met with in connexion with general dropsy; and, even where it is otherwise, the same principles of treatment are applicable to the partial and the more extensive disease. These principles are stated in a general manner in the article *Hydrops*.

ANA'SPASIS. (From ανασπαω, to draw together.) Contraction of the stomach. — *Hippocrates*.

ANASTA'LTICUS. (From ανασταλλω, to restrain.) Styptic or astringent.

ANA'STASIS. (From ανιστημι, to rise, or rise again; to cause to rise.) 1. A recovery from sickness; a restoration to health.

2. A translation of humours to a superior part. — *Hippocrates*.

ANASTOMO'SIS. (Αναστομοσις; from ανα, mutually, and στομα, a mouth.) The inosculation or communication of vessels, as arteries, veins, and lymphatics. The term has also been hypothetically applied to the union of the branches of nerves, from the notion that these were canals for the transmission of a nervous fluid.

ANASTOMO'TICUS. Anastomotic. 1. A term anciently applied to medicines which were

supposed to open the mouths of vessels, as cathartics, diuretics, deobstruents, diaphoretics.

2. Applied by anatomists to those branches of vessels by which an union, or anastomosis, with other vessels is effected.

ANA'TICA PORTIO. A barbarism for an equal portion, from ανα, of each.

Anatomical Nomenclature. See *Nomenclature anatomical.*

ANA'TOMY. (Ανατομια, or Ανατομη. *Anatomia, æ.* f. or *Anatome, es.* f.; from ανατεμνω, to cut up.) The dissection of organised bodies, with a view to elucidate their structure and functions; also the science which treats of the structure of organised bodies, and which is learned by dissection. Anatomy is divided into *human* and *comparative*, the one treating of the structure of man alone, the other comparing the structure of all organised beings, whether animal or vegetable. The anatomy of the inferior animals is called *zootomy;* that of vegetables, *phytotomy.* Anatomy is also divided into *general* and *descriptive:* general anatomy teaches the structure and physical properties of the various tissues which compose the body, without reference to the form or situation of the organs into whose composition they enter; descriptive anatomy takes cognisance of the shape, position, and connexion of parts.

Descriptive anatomy is subdivided into, —

Osteology; the study of the bones.
Syndesmology; that of the ligaments.
Myology; of the muscles.
Neurology; of the nerves.
Angiology; of the vessels.
Adenology; of the glands.
Splanchnology; of the viscera.
Dermology; of the cutaneous textures.

Lastly, anatomy is divided, according to the object with a view to which it is especially cultivated, into *pathological*, or *morbid anatomy*, which investigates the changes induced in the structure of organs by disease; *surgical anatomy*, which demonstrates the relative position of parts, with a reference to those operations which it may be necessary to perform on them; *physiological anatomy*, which regards the structure of organs only in as far as it elucidates their functions, and classifies organs according to the functions to which they minister; *transcendental anatomy*, which regards the plan or model on which the living frame and its organs are developed.

ANATOMY, ARTIFICIAL. The beautiful and useful art of making models in wax or other materials, to illustrate the healthy or diseased structure of parts has been called artificial anatomy.

ANATRE'SIS. (From ανατραω, to perforate.) The operation of trepanning the skull. — *Galen.*

ANATRI'PSIS. (From ανατριβω, to rub, or rub in.) Friction of the surface of the body, with or without the use of medicated oils.

ANATRIPSO'LOGY. A treatise on the use of friction.

ANATRIS. *Anatris.* Mercury.

ANATRON. *Anatrum.* See *Natron.*

ANA'TROPE. (*e, es.* f.; from ανατρεπω, to subvert.) Inverted action of the stomach; nausea and vomiting. — *Galen.*

ANAU'DIA. (*a, æ.* f.; from α, priv. and αυδη, speech.) Aphonia; loss of voice.

A'NCEPS. (*ceps, ipitis.*) Two-edged, having two sharp edges: applied to the stems and leaves of plants, as in the *Sisymbrium striatum*, *Iris graminea*, and leaves of the *Typha latifolia.*

ANCHA. (Arabic.) The hip.

A'NCHILOPS. (*ops, opis.* m.; from αγχι, near, and ωψ, the eye.) A disease in the inner corner of the eye. See *Ægilops.*

ANCHORA'LIS. (From *anchora*, an anchor.) The coracoid process of the scapula has been called *processus anchoralis.*

ANCHOVY. See *Clupea encrasicolus.*

Anchovy pear. See *Grias cauliflora.*

ANCHU'SA. Αγχουσα. 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Monogynia.*

2. The name in some pharmacopœias for the alkanet root and bugloss. See *Anchusa officinalis*, and *Anchusa tinctoria.*

ANCHUSA OFFICINALIS. The officinal bugloss. It has also been called *Buglossa, Buglossum angustifolium majus, Buglossum vulgare majus, Buglossum sylvestre*, and *Buglossum sativum.* It is the *Anchusa — foliis lanceolatis strigosis, spicis secundis imbricatis, calycibus quinquepartitis*, of Linnæus. It was formerly esteemed as a cordial in melancholia and hypochondriasis. It is seldom used in modern practice.

ANCHUSA TINCTORIA. The systematic name of the anchusa or alkanna of the pharmacopœias. The alkanet plant, called also *Alkanna spuria, Alkanna tinctorum, Buglossum tinctorum, Anebium, Dyer's alkanet.* This plant grows wild in France and other countries of Europe, but is cultivated in our gardens. The root is externally of a deep purple colour, and is used by dyers. It imparts a beautiful deep red colour to oil, wax, turpentine, and alkohol, and is used in pharmacy for colouring ointments, as lip salves, &c.

ANCHYLO'SIS. See *Ancylosis.*

ANCIPI'TIUS. (From *anceps.*) Two-edged: applied to leaves in the same sense as *anceps.*

A'NCON. Αγκων. The elbow joint. The term is sometimes restricted by anatomists to that process of the ulna, otherwise called the olecranon, and which forms the projecting part of the elbow on which we lean. See *Ulna.*

ANCONE'US. (From αγκων, the elbow.) A small triangular muscle, situated on the back part of the elbow. *Anconeus minor* of Winslow, *Anconeus vel cubitalis Riolani* of Douglas. It arises from the ridge, and from the external condyle of the humerus by a thick, strong, and short tendon; from this it becomes fleshy, and, after running about three inches obliquely backwards, it is inserted by fleshy fibres into the back part or ridge of the ulna. Its use is to assist in extending the fore-arm.

ANCONEUS EXTERNUS. See *Triceps extensor cubiti.*

ANCONEUS INTERNUS. See *Triceps extensor cubiti.*

ANCONEUS MAJOR. See *Triceps extensor cubiti.*

ANCONEUS MINOR. See *Anconeus*.

ANCONEUS PROCESSUS. See *Ulna*.

ANCO'NOID PROCESS. See *Ulna*.

ANCTE'RES. Αγκτηρες. Fibulæ or clasps, with which the lips of gaping wounds, which did not admit of the suture, were brought into apposition. — *Celsus*.

ANCTERIA'SMUS. The operation of bringing the lips of wounds together by fibulæ or clasps.

ANCU'BITUS. A barbarous term applied to a disease in which there was an appearance as if of sand and small stones in the eyes. It was otherwise called *Petrificatio*. The editors of Castelli give this word on the authority of John of Gadesden.

ANCUNULE'NTA. (A barbarism.) This term is said to have been applied to a woman during the time of menstruation. — *James. Turton.*

A'NCYLE. (From αγκυλος, crooked or contracted.) Contraction or stiffness of a joint. — *Galen*. See *Anchylosis*.

ANCYLOBLE'PHARON. (Αγκυλοβλεφαρον, from αγκυλη, a contraction, and βλεφαρον, the eyelid.) An adhesion of the margins of the eyelids to each other.

ANCYLOGLO'SSUS. (From αγκυλη, a contraction, and γλωσσα, the tongue.) Applied to one who is tongue-tied.

ANCYLOME'LE. (*e, es.* f.; from αγκυλος, crooked, and μηλη, a probe.) A curved probe.

ANCYLO'SIS. (Αγκυλωσις. (From αγκυλος, crooked or contracted.) Stiffness and immobility of a joint. This term is generally written *anchylosis*, but improperly. Ancylosis is divided into *true* or *complete*, and *false* or *incomplete*.

When the extremities of the bones which enter into the formation of a joint unite firmly, so as to render the joint altogether immoveable, the case is one of complete ancylosis: when there is no union of the bones, but a contraction of the tendons and ligaments surrounding the joint which admits only of a small degree of motion, it is called incomplete ancylosis. In young persons ancylosis is very seldom an original affection. It arises from caries of the bones and erosion of the articular cartilages, as in white swelling; and in these cases is a fortunate occurrence, since it is, in effect, the process instituted by nature to arrest the morbid action; it is consequent also on fractures of the articular extremities of the bones; on wounds of the joints; on inflammation of the synovial membrane; on rheumatism attended with affusions into the joints and bursæ mucosæ; and, in short, on all those injuries and diseases which keep a joint long in a state of inactivity, and occasion chronic inflammation of the parts which enter into its formation. Dislocations which have remained long unreduced are mentioned by writers as a cause of ancylosis, but they cannot be thus considered with any propriety, because the original joint has ceased to exist by the disjunction of the parts which composed it, and hence cannot be the subject of ancylosis or any other disease; and when a new or false joint is formed, it is always moveable. At an advanced period of life, ancylosis generally arises from ossification of the ligaments and cartilages, and seems to be connected with that disposition to the formation of bone which is manifested by ossification of the cartilages of the ribs and other parts, and which so often gives rise to disease of the arteries, by the deposition of bony matter in their parietes. In some instances, however, this ossific diathesis, if it may be so called, has presented itself in early life. There have been some cases of universal ancylosis in which every joint has been obliterated, and the whole frame rendered rigid and immoveable. In the museum of Trinity College, Dublin, is the skeleton of an aged man in which the joints have undergone an universal ancylosis. In the Hunterian Museum in London, there is a similar skeleton of an individual in the meridian of live; and in the *Histoire de l'Académie des Sciences*, for 1716, a case of universal ancylosis is detailed, occurring in a child only twenty-three months old.

The treatment of ancylosis is confined to the incomplete form of the affection. When the ends of the bones have become incorporated, treatment is of course nugatory, and if at all active may prove dangerous. When the immobility of the joint arises merely from contraction of the tendons and ligaments, a perseverance in the proper means will frequently effect a cure, even when the disease has been of considerable duration. The joint is to be moved gently and steadily from day to day, increasing the motion as the flexibility of the parts increases: no degree of violence should be used, since this, by exciting inflammation and tumefaction, is likely to augment the evil. Friction with oleaginous liniments is also beneficial: various medicated fomentations, and stimulating liniments of different kinds, have been recommended, but regular flexion and extension of the joint, and friction, are the means chiefly worthy of confidence.

ANCYLO'TOMUS. (From αγκυλη, and τεμνω, to cut.) 1. A crooked surgical knife, or bistoury. 2. A knife for dividing the frænum linguæ in tongue-tied persons.

ANCYROI'DES. (From αγκυρα, an anchor, and ειδος, resemblance.) The coracoid process of the scapula has been so called, from its likeness to the beak of an anchor. See *Scapula*.

ANDA. A Brazilian tree, the fruit of which is an oval nut, containing two seeds. The seeds are strongly cathartic, and have also an emetic effect; the green outer portion is astringent, and used in diarrhœa.

ANDELY. A town of France, near Gysors. It has cold mineral springs, which are slightly chalybeate.

Anderson's pills. These consist of Barbadoes aloes with a proportion of jalap and oil of aniseed.

ANDI'RA. The name of a genus of plants. Class, *Diadelphia*; Order, *Decandria*.

ANDIRA INERMIS. The *Geoffroya inermis* of Linnæus, and formerly called *Angelina* and *Angelina Zanoni acostæ*. The cabbage tree.

This is a lofty tree growing in the East and West Indies, and other hot countries. Its bark is brought to us in pieces, which are grey externally, but internally black and furrowed.

It has a disagreeable sweetish taste, and its powder resembles that of jalap. It contains mucus, resin, sugar, extractive matter, and a narcotic principle. This bark has both a cathartic and a narcotic effect, and is celebrated as an anthelmintic, especially for expelling lumbrici. It may be given in powder, decoction, extract, or syrup. The dose of the powder is from ℈j. to ʒss.; that of the extract, which is made by evaporating the decoction, gr. iij.; that of the syrup, which is merely the decoction with a double proportion of sugar, from ʒss. to ʒ ij. The decoction is directed in the Edinburgh Pharmacopœia. See *Decoctum Geoffroyæ inermis*. The dose of this medicine, in whatever form it may be given, is to be gradually increased till it induces a degree of nausea, the occurrence of which limits the dose; for if it be carried further it occasions vomiting, fever, and delirium. The same effects ensue if cold water be drunk during its operation. When these poisonous effects occur, they may be removed by plentiful dilution with warm water, and a dose of castor oil.

The seeds of this plant possess the same virtues as the bark. The bark and seeds of the *Andira racemosa* and *Andira retusa* have been used for the same purposes as those of the *Andina inermis*.

ANDRANATOMI'A. (*a*, *æ*. f.; from *ανηρ*, a man, and *ανατεμνω*, to cut up.) *Andranatome*. The dissection of the human body, particularly of the male.

Androgenia. (Ανδρογενεια; from *ανηρ*, a man, and *γενεσις*, generation.) The generation of males. — *Hippocrates*.

ANDRO'GYNUS. (Ανδρογυνος. *Androgynus*, *i*. m.; from *ανηρ*, a man, and *γυνη*, a woman.) 1. An hermaphrodite.

2. In *Botany* this term has been used in two different senses: applied to a *flower*, it means one which has both male and female organs; applied to a *plant*, it is synonymous with monœcious, and denotes the presence of separate male and female flowers on the same plant.

Andromani'a. (From *ανηρ*, a man, and *μανια*, madness.) This term has been used synonymously with *nymphomania*, or *furor uterinus*.

Andro'meda. (The name of a genus of plants of the class *Decandria*, and order *Monogynia*.

Andromeda maria'na. *Broad-leaved Moorwort*. An American plant, a decoction of the leaves of which is said to be useful in the disease called the toe-itch, or ground-itch, common among the slaves in the southern parts of the United States.

Andro'nion. The name of a pastil invented by an ancient physician, named Andron, and recommended against carbuncle and herpes. — *Oribasius*. *Paulus*.

Andro'phorus. (From *ανηρ*, a man or male, and *φερω*, to bear.) The slender pillar which supports the united anthers in monadelphous and diadelphous plants; it is distinguished from a *stamen*, in that the latter supports only one anther. — *Mirbel*.

ANDROPO'GON. (From *ανηρ*, a man, and *πωγων*, a beard.) The name of a genus of plants in the Linnæan system. Class, *Polygamia*; Order, *Monœcia*.

Andropogon nardus. The systematic name of Indian nard or spikenard; called also *Spica nardi* and *Spica indica*. The root of this plant is an ingredient in the mithridate and theriaca: it is moderately warm and pungent, and its flavour is not disagreeable. It is said to be used by the Orientals as a spice.

Andropogon schæna'nthus. The systematic name of the camels-hay, or sweet-rush; called also *Juncus odoratus*, *Fœnum camelorum*, and *Juncus aromaticus*. The dried plant is imported into this country from Turkey and Arabia. It has an agreeable smell, and a warm, bitterish, not unpleasant taste. It was formerly employed as a stomachic and deobstruent.

ANDROSÆ'MUM. (*um*, *i*. n.; from *ανηρ*, a man, and *αιμα*, blood: so called, because it affords a blood-red juice.) See *Hypericum androsæmum*.

ANDRO'TOME. (*e*, *es*. f.; from *ανηρ*, a man, and *τεμνω*, to cut.) The dissection of man.

ANDROTO'MIA. (*a*, *æ*. f.; from *ανηρ*, a a man, and *τεμνω*, to cut.) Androtomy, or human dissection.

A'ndrum. Kæmpfer has given this name, latinised from an Indian word, to a species of elephantiasis of the scrotum, which is endemic in the south of Asia.

Ane'bium. The herb alkanet. See *Anchusa*.

ANEILE'MA. (From *ανειλεω*, to roll up.) *Aneilesis*. Flatulence; the rising up of air in the intestines, and the tormina occasioned thereby. — *Hippocrates*.

Anele'ctric. The same as *non-electric*.

ANEMO'NE. (*e*, *es*. f.; from *ανεμος*, wind: so named, because it has been said not to open its flowers till blown upon by the wind.) Anemone. The name of a genus of plants in the Linnæan system. Class, *Polyandria*; Order, *Polygynia*. The wind-flower.

Anemone hepatica. The hepatica, or herb trinity. *Hepatica nobilis* of the pharmacopœias, and *herba trinitatis*. This plant is alleged to possess mildly astringent and corroborant virtues. Infusions of it have been drunk as tea; or the powder of the dry leaves given, in the quantity of half a spoonful at a time.

Anemone nemorosa. The systematic name of the *Ranunculus albus* of the pharmacopœias. The bruised leaves and flowers are said to cure tinea capitis, if applied to the part. The whole plant is acrid and poisonous.

Anemone pratensis. The *Pulsatilla nigricans* of the pharmacopœias. This plant, *Anemone — pedunculo involucrato, petalis apice reflexis, foliis bipinnatis*, of Linnæus, has been received into the Edinburgh pharmacopœia, upon the authority of Baron Stoerck, who recommended it as an effectual remedy for most of the chronic diseases affecting the eye, particularly amaurosis, cataract, and opacity of the cornea. He likewise found it of great service in the nodes and nocturnal pains of syphilis, and in ulcers, caries, indurated glands, suppressed menses, serpiginous eruptions, melancholy, and

palsy. The plant has scarcely any smell; but its taste is extremely acrid, and when chewed, it inflames the tongue and fauces.

ANENCE'PHALUS. (*us*, *i.* m.; from α, priv. and εγκεφαλος, the brain.) A fœtus born without a brain.

ANEPITHY'MIA. (*a*, *æ.* f.; from α, priv. and επιθυμια, desire.) Loss of any of the natural appetites, as hunger, thirst, &c.

ANERETHI'SIA. (From α, priv. and ερεθω, to irritate.) The name given by Swediaur to defect of irritability.

A'NESIS. (Ανεσις; from ανιημι, to remit.) A remission or diminution of the symptoms of a disease.

ANE'THUM. (*um*, *i.* n. Ανηθον.) 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Digynia*.

2. The pharmacopœial name of the common dill. See *Anethum graveolens*.

ANETHUM FŒNICULUM. Sweet fennel, the *fœniculum* of the shops. *Anethum —fructibus ovatis*, of Linnæus. The seeds and roots of this indigenous plant are directed by the Colleges of London and Edinburgh. The seeds have an aromatic smell, and a warm sweetish taste, and contain a large proportion of essential oil. They are stomachic and carminative. The root has a sweet taste, but very little aromatic warmth, and is said to be pectoral and diuretic.

ANETHUM GRAVE'OLENS. Dill. *Anethum* of the shops. *Anethum —fructibus compressis*, of Linnæus. This plant is a native of Spain, but cultivated in several parts of England. The seeds are directed for use in the London and Edinburgh Pharmacopœias: they have a moderately warm pungent taste, and an aromatic, but sickly smell. An essential oil, and a distilled water, are prepared from them, which are given in flatulent colic, and dyspepsia.

ANE'TICUS. (From ανιημαι, to assuage.) This term has been applied to soothing medicines.

ANE'TUS. (*us*, *i.* m.; from ανιημι, to remit.) Dr. Good uses this as the generic name of intermittent fevers.

A'NEURISM. See *Aneurisma*.

ANEURI'SMA. (Properly *aneurysma*. Ανευρυσμα; from ανευρυνω, to dilate.) An aneurism. This term signifies, strictly, a tumour arising from the dilatation of an artery; but it has been extended to several diseases and lesions of the blood-vessels, and to dilatations of the heart.

Four principal varieties of aneurism have been generally enumerated by authors.

1. *True Aneurism.* — This consists in a pulsating tumour, caused by rupture, or ulceration, of the internal and middle coats of an artery, with dilatation of its external coat, or by a simple dilatation of all the coats. Such, at least, is the meaning which, till very lately, has been attached to the term by modern writers. It was maintained by Fernel, that true aneurism depends upon dilatation of all the coats of an artery, while Fabricius Hildanus and Sennert held, that there was a rupture of the internal and middle coats. The question was long agitated, till the observations of Lancisi, Friend, Guattani, and Morgagni, established the opinion that true aneurism may arise from rupture, from distension, or from a combination of the two, in cases where the distension of the arterial coats has preceded their rupture. This became the prevalent doctrine till Scarpa denied that true aneurism ever arises from mere dilatation. The observations of many eminent surgeons of the present day, have put it beyond a doubt that there is rupture of the proper coats of the artery in a great majority of cases; but, since we have as weighty testimony to the occasional occurrence of aneurism from simple dilatation, we are led to the conclusion which an *à priori* view of the subject would suggest — namely, that the disease commonly called true aneurism may depend either on perforation of the two inner tunics, with dilatation of the external, or on simple dilatation of the parietes of the vessel. The former cause, however, is so much the more frequent, that a practical view of the subject must principally regard the affection as arising from that cause. When true aneurism occurs spontaneously, it of course argues a previous diseased state of the artery; and, even when it is the result of external violence, the vessel can hardly be conceived to have been healthy, because the natural effect of laceration of the internal and middle coats would be, not aneurism, but effusion of lymph, and obliteration of the canal. That an unhealthy state of the arterial system generally accompanies aneurism, is rendered probable by the fact, that several aneurisms frequently coexist in the same individual, and that it is not uncommon for a patient, who has been cured of an external aneurism by an operation, to die unexpectedly from the rupture of an aneurism of the aorta. In the ordinary progress of true aneurism, the two inner coats ulcerate, or are torn, and the blood comes in contact with the external or cellular coat of the artery, which is immediately distended; the blood, being now out of the course of the circulation, coagulates, and, as the sac of the aneurism enlarges, the lymph is deposited within it in successive layers, which are arranged concentrically like the coats of an onion, and which are firmer the further they recede from the artery. This deposition of lymph resists the impulse of the blood; and when the disease undergoes a spontaneous cure, it is by the accumulation of coagula, which completely fill up the sac, put a stop to the circulation through the artery, and cause the obliteration of its canal. More frequently, however, the layers of lymph only offer a temporary resistance to the evil: when the cellular coat is distended to the utmost, it gives way, and the cellular sheath of the artery becomes the sac of the aneurism, and, in its turn, is also ruptured; the blood, however, is not effused, since, by the pressure of the tumour on the surrounding parts, inflammation has been excited, and the sac united with them by coagulating lymph. At length the parietes of the tumour yield to the constantly increasing pressure of the contained blood, and a rapid hæmorrhage puts a period to the patient's life and sufferings, if he has not been previously worn out by constitu-

tional irritation, or destroyed by the pressure of the aneurismal tumour on parts essential to life. The mode in which the aneurism bursts, varies according to its situation. When the tumour points on the external surface of the body, a slough is generally formed, on the detachment of which the fatal hæmorrhage ensues, and the same happens when the aneurism gives way into cavities lined with a mucous membrane, as the gullet or intestines; but when it presses upon a serous membrane, as in the case of aneurisms which burst into the cavity of the thorax, or abdomen, the distended part gives way by laceration.

True aneurism is most frequently met with in the aorta, particularly at its arch; its next most common situation is the popliteal artery; it is also familiar to surgeons as occurring in the external iliac, femoral, common carotid, and subclavian arteries; it is rare in the brachial artery, and scarcely ever occurs in any small artery, wherever situated.

2. *False Aneurism.* — When all the coats of an artery are ruptured or wounded, and the blood escaping into the surrounding textures occasions a pulsating tumour, the case is said to be one of false aneurism. This kind of aneurism may be either *circumscribed* or *diffused:* the former takes place where the blood is poured out slowly, and its diffusion prevented by the pressure of dense cellular membrane or other unyielding textures; the latter, when the blood escapes readily into a lax cellular tissue, which allows it to spread in all directions. False aneurism may arise from the rupture of an artery by some sudden exertion, but it most usually results from punctured wounds of the arteries.

The acceptation of the terms true and false aneurism has been somewhat altered by recent writers. The name of *true aneurism* has been restricted to tumours formed by a dilatation of all the coats of an artery, and that of *false aneurism* to tumours consequent upon the rupture of some or all of the coats: if the two inner tunics only have given way, and the external is dilated into a sac, the case is called *circumscribed false aneurism;* if all the tunics have given way, and the blood has been infiltrated into the surrounding textures, it is called *diffused false aneurism.* Upon the whole, however, the old division seems preferable to the new, because it associates under one denomination both the forms which arise from disease of the vessel, and distinguishes them from those which are the result of a wound penetrating all its coats. M. Lisfranc has endeavoured to simplify the subject, by admitting only two kinds of aneurism, the *spontaneous* and the *traumatic;* the former corresponding with the true aneurism of surgical writers in general, the latter with the circumscribed false aneurism: the mere extravasations of blood from a wounded artery, which have been called diffused false aneurisms, are excluded altogether. This arrangement is, perhaps, the best and most practical that can be adopted.

3. *Aneurisma Varix*, or *Varicose Aneurism.* — This is considered by some as a variety of the false aneurism. When the operation of bleeding at the bend of the arm is carelessly performed, it sometimes happens that the lancet transfixes the vein, and the fascia of the biceps muscle, and penetrates the artery. When this happens, the blood from the artery sometimes merely accumulates under the aponeurosis, forming a circumscribed false aneurism: in other cases, the aperture in the vein, fascia, and artery, are all united by adhesive inflammation into a common opening, through which the blood passes from the artery into the vein, which becomes dilated to a greater or less extent above and below the seat of the injury, and is felt to pulsate like an artery; the passage of the blood from the artery into the vein is accompanied with a whizzing sound, analogous to the *bellows sound* heard in certain diseases of the heart. We sometimes meet with a complication of false and varicose aneurism. When the vein has been transfixed, and the artery penetrated as above described, if the orifices in the injured vessels happen to be exactly opposed when the arm is bound up, they will generally unite, and a simple varicose aneurism will result; but, if they do not come into contact, the blood will be effused into the cellular membrane, and if the wound in the artery and that in the vein still remain open, a portion of the blood will also pass into the vein: a complicated aneurism, partaking of the nature both of the common false aneurism and of the varicose, is thus formed.

5. *Aneurism by Anastomosis.* — This name was given by Mr. John Bell to a disease which he was the first to describe minutely, though it had been previously noticed in surgical writings. The affection sometimes presents itself in newborn children, in the form of a small, bluish, or mulberry-coloured mark, which enlarges as the child grows, and is at length attended with pulsation. It is also frequently met with in the adult, and is then, generally, consequent upon a bruise. As the tumour gets larger, the pulsation is strong and continual, and is much increased by exercise, or agitation of the mind. The tumour consists of the smaller arteries and veins of the part, which have become dilated, and open into little sacs in the cellular substance, which give way when over-distended, and often discharge blood so profusely as to endanger the life of the patient. It has been observed, that, in females, the tumour becomes more turgid at the menstrual periods; and, in some cases of amenorrhœa, a vicarious hæmorrhage has taken place from it.

In the following remarks on the spontaneous cure and treatment of aneurism, we have reference only to the true and false aneurism, chiefly the former; varicose aneurism, and that by anastomosis, are quite of a different nature from these, and require a different treatment.

The spontaneous cure of aneurism appears to take place in one or other of the following ways.

1. The blood effused into the sac, being removed from the course of the circulation, deposits its fibrinous part in successive layers, which sometimes become so firm as effectually to resist the impulse of the blood, and prevent any

further dilatation of the sac: in this case the sac is gradually filled up with coagulating lymph: it generally happens that the deposition of this substance continues in the artery on each side of the sac, as far as the point where the nearest large branch is given off, and the canal of the vessel is thus obliterated. It would appear, however, from the observations of Mr. Hodgson and others, that in a few instances the artery has remained pervious after the sac is filled up: in either case, the sac having ceased to enlarge, its contents are taken up by the absorbents; the sac itself contracts more or less perfectly, sometimes shrivelling into a little hard knot, and the cure of the aneurism is complete.

2. In cases where the aneurismal tumour, from its size or situation, presses severely on the surrounding parts, a high degree of inflammation is sometimes excited; the whole mass passes into a state of mortification; and, as in all other cases of mortification, a dense coagulum is formed in the artery, so that when the parts slough away there is no hæmorrhage; the circulation is thrown into collateral channels, and the patient recovers.

3. As the aneurismal tumour increases in size, its position with respect to the artery may change, so that it presses strongly on the vessel near its entrance into, or egress from, the sac; the current of blood through the artery is thus stopped, the circulation is carried on by the collateral branches, the canal of the diseased vessel is obliterated, the tumour is absorbed, and the aneurism may thus literally be said to cure itself.

4. A portion of coagulum may be detached from the inside of the sac, and fall into the cavity of the artery, thus plugging up the canal, and arresting the circulation through it, as a natural consequence of which a collateral circulation is established, and the aneurismal artery and sac are obliterated. The late Mr. Allan, of Edinburgh, an excellent practical writer, regards the last as the most frequent cause of the spontaneous cure of aneurism in the extremities. "A portion of coagulum," says Mr. Allan, "may be detached and fall into the cavity of the artery in consequence of the force of the flowing blood, or by a change of position of the limb; or it may be forced into the cavity of the artery by external compression upon the tumour. I observed that in aneurism of the aorta near the heart, the coagula were sometimes moved from the sides of the sac, and carried into the artery, which was consequently plugged up, and that the patient then immediately died as quickly as if he had been suffocated. There is every reason to believe that the same thing frequently takes place in aneurism of the extremities; but the effect is different. This kind of obstruction produces instant death in the aorta, but in the extremities only a change of circulation. When a loose clot falls into the cavity of the artery, the pulse ceases, and the limb immediately becomes cold. It remains so for a day or two, when it begins slowly to recover its heat, and the pulse also returns. The circulation is at last completely re-established, and the strength of the limb is restored. The change that has happened is equivalent to an operation; the artery is stopped up, and the circulation is thrown upon the collateral branches, which, by a law of the animal economy, immediately enlarge, so as freely to transmit the whole blood sent to the limb."

Mr. Allan thinks it improbable that the blood coagulates in the artery after the sac is filled up, as represented by Mr. Hodgson. He objects to this view of the subject, that it is not easy to conceive how the blood should coagulate in the artery, since it is within the course of the circulation, and does not coagulate in any parallel case: that the force of the flowing blood would prevent its coagulation, and that the clot which might at any time be formed would be carried along the artery and obstruct it at a lower point: that the cases of aneurism of the aorta which Mr. Hodgson himself relates, prove that the deposition of coagulating lymph never extends into the artery, but that whenever the sac is filled up the coagulum becomes smooth towards the channel of the vessel: that if the blood continued to deposit its coagulating lymph in the artery after the sac was filled up, there never would be any change in the temperature of the limb when the artery became obstructed, because this deposition is a slow process; and in proportion as the flow of blood through the aneurismal artery was prevented, the collateral branches would gradually enlarge; whereas, in all the cases which Mr. Allan had seen, the limb had lost its heat and feeling as suddenly as if the artery had been obstructed by a ligature, and it required a day or two to regain its former temperature. These and other considerations induced Mr. Allan to doubt the accuracy of the general notion, as to the most frequent cause of the spontaneous cure of aneurism; and they, at all events, are sufficient to render it probable, that the mechanical obstruction of the artery by the detachment of a clot from within the sac ought to be enumerated among the circumstances on which the spontaneous cure of the disease in question sometimes depends.

5. A case has been related by Sir Astley Cooper, which illustrates another way in which an aneurism may undergo a spontaneous cure. A man in Guy's Hospital had an aneurism just below the groin. He was sitting before the fire when he felt something burst in the upper part of his thigh. On examination it was found that no blood had escaped, and indeed the aneurism had not yet reached the skin so as to become adherent to it. The thigh, however, was enormously swelled, and the patient was unable to move the limb. For three days a pulsation was perceptible in the aneurism, after which it ceased, and the tumefaction of the limb began to diminish. At the end of four months the aneurismal swelling had subsided considerably, and he could use the limb; at the end of six months he was discharged from the hospital. This man afterwards died from the rupture of an aneurism in the abdomen, and on dissection it was found, that the former aneurism in the thigh had burst under the fascia lata, and that the femoral artery had

been obliterated by the pressure of the effused blood.

It appears, then, that the spontaneous cure of aneurism under all circumstances, depends upon the formation of coagula in the sac, or the artery, or both; or upon some mechanical obstruction to the course of the blood through the artery, which eventually causes a deposition of lymph within the canal of the vessel. The treatment, whether medical or surgical, is founded on a knowledge of these facts, and there are few instances in which the exercise of the healing art is more directly guided by physiological principles. The medical treatment consists in the use of such means as diminish the action of the heart and favour the formation of coagula within the aneurismal sac: the principal of these means are small but frequent abstractions of blood from the general system, purgatives, a very spare diet, and perfect quietude. The plan of treating aneurism by reducing the actions of the arterial system to the lowest ebb is called Valsalva's treatment, after a celebrated Italian physician of that name, who flourished in the latter part of the seventeenth and commencement of the eighteenth century. Valsalva, after taking away a good deal of blood by venesection, diminish the quantity of food daily, till at length the patient took only half a pint of soup in the morning, and a quarter of a pint in the evening, with a very small quantity of water, medicated with mucilage of quince seed, or with osteocolla, a substance which at that time was believed to promote the formation of callus, and was therefore most likely prescribed by him, on an erroneous analogy, with a view of rendering the diseased parts callous, and inapt to yield to the impulse of the blood. When the patient was so reduced as to be unable to rise from his bed, the extreme debility was removed by a more liberal diet. By such treatment Valsalva believed that the life of incurable patients might be protracted, and that, where the disease had not made too great progress, a perfect cure might be obtained. The method of Valsalva is not described in his own writings, but was published by Albertini, one of his fellow-students. More recent practitioners have fully recognised the general value of Valsalva's precepts, though many have doubted, and with good reason, whether an absolute cure is often to be expected from the practice, and also whether it be expedient in most cases to reduce the patient to so extreme a degree of extenuation. The most judicious practitioners of the present day are content with moderate bleeding, a light and very temperate diet, excluding the use of all alkoholic and fermented liquors, and a life of great tranquillity of body and mind, with a sedulous avoidance of all that can excite the passions, and a restriction of corporeal exercise to gestation in an easy carriage: with these means, others which have a tendency to diminish the force of the circulation, as digitalis, colchicum, &c., may be conjoined, according to the judgment of the practitioner. This medical treatment of aneurism is the only one which is applicable to aneurisms of the aorta, or others situated within the chest or abdomen, in which it is not deemed expedient to attempt a surgical operation. In the case of aneurisms situated in the extremities, however, the reducing practice just described becomes a valuable, and, indeed, an indispensable adjunct to the local compression by which surgeons in favourable cases endeavour to promote the formation of coagula, and avoid the necessity of using the knife.

The *surgical* treatment of aneurism is twofold; namely, by compression, and by ligature. Compression is only applicable to aneurisms situated in the extremities, and is applied to the aneurismal tumour itself, to the artery between it and the heart, or to both, according to circumstances. When the case is not of long standing, and the tumour is small, pressure is advantageously applied to the tumour itself; when the tumour is larger, pressure, directly exercised upon it, would be, for obvious reasons, both ineffectual and injurious, and can only be applied with propriety on the artery between it and the heart; but in such cases the practical surgeon, unless under very particular circumstances, would not think of trusting to compression at all; when it happens that the tumour is small, and the artery in the vicinity of a bone, compression will be most beneficially applied both to the aneurismal tumour and to the artery at a point between it and the heart, which point should be as near the sac as possible, lest any anastomosing branches should intervene by which the blood may still be carried into the sac, notwithstanding the compression of the main trunk. In all cases the compression must be confined to the course of the diseased vessel, and by no means involve the whole circumference of the limb; for, in the latter instance, it would operate as much on the anastomosing branches as on the main trunk; and the whole intention would be defeated, with the additional disadvantage of causing swelling and œdema of the limb. For the various methods of applying compression in cases of aneurism, we must refer the reader to works on practical surgery.

The use of compression, in conjunction with proper constitutional treatment, has perfectly succeeded in many instances; but, generally speaking, it fails; and the experienced surgeon will only be inclined to give it a trial where he observes some disposition towards a spontaneous cure, and where he has time enough before him, so that, if gentler means should not succeed, he can still have recourse to tying the artery.

The great surgical means for the cure of aneurism is the ligature of the artery, whereby the blood is instantaneously debarred from all entrance into the sac, and the canal of the artery eventually obliterated.

When a proper ligature is applied with a moderate degree of tightness upon an artery, the internal and middle coats of the vessel are cut through, while the external coat remains entire. The artery being immediately rendered impervious at this point by the pressure of the ligature, the blood coagulates directly above the ligature, and the coagulum extends a greater or less way up the vessel towards the nearest anastomosing branch, through which the blood,

prevented from entering its old channel, flows to the lower parts of the limb. As a consequence of the lesion of the inner coats, inflammation ensues; if the inflammation be moderate, it terminates in the effusion of coagulable lymph in the cavity of the artery, between its coats, and on its external surface, which is precisely the event desired by the surgeon, and on which the obliteration of the canal of the vessel depends. After a while, the external coat sloughs off at the part where the ligature was applied, the ligature also comes away, and the artery is permanently secure; but if the inflammation be too great, or occurs in an unhealthy artery, it may terminate in sloughing or ulceration and what is called secondary hæmorrhage takes place, endangering or destroying the life of the patient. In operations for aneurism, there are three situations in which the ligature has been applied, namely, within the aneurismal sac, between the sac and the heart, and beyond the sac, further from the heart. The older surgeons always adopted the first method: they laid open the tumour, cleared away the coagula, and applied a ligature above, and another below the orifice in the artery. This proceeding was at once severe, dangerous, and comparatively inefficient, and has now given place to a more simple and scientific operation. The application of the ligature nearer the heart than the aneurismal tumour, was first proposed by John Hunter, and was put in effect by him with perfect success in cases of popliteal aneurism: this beautiful operation has now been extended, by the enterprise of modern surgeons, to aneurisms of the carotid, axillary, external iliac, and other arteries; and the principle on which it rests is recognised as generally applicable to those aneurisms which come under the care of the surgeon. In one case of aneurism of the external iliac artery, Sir Astley Cooper had even the boldness to throw a ligature round the abdominal aorta, as affording the patient the only chance of safety: the case terminated fatally; but some have thought that the circumstances, as far as the immediate results of the operation were concerned, would justify similar attempts in other equally desperate cases. In this, the common method of curing aneurism by the ligature, there are several very important precepts to be observed.

1. The ligature should be thin and round, so as to effect a clean division of the two inner coats, and it should be tightly applied in order to insure this result.

2. The vessel should be detached from its connexions as little as possible, and the wound caused by the operation should be immediately brought together with a view to its healing by the first intention.

3. In *spontaneous* or *true aneurism*, the ligature should not be applied too near the sac, lest the artery should be diseased, and incapable of assuming the adhesive inflammation on which the cure depends: in *traumatic* or *false aneurism*, the artery is sound; and the ligature may, therefore, be applied near the sac.

4. The ligature ought never to be applied to the artery too near a large anastomosing branch; for the impulse of the blood will prevent the formation of a firm coagulum, and may frustrate the whole sanatory process.

It sometimes happens, that an external aneurism is situated so near the trunk of the body, or otherwise so circumstanced, that a ligature cannot be applied at any point of the artery nearer the heart: in such cases, the artery has been tied beyond the tumour. This practice was first proposed by Brasdor, and was tried, but without success, by Deschamps and Sir Astley Cooper. Mr. Wardrop, however, has used this method with success in several instances, chiefly of carotid aneurism; and some cases of aneurism of the arteria innominata are reported to have been cured by the ligature of the subclavian artery: an operation of this kind, performed by Dr. Mott, was unequivocally successful; and there is abundant encouragement for giving the practice a fair trial.

The aneurismal varix is in most cases attended with no danger, and comparatively little inconvenience; the vein, affording a ready conduit to the blood impelled into it from the artery, does not become much distended, and after a certain time the tumour remains stationary. Dr. William Hunter, who first described this form of aneurism, was of opinion, that, in a general way, it is best not to interfere with it: an opinion in which surgeons have usually acquiesced. In some instances, however, a cure has been effected by compression. When this is applied it should be done early, and the pressure should be strong enough to bring the sides, both of the artery and vein, into close apposition. If the tumour should be burst by external violence, it then becomes necessary to tie the artery, and a ligature should be applied both above and below the orifice by which it communicates with the vein. In the complication of varicose and false aneurisms already described it is generally necessary to tie the artery; and here also two ligatures are to be applied, one above and the other below the orifice in the vessel.

The aneurism by anastomosis has been variously treated. Whenever the tumour is so situated that it can be extirpated with safety, it should without hesitation be cut out, the surgeon being careful to avoid wounding the tumour itself, by carrying his incisions fairly below it; even with this precaution the hæmorrhage attending the operation has been known to prove fatal. When the situation of the tumour does not admit of its extirpation, the chief arteries from which it derives its blood should, if possible, be tied: this has been done with success in several instances; but the good effects of the ligature are not here to be expected with the same confidence as in common aneurism, because the supply of blood to the tumour by the anastomosing vessels may still continue to be very considerable. Pressure, in situations where it can be firmly and steadily applied, has succeeded in many instances, but is frequently ineffectual, and may sometimes do harm. Unless the circumstances of the case be very urgent, the prudent surgeon will not be particularly desirous of interfering with this

disease in any way, except where it is so situated as to be easily and safely extirpated.

Aneurism of the Heart. This term has been applied to enlargement of the heart. When it is attended with thickening of the parietes it is called *active aneurism;* and when with enlargement of the cavities and extenuation of the parietes, *passive aneurism.* See *Heart, diseases of.*

Aneurisma spurium. Spurious or false aneurism. See *Aneurisma.*

Aneurisma varico'sum. *Varicose aneurism, aneurismal varix,* or *venous aneurism.* See *Aneurisma.*

Aneurisma verum. *True aneurism.* See *Aneurisma.*

Aneurismal varix. See *Aneurisma.*

Anfractuo'sity. *Anfractus.* This word is used by anatomists for a sinuous depression or groove: thus the furrows which separate the convolutions of the brain have been called cerebral anfractuosities.

Angeio'logy. See *Angiologia.*

Angeio'tomy. See *Angiotomia.*

ANGE'LICA. (*a, æ.* f.: so called from its supposed angelic virtues.) 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Digynia.*

2. The pharmacopœial name of the garden angelica. See *Angelica archangelica.*

Angelica archangelica. The systematic name for the *angelica* of the shops, called also *Milzadella. Angelica—foliorum impari lobato,* of Linnæus. This plant is a native of the northern parts of Europe, but cultivated in our gardens. The roots of angelica have a fragrant, agreeable smell, and a bitterish, pungent taste. The stalk, leaves, and seeds, which are also directed in the pharmacopœias, possess the same qualities, though in an inferior degree. Their virtues are aromatic and carminative. The dose in substance is from ʒss. to ʒj., which may be given three or four times a day. Although the angelica is a very elegant aromatic, it is scarcely ever prescribed in modern practice, and is used principally by the confectioners, who make an agreeable sweatmeat of the stems, cut when they are young and tender.

Angelica, garden. See *Angelica archangelica.*

Angelica pilula. Anderson's Scotch pill.

Angelica sativa. See *Angelica sylvestris.*

Angelica sylvestris. Wild angelica; called also *Angelica sativa. Angelica—foliis æqualibus ovato-lanceolatis serratis,* of Linnæus. This species of angelica possesses similar properties to the garden species, but in a much inferior degree. It is only used when the latter cannot be obtained. The seeds, powdered and put in the hair, are said to kill lice.

Angelica, wild. See *Angelica sylvestris.*

Angelicæ. The name given by Decandolle to a tribe of umbelliferous plants, of which the genus *angelica* is the type.

Angelicus pulvis. A name of the Pulvis Algaroth of the old chemists. See *Algaroth.*

Angeli'næ cortex. See *Andira.*

ANGER. *Ira.* See *Pathemata animi.*

Angie'ctasis. (From αγγειον, a vessel, and εκτασις, extension.) Any dilatation of a vessel; a term comprehending the different kinds of *aneurism, varix,* &c.

ANGI'NA. (*a, æ.* f.; from *ango,* to strangle.) A term that has been applied to several diseases which are attended with difficult deglutition or respiration.

Angina epiglottidea. An œdematous affection of the glottis, the consequence of chronic laryngitis. See *Laryngitis.*

Angina externa. The mumps. See *Parotitis.*

Angina gangræ'nosa. The malignant sore-throat. See *Scarlatina maligna.*

Angina maligna. See *Scarlatina maligna.*

Angina membranacea. The croup. See *Croup.*

Angina pectoris. A disease first accurately described by Dr. Heberden, although traces of it are to be found in the works of Morgagni, Hoffman, and Poter. Some have thought that this disease is glanced at in the writings of the ancients; but this is extremely doubtful. Since the attention of physicians was directed to it by Heberden, many treatises have been written upon it, and it has received a vast variety of names, as *Cardiogmus cordis sinistri, Asthma arthriticum, Asthma spastico-arthriticum inconstans, Asthma convulsivum, Asthma dolorificum, Diaphragmatic gout, Angor pectoris, Stenocardia, Sternodynia syncopalis, Pnigophobia, Asthenia pectoralis, Sternalgia.* It has received the English name of *Suffocative breast-pang.*

This affection is observed to assume an acute and a chronic form. The *acute* form is characterised by a sense of painful constriction in the chest, which is felt most about the lower part of the sternum, inclining to the left side, and extending to the left arm, at first no further than the deltoid muscle, but subsequently to the elbows, wrists, and fingers: the right arm also is often affected in a similar manner. The pain is always severe, and sometimes amounts to agony; the action of the heart and lungs is variously disordered, and the patient is harassed with dyspnœa, palpitation, extreme anxiety, and a sense of impending dissolution; the pulse is sometimes not much affected, but it is generally either oppressed, feeble, and intermittent, or full and throbbing: it occasionally alternates between these two states; the functions of the stomach are also much deranged, and there is often excessive flatulence and eructation. After continuing from a few minutes to one or more hours, these distressing symptoms subside, and the patient returns to his ordinary state.

The *chronic* form of the disease is less violent, but the paroxysms are more frequent, and of longer duration, and the intermissions less perfect. The chronic form often results from the long continuance of the acute, but is, in some cases, primary. Palpitation and irregularity of the pulse more constantly attend the chronic than the acute form, because the continual disturbance of the respiration and circulation is nearly certain to bring on organic disease of the heart.

The paroxysm of angina pectoris is sometimes preceded by disordered states of the digestion, and muscular pains about the chest, or in other parts: at other times its incursion is sudden

and unexpected. It is often excited by exercise, especially walking against the wind, or up a hill, or a long flight of steps, and by strong mental emotions of whatever kind; frequently, however, it comes on without any manifest exciting cause. In the chronic disease a paroxysm is generally much more easily excited than in the acute: in many instances, indeed, the slightest causes are sufficient to produce this effect, and the existence of the patient is one of continual agitation and misery.

Angina pectoris seems, on the whole, to occur more frequently in men than in women, and in advanced than in early life. The states of constitution which seem most to predispose to it, are those induced by the gouty and rheumatic diatheses, by intemperance in food or drink, and by anxiety of mind. It has been thought by some to be capable of hereditary transmission: where it is connected with the gouty diathesis it may readily be conceived to be so; but a sufficient number of facts have not been accumulated to warrant any conclusion on this subject. The pathology of this affection is extremely obscure. Almost every variety of disease of the thoracic viscera has been found associated with it, but none with any degree of uniformity. Organic affections of the heart and great vessels are most common, such as ossification of the different valves, ossification of the coronary arteries, hypertrophy of the heart, or passive dilatation — more frequently the latter. Several of these lesions have been regarded by pathologists as the cause of pectoral angina; but that none of them are necessarily connected with the disease is sufficiently proved, on the one hand, by the fact that they may all be found in subjects who have never laboured under angina, and, on the other hand, by the still more conclusive fact, that several cases of angina have presented on dissection no morbid appearances whatsoever. The cause of the disease has been sought for by some, in the pressure of enlarged abdominal viscera, especially of the liver, upon the heart — an hypothesis scarcely worth alluding to: others, as Darwin and Butler, have considered angina pectoris as a kind of cramp of the diaphragm and other respiratory muscles. This affection has also been ascribed to a congestion of blood in the heart and large vessels, which must be acknowleged to be a frequent accompaniment, but can hardly be regarded as a cause. Lastly, pectoral angina has been supposed to consist essentially in neuralgic, or other affections of the pneumogastric and cardiac nerves. There is no doubt that the most prominent and invariable symptoms of the disease are just those which might be expected from such a cause; at the same time it must be remembered that in a great majority of cases there is very manifest disease of the heart, lungs, or their large vessels. Perhaps, therefore, we may not err greatly, either in a theoretical or practical point of view, by regarding angina pectoris as consisting in disordered action of the respiratory and cardiac nerves, which generally produces, and in its turn is aggravated by, organic lesion of the heart, lungs, or their great vessels.

With respect to the prognosis of angina pectoris, it is evident that it must be doubtful in all cases, and decidedly unfavourable in the greater part; nevertheless, where the disease is recent, the patient young, and there are no symptoms of serious organic affection, much may be hoped for from the resources of art. When it proves fatal, the patient either dies during a paroxysm of unusual duration or severity, or falls a victim to some of the many organic lesions of the heart with which it is so frequently complicated. The treatment of angina pectoris resolves itself into that which is applicable for the immediate relief of the paroxysm, and that which is directed to prevent or diminish the frequency of its return. With respect to the former, no precise rules can be laid down, and the practitioner must be regulated by the actual condition of the patient. There has been much dispute as to the propriety of bloodletting; but where the patient is plethoric and the pulse strong, moderate bleeding will always be advantageous, and may be practised without hesitation; while a feeble pulse, a pale surface, and a disposition to syncope, very clearly contra-indicate the use of venesection: in those cases, however, where local congestion seems to be combined with general debility, the restricted and cautious employment of topical bloodletting may still be admissible. Counter-irritants, whether applied to the external parts of the thorax or to the lower extremities, are serviceable in any case; and where there is any reason to suspect that the symptoms are connected with misplaced gout, sinapisms to the feet, and stimulating pediluvia, are by no means to be neglected. Dr. Good speaks highly of emetics, especially those of the antimonial kind, and recommends us to encourage the diaphoresis which they generally produce: where the paroxysm appears to have been brought on by an error in diet, an emetic may doubtless prove serviceable, but where the pectoral angina is complicated with valvular disease of the heart, the hurry of the circulation induced by emetics would render their use highly imprudent. The common antispasmodics sometimes do good, but upon the whole they are little to be depended on. Opium may be useful in some cases, but its tendency to produce vascular congestion prohibits its indiscriminate use.

With respect to the remedial means to be employed during the intervals of the paroxysms, it is obvious that, as we know nothing with any certainty of the proximate cause, our efforts will be most reasonably directed to obviate those states of the constitution which seem to predispose to the disease, and to diminish the influence of those complications which may increase the frequency, severity, or danger of the attacks. It will be the first duty of the practitioner to ascertain, as far as possible, the presence or absence of organic disease. When angina pectoris is connected with structural lesions of the heart, lungs, or their great blood-vessels, it is clear that, whether these be regarded as the primary cause, the result, or only the casual accompaniment of the affection under consideration, our treatment must be merely palliative; but it is not, on that account, to be

regarded as nugatory, since every experienced practitioner must be aware, in this as in many other cases, to what an extent life may often be prolonged, and suffering diminished, by a cautious and scientific vigilance. In those more fortunate, but rarer cases, where the disease appears to be of a purely nervous character, or to be chiefly dependent on disorder of the digestive organs, we may entertain some hopes of entire success; but even here, if the case be of any standing, we should not be too sanguine, since, when extensive and complex systems of nerves acquire a habit of disordered action, that habit is not easily broken through, and the deranged state of the nerves too frequently induces, sooner or later, disordered vascular action and gradual change of structure in the organs to which they are distributed. From the foregoing considerations, it will at once appear that general directions for the treatment of angina pectoris are more likely to mislead than to instruct. The treatment required may be mainly that adapted to the different organic affections of the thoracic viscera — that of dyspepsia — of plethora — of nervous excitement; in short, of any of those local or constitutional affections which, whatever may be their essential relations to angina, are well known to act as, at least, predisponent causes, to increase the frequency of the paroxysms, and to add to their formidable character. It may be stated, however, that, in all cases, a life of great tranquillity, a carefully regulated diet, early hours, an uniformity of habits, and placid occupation of the mind, will materially conduce to the cure of the disease where this is practicable, or to the alleviation of suffering where restoration to health is not to be hoped for.

It may be repeated, that there are few cases in which the occasional and judicious use of external counter-irritants may not be of some service, and, in a great many, their effect is immediate and striking. Blisters are of comparatively little avail, unless for the purpose of diminishing inflammatory action where bloodletting is deemed unadvisable: issues and setons are of much more decided efficacy. It is unnecessary to enumerate the various *specifics* that have been used in this disease. Bark, and other vegetable tonics, iron, arsenic, nitrate of silver, the sulphates of copper and zinc, mercury, hydrosulphuret of ammonia, the various narcotics, in short, the greater part of the materia medica, have at different times been put in requisition: no medicine is to be despised in this or any other disease, where any rational indication for its use can be perceived; but, when drugs are arrayed against the *name* of a disease without reference to its pathology, it is sufficient to say that they will, generally speaking, be eligible in proportion to their inactivity.

Angina pellicula'ris. A name lately given to those inflammations of the pharynx, larynx, or adjacent parts, which are attended with the formation of false membranes.

Angina polypo'sa. So called because the disease is attended with the formation of a false membrane, somewhat resembling a polypus. The croup. See *Croup*.

Angina scirrho'sa. Difficulty of deglutition, occasioned by scirrhus of the pharynx or œsophagus. See *Stricture*.

Angina sicca. A chronic inflammation of the pharynx, accompanied with a distressing sensation of dryness and heat. It is generally symptomatic of chronic affections of the stomach or lungs.

Angino'sus. Attended with angina, as *Scarlatina anginosa*.

Angioca'rpi. The name given by Persoon to a division of funguses which bear their seeds internally. They are either hard and membranous, or tough and leathery.

ANGIOLO'GIA. (*a*, *æ*. f.; from *αγγειον*, a vessel, and *λογος*, a discourse.) Angiology, or the doctrine of the blood-vessels and absorbents.

Angio'sis. A term under which Alibert includes all diseases of the blood-vessels.

ANGIOSPE'RMIA. (*a*, *æ*. f.; from *αγγειον*, a vessel, and *σπερμα*, seed.) 1. The name of an order of plants in the class *Didynamia* of Linnæus, the seeds of which are lodged in a pericarpium or seed-vessel.

Angiospermæ plantæ. Plants which have their seeds inclosed in a vessel.

ANGIOTO'MIA. (*a*, *æ*. f.; from *αγγειον*, a vessel, and *τεμνω*, to cut.) Angiotomy; the anatomy of the sanguiferous and absorbent vessels.

Angle. The inclination of two lines towards each other, which meet at a point. The term is applied by anatomists to various parts, which are of an angular shape: thus we speak of the external and internal angles of the eyes, of the angle of the jaw, &c.

Angle, facial. It was proposed by Camper to measure the respective proportions of the cranium and face, and thus, to a certain extent, to estimate the degree of intelligence in different animals and individuals in the following manner. A straight line is drawn from the most prominent part of the forehead to the alveolar edge of the upper jaw, opposite to the incisor teeth, and another from the external auditory foramen to the same point. These lines form an angle called the *facial angle*; and the nearer it approaches to a right angle the more the general size of the cranium is supposed to predominate over that of the face. But the accuracy of this measurement is affected by the relative size of the frontal sinuses, and the prominence of the jaws, in different species and individuals; moreover, the development of the cranium has no uniform connexion with the power of mind, since, as regards individuals, we often see those who are highly intellectual with very poor foreheads, and *vice versâ*; and as regards nations, we find several stupid and miserable tribes inhabiting different parts of Africa, whose skulls differ very little from those of Europeans. The facial angle, therefore, affords but a very defective criterion, either of the development of the cranium, or the sagacity of the animal; still, however, there appears to be some general truth in the indications derived from it, especially in relation to the human species; for in the European man the facial angle is seldom less than 80°, while in the negro

it is seldom more than 70°. In the inferior animals the rule becomes less applicable, owing to the greater variety in the size of the frontal sinuses and jaws. A more correct mode of estimating the relative proportions of the cranium and face has been proposed by Cuvier, namely, to make a vertical section of the head, and to compare the area of the section of the cranium with that of the face.

ANGLE, OPTIC. *Angle of Vision. Visual Angle.* The angle formed by two rays of light proceeding from different objects, or opposite extremities of the same object, and meeting in the pupil.

ANGOLA SEED. See *Abrus precatorius.*

ANGOLAN. A fine East Indian tree, the wood of which is believed to possess diuretic and vermifuge powers. It is the *Alangium decapetalum*, Class *Decandria*; Order *Monogynia.*

A'NGONE. (*e, es.* f.; from *αγχω*, to strangle.) A name given to the feeling of strangulation common in hysteria. The word ought to be written *anchone*, which after all is nothing but a common Greek word for strangulation or suffocation.

A'NGOR. (*or, oris.* m.) In pathology, a feeling of anxiety and constriction in the præcordial region; it is an accompaniment of many severe diseases.

A'NGOS. *Αγγος.* A vessel. Hippocrates applies this term to the uterus.

ANGUI'LLA. (*a, æ.* f.; an eel.) See *Muræna anguilla.*

ANGULAR. Having the shape of an angle; or relating to an angle.

ANGULAR PROCESSES. The orbitary processes of the frontal bone are so called.

ANGULAR ARTERY. This name has been given to the termination of the facial artery, where it is distributed near the inner angle of the eye, and also to the entire facial artery, because its trunk passes over the angle of the lower jaw bone.

ANGULAR VEIN. The vein accompanying the angular artery.

ANGULA'TUS. Angled. Used by botanists generally to designate stems, leaves, petioles, &c., which are of an angular shape.

ANGULO'SUS. Angular.

ANGU'RIA. The name given by the older botanists to the *water melon.* See *Cucuribita.*

ANGUSTA'TIO. The morbid contraction of a vessel or canal.

ANGUSTIFO'LIUM. (From *angustus*, narrow, and *folium*, a leaf.) Narrow-leaved: applied to plants, as *Epilobium angustifolium*, &c.

ANGUSTU'RA. A bark so called because it was brought from *Nueva Guayana*, or *Angustura*, in South America. See *Bonplandia trifoliata.*

ANGUSTURA, FALSE. See *Brucia antidysenterica.*

ANGUSTURA FERRUGINEA. See *Brucia antidysenterica.*

ANHALTI'NA. A name given to certain distilled waters or spirits impregnated with various aromatics, and supposed to possess analeptic virtues; they were so called because they were first prepared in the laboratory of the Prince of Anhalt.

ANHELA'TION. See *Dyspnœa.*

ANHE'LITUS. (*us, us.* m.; from *anhelo*, to breathe with difficulty.) Anhelation. See *Dyspnœa.*

ANHY'DROUS. (From *α*, neg. and *ὑδωρ*, water.) Without water. A term applied by chemists to various substances which contain no combined water.

ANICE'TON. (*Ανικητον*, invincible.) An epithet of a plaster invented by Crito, and so called because it was thought by the ancients an infallible or invincible remedy for achores, or scaldhead. It was composed of litharge, alum, cerussa, frankincense, white pepper, and turpentine.

Anil. See *Indigofera.*

A'NIMA. (*a, æ.* f.; from *ανεμος*, wind, or breath.) The soul, or vital principle. This term has been applied — 1. To the rational soul, or intellectual principle of man; 2. To the vital principle, whether of animals or vegetables; 3. By the old chemists, to any simple and volatile substance; 4. To the purest part of any substance; 5. A medicine supposed to have particular virtues in curing the diseases of any organ, was sometimes called the *anima*, or soul of that organ: thus the hermodactyl was the anima articulorum, because it was esteemed of great efficacy against arthritic affections; 6. Stahl gave the name of *anima* to an intelligent principle, which he believed to preside over all the actions of life. See *Life.*

ANIMA ALOËS. Refined aloes.

ANIMA ARTICULORUM. See *Hermodactylus.*

ANIMA HEPATIS. Sal martis. Sulphate of iron. So called from the efficacy it was formerly supposed to possess in diseases of the liver.

ANIMA PULMONUM. The soul of the lungs. A name given to saffron, on account of its use in asthmas.

ANIMA RHABARBARI. The best rhubarb.

ANIMA SATURNI. Sugar of lead.

ANIMA VENERIS. A preparation of copper.

ANIDRO'SIS. (*Ανιδρωσις*; from *α*, neg. and *ἱδρως*, sweat.) Absence of cutaneous perspiration.

A'NIMAL. (*al, alis.* n.; from *anima*, the soul, or vital principle, which, again, is from *ανεμος*, wind, or breath.) An animal. The objects which constitute the material universe are divided into *organic*, or living, and *inorganic*, not endowed with life. Organic bodies are divided into *animals* and *vegetables.* It might be supposed, on a superficial view of the subject, that nothing would be easier than to define a living body, and to show wherein it differs from a mere mass of unorganised matter; or to distinguish an animal from a vegetable, and point out the essential difference between these two forms of living being; but the further we advance in the science of life, the more difficult do these things appear; and we find that, in the present state of knowledge, we must be content to substitute comparative views of the more obvious characteristics of living, and inorganic, of animal, and vegetable bodies, for vain attempts to define the essential conditions of their existence.

The outline of such a comparison will be found under the article *Body*.

Taking the word animal in its common acceptation, as meaning a living being endowed with sensation and voluntary motion, we may here consider the animal frame with reference simply to its chemical and mechanical composition, and those general properties of life on which the exercise of all the particular functions depends. The animal body is composed of certain *elements*, all of which are also found in the inorganic world, and these, entering into various chemical combinations, under the influence of the vital energy, form *proximate principles* which are peculiar to the animal body. The elementary substances are *oxygen*, *hydrogen*, *carbon*, *nitrogen*, *phosphorus*, *sulphur*, *iodine*, *bromine*, *chlorine*, *fluorine*, *silicium*, *magnesium*, *potassium*, *sodium*, *calcium*, *iron*, and *manganese*: to which must be added, *caloric*, *light*, and *electricity*, if these be regarded as imponderable matter; which, however, is hypothetical, since they may be merely affections of matter. Of the substances above enumerated, six mainly enter into the formation of animal substances, viz. *oxygen*, *hydrogen*, *carbon*, *azote*, *phosphorus*, and *calcium*: the rest are met with sparingly, and some of them even appear to be adventiticus, and not essential to the constitution of the substance in which they are found.

The proximate principles of the animal body may be conveniently distributed, according to the arrangement of Gay Lussac and Thenard, into three sections: — I. *Those which are neither acid nor oleaginous*, including *fibrin*, *albumen*, *gelatine*, *caseum*, *hematosine*, *urea*, *sugar of milk*, *sugar of diabetic urine*. II. *Acids*, including the *uric*, *purpuric*, *rosacic*, *formic*, *lactic*, *allantoic*, *ambreic*, *butyric*, *capric*, *caproic*, *caseic*, *cetic*, *cholesteric*, *dephinic*, *hircic*, *margaric*, *oleic*, *sebacic*, *stearic*, and perhaps some others. III. *Oleaginous substances*, including those which constitute the different kinds of fat and animal oil, — such as *elaine*, *stearine*, *glycerine*, *butyrine*, *cetine*, *cholesterine*, *phocenine*, *hircine*. From the various combinations of these principles the different solids and fluids of the body result.

The fluids of the animal body bear a very large proportion to its solid parts: in the adult human subject they are calculated to be as 9 to 1. Chaussier found that a body, weighing 120 pounds, after some days' desiccation in an oven, weighed only 12 pounds. The bodies of those who have been buried in the burning sands of the Arabian deserts, and in other very dry situations, are found to undergo an extraordinary diminution of weight. In all such instances, however, allowance must be made for the various chemical re-actions of the elements of the body; for, on the one hand, much of its solid substance may be resolved into gaseous products, and, on the other, there may be a considerable formation of water by the union of oxygen and hydrogen: it hence appears, that the loss of weight which the body sustains by drying in a hot place is not an accurate measure of the proportion of the fluids to the solids; and that although the fluids doubtless preponderate greatly, they probably do so less than the numbers above stated indicate.

The solid components of the body, variously woven together, constitute certain textures or tissues, which are more or less homogeneous wherever they are met with throughout the frame, and each of which is endowed with characteristic vital properties.

Throughout the history of physiology, it has been a favourite notion that all the solid textures are ultimately divisible into one or more kinds of fibres. The ancients admitted only one kind of elementary fibre, and this they believed to consist of *earth*, *oil*, and *iron*; the elementary fibre, variously modified, gave rise to secondary fibres, namely, the *nervous*, *muscular*, *parenchymatous* and *osseous*. Chaussier has lately endeavoured to establish a new arrangement of fibres, which he divides into *laminar*, *nerval*, *muscular*, and *albuginous*. With respect to the elementary fibre, it may be put out of the question, for nobody has ever seen it; and, with respect to fibres which do come, in some degree, under the cognisance of the senses, it will be better to defer describing or classifying them till we can see them a little more clearly.

Several arrangements of the tissues have been proposed since that of Bichat, who first brought forward the doctrine of the tissues, or, in other words, the study of general anatomy. (See *Texture*.) The following table exhibits the classification of the tissues by M. M. Dupuytren and Richerand, which is, perhaps, the one least liable to objections: —

1. Cellular.
2. Vascular ..... { Arterial. / Venous. / Lymphatic.
3. Nervous ..... { Cerebral. / Ganglionic.
4. Osseous.
5. Fibrous ..... { Fibrous. / Fibrocartilaginous. / Dermoid.
6. Muscular ..... { Voluntary. / Involuntary.
7. Erectile.
8. Mucous.
9. Serous.
10. Horny or Epidermic { Pilous. / Epidermoid.
11. Parenchymatous ..... Glandular.

The fluids of the animal body have also been variously divided. The ancients admitted four cardinal humours, derived from the four elements; viz. *blood*, *lymph* or *phlegm*, *yellow bile*, and *black bile*; and from the various admixture of these all the solids and fluids were derived. Some modern physiologists have divided the fluids into three classes: — 1. The *chyme* and *chyle*. 2. The *blood*. 3. The *fluids eliminated from the blood*. Others have divided them into two classes only: —1. The *primary*, *alimentary*, or *useful*. 2. The *secondary*, or *useless*. A third distribution is into — 1. The *recrementitial*, or those destined to nourish the body. 2. The *excrementitial*, or those destined to be expelled from the body. 3. The *excremento-recre-*

mential, or those partaking of the nature of both the two former. The fluids have also been distinguished according to their chemical characters into *albuminous*, *fibrinous*, *soapy*, *aqueous*, *acid*, *alkaline*, &c.

The latest arrangement of the animal fluids is that of Professor Chaussier; it is as follows: —

1. The *blood*.
2. The *lymph*.
3. The *perspiratory fluids*, comprising the fluids which transpire or exhale from the skin, the mucous, serous, synovial, and cellular membranes, the adipose cells, the medullary membranes, the interior of the thyroid, and thymus glands, the eye, and the ear.
4. The *follicular fluids*: the sebaceous secretion of the skin, the cerumen, the ropy matter of the eye-lids, the mucus of the mucous glands and follicles; that of the tonsils, the cardiac glands, prostate gland, vicinity of the anus, &c.
5. The *glandular fluids*: the tears, saliva, pancreatic fluid, bile, urine, the fluid of Cowper's glands, the semen, the milk, the fluid of the supra-renal capsules, and that of the testicles and mammæ of new-born infants.
6. The chyme and the chyle.

The living solids are possessed of certain properties which are never observed in lifeless matter: such properties are therefore called *vital properties*; and when these are brought into activity by their appropriate stimuli, the phenomena of life are manifested. All the vital properties are referrible to *sensibility* or *contractility*.

There are several kinds of sensibility and contractility which may be stated as follows: —

- Sensibility.
  - Animal sensibility. *Perceptive; cerebral; sensibility of relation*, &c. Attended with consciousness, and requiring for its manifestation a particular apparatus or arrangement of parts.
  - Organic sensibility. *Nutritive, vegetative, latent, molecular sensibility.* Unattended with consciousness, requiring no particular organ, and existing in all living parts, whether animal or vegetable.
- Contractility.
  - Animal contractility. *Voluntary; contractility of relation*, &c. Excited by the will, and accompanied with consciousness. Subordinate to animal sensibility.
  - Organic contractility.
    - Involuntary, and unaccompanied with sensation; *irritability.* Corresponding to organic sensibility.
    - Involuntary, but accompanied with sensation.

Of the vital properties of the fluids little can be said. The experiments of Harvey and Hunter leave scarcely any room to doubt of the vitality of the blood; but the only vital property of this fluid which comes distinctly under the cognisance of our senses is the contractility of its fibrinous part: this, however, is evinced under circumstances entirely different from those which influence the contractility of the solid parts, and hence, no analogical inferences can be drawn.

By virtue of the vital properties with which it is endowed, the animal body passes through successive periods of growth, maturity, and decline, and during this progress performs a variety of functions, some of which minister to the preservation of the individual, others to the establishment of conscious relations between it and surrounding objects, and others again to the perpetuation of the species. Some illustration of these subjects will be found in the articles *Periods of Life*, and *Function*, which see.

Animal acid. See *Acid animal.*

Animal heat. See *Animal temperature.*

ANIMAL KINGDOM. The study of the objects comprehended within this kingdom of nature is called *zoology*, and has been regarded under various points of view, and in various relations to other branches of knowledge. It is singular that Aristotle, who may be considered as the earliest scientific writer on natural history, should have pursued that path of inquiry which in our own times has led to results of the highest interest, not only to the naturalist but to the physiologist, the physician, and the cultivator of general science. This great philosopher perceived clearly that a comparison of the anatomical structure of animals was the true key to the investigation of their nature and habits. Subsequent inquirers deviated from this path, and were long chiefly occupied with the external characters of animals and the formation of artificial systems founded upon these characters. Zoology, regarded under the latter aspect, attained to a high degree of perfection in the hands of Linnæus, whose system, though faulty in its leading principle, still formed a vast and splendid accumulation of natural knowledge. It is only of late years that the Aristotelian method of inquiry has been revived, and zoology so intimately interwoven with comparative anatomy that they must henceforth be considered as parts of the same science. For this important improvement the world is mainly indebted to John Hunter and Cuvier, especially the latter, by whose genius and industry zoology has at length been placed on a sound and permanent basis.

The system of Linnæus is anatomical in its three primary divisions, inasmuch as they are founded on the structure of the heart; and some anatomical details occur unavoidably through the entire system; but anatomy is not the guiding principle, and the arrangement is, on the whole, artificial and formed by the selection of a certain number of external characters. Linnæus distributed the animal creation into six great classes as follows: —

Div. I. — Heart with two auricles and two ventricles; warm and red blood.

Class 1. *Mammalia.* Animals which suckle their young.

2. *Aves.* Birds.

Div. II. — Heart with one auricle and one ventricle; cold and red blood.

3. *Amphibia.* Reptiles and serpents.
4. *Pisces.* Fishes.

Div. III. — Heart with one auricle, but no ventricle; cold and colourless blood.

5. *Insecta.* Insects.
6. *Vermes.* Worms.

These classes contain the following orders: —

Class I. — Mammalia.

The characters of the orders in this class are taken principally from the number, situation, and structure of the teeth.

Order 1. *Primates.* With four front incisors and two canine teeth in each jaw: including *Man*, the *Simiæ*, *Lemurs*, and *Bats*.

2. *Bruta.* No front teeth in either jaw: including the *Elephant*, *Rhinoceros*, *Walrus*, &c.

3. *Feræ.* Front teeth of a conical shape, generally six above and below; two long canine teeth. Ferocious and predatory quadrupeds, as the *Dog and Cat tribe*.

4. *Glires.* Two long front incisors in each jaw; no canine teeth. The hare tribe, as *Hares*, *Rabbits*, *Squirrels*, &c.

5. *Pecora.* No fore-teeth in the upper jaw. Cattle; as *Oxen*, *Sheep*, *Goats*, &c.

6. *Belluæ.* Fore-teeth both in the upper and lower jaw; including only the genus *Equus*, the *Hippopotamus*, the *Tapir*, and the *Hog*.

7. *Cetæ.* Teeth various. No feet. The whale tribe; as the *Whale*, *Dolphin*, *Porpoise*, &c.

Class II. — Aves

The characters of the orders taken principally from the bill.

Order 1. *Accipitres.* Upper mandible with an angular projection. Rapacious birds; as the *Eagle*, *Vulture*, *Hawk*, &c.

2. *Picæ.* Bill compressed, convex. Pies; including *Crows*, *Jays*, *Parrots*, &c.

3. *Anseres.* Bill covered with skin, broad at the tip. *Water-fowl;* as *Ducks*, *Geese*, *Gulls*, *Divers*, &c.

4. *Grallæ.* Bill roundish. Tongue fleshy. Waders; as the *Herons*, *Curlews*, *Plovers*, &c.

5. *Gallinæ.* Bill convex; upper mandible arched. Including the domestic fowl and birds more or less allied to it; as the *Peacock*, *Turkey*, *Pheasant*, *Partridge*, &c.

6. *Passeres.* Bill conical; sharp-pointed. The *Sparrow tribe*.

Class III. — Amphibia.

1. *Reptilia.* Reptiles. Furnished with feet and flat naked ears, without auricles. *Lizards*, *Frogs*, &c.

2. *Serpentes.* Serpents. Without feet. Eggs connected in a chain. Penis double, muricate.

Class IV. — Pisces.

1. *Apodes.* No ventral fins; as the *Eel*, *Conger*, &c.

2. *Jugulares.* Ventral fins placed before the pectoral; as the *Cod*, *Haddock*, *Blenny*, &c.

3. *Thoracici.* Ventral fins under the pectoral; as the *Mackerel*, *Perch*, &c.

4. *Abdominales.* Ventral fins behind the pectoral; as the *Salmon*, *Pike*, *Mullet*, &c.

5. *Branchiostegi.* Gills destitute of bony rays; as the *Diodon*, *Balistes*, &c.

6. *Chondropterygii.* Gills cartilaginous; as the *Shark*, *Sturgeon*, &c.

Class V. — Insectæ.

The characters of the orders in this class are derived from the number, structure, or absence of the wings.

1. *Coleoptera.* With four wings; of which the two upper, called *elytra*, or wing-cases, are crustaceous; as *Beetles*.

2. *Hemiptera.* With half elytra, or wing-cases only half as long as the body; as the *Cockroach*, *Lantern-fly*, &c.

3. *Lepidoptera.* Four imbricate scaly wings. *Butterflies* and *Moths*.

4. *Neuroptera.* Naked membranaceous or nerved wings; tail unarmed; as the *Dragon-fly*, *Ephemera*, &c.

5. *Hymenoptera.* Naked membranaceous wings; tail armed with a sting. *Wasps*, *Hornets*, *Bees*, &c.

6. *Diptera.* Two wings. The *Common fly*, *Gnat*, *Gad-fly*.

7. *Aptera.* No wings. *Spider*, *Scorpion*, *Flea*, *Mite*.

Class VI. — Vermes.

1. *Intestina.* Simple naked animals without limbs. *Earth-worm*, *Tape-worm*, *Guinea-worm*, *Hydatid*, &c.

2. *Mollusca.* Simple animals with limbs. *Star-fish*, *Cuttle-fish*, *Slug*.

3. *Testacea.* Mollusca covered with shells. *Shell-fish* of all kinds.

4. *Zoophyta.* Composite animals resembling vegetables. *Corals*, *Polypi*.

5. *Infusoria.* Simple microscopic animalcules. The *Wheel animalcules*, &c.

The Linnæan system of zoology is now in a great measure superseded by that of Cuvier, of which the following table may serve to give an idea. The meaning of the names applied to the divisions, classes, and orders, has been affixed to each, in order to render the principles of the arrangement more intelligible at the first view.

Div. I. — Vertebrata.

Animals with an internal skeleton supported by a spine.

Class I. — Mammalia. Animals which suckle their young.

Order 1. *Bimana.* Two-handed. Ex. *Man*.

2. *Quadrumana.* Four-handed. *Monkeys*.

3. *Carnivora.* Carnivorous animals. *Dog and Cat tribe*.

4. *Rodentia.* Gnawers. *Beaver*, *Hare*, *Rabbit*, *Rat*, *Mouse*.

5. *Edentata.* Toothless; because all are devoid of incisor teeth, and some are without any teeth. *Sloth*, *Anteater*.

6. *Pachyderma.* Thick-hided. *Elephant*, *Rhinoceros*, *Pig*.

7. *Ruminantia.* Ruminating animals. *Camel*, *Ox*, *Sheep*, *Goat*.

8. *Cetacea.* Whales. *Whale*, *Porpoise*.

Class II. — Aves, Birds.

Order 1. *Accipitres.* Birds of prey. Ex. *Eagle*, *Hawk*.

2. *Passeres.* Sparrow tribe. *Sparrow*, *Swallow*, *Shrike*.

3. *Scansores.* Climbers. *Parrot*, *Mackaw*, *Woodpecker*.

4. *Gallinæ.* Gallinaceous birds; birds resembling the domestic fowl. *Domestic fowl*, *Turkey*, *Guinea fowl*.

5. *Grallæ.* Waders. *Crane*, *Heron*, *Bittern*, *Plover*.

6. *Palmipedes.* Web-footed. *Pelican*, *Goose*, *Duck*, *Gull*.

Class III. — Reptilia, Reptiles.

Order 1. *Chelonea.* Tortoise tribe. Ex. *Turtle*, *Tortoise*.

2. *Sauria.* Lizards. *Crocodile, Alligator, Guana.*

3. *Ophidia.* Serpents. *Boa, Rattlesnake, Adder.*

4. *Batrachia.* Frog-like animals. *Frog, Toad, Salamander, Eft.*

Class IV. — Pisces, Fishes.

Section I. — Osseous.

Order 1. *Acanthopterygii.* Spiny-finned; fins supported by bony rays. Ex. *Perch, Mullet.*

The three next orders are named *Malacopterygii*, or soft-finned, because the fins are supported by cartilaginous rays.

2. *Malacopterygii Abdominales.* With the ventral fins abdominal. *Salmon, Herring.*

3. *Malacopterygii sub-brachiati.* With the ventral fins thoracic. *Cod, Turbot.*

4. *Malacopterygii Apodes.* Without ventral fins. *Eel, Gymnotus.*

5. *Lophobranchii.* Having tufted branchiæ. *Pipe fish, Hippocampus.*

6. *Plectognathi.* Having the jaws knit; the maxillary bone being firmly fixed to the intermaxillary. *Sunfish, Porcupine fish.*

Section II. — Cartilaginous, *Chondropterygii.*

Order 7. *Sturiones.* Sturgeons. Ex. *All the Sturgeons.*

8. *Selachii.* Cartilaginous, and destitute of scales.

9. *Cyclostomi.* Round-mouthed. *Lamprey.*

Div. II. — Mollusca.

Soft, invertebral, inarticulate animals, of which many are protected by a shell.

Class I. — Cephalopoda. Head-footed; because the tentacula are placed round the mouth.

Order, *Cephalopoda.* Ex. *Cuttlefish, Nautilus.*

Class II. — Pteropoda. Fin-footed; because the organs of locomotion consist of two membranous expansions, or fins, one on each side of the head.

Order. *Pteropoda.* Ex. *Clio, Pneumodermon, Hyalea.*

Class III. — Gasteropoda. Belly-footed; because they have a muscular foot situated on the abdominal surface.

Order 1. *Pulmonea.* Having a pulmonary cavity. Ex. *Snail.*

2. *Nudibranchia.* With external or naked branchiæ. *Tritonia, Thethys.*

3. *Infero-branchia.* Branchiæ situated under the cloak. *Phyllidia, Diphyllidia.*

4. *Tectibranchia.* Branchiæ (when at rest) concealed under a lid. *Aplysia, Dolabella.*

5. *Heteropoda.* Differently footed, because their feet are different from those of any of the other orders. *Carinaria, Atlanta.*

6. *Pectinibranchia.* Comb-gilled; because the branchiæ are in the form of pectinated laminæ. *Turbo, Turritella.*

7. *Tubulibranchia.* The branchiæ contained in the tubular shell of the animal.

8. *Scutibranchia.* With shielded gills; because the branchiæ are protected by the scuti-form shell. *Halyotis, Fissurella.*

9. *Cyclobranchia.* Circular-gilled; because the branchiæ are arranged in a form more or less circular round a central stem. *Patella, Chiton.*

Class IV. — Acephala. Headless.

Order 1. *Testacea.* Having a shell. Ex. *Oyster, Mussel.*

2. *Nuda.* Naked. *Ascidia, Pyrosoma.*

Class V. — Brachiopoda. Arm-footed; because they have arms rising from the margin of the mouth instead of feet.

Order, *Brachiopoda.* Ex. *Lingula, Terebratula.*

Class VI. — Cirrhopoda. Having cirrhi or filaments on the feet.

Order, *Cyrrhopoda.* Ex. *The different kinds of Barnacle.*

Div. III. Articulata.

Animals covered with a case divided into rings.

Class I. — Annelida. Ring-bodied Animals.

Order 1. *Tubicola.* Inhabiting a tubular shell. Ex. *Serpula, Amphitrite.*

2. *Dorsibranchia.* Having gills on the back; because the branchiæ project from the whole length or middle of the body. *Arenicola, Nereis.*

3. *Abranchia.* Without apparent branchiæ. *Earthworm, Leech.*

Class II. — Crustacea. Crustaceous animals. Articulated animals with articulated feet.

Sect. I. *Malacostracia.* Soft-shelled; covered with a shell of moderate firmness.

Order 1. *Decapoda.* Ten-footed. Ex. *Crabs* and *Lobsters.*

2. *Stomapoda.* Mouth-footed; because the four anterior feet approach the mouth. *The various kinds of Sea mantis.*

3. *Amphipoda.* Having feet resembling both the two former orders.

4. *Læmodipoda.* Throat-footed; because the four anterior feet grow from the head, which is confounded with the first thoracic segment. *Whale-louse.*

5. *Isopoda.* Equal footed. *Cymothoa. Euridice.*

Sect. II. *Entomostracia.* Insect-shelled; thin-shelled.

6. *Branchiopoda.* Gill-footed; having the branchia situated on the feet. *Monoculus, Cyclops.*

7. *Pœcilopoda.* Variously footed. *Limulus.*

Class III. — Arachnida. The spider tribe.

Order 1. *Pulmonata.* Provided with lungs. *Tarantula, Common spider.*

2. *Trachearia.* Breathing by means of tracheæ. *Mite.*

Class IV. — Insecta. Insects.

Order 1. *Myriapoda.* Ten thousand footed; *i. e.*, having numerous feet. *Centipede.*

2. *Thysanoura.* Fringe-tailed. *Lepisma, Podura.*

3. *Parasita.* Parasitical, infesting other animals. *Lice.*

4. *Suctoria.* Suckers. *Flea.*

5. *Coleoptera.* Sheath-winged. *Beetles.*

6. *Orthoptera.* Straight-winged. *Earwig, Grasshopper.*

7. *Hemiptera.* Having the wing sheaths half membranaceous. *Bug, Lantern-fly.*

8. *Neuroptera.* Nerve-winged; the nerves or

prominent lines on the wings forming a network. *Lion-ant, Ephemera.*

9. *Hymenoptera.* With membranaceous wings. *Hornet, Ichneumon fly.*

10. *Lepidoptera.* Scaly-winged. *Butterflies* and *Moths.*

11. *Rhipiptera.* Fan-winged, *Xenos. Stylops.*

12. *Diptera.* Two-winged. *Common fly, Gad-fly.*

Div. IV. — Zoophyta or radiata.

Radiated Animals. Animals disposed around an axis.

Class I. — Echino-derma. Having skins like a sea-urchin; hard-skinned.

Order 1. *Pedicellata.* Having organs which are called feet. Ex. *Star fish, Sea urchin.*

2. *Apoda.* Without feet. *Sipunculus, Thalassema.*

Class II. — Intestina. Worms inhabiting the bodies of other animals.

Order 1. *Cavitaria.* Having cavities, or stomachs. *Guinea-worm, Ascaris lumbricoides.*

2. *Parenchyma.* Having cellular bodies. *Tape-worm, Fluke-worm.*

Class III. — Acalepha. Nettles; because the animals, when touched, emit an acrid fluid which inflames the skin.

Order 1. *Simplicia.* Simple. Ex. *Medusa, Beroe.*

2. *Hydrostatica.* With buoyant air vessels in the interior of the body. *Physalia, Physsophora.*

Class IV. — Polypi. Many-footed, from the number of their tentacula. Animals more or less resembling plants.

Order 1. *Carnosa.* Fleshy. Ex. *Actinia, Zoanthus.*

2. *Gelatinosa.* Gelatinous. *Hydra, Crystatella.*

3. *Polypifera.* Polype-bearers. Compound animals, bearing a number of polypes on a common axis. *Sertularia, Flustra, Madrepora, Isis.*

Class V. — Infusoria. Infusory animals; found in infusions of animal and vegetable substances, and in stagnant waters.

Order 1. — *Rotifera.* Wheel-bearers; because their cilia in rapid motion appear like revolving wheels. Ex. *The Wheel animalcules.*

2. *Homogenea.* Homogeneous. *Vibrio, Volvox, Monas.*

From the uniform relation between the expansion of the nervous system and the perfection of the animal, it has been proposed to make the anatomy of this system the basis of an improved classification of animals. It fortunately happens that such a distribution runs precisely parallel with the four primary groups of Cuvier, and tends to illustrate, rather than overturn, the classification of that distinguished naturalist. In the radiated animals, the nervous system, whenever it can be traced, consists of filaments disposed in a circular manner round the oral extremity of the body: hence these animals are styled *cyclo-neura.* In the articulated animals we find a double nervous cord extending the whole length of the ventral surface of the body; the term *diplo-neura,* therefore, is here applicable. In the mollusca the nervous system becomes more concentrated, and generally forms a series of ganglia round the œsophagus; this character is expressed by the term *cyclo-gangliata.* In the vertebrated animals, the central mass of the nervous system is in the form of a dorsal nervous cord, developed at one extremity into a brain, and these parts are protected by a spinal column and a cranium: whence the term *spini-cerebrata* applied to these animals. The anatomical comparison of animals founded on the above mentioned distinctions, has been lately illustrated in this country by the writings of Dr. R. E. Grant, the able Professor of Zoology in the University of London, and to these we are principally indebted for the materials of the following outline of the organisation of the animal kingdom, which seems necessary here in order to give some connexion to the various articles relating to zoology and comparative anatomy which are scattered through this dictionary. The arrangement adopted by Dr. Grant is exhibited in the annexed table: —

Animalia.

I. Subregnum, Cyclo-neura vel Radiata.
- Class 1. *Polygastrica.*
- 2. *Porifera.*
- 3. *Polypifera.*
- 4. *Acalephæ.*
- 5. *Echinoderma.*

II. Subregnum, Diplo-neura vel Articulata.
- Class 6. *Entozoa.*
- 7. *Rotifera.*
- 8. *Cirrhopoda.*
- 9. *Annelida.*
- 10. *Myriapoda.*
- 11. *Insecta.*
- 12. *Arachnida.*
- 13. *Crustacea.*

III. Subregnum, Cyclo-gangliata vel Mollusca.
- Class 14. *Tunicata.*
- 15. *Conchifera.*
- 16. *Gasteropoda.*
- 17. *Pteropoda.*
- 18. *Cephalopoda.*

IV. Subregnum, Spini-cerebrata vel Vertebrata.
- Class 19. *Pisces.*
- 20. *Amphibia.*
- 21. *Reptilia.*
- 22. *Aves.*
- 23. *Mammalia.*

I. *Cyclo-neura vel Radiata.* This is the lowest class of animals in which the nervous system can be detected; and here it is found in the form of filaments disposed in a circular manner around the oral extremity of the body.

This division comprehends, —

1. *Polygastrica.* Microscopic, simple, transparent, soft, aquatic animals, with numerous internal stomachs or cæca, communicating with the alimentary cavity; generally provided with eyes, with a circular exsertile dental apparatus around the mouth, and with vibratile cilia for respiration and progressive motion. In these animals the nervous system is only presumed from analogy to exist; it is too minute to be

detected. To this class belong the genera volvox, vaginicola, and other fresh-water and marine animalcules.

2. *Porifera.* Simple, aquatic, soft animals with a fibrous internal skeleton, sometimes supported by siliceous and sometimes by calcareous spicula; the body permeated by a soft gelatinous substance, covered externally with minute absorbent pores, and traversed by numerous ramified anastomosing canals, commencing from the pores, and terminating in open vents which give egress to currents of water that are constantly passing in at the pores: these animals are destitute of organs of sense and of visible muscular fibres, and here also the nervous system is only presumed to exist. The sponges belong to this class.

3. *Polypifera.* Aquatic plant-like animals, generally fixed, of a simple internal structure, and for the most part without perceptible nerves, muscles, or organs of sense; they are nourished by superficial polypi developed from the fleshy substance of the body, and projecting from open terminal cells. The polypi have generally tentacula around their orifice, the margins of which tentacula are furnished with numerous vibratile cilia, by whose rapid motion currents are produced in the surrounding water to attract the food of the animal and aërate its surface and fluids. The polypifera include the corals, sertulariæ, antennulariæ, &c.

4. *Acalephæ.* Soft aquatic free animals, of a simple structure, generally of a gelatinous and transparent texture, and emitting an acrid secretion which, when applied to the skin, inflames it like the sting of a nettle, from which circumstance the name of the class is derived. Few of these animals possess a solid skeleton or perceptible nervous system; some of them have eyes, with a crystalline humour. They are all marine, and swim by the contractions of a highly vascular and irritable mantle, by means of air sacs, or by the rapid movement of external vibratile cilia. This class includes the various animals called *sea nettles,* as actinia, medusa, beroe, &c.

5. *Echinoderma.* Simple aquatic animals, provided for the most part with a calcified exterior skeleton or a coriaceous skin; the body radiated, globular or cylindrical; often provided with a distinct nervous, muscular, respiratory, and vascular system. These animals are generally free, but some are fixed as the crinoidea. The vascular system is unprovided with auricle or ventricle; the digestive canal is seldom furnished with distinct glandular organs; there is sometimes a simple stomach with one aperture, and numerous lateral cæca, and sometimes a lengthened intestine with two terminal openings. The echinoderma are so called from the spines or tubercles with which their external surface is usually covered; but some animals destitute of a hard or coriaceous covering are placed in this class from the similarity of their structure in other respects. To the echinoderma belong the sea urchins, starfish, &c.

II. *Diplo-neura vel Articulata.* This division comprehends, —

6. *Entozoa.* Parasitical simple animals, for the most part of a lengthened cylindrical form, without an internal skeleton or distinct organs of sense; the mouth, or anterior part of the body, usually provided with recurved sharp spines; the body generally covered with an elastic white transparent integument; the nervous system seldom distinct; the vascular system without auricle or ventricle; no respiratory organs; sexes generally separate. To this class belong the various kinds of intestinal and other worms which infest the bodies of living animals.

7. *Rotifera.* Minute aquatic animals, with a distinct nervous and muscular system; provided with eyes, lateral maxillæ, a dorsal vessel, an intestine with two apertures, and vibratile cilia disposed generally in a circular form around the anterior part of the body. All these animals are free, most are naked, but many sheathed or loricated; they have no branchial or pulmonary organs. They are termed *rotifera,* or wheel animals, because the rapid motion of their cilia produces the appearance of a revolving wheel.

8. *Cirrhopoda.* Aquatic articulated animals, with articulated cirrhi; furnished with branchiæ, and having the body covered with a fleshy mantle, and fixed in a multivalve shell. These animals are all marine; the branchiæ are fixed to the bases of the articulated cirrhi; the mouth has mandibles and maxillæ; there is a pulsating dorsal vessel, and a double longitudinal knotted sub-abdominal nervous cord. None of the cirrhopoda are free; they are attached to some other object, either directly by the base of the shell, or by the intervention of a tubular stalk. This class includes the barnacles and animals allied to them.

9. *Annelida.* Animals with a long cylindrical body, generally divided into transverse segments, and covered with a soft skin; naked or fixed in calcareous, arenaceous, or other tubes; the head usually provided with antennæ and numerous simple eyes, and the mouth furnished with maxillæ; the locomotive organs consisting of simple setæ, or cirrhi, extending from the side of the body in a single or double row. The vascular system consists of arteries and veins, and the blood is generally red, but there is no distinct auricle or ventricle; the respiratory organs are generally external branchiæ, but sometimes internal air-cells: the alimentary canal passes straight through the body; it has two terminal openings, and numerous lateral cæca. This class includes the leech, the earthworm, and various marine worms, as aphrodita, nereis, &c.

10. *Myriapoda.* With a lengthened articulated body equally developed throughout; the head provided with antennæ and simple eyes; the segments of the trunk admitting of free motion, without distinction of thorax and abdomen; each segment furnished with one or two pairs of articulated legs; respiration aërial, and performed by tracheæ, which commence in stigmata opening along the whole extent of the body, and ramify internally. The myriapoda do not, like most of the insecta, undergo a metamorphosis; they never have wings, and have always more than six pair of legs. To this class belong the centipedes.

11. *Insecta.* With six articulated legs extending from an articulated trunk, which is divided into a head, thorax, and abdomen; the head is provided with a labium, labrum, mandibles, and maxillæ, with eyes most frequently compound, but often simple, with a pair of antennæ, and with palpi; the thorax supports the six legs, and commonly one or two pairs of wings, and has attached to it the moveable segments of the abdomen, which embrace the principal organs of digestion, circulation, and generation. The respiration is effected by means of tracheæ, which form continuous lateral trunks before they ramify through the body. The circulation is aided by a pulsating dorsal vessel, provided with numerous valves, and the alimentary canal is furnished with salivary and hepatic, and often with pancreatic glands. The sexes are separate, and the genital organs, which are slow in their development, are highly complicated in the perfect state. These animals generally pass through a series of metamorphoses, and throw off their exuvial covering five or six times during their development. This class is the most numerous in the animal kingdom, comprehending about a hundred thousand species. The greater part of their life is spent in the larva state, during which they are generally most voracious, like the young of other classes. In the adult state, the masticating and digestive organs vary much, according to the carnivorous or phytophagous character of the species. In carnivorous insects, the intestinal tube passes nearly straight through the body, with few enlargements in its course, and the glandular organs are of comparatively simple structure. In phytophagous insects, the alimentary tube is longer, more capacious, and more convoluted, and the glandular apparatus is more developed.

12. *Arachnida.* Spiders. Head and thorax united; generally four pair of legs; no antennæ; eyes simple; no wings; the trunk divided into a cephalo-thorax and an abdomen; the head often furnished with two pair of chiliform manducatory organs. The respiration is aërial, sometimes performed by tracheæ, and sometimes by pectinated pulmonary sacs, opening on the sides of the abdominal surface of the trunk. The nervous, respiratory, and circulating systems are more highly developed than in insects. The arachnida are carnivorous, cunning, and ferocious, and many are furnished with poisonous instruments.

13. *Crustacea.* With the head and thorax generally united; two pair of antennæ; two compound eyes; more than four pair of legs; shell generally hard and calcareous. These animals are usually carnivorous, and have a short and straight alimentary canal; the biliary organs have a conglomerate form. The circulation is often aided by a muscular ventricle. Some of the arachnida are fixed and parasitic, breathing by their general exterior surface, but the greater part are free, and respire by means of branchiæ placed under the sides of the shell, or on the under surface of the post-abdomen. The sexes are separate, and the organs of generation double and symmetrical in both sexes. This class includes crabs, lobsters, and animals allied to them.

III. *Cyclo-gangliata vel Mollusca.* This division comprehends five classes.

14. *Tunicata.* Soft, aquatic, acephalous animals, breathing by internal branchiæ (never in form of four pectinated laminæ, as in the *conchifera*), and covered by a close external elastic tunic, furnished with at least two apertures. The exterior tunic is lined by a muscular coat; nervous ganglia are observed in the abdominal cavity, and a longitudinal nervous filament extends throughout the length of the animal. The respiratory organs are ciliated, as in the higher molluscous classes, for the production of the respiratory currents. The mouth opens at the bottom of the abdominal cavity, and is unprovided with tentacula, or other organs of sense. The œsophagus, which is short, leads to a capacious stomach, sometimes surrounded by the lobes of a small liver, which pours its secretion into the cavity of the stomach, as in the higher mollusca; from the stomach a short wide convoluted intestine proceeds to near the ventral orifice of the sac, where it terminates in the anus. The thoracic orifice, or entrance to the respiratory cavity, is generally furnished with numerous delicate tentacula, and the longitudinal nervous filament is observed to encompass this opening, and terminate in a small ganglion. The circulation is aided by a muscular heart. The reproductive organs consist of an ovarium, either simple or complicated, with some additional glands, the use of which is unknown; the animals appear to be hermaphrodite, and to propagate without sexual intercourse. The tunicata are all marine; most of them are fixed, but some are free; many are organically connected in groups, others are solitary. The genera cynthia, clavellina, &c. belong to this class.

15. *Conchifera.* Acephalous aquatic animals covered with a solid calcareous shell, consisting of at least two pieces, and breathing by internal branchiæ in form of four pectinated laminæ. These animals have the mouth situated at the bottom of the thoracic cavity; the stomach is surrounded and perforated by the lobes of the liver; the circulation is aided by a bifid or divided auricle, and by a muscular ventricle, which is generally perforated by the rectum. Like the last class, the conchifera have an ovarium, and their reproduction seems to be independent of sexual intercourse. This class includes all the bivalved mollusca.

16. *Gasteropoda.* Body inarticulate, provided with a head, which, for the most part, supports tentacula and simple eyes, and furnished with a muscular foot, extended under the abdomen, and adapted for creeping. These animals are sometimes naked, more generally covered with an univalve, unilocular, solid external shell. Some breathe by a pulmonary cavity, but the greater part by branchiæ variously disposed on the surface or under an open mantle. The higher forms are chiefly carnivorous, the lower phytophagous, whence a corresponding diversity in the structure of the digestive organs. The inferior orders are generally hermaphrodite; in

the higher, the sexes are distinct. Snails belong to this class.

17. *Pteropoda.* Body formed for swimming; mantle closed above; branchiæ external; no muscular foot for creeping; shell when present always thin, pellucid, unilocular, and inoperculate. These soft, minute, floating animals are all marine, and are enabled to swim by means of two lateral musculo-cutaneous finger-like expansions, on the surface of which the respiratory branchiæ or vascular plexuses are placed. These lateral fins are never supported by rays. The head is generally provided with retractile or sheathed tentacula, seldom with eyes. The body is sometimes entirely naked, often protected by a delicate, thin, transparent shell, which encloses the abdomen, and is covered with a fold of the skin. They appear to be most closely allied to the inferior testaceous cephalopods, in the nature and form of their shell, in their locomotive powers, and in the general simplicity of their internal structure, especially of the generative organs. In the pteropoda the mouth leads to a long œsophagus, which is surrounded by a circular series of nervous ganglia, and is accompanied by two long simple salivary follicles. The stomach is embedded in the lobes of the liver, from which numerous short ducts open into its cavity. The intestine is short, and, after making one or two turns, ascends and terminates in the neck near the mouth. The heart, situated at the pyloric end of the stomach, is enclosed in a pericardium, and receives arterialised blood from the branchial veins, which it propels through the system. The organs of generation occupy the bottom of the abdominal cavity, and consist of an ovary and a long oviduct into which a short-wide cæcum, commonly regarded as a testicle, pours its secretion. The oviduct terminates on the left side, near the anus, in a small glandular sac, beneath which is the renal sac. The pteropods are found floating in immense numbers on the surface of the tropical seas in still, warm evenings, and some abound in the arctic seas, affording the whale a great part of his food. To this class belong the genera hyalea, pneumodermon, clio, &c.

18. *Cephalopoda.* Free molluscous animals with the feet disposed around the head; respiring by internal branchiæ, and having the abdominal cavity enveloped in a muscular mantle open anteriorly. Animals all marine, and enabled to swim by means of membranous or muscular expansions, which are never supported by rays. The surface of the body is often naked, sometimes covered with a shell, which is generally polythalamous, rarely monothalamous, and always inoperculate. There is frequently a loose, dorsal, calcareous, or horny shell concealed in a shut sub-cutaneous sac. The mouth is furnished with two horny or calcified mandibles, and the rudiments of an internal organised cartilaginous cranium and vertebral column are generally perceptible, together with some detached parts of the skeleton of the vertebrata. The gullet is surrounded by a nervous collar, from which two supra-abdominal nervous columns generally extend along the middle of the back, and sympathetic ganglia are observed in the abdominal cavity as in the inferior mollusca. The cephalopoda are predaceous animals: the alimentary canal is always very short, and is generally dilated into a crop, a gizzard, and a spiral chylific stomach. There are two pairs of salivary glands; the liver is very large, and pours its secretion into the stomach by ducts which are surrounded and penetrated by those of the pancreatic follicles; the intestine, after leaving the stomach, makes one or two turns, or proceeds directly to the anus, which opens at the base of the funnel. These animals have a central systemic ventricle and an auricle situated laterally at the base of each gill, giving origin to the branchial artery. The sexes are generally separate, but in the lower animals of this class appear to approach the pteropoda in the male and female character of their generative organs. The naked cephalopods have a glandular sac for secreting an inky fluid, by the emission of which the animal is able at will to darken the water, and which it probably uses as a means of eluding its enemies. The sac secreting this peculiar fluid is situated either in a recess of the liver, in front of that organ, or below it: the excretory duct opens into the rectum. To this class belong the cuttle-fish, nautilus, &c.

IV. — *Spini-cerebrata or Vertebrated Animals.*

This division includes the following classes: —

19. *Pisces.* Fishes. Vertebrated oviparous animals with cold and red blood; having a heart with one auricle and one ventricle; breathing by permanent branchiæ; and provided with fins for progressive motion. They have a vertebral column and a cranium, enclosing a spinal cord and a brain, the latter consisting of a medulla oblongata, optic lobes, cerebral hemispheres, olfactory tubercles, and a cerebellum. The fins are supported by rays prolonged from the skeleton; the body is generally covered with scales; the trunk is organised for the lateral motion of the tail; there is no sacrum, and the pelvic arch is unconnected with the vertebral column. The bones are elastic or cartilaginous, and the centres of ossification for the most part remain permanently detached. The body of each vertebra terminates in two cup-like cavities; the vertebræ move on elastic, tense, intervertebral sacs, and the transverse processes are directed vertically downwards as they approach the tail, in order to facilitate the lateral motion of the trunk. The muscles, which are generally white, are disposed in oblique strata on the sides of the trunk for the movement of the elastic vertebral column. The mouth, destitute of salivary glands, is commonly furnished with numerous unequal, irregular, fangless, osseous teeth, and the wide but short œsophagus leads to a capacious stomach, from which the intestine, shorter than in the higher classes, and nearly equal throughout, proceeds, without cæcal enlargement, to terminate in a cloacal sac on the inferior surface of the trunk. The liver is large, and pours its secretion, generally by a single duct, into the duodenum, near the pyloric extremity of the stomach, and close to the opening of the pancreatic duct. The pancreas consists in some cases of two simple glandular follicles, in others of numerous follicles,

and in others again it has a conglomerate form. The bilocular heart of fishes is entirely branchial; it is often preceded by a sinus venosus, and succeeded by a bulbus arteriosus, which frequently presents numerous internal valves in its course. The whole of the venous blood is sent through the gills; and the branchial veins, after giving branches to the anterior parts, unite to form the aorta, which sends the arterialised blood through the body without the aid of a systemic heart. The respiration is effected by branchiæ, to which the water is transmitted through the mouth, or through distinct spiracula; the branchiæ are internal in the adult, and are often preceded by external branchiæ in the young. The lungs when present are always rudimentary, sometimes in the form of a short single air-bag, sometimes divided or ramified, and generally communicating by an air-duct with the intestine, stomach, or œsophagus, but seldom aiding in respiration. Fishes are oviparous, and have the sexes separate; the ovaries are continuous with the oviducts in osseous fishes, and detached from them in the plagiostomous chondropterygii; impregnation in some instances takes place internally, and in others after the ova are discharged from the body.

20. *Amphibia.* Vertebrated oviparous animals with cold and red blood, a heart with three cavities, and a naked skin; and breathing, while young, by means of gills. These animals commence their career like fishes with one auricle and one ventricle, which send the whole of the blood through the branchiæ; and at this period also the bodies of the vertebræ are doubly concave, like those of fishes. Many of the amphibia retain their gills through life, accompanied with pulmonic cavities from which the arterialised blood is sent to a small left auricle. These animals are called *amphibia*, from the transition which most of them undergo from an aquatic to a terrestrial life. Their skeleton is imperfectly consolidated, their ribs very short or wanting, their pelvic arch free or nearly so, and their atlantal and sacral extremities often very imperfectly developed or partly deficient. Their toes are destitute of claws. Their skin is destitute of scales or other covering, and the respiration through its naked, sensitive, and secreting surface compensates for the imperfect development of their lungs, or the limited use of them during submersion or hybernation. Some reside constantly in the water, others only occasionally; and some are confined to the land. The sexes are separate, and the genital organs double and symmetrical. The male organ of intromission is rarely developed, and impregnation of the ova is generally effected externally. This class includes those animals otherwise called *batrachia* or frog-like animals.

21. *Reptilia.* Vertebrated oviparous animals, with cold and red blood; a heart with two auricles and one ventricle; breathing at all ages by means of lungs; having the skin covered with scales; and generative organs adapted to internal impregnation. Reptiles, whether terrestrial or aquatic, are never provided with gills: they breathe only by lungs; and the left auricle of the heart is larger than in the amphibia. Their bones are more solid than those of the lower vertebrata; and the pelvic arch, when it exists, is more firmly attached to the vertebral column: the centres of ossification, especially of the cranial bones, generally remain detached. Some reptiles, as lizards, have feet, which are four in number, and the toes are generally provided with claws; others, as serpents, are destitute of feet, and perform their progressive movements by means of the ventral scales. The cerebellum in these animals is remarkably small. Their muscular irritability is languid, and they are very tenacious of life. The ventricle which receives both the arterialised and venous blood is more or less divided by an imperfect longitudinal septum. The thoracic and abdominal cavities are not separated by a muscular diaphragm, and the lungs extend backwards over the abdominal viscera. The organs of generation are double and symmetrical in both sexes, and in the male the corpora cavernosa are often detached and bifid. The chorion of the ova is generally thin or coriaceous, seldom calcified or hard. The instincts of the parent extend in most species to the protection of the young.

22. *Aves.* Birds. Vertebrated oviparous animals, with warm and red blood, and a heart with four cavities; having the skin covered with feathers, and the atlantal extremities organised for progression through the air. The bones are of a very compact and dense texture; their cavities contain no marrow, but are filled with air admitted from the cells of the lungs. The tympanic bone is moveable; the place of teeth is supplied by horny mandibles; the coracoid bones reach the sternum; the sternum is greatly expanded and rises into a mesial crest; the sternal ends of the ribs are ossified; there are no tarsal bones. The diaphragm never forms a complete partition between the thoracic and abdominal cavities. The hemispheres of the brain are without convolutions; the optic lobes are large and hollow; the cerebellum is large and sulcated; the spinal cord has two enlargements in its course, from one of which proceed the nerves of the atlantal, and from the other those of the sacral extremities. The great irritability of the muscular system in birds corresponds with the extent of their respiration, the high development of their nervous system, the rapidity of their circulation, and the general energy of their vital functions. The alimentary canal is furnished with a crop, a glandular infundibulum, a gizzard, and generally two cæca coli. In the gallinaceous birds the œsophagus sends out a large crop with a contracted neck, and supplied with glandular follicles. Beneath this is the infundibulum or glandular stomach, with numerous large follicles placed between the mucus and muscular coats, and this opens into the large muscular gizzard, which is covered externally by two strong digastric muscles. The cardiac and pyloric orifices of the gizzard are close to each other. Towards the lower part of the small intestine a minute cæcum often indicates the original entrance of the yolk-bag. The two long cæca coli commence by narrow entrances, and the short colon ends in a common cloaca for the genital and urinary secretions. In the

predaceous birds the œsophagus, crop, infundibulum, and gizzard, are capacious, thin, and membranous, forming a continuous cavity, from which the indigestible portion of the food can be thrown out in a bolus. In these birds the cæca coli are very small, sometimes unequal or wanting. The urinary and genital organs enter the cloaca near the anus.

The liver in birds is of greater proportional size and of more uniform shape than in quadrupeds: it has two lobes, nearly of equal size. Most birds have a gall-bladder, but in a few it is absent. The pancreas is a long narrow conglomerate gland, situated between the folds of the duodenum; the hepatic and cystic ducts unite in some species, and open separately into the duodenum in others: the pancreatic duct has generally a separate orifice. The spleen is small, and placed between the left lobe of the liver and the stomach. In the heart of birds, the right ventricle has the tricuspid valve in form of a thick strong muscular fold. The lungs form two undivided light-coloured lobes, fixed by the pleuræ to the back part of the trunk; the last rings of the trachea form an inferior larynx; the bronchia are ramified in a membranous form through the lungs, and the lungs open into large membranous abdominal air-cells, which communicate with the cavities of the bones. This great system of air-cells, has been regarded by some as auxiliary to respiration, and the functions connected with it; by others, as aiding the voice; and by others, as a pneumatic apparatus, the use of which is to vary the density of the animal, and enable it to rise or sink in the medium in which it moves. The generative organs of birds are double and symmetrical in the male, and generally unsymmetrical in the female. The testes are internal, and the vasa deferentia terminate in the cloaca, where there is sometimes a grooved organ of intromission. In the female, the left ovary and oviduct only are fully developed, the right being, for the most part, atrophiated and useless. The cavity of the cloaca in most birds receives the end of the rectum, which forms a wide vestibule: beneath this lies the urinary sac, below which are the two orifices of the ureters, with the pervious oviduct on the left side, and the impervious one on the right. The *bursa fabricii* and the clitoris, when present, are placed further back in the preputial cavity. The ova of birds are impregnated internally, their chorion is calcified, and their development is effected by incubation.

23. *Mammalia.* Vertebrated animals, with warm and red blood, and a heart with four cavities; viviparous, and provided with mammæ for suckling their young; having lungs which move freely in a distinct thoracic cavity, and the surface of the body more or less covered with hair. The bodies of their vertebræ are connected by flat surfaces; the tympanic bone is fixed; the jaws are generally furnished with teeth lodged in deep alveoli; the coracoid bone rarely reaches the sternum; and the posterior extremities, when present, are always attached by a pelvic arch to a solid sacrum. The thoracic and abdominal cavities are separated by a muscular diaphragm. The hemispheres of the brain contain large ventricles, and are rarely without convolutions; the optic lobes are small, concealed, solid, and divided by a transverse furrow; the commissures of the brain and cerebellum, and the hemispheres of the cerebellum, are large. The alimentary canal is of great length; the colon long and wide, with a single cæcum, and sometimes with a vermiform appendix; and the anal opening is generally distinct from the urinary and genital passages. The tricuspid valve is thin and membranous; the aorta descends on the left side; there is no inferior larynx; the epiglottis is distinct, and the bronchia continue cartilaginous in their ramifications through the lungs. The lungs are generally divided into lobes, they move freely in a distinct thoracic cavity, and have no communication with abdominal cells, as in birds. All mammalia have an urinary bladder, and in the male the urethra passes through a tubular penis. The organs of generation are double in both sexes: symmetrical in the male, and rarely unsymmetrical in the female. The oviducts commonly unite at their lower part to form a uterus, in which the ovum detached from the ovary becomes again connected with the system of the parent, and is hatched. The mammary glands, which vary both in number and position, open externally for the nourishment of the young.

ANIMAL MAGNETISM. See *Magnetism.*

ANIMAL SPIRITS. See *Vital spirits.*

ANIMAL TEMPERATURE. The living animal body is well known to possess the power of resisting the changes of external temperature, and of maintaining, from its own resources, a degree of heat essential to the performance of its functions. John Hunter seems to have regarded this power as an immediate attribute of vitality, and to have thought that every living part had an inherent power of regulating its own temperature according to its necessities. It is quite possible that this may be the case; but it is as probable that the production of heat and cold in the animal body, though doubtless under the control of the vital energy, may depend, in a great measure, on processes less involved in the arcana of life, and on which observation and experiment may be expected to throw considerable light. A variety of hypotheses have at different times been brought forward to account for these remarkable phenomena, though it must be confessed that no solution hitherto offered can be considered as at all satisfactory. The subject will be most conveniently treated under two heads:—1. The production of heat. 2. The production of cold.

1. *The production of heat.* Galen and the Greek school of physiologists regarded the heart as the source of animal heat, which they supposed to be communicated to the blood, and diffused by means of this fluid to all parts of the frame. When the chemists threw off the authority of Galen, they ascribed animal heat to a fermentation of the blood which took place in the heart. The iatro-mechanicians, again, maintained that heat was generated in the blood by friction against the sides of the vessels in the

course of its circulation. The following survey of the principal opinions that have been held on this subject in more recent times, is slightly condensed from Dr. Bostock's System of Physiology, in which work the whole question of animal temperature is treated with great accuracy, judgment, and candour, although the author professes himself an advocate of the chemical theory.

Though we meet with occasional expressions which seem to hint at a more correct opinion, yet perhaps the first distinct attempt to account for the generation of animal heat, by what we should now consider as a legitimate mode of reasoning, is to be met with in the writings of Mayow. After he had made his interesting discoveries on the constitution of the atmosphere, and the share which it has in the extrication of heat in combustion, he was led to extend the analogy to animal heat, and concluded, contrary to the opinion almost universally embraced at that time, that the use of the lungs is not to cool the heart, but to generate heat, an effect which is brought about by the absorption of the nitro-aëreal spirit of the air: this, mixing with the sulphureous particles of the blood, excites a species of fermentation by which heat is produced, in a way precisely similar to that in which heat is excited by the combustion of inflammable matter generally. Mayow, therefore, explicitly advanced the two positions, that the effect of respiration is to generate heat, and that it does so by an operation in every respect analogous to combustion. His hypothesis was, however, imperfect, in consequence of the erroneous opinions which he entertained respecting the nature of combustion generally, or the mode by which combustion generates heat, as well as respecting the nature of the combustible matter which is discharged from the blood. Perhaps, however, the latter should be regarded as a verbal, rather than a real inaccuracy, the word sulphureous being then a general term applied to any kind of inflammable matter, and not, as now, confined to one species. Mayow's doctrine respecting the connexion between respiration and animal heat, does not appear to have made any considerable impression upon the minds of contemporary physiologists, for we find that the old hypotheses still continued to prevail without alteration, or only with slight and immaterial modifications, until the middle of the last century. During this period the question was warmly discussed, whether the lungs were agents for generating heat, or for reducing the temperature of the blood by bringing it into proximity with the cold air; and the sentiments of the most eminent physiologists appear to have been, for the most part, in favour of the latter opinion: it is also to be observed that even most of those who adopted the opinion that the lungs serve to generate heat, supposed that this effect was produced entirely by friction or some other mechanical means.

It was not until after Black had completed his valuable experiments on fixed air, that more correct ideas began to prevail respecting the cause of animal heat. After he had discovered that the same kind of aëriform fluid which is produced by the burning of fuel is expired from the lungs, a strict connexion seemed to be established between the processes of combustion and respiration. He was hence led to infer, as Mayow had previously done, that respiration is a species of combustion, and that the heat thus extricated is employed in preserving the temperature of the animal body above that of the surrounding medium. But Black's explanation of the cause of animal heat, although extremely ingenious, and founded upon what appeared to be correct principles, was liable to an objection which prevented it from being generally received. It was said, that if the lungs are the seat of the supposed combustion, or the focus whence the heat radiates to all parts of the body, their temperature must be much superior to that of the other organs, and, in short, that they would be altogether incapable of supporting the degree of heat to which they would be necessarily exposed. We do not find that Black made any attempt to repel the objection, and we may presume that he conceived it so formidable, as to have induced him altogether to relinquish the hypothesis.

Lavoisier now entered upon his researches into the nature of combustion and other analogous operations; and, after repeating and verifying many of the experiments of Black and Priestley, he pointed out more clearly than they had done the exact nature of the change which is produced upon the air by the action of the lungs. He found a perfect similarity between the results which he obtained from the combustion of charcoal and the products of respiration; and as the evolution of heat is the necessary consequence of the former operation, he was induced to draw the same inference that had been previously made by Black, that heat must be generated by the formation of carbonic acid in the lungs. He does not appear, at least in the first instance, to have felt the objection that had been urged against the doctrine, but brings it forward as a correct deduction from acknowledged facts, and as a satisfactory method of explaining the phenomena.

It was shortly after this period that Crawford commenced his investigations, and illustrated the subject by a series of very elaborate and ingenious experiments; the result of which was the formation of a theory of animal heat, which appeared to account for all the phenomena, and to be founded upon well-established facts, while it was not liable to the objection which had been urged against Black's hypothesis. The scrupulous care with which Crawford endeavoured to avoid every source of inaccuracy, the ingenuousness with which he acknowledged the errors of his first experiments, and the spirit of candour which pervades every part of his work, produced so favourable an impression that his doctrine was generally embraced by his contemporaries.

Crawford's theory of animal heat may be regarded as founded upon the three following positions:—1. That the air, when taken into the lungs, undergoes the same change as by the combustion of a carbonaceous body, and that,

consequently, heat is generated in the same manner as in the combustion of carbon. 2. The same process by which the oxygen of the inspired air is converted into carbonic acid, likewise converts the venous into arterial blood, but arterial possessing a greater capacity for heat than venous blood, the heat which would otherwise raise the capacity of the arterialised blood, is employed in saturating its increased capacity, and in maintaining its temperature at the same degree with the venous. 3. The heat is not therefore actually set at liberty in the lungs, although the arterial contains a greater quantity of absolute heat than the venous blood, but it is during the course of the circulation, when the arterial blood is again venalised, and consequently loses its increased capacity, that the heat becomes sensible and supports the temperature of the system. The hypothesis which Crawford constructed upon the above positions professed to be the result of direct experiment in all its parts; it removed the objection that had been urged against Black's doctrine, and afforded one of the most interesting and beautiful specimens of the application of physical and chemical reasoning to the animal economy that had been ever presented to the world.

The first of the above positions, the different capacities for heat of the air before and after it had undergone the change which it experiences in combustion or in respiration, constituted, as is well known, the main point to which Crawford directed his elaborate train of experiments, and forms the basis of his theory of inflammation generally, of which animal heat composes only one example. With respect to the second position, the different capacities of arterial and venous blood, Crawford entered into a long and careful examination; and although there are many parts in it of very delicate execution, and which required a minute attention to various circumstances that might interfere with the results, yet he appears to have been so well aware of the sources of error, and to have so carefully guarded against them, that his experiments must be allowed to possess considerable weight. The conclusion which Crawford deduced was, that the specific heat of arterial, was greater than that of venous blood in an average proportion of 114·5 to 100. If we admit the fact, the conclusion is obvious and most important. It follows that when the blood is converted from the venous to the arterial state, it renders latent a part of the heat which would otherwise have been liberated by the union of the oxygen and the carbon, and would have raised the temperature of the blood in the pulmonary vessels. The heat, therefore, appears to be employed in three ways: a part of it in counteracting the effect of the cold air which is taken into the lungs; another portion in producing the vapour that is expired; while the remainder supplies the arterial blood with what is requisite, in consequence of its increased capacity, to support its temperature at the same degree with that of the venous blood.

It would appear that these operations are so nicely adjusted to each other, that the temperature of the blood in the different parts of the body is kept nearly at an uniform standard, and especially, that while this fluid passes through the lungs, and in conjunction with the air undergoes that change which serves as the actual origin of the heat of the animal, its temperature is little, if at all affected, the whole of the heat which would otherwise be liberated being employed in the three ways mentioned above. Admitting the truth of the theory, it will follow, that the more carbon is separated from the blood and united to oxygen, the more heat will be disengaged, the more completely, therefore, will the blood be arterialised, and consequently the more will its capacity be increased, and the greater quantity of heat will it require to maintain its temperature. According to Crawford's doctrine the blood is not warmed in passing through the lungs, although this is the organ in which it acquires its heat, but it is in the capillary part of the systemic circulation, when the blood again becomes venalised, that the heat is disengaged. This change, therefore, takes place in that part of the body where it is the most necessary to counteract the effect of the surrounding medium, which is, in most cases, colder than the body itself, and where by its diffusion over a great extent of surface, it must tend to make the heat nearly uniform through the whole of the system.

After the publication of Crawford's theory, Lavoisier, in a subsequent memoir, recurred to the subject of animal heat. He still maintained his former opinion, that it is derived from the union of carbon and oxygen in the lungs, and that respiration is, in every respect, analogous to the process of combustion. He assumes that all parts of the body are preserved at the same temperature, and with respect to the manner in which the heat is equalised, he observes that it depends upon the three following causes: — 1. Upon the rapidity of the circulation of the blood, by which the heat that is acquired in the lungs is quickly transmitted to all parts of the body; 2. Upon the evaporation which takes place from these organs, which carries off a part of their heat; and, 3. From the increased capacity for heat, which blood acquires when it is converted from the venous to the arterial state. It will be observed that this view of the subject, so far as animal temperature alone is concerned, is strictly conformable to the doctrine of Crawford. Lavoisier, however, does not introduce the name of Crawford, or even allude to his experiments on the different capacities of arterial and venous blood; and the same disingenuous silence is observed on this point, when, in another part of his paper, he compares his own hypothesis with that of Crawford respecting the heat generated by combustion, and notices the experiments on the different capacities of oxygen and carbonic acid. Lavoisier seems to have maintained the same opinion respecting animal heat in his after researches; he always speaks of it as the result of combustion, and supposes that the heat is generated upon the same principle as in the formation of carbonic acid, by the more rapid union of oxygen and carbon.

Although Crawford's theory so admirably accounted for all the phenomena, and appeared to be so strictly deduced from facts and experiments, yet the extreme delicacy of the operations on which it rested, as well as the interest excited by its great importance, led to a rigid examination of all its fundamental positions; the consequence of which was that they have all of them been controverted, and we have an account of a number of experiments, the results of which are reported as being directly opposite to those of Crawford, or, at least, as not warranting his conclusions. The main points on which the theory is supported are the following: — that heat is extricated when oxygen is converted into carbonic acid, in consequence of the diminished capacity of the latter; that the capacity of arterial is greater than of venous blood; and that the blood in the two sides of the heart, and in the large trunks of the pulmonic system possesses the same temperature. With respect to the first of these points, the different capacities of oxygen and carbonic acid, it must be considered as a question which affects the theory of combustion generally, and in which the cause of animal temperature is not particularly concerned. When carbon is united to oxygen so as to produce carbonic acid, we find that heat is liberated, and this takes place not merely in that rapid union of the bodies, which may be considered essential to a proper combustion, but in the slow combination of them, such as occurs in fermentation, putrefaction, and germination. In whatever way, therefore, we account for the liberation of heat in these processes, we may employ the same method to explain the heat generated by respiration. We may even go farther, and say, that as heat is always liberated when this union of oxygen and carbon takes place, the same effects must necessarily follow from the production of carbonic acid in respiration. The difficulty, therefore, is not to account for the heat produced by respiration, but to remove the objection which was originally urged against Black's hypothesis, that the temperature of the blood in the lungs ought to be greater than that in the other parts of the body. It is in fact with the other two points only, the comparative temperature of the blood in the trunks of the pulmonic vessels or in the two sides of the heart, and the different capacity of arterial and venous blood, that the theory of animal heat is concerned, but on both of them experiments have been adduced, which are in direct opposition to the doctrine of Crawford.

It seems not a little remarkable that there should have been any difficulty in ascertaining the first of these points, which we might have supposed would have been settled by a few simple and easy observations. This, however, appears not to be the case, and it still remains undecided; although the weight of authority inclines to the opinion, that arterialised blood, at least in the heart and great trunks, is a degree or two warmer than the venous; so that upon the whole it appears probable that the blood does not possess that uniformity of temperature which has been generally assigned to it, but that it differs a little, not only in different individuals of the same species, but also in the different internal organs of the same individual. The latest experiments which have been made on the comparative capacity of arterial and venous blood are likewise unfavourable to the theory of Crawford; for although we are led to conclude from them, especially from those of Dr. Davy, that the specific heat of arterial is greater than that of venous blood, the excess appears to be so small as to be scarcely sufficient to account for the effects which are attributed to it.

These experiments are, however, to be considered as bearing upon the theory of Crawford, only in as far as it depends upon the doctrine of the different capacities of arterial and venous blood. The opinion that animal heat results from the union of oxygen and carbon, as originally advanced by Black, and as subsequently illustrated by Lavoisier, although it may be obnoxious to the objection which has been already stated, is unaffected by the attempts that have been made to disprove the results of Crawford's experiments. We should still conceive that the heat must be produced by the formation of carbonic acid, although we might be unable to explain the exact mode in which it is set at liberty, or the precise point in the circulation where it assumes the form of sensible heat. We accordingly find that the chemical theory, or that which supposes respiration to be a process more or less analogous to combustion, generally prevailed, until the doctrine was attacked in its essential point by a series of experiments that were performed by Sir Benjamin, then Mr. Brodie, who took advantage of the process for restoring the action of the heart, after decapitation or removal of the brain, by artificially inflating the lungs. By this means we are able to produce the usual change in the appearance of the blood from the venous to the arterial state, when we find that oxygen is consumed, and carbonic acid gas disengaged, as in natural respiration. The chemical action of the lungs being thus maintained, as in the state of health, it became a curious subject of inquiry, whether heat was also evolved, and the temperature of the animal supported, in the same manner as during the perfect state of the functions. Upon making the experiment this appeared not to be the case, for it was found that when, by any means, the influence of the brain was effectually cut off from the heart and blood vessels, although, by means of artificial respiration, the contraction of the heart and the passage of the blood through the lungs is maintained, so that it apparently undergoes its change from the venous to the arterial state, yet the generation of animal heat seems to be suspended, and, consequently, if the air which is inspired be colder than the body, the effect of respiration is to cool the animal. Mr. Brodie's experiments were so simple and appeared so decisive in their results, that the conclusion from them was thought to be irresistible, and notwithstanding the mass of evidence that had been accumulated in favour of the chemical theory of respiration and the numerous arguments and analogies that

had been adduced in its favour, the opinion of many of the most intelligent physiologists was, that respiration, as far as respects the production of carbonic acid, is not the cause of animal heat, and is only remotely connected with it; that the lungs have no immediate or direct concern in the operation, but that it depends upon the nervous influence.

But notwithstanding the value of Mr. Brodie's experiments, there are two circumstances which seem to have been overlooked or disregarded by him, and which it will be necessary to examine, before we can draw the conclusion which, at first view, appeared so naturally to flow from them. In the first place we must inquire into the degree of cooling effect which is caused by the inflation of the cold air into the lungs, and compare this with the opposite effect which might be produced by the generation of the carbonic acid. In the natural or entire state of the animal, the respiration is regulated partly by the influence of volition, and partly of instinct, the quantity of air inspired being just sufficient to answer the demands of the system; but in the experiment which has been related, the air is forcibly sent into the pulmonary vesicles, without any co-operation from the animal, and, of course, independently of the correspondence between the different functions which are connected with the action of the lungs. Now, as we have already observed, respiration may be considered as a compound process, one essential effect of which is to abstract heat from the body; the question, therefore, to examine is, whether the heating or cooling effect of respiration will preponderate, under the circumstances in which the animal was placed in these experiments. The second point in which Mr. Brodie's conclusion is premature, respects the part of the circulation in which the heat is extricated. If, according to the theory of Crawford, it is not in the lungs, but in the capillary vessels, that this operation is carried on, we should scarcely expect to find the temperature of the animal supported by the artificial inflation, because the immediate effect in this case is to render heat latent, which is necessarily a cooling process, while it is by no means surprising that the disengagement of the latent heat which takes place in the natural situation of the animal should have been entirely prevented, or very much diminished, where the functions of the system generally, and those of secretion and assimilation in particular, were so much deranged, or even entirely suspended. Perhaps, therefore, it may not be going too far to assert, that in the case in question, where a quantity of cold air is forcibly propelled into the lungs, and a portion of heat necessarily rendered latent, by the conversion of venous into arterial blood, and where we may also presume that the air which is discharged from the lungs, would carry off a quantity of aqueous vapour, and in this way produce a farther abstraction of heat, while, on the other hand, it is not improbable, that the various processes by which the blood is venalised in the natural state of the system, must be impeded or deranged, the result which we ought to expect would be the cooling of the blood, as Mr. Brodie found it to be in his experiments.

These theoretical considerations might have induced us to pause before we admitted the conclusion, that the chemical change of the air in the lungs is not the source of animal heat; but we have two sets of experiments, one by Dr. Philip, and a second by Legallois, which directly oppose those of Mr. Brodie, by showing, that, if the attending circumstances are duly considered, we can clearly trace a connexion between the diminution in the quantity of oxygen consumed and the deficiency in the evolution of heat, when we employ the process of artificial inflation. Dr. Philip conceived that the cause why the temperature of the body diminished more rapidly where this operation was employed, than where the animal was left undisturbed, depended upon too large a quantity of air having been propelled into the lungs, and he accordingly found that when a less quantity of air was used, the cooling process was sensibly retarded by the inflation, so as directly to obviate Mr. Brodie's objections, and to exemplify the power of the lungs in generating heat. That this power is not directly dependent upon the nervous system appears also to be proved by an experiment in which the rate of cooling in a dead animal, where the brain and nervous system had been removed, was compared with one which was left in its entire state, in which case, and also when the artificial respiration was employed, no difference could be observed in the temperature of the animals.

A very elaborate and ingenious train of experiments was performed upon the same subject by Legallois, the results of which were decidedly favourable to the chemical theory, and fundamentally coincided with those of Dr. Philip. The experiments consisted in observing the rate of cooling in animals under different circumstances, and in comparing the effect of the inflation of the lungs upon perfect and upon mutilated animals, and also in noticing the degree in which animal temperature is influenced by various impediments to the respiration or to the action of the other functions. He deduced the following important conclusions from his experiments: — 1. That the animals upon which artificial respiration has been employed, although they suffered a reduction of temperature, yet it was less by from 1° to 3° (centigr.) than in simply dead animals; 2. That in cooling through a certain number of degrees, they parted with more heat than simply dead animals; 3. That inflation of the lungs of perfect and healthy animals lowers their temperature, and that if the operation be continued for a sufficient length of time, they may even be destroyed by cold; and, 4. That the same effect may be produced by any circumstance which constrains or impedes the respiration. One important point still remained to be decided; when the cooling process is going forward by any constraint or impediment to the respiration, is the consumption of oxygen proportionably diminished? The result of his experiments on this point was also favourable to

the chemical theory. He had found that laying an animal on its back lowers its temperature, and he examined whether in this case the consumption of oxygen was diminished. The experiment was performed on rabbits and cats. For the purpose of comparison he first operated upon the animal while it was at liberty, and afterwards when confined on its back: the results are not quite uniform, but, for the most part, there was considerably more oxygen consumed when the animals were at liberty. Upon repeating the experiment, with certain variations, it appeared that when the respiration was in any way constrained, by the animal being tied on its back, or by there being a deficiency of air, less oxygen is consumed. It was observed, however, that in certain cases the cooling was more rapid than ordinary, even when more oxygen is consumed, owing, as the author conjectures, to the struggles which are made carrying off a portion of the heat. In order, therefore, to render the experiment still more decisive, he rendered the respiration so difficult, that no voluntary effort of the animal could enable it to consume the usual quantity of oxygen; this was accomplished either by placing it in air that was much rarefied, or by mixing with it a large proportion of nitrogen. The experiment was then performed in this way upon dogs, cats, rabbits, and guinea-pigs, when the greatest cooling effect was always found to correspond with the least consumption of oxygen. We are informed that the quantity of carbonic acid formed is always less than that of the oxygen which disappears. When a quantity of carbonic acid is mixed with the air, this is in part removed, thus proving that carbonic acid is absorbed by the lungs. The author's final decision is, that the nervous system affects the temperature, but that it is by an indirect operation, and only in as far as it contributes to bring the air into contact with the blood. *Bostock's Physiology*, vol. ii. p. 250. 274.

Sir Everard Home advanced an opinion, that the production of animal heat depends on the ganglial system of nerves; an opinion which, though very feebly supported by its author, is worthy of considerable attention.

We may briefly consider the claims of each of the hypotheses above mentioned.

The theory of Crawford must be allowed to possess much beauty and considerable applicability: various observations and experiments may be brought indirectly to bear upon it, some of which afford it strong support, while others invalidate it by objections that appear nearly insurmountable. In its favour we may adduce the phenomena of hybernation, since it has been established by the observations of Spallanzani, Hunter, Carlisle, De Saissy, and others, that the diminution of heat in hybernating animals bears an exact proportion to the diminished activity of respiration. But the most powerful collateral evidence in favour of the chemical theory, is afforded by the parallel which comparative anatomy enables us to draw between the perfection of the respiratory function and the degree of animal temperature; it being pretty universally found, that throughout all classes of animals, the more the lungs, by their extent and the perfection of their organisation, favour the chemical changes effected by respiration, the higher is the temperature of the animal compared with the medium in which it lives. This fact seems at first sight to be almost conclusive in favour of the doctrine under consideration; but it is to be observed, that the expansion of the respiratory organs, with which the calorific power is found to keep pace, is accompanied by a corresponding development of the whole apparatus of life; so that, after all, the only legitimate inference appears to be, that the greater the general activity of the vital functions in any animal, the higher will be the temperature of that animal. The facts most powerfully opposed to the chemical theory are derived from the observation of disease. John Hunter has recorded several instances utterly subversive of the notion, that respiration is the only source of animal heat. For example, he relates the case of a patient who, when lying comatose from an injury of the brain, and breathing with only half the natural frequency, was nevertheless extremely hot; and another case of a boy who appeared to be dying, and breathed so slow that twenty-three seconds elapsed between each respiratory act; the pulse was weak and slow, and the body of a purple hue, owing to the deficient aëration of the blood; yet he was very warm, though it was the middle of winter, and he was lying in a room without a fire. These cases are particularly striking, but others having a similar tendency are continually occurring in the course of ordinary practice: we observe rapid alternations of temperature without any change in the respiration at all commensurate with the effect produced, and where such effect cannot be reasonably connected with the state of cutaneous evaporation which is supposed to modify the influence of the calorific cause. The experiments of Dulong and of Despretz, which must be acknowledged to have been carefully and scientifically conducted, favour Crawford's theory to a certain extent only: they were instituted to ascertain how far the quantity of oxygen gas consumed in respiration is sufficient to produce all the heat which the animal is continually losing; and they go to prove that the greater part of the heat may be accounted for from this source, but not all, and hence, that respiration is the principal source of animal heat, but not the only source. On the whole, it cannot be doubted that respiration is an actual source of animal heat: that it is the principal source may very well be questioned; and that it is the sole source is an opinion discountenanced by all the direct experiments that have yet been made on the subject.

The hypothesis which refers the generation of animal heat exclusively to the brain, to say nothing of the obstacles opposed to it by the experiments of Wilson Philip, and Le Gallois, is manifestly incompatible with pathological and other facts. Thus, in cases of injury of the vertebræ, where all the parts below the seat of the injury are entirely deprived of sense and motion by the interception of their communi-

cation with the brain, the temperature of these parts often remains perfectly natural: again, children have been born without any brain, who nevertheless evinced no defect of animal temperature. Nor has the spinal cord any better claim to be considered as the source of vital heat, since the complete paralysis of the nerves derived from it is frequently unattended with any diminution of temperature in the parts to which they are distributed. The influence of the ganglial system on animal temperature has hitherto been investigated only by some experiments of Sir E. Home, which seem to have been quite inapposite, and to have had no intelligible relation to the subject of inquiry; nothing, therefore, need here be said about them.

Finally, an impartial comparison of the several hypotheses hitherto advanced, and an extended view of the phenomena of vital heat, as observed throughout the whole range of organised existence, would, perhaps, incline us to acquiesce in the sentiments of Professor Tiedemann. "The only point," says this distinguished physiologist, "which can be regarded as established is, that the evolution of heat is a vital act, depending immediately on the process of nutrition, the conditional and preservative cause of life. The taking of aliments, and their assimilation by digestion and respiration; the circulation of the fluids, nutrition, and secretion; the renewal of materials that accompanies the exercise of life; and the incessant changes of composition in the solids and fluids, all of which in animals are under the influence of the nerves, also bear their part in the generation of heat, and it is erroneous to seek the source of it in any one of these causes alone. The intensity of the evolution of heat in animals, and their power of maintaining themselves at a certain temperature proper to each species, are in a direct ratio with the complexity of their organisation, and with the sum and intensity of their manifestations of activity. Birds and mammifera, which take aliment at the shortest intervals, and digest with the greatest rapidity; which consume most oxygen, and give out most carbonic acid; whose circulation is most rapid and energetic; which exhibit the greatest pertinacity in their movements; which evince the strongest agency of the nervous system; which secrete the greatest quantity of diversified humours; and in which, in short, all the phenomena proclaim that the renewal of matters occurs most speedily and vigorously; these have the highest degree of heat, and are able to maintain it with the greatest uniformity at the temperature proper to each of them. Amphibia, fishes, insects, mollusca, and worms, whose structure is less complex, whose vital phenomena exhibit less diversity, and in which the above-named actions of life have less intensity, have also a lower degree of heat, are more subject to variation in their temperature, and have a more limited faculty of generating caloric.

"Further, the generation of heat resulting from the renewal of matter, and the changes of composition ever accompanying life, vary in animals, within certain limits, according to the development, the age, the nature of the aliment, and the manner of performing digestion; according to the respiration, the circulation of the blood, and the nervous influence; according to the seasons, and even to the periods of the day; during waking and sleeping; according to the external stimuli that affect animals; and, finally, according to diseases, medicinal remedies, and poisons.

"In plants, an evolution of heat seems to occur, though only in a small degree, during the acts of respiration, nutrition, and secretion, as also during fecundation and germination. But since the solids of vegetables, when once formed, do not appear to undergo continual changes in consequence of their internal activity, as is observed in animals, in which the matter of the different tissues is incessantly changing; since they do not execute voluntary movements, and are destitute of the entire group of the nervous functions, they lack the chief sources of the generation of heat."

2. *The production of cold.* — The living animal body has not only the power of generating heat within itself; it is also capable of resisting extraneous heat, of reducing its own temperature, and keeping it within moderate limits. This power of refrigeration has been variously accounted for, according to the view taken of the source of heat. If the nervous system, or any portion of it, be regarded as presiding over the generation of heat, it may as readily be conceived to cause the production of cold, both phenomena being in effect the result of vital processes which chemistry must not hope to explain. Even here, however, we must admit the secondary operation of chemical causes; for, as it has been shown that respiration is, without question, a source of heat, so it cannot be denied that cutaneous and pulmonary evaporation must operate as a very efficient cause in the reduction of temperature. The effect of evaporation in cooling the body seems first to have occurred to Dr. Franklin. His opinion on this subject was opposed by Dr. Crawford, who thought that, in proportion to the degree of heat to which the body is exposed, the blood becomes less venalised and evolves less heat, from its containing a smaller quantity of inflammable matter, and that the equalization of temperature is mainly attributable to this cause. The question was fully and carefully investigated by Dr. De Laroche, who found that when animals were confined in a hot atmosphere so saturated with moisture that no evaporation could take place, they suffered severely under a heat only a little higher than their own. He likewise found, by carefully conducted experiments, that the consumption of oxygen in respiration is greater as the temperature is lower, in the average proportion of about 6 to 5: the formation of carbonic acid was not, however, proportionate to the consumption of oxygen, being in all cases less; so that some oxygen appeared to have been absorbed. The difference between the quantity of the oxygen consumed, and of the carbonic acid generated, was also less at a high, than at a low, temperature. It had been previously shown by the experiments of Crawford, Jurine,

and Lavoisier, that less oxygen is consumed in respiration at high, than at low, temperatures. The general conclusions derived by De Laroche from his experiments were, that there is a smaller evolution of animal heat at high than at low temperatures; but that cutaneous and pulmonary evaporation is the great cause of the production of cold, and the only cause at temperatures higher than that which is natural to the animal.

In the present state of knowledge it would be rash to embrace unconditionally any of the hypothesis on which it has been attempted to explain the phenomena of animal temperature. There can be no doubt that much heat is generated by respiration, and much cold by evaporation; but various circumstances, both of health and disease, seem to demonstrate that the nervous system has also great influence on animal temperature, although we are ignorant as to what portion of this system is most influential.

The independent power which the living body possesses of maintaining and regulating its own temperature, enables it to encounter, without injury, intense degrees of external heat and cold. Thus it has been demonstrated by the experiments of Banks, Blagden, and Fordyce in England, and those of Duhamel and Tillet in France, that the human body will sustain without injury, and even without serious inconvenience, a degree of heat sufficient to bake meat. The three first-mentioned experimenters subjected themselves, with perfect impunity, to a temperature of nearly 260° Fahr., and even found that the temperature of their bodies was but little raised. In the more recent experiments of MM. Berger and De Laroche, the temperature of the body was increased much more by a minor degree of heat: they found that in a stove heated to 120° Fahr., their own temperature rose nearly 6·8°; and M. De Laroche having remained sixteen minutes in a dry stove at 175°, found the heat of his own body to have risen 9°.

In the countries near the pole, the thermometer sometimes stands in winter at 42° Fahr.; and this excessive cold, though supported with difficulty, is still found compatible with the existence of man and other animals. In milder climates, as our own, a temperature several degrees below the freezing point of water is sustained without inconvenience, if combated by brisk exercise, and often excites a feeling of increased health and vigour.

Few correct observations have yet been made upon the natural temperature of the human body. It appears to be generally between 96° and 98° Fahr. According to the latest experiments, which are those of MM. Edwards and Gentil, the best place for judging of the temperature of the body is the armpit. They found a considerable difference of temperature in a young man and a young woman: the heat of the hand in the former was 98·4° Fahr.; in the latter it was rather less than 97½. Great variety was also observed in the heat of persons of different temperaments. In the same individual, also, there are diurnal variations, and the temperature may change two or three degrees from morning to evening. For the effects produced on the temperature of the body by disease, see *Morbid Temperature.*

Animal jelly. See *Gelatina.*

Animal œconomy. See *Œconomy, animal.*

Animal oil. See *Oleum animale.*

ANIMA'LCULE. (*Animalculum, i.* n.; diminutive of *animal.*) This word is applied in a general manner to those minute animals which cannot be distinctly seen without the help of glasses, and more especially to such as are invisible to the naked eye.

Animalcules, infusory. See *Infusoria.*

Animalcules, spermatic. See *Semen.*

Animaliza'tion. The process by which the nutritive part of the food is converted into the various substances that compose the body.

Animation. (*Animatio;* from *animo,* to give life, to animate. The state of a living animal, as vegetation is that of a living vegetable.

Animation, suspended. See *Asphyxia.*

A'nime gummi. See *Hymenæa courbaril.*

A'nimi deliquium. See *Syncope.*

A'nimists. Those physiologists who followed Stahl, in believing that all the functions of the living body are performed by the immediate agency of the *anima,* or soul, were called *Animists.* See *Life.*

A'NIMUS. (*us, i.* m.; from *ανεμος,* wind or breath.) The soul or mind. Applied both to the living and the intellectual principle, but more frequently the latter.

Anima usually denotes the soul in the sense of a *vital principle;* while *animus* denotes the soul or mind in the sense of a *conscious and intelligent being.*

Aninga. A root which grows in the Antilles, and is used by sugar-bakers for refining their sugar.

Ani'satum. A medicated wine, formerly prepared with the wine of Ascalon, honey, and aniseed.

Anisca'lptor. (*or, oris.* m.; from *anus,* the breech, and *scalpo,* to scratch.) A ridiculous name formerly given to the latissimus dorsi muscle, because it is chiefly instrumental in the office alluded to.

ANISEED. See *Pimpinella anisum.*

Ani'si camphora. When the volatile oil of anise is exposed to a low temperature, it separates into a thin liquid and a concrete substance; the latter has been called *camphor of anise:* it is the same with the substance named *serusina* by Bizio. See *Oil volatile.*

Aniso'tachys. (From *ανισος,* unequal, and *ταχυς,* quick.) Applied formerly to a pulse which is quick and unequal.

ANI'SUM. (*um, i.* n. derivation uncertain; the word is spelled by Greek writers *ανισον, ανησον, ανησσον,* and *αννησον.*) See *Pimpinella anisum.*

Anisum sinense. See *Illicium.*

Anisum stellatum. See *Illicium.*

Anisum vulgare. See *Pimpinella.*

ANKLE. The junction of the leg with the foot.

ANNEALING. We know too little of the arrangement of particles to determine what it is that constitutes or produces brittleness in any substance. In a considerable number of in-

stances, bodies which are capable of undergoing ignition are found to become hard and brittle when cooled suddenly. This is a great inconvenience in glass, and also in steel, when it is required to be soft and flexible. The brittleness of these substances is avoided by cooling them very gradually, and this process is called *annealing*. Glass vessels, or other articles, are carried into an oven or apartment near the great furnace, called the leer, where they are permitted to cool, in a greater or less time, according to their thickness and bulk. The annealing of steel, or other metallic bodies, consists simply in heating them, and suffering them to cool again, either upon the hearth of the furnace, or in any other situation where the temperature is moderate.

Annora, *Anora*. An alchemical term for calcined egg-shells or quick-lime.

Annota'tio. Under this name some writers have included the symptoms which precede an attack of ague, as languor, yawning, chilliness, &c.

Anodus. A barbarous term. Nutrimentum quod in renibus separatur. — *Ruland.*

Anpater. An alchemical name of sulphur. *Annotto.* See *Bixa orleana.*

ANNUAL. (*Annuus*, yearly.) 1. In *Botany*, applied to plants which do not live longer than one year; as *Papaver somniferum*, *Helianthus annuus*, *Hordeum*, *Triticum*, &c.

2. In *Pathology*, this term has been applied to diseases which return about the same time every year: *morbi annui*; *morbi anniversarii.*

A'nnuens. (From *annuo*, to nod.) The *recti antici capitis* have been called *musculi annuentes*, because they perform the office of nodding, or bending the head forwards.

A'NNULAR. (*Annularis*; from *annulus*, a ring.) Resembling a ring, or having relation to a ring; as an annular bone, an annular cartilage. *Digitus annularis*, the ring finger.

Annular bone. See *Circulus osseus.*

Annular cartilage. The cricoid cartilage.

Annular protuberance. See *Pons varolii.*

Annularis processus. See *Pons varolii.*

Annula'ris vena. The vein situated between the ring finger and the little finger.

ANNULA'TUS. (From *annulus*, a ring.) Annulate; having rings.

Annulata Animalia. Ring-bodied animals. See *Annelides* and *Animal Kingdom.*

A'NNULUS. (*us*, *i.* m.) A Ring. This name is given, 1. In *Anatomy*, to ring-like parts, openings, &c.; as annulus osseus of the temporal bone in the fœtus, annulus abdominis, &c.

2. In *Botany*, to the slender membrane surrounding the stem of the fungi like a ring.

Annulus abdominis. The abdominal ring. An opening formed by the separation of the fibres of the external oblique muscle of the abdomen, through which passes the spermatic cord in man, and the round ligament of the uterus in woman. It is through this opening that the abdominal viscera protrude in inguinal hernia. See *Obliquus externus abdominis.*

Annulus chirurgicus. A ring formed of lead or brass, and used to fix the eye in surgical operations.

Annulus ligamentosus. The ciliary circle has been so called.

Annulus gangliformis tunicæ choroïdeæ. The ciliary circle is thus named by Soëmmering.

Annulus purgatorius. A ring made of glass of antimony, formerly supposed to have the power of purging.

Annuli superstitiosi. Rings made of various materials, and principally those in which gems engraved with mysterious figures and characters were set, had most extraordinary magical and medicinal virtues attributed to them in the ages of ignorance and superstition.

Annus climacte'ricus. The climacteric year. This name has been given to the 63d, and also to the 81st year of the age of man, from a notion that men are more likely to die during these years than any other. This notion is quite without foundation: a man is as likely to die at 62 as at 63; and he is more likely to die at 82 than at 81, because he is one year further advanced in extreme old age.

Anocatha'rtic. (*Anocatharticus*; from ανω, upwards, and καθαιρω, to purge.) Emetic; purging upwards.

Anochei'lum. (*um*, *i.* n.; from ανω, upwards, and χειλος, the lip.) The upper lip, as opposed to *Catocheilon*, the under lip.

Anody'nia. (Ανωδυνια, from α, neg. and οδυνη, pain.) Absence of pain.

A'NODYNE. (*Anodynus*; Ανωδυνος, from α, priv. and οδυνη, pain.) Applied to medicines which allay pain. Anodyne medicines are divided into three sorts; *paregorics*, or such as actually assuage pain; *hypnotics*, or such as relieve by procuring sleep; and *narcotics*, or such as give ease by stupifying the senses.

Anodyne necklaces. These necklaces are made of the roots of henbane; of the seeds of the *Coix lachryma*, otherwise called Job's tears; of allspice steeped in brandy; and other materials. They are believed by the credulous to facilitate dentition, procure sleep, &c.

Ano'dynum martiale. The precipitate formed by adding potash to a solution of the ferrum ammoniatum in water.

Ano'dynum minerale. This name has been given to two substances.

1. The sal prunellæ has been so called. See *Sal prunellæ.*

2. The antimoniated nitre, or nitrum stibiatum, has also been so called. See *Nitrum stibiatum.*

Anodynus liquor. See *Liquor anodynus.*

Anæ'a. Ανοια. The same as Amentia. See *Amentia.*

ANO'MALOUS. (*Anomalus*; ανωμαλος; from α, neg. and ὁμαλος, equal, regular.) Irregular; subject to no certain law. Applied to diseases which do not follow the ordinary course, or which have something peculiar and unusual in their symptoms.

Anomaly. (Same etymon.) A deviation from ordinary laws. Monstrosities are called *anomalies of organisation.*

Anomalocephalus. (From ανωμαλος, irregular; and κεφαλη, a head. An individual whose head is deformed. — *G. St. Hilaire.*

ANO'MPHALOS. (*Anomphalus;* from α, priv. and ομφαλος, the navel.) Without a navel. It was a matter of grave dispute with the polemical divines of the thirteenth century, and some other equally sagacious persons, whether Adam and Eve had navels or not, since they were not born like ordinary mortals — a question not very easy of solution. In more recent times, some children born with extroversion of the bladder have been falsely supposed to be ανομφαλοι, or destitute of a navel, because the navel could not be distinctly seen.

ANONIS. See *Ononis.*

ANO'NYMOUS. (*Anonymus;* from α, priv. and ονομα, a name.) Nameless; an epithet foolishly enough applied to several parts of the body: as the anonymous bone, or *os innominatum;* the anonymous foramen, or *foramen innominatum.*

Anorchis. See *Anorchus.*

ANO'RCHUS. (*us, i.* m.; from α, priv. and ορχις, the testicle.) One who is born without testicles, or who has been deprived of these organs. The apparent absence of the testicles at birth is very common, and arises merely from their not having yet descended into the scrotum; they are sometimes retained within the abdomen to the age of ten or fifteen years, or even through life. Occasionally one testicle descends into the scrotum, while the other remains in the abdomen. Men, in whom the testicles are retained within the abdomen, are not at all less apt for generation than others.

ANORE'XIA. (*a, æ.* f.; from α, priv. and ορεξις, appetite.) Anorexy. A want of appetite, without loathing of food. It is generally symptomatic. See *Dyspepsia.*

ANOR'MAL. *Anormis, Abnormis.* (From *ab* and *norma,* a law or rule.) Irregular. Contrary to ordinary laws. It is opposed to *normal* or regular.

ANO'SMIA. (*a, æ.* f.; from α, neg. and οσμη, an odour.) A loss of the sense of smell. When it arises from a disease of the Schneiderian membrane, it is termed *Anosmia organica;* and when from no manifest cause, *Anosmia atonica.* In the latter case it arises, doubtless, from paralysis of the nerves which minister to this sense. The term anosmia is not quite correctly applied. Οσμη means an odour, not the sense of smell; anosmia, therefore, would properly signify the absence of odour in any substance. See *Anosphresia.*

ANOSPHRE'SIA. (From α, priv. and οσφρησις, the sense of smell.) Loss of the sense of smell. — *Swediaur.*

A'NSER. (*er, eris.* m.; a goose or gander.) The name of a genus of birds.

ANSER DOME'STICUS. See *Anas anser.*

ANSERI'NA. (From *anser,* a goose: so called because geese eat it.) See *Potentilla anserina.*

ANT. See *Formica rufa.*

Ants, acid of. See *Formic acid.*

ANTA'CID. (*Antacidus;* from αντι, against, and *acidus,* acid.) Applied to medicines which destroy acidity. The action of antacids in the human stomach appears to be purely chemical; they merely combine with the acid present, and neutralise it. They are simply palliatives, since the generation of acidity is only to be prevented by restoring the tone of the digestive organs. Dyspepsia and diarrhœa are the diseases in which they are chiefly employed. The principal antacids in use are, potash, soda, ammonia, magnesia, lime, and their carbonates. Some medicines of this class form, with the acid in the stomach, a purgative salt; it is thus that magnesia, which in itself is a very slight laxative, sometimes produces a strong cathartic effect: others, as lime, form a salt which is inert. Ammonia neutralizes a larger proportion of acid than any other base: magnesia ranks next in this respect; then comes lime; and, lastly, potash and soda. One of these medicines, however, may be preferable in one case, and another in another: thus, where the acidity is conjoined with nausea and faintness, ammonia acts as a grateful stimulant as well as an antacid; when irritability of the gastro-enteric mucous membrane prevails, potash is particularly indicated, since it appears to have the effect of allaying irritation of the mucous membranes in general; magnesia acts as a mild and pleasant laxative; while lime possesses somewhat of an astringent and tonic power, in addition to its antacid properties.

ANTA'CRID. (*Antacridus;* from αντι, against, and *acridus,* acrid.) Applied to a medicine which corrects acrimony.

ANTAGONISM. (*Antagonismus;* from αντι, against, and αγωνιζω, to contend.) The action of muscles which oppose each other.

ANTAGONIST. (*Antagonista;* from αντι, against, and αγωνιζω, to contend.) A term applied to a muscle whose action is opposed to that of another muscle: thus the flexors and extensors of a limb are antagonists, and also the abductors and adductors. It may happen that two muscles which are antagonists when they act separately, cease to be so when they act at the same time; thus, when one of the sterno-mastoid muscles turns the head sideways, it is opposed by the other; but when both the muscles act in bending the head forwards, they pull together. The equilibrium of the body arises from the antagonism of its muscles, the action of which we learn to regulate by habit.

ANTA'LGIC. (*Antalgicus;* from αντι, against, and αλγος, pain.) Relieving pain: synonymous with anodyne.

ANTA'LKALINE. (*Antalkalinus;* from αντι, against, and *alkali,* an alkali.) Having the power of neutralising alkalis. All the acids, except the carbonic, have this power.

ANTAPHRODI'SIAC. (*Antaphrodisiacus;* from αντι, against, and αφροδισιακος, venereal, appertaining to Venus.) Applied, 1. To medicines which diminish the venereal appetite. 2. To medicines used against the lues venerea, or syphilis.

ANTAPHRODI'TIC. The same.

ANTAPO'DOSIS. (From ανταποδιδωμι, to reciprocate.) The succession or return of the paroxysms in fevers. — *Hippocrates.*

ANTARIS. Mercury.

ANTARTHRI'TIC. *Antarthriticus;* from αντι, against, and αρθριτις, the gout.) Applied to a medicine used against the gout.

ANTASTHMA'TIC. (*Antasthmaticus;* from αντι,

against, and ασθμαζω, to breathe with difficulty.) Applied to a medicine which relieves asthma.

ANTATRO'PHIC. (*Antatrophicus;* from αντι, against, and ατροφια, a wasting.) Applied to medicines used against an atrophy.

ANTECE'DENS CAUSA. See *Aëtiologia.*

ANTECEDENTIA SIGNA. The precursory symptoms of a disease. See *Symptom.*

ANTELA'BIUM. (From *ante*, before, and *labium*, a lip.) The extremity of the lip.

ANTE'MBASIS. (From αντι, mutually, and εμβαινω, to enter.) The reception or insertion of bones into each other. — *Galen.*

ANTEME'TIC. (*Antimeticus;* from αντι, against, and εμετικος, emetic.) Applied to a medicine used against vomiting.

ANTENDEI'XIS. (From αντι, against, and ενδειξις, an indication.) Contra-indication, which see.

ANTE'NNÆ. A kind of articulated and moveable horns, with which the heads of insects, crustaceous animals, &c., are furnished, and which seem to constitute a very delicate organ of touch. Their form and magnitude vary infinitely in different genera and species, and even in the two sexes of the same species.

ANTENEA'SMUS. (Probably from αντειναω, for ανατειναω, *sursum extendo, attollo.*) A disease mentioned by Gariopontus, in which the patients were seized with maniacal dancing, and a disposition to lay violent hands on themselves. It was called also *enthusiasmus*, and seems to have been a variety of the *Chorea sancti viti.*

ANTEPHIA'LTIC. (From αντι, against, and εφιαλτης, the night-mare.) Applied to a medicine used against the night-mare.

ANTEPILE'PTIC. (*Antilepticus;* from αντι, against, and επιληψια, epilepsy.) Applied to a medicine used against epilepsy.

ANTE'RIOR. This word is often used by anatomists to designate parts which are situated before others, as the anterior lobes of the brain, the foramen lacerum anterius, &c.

ANTERIOR AURIS. *Musculus anterior auris.* A muscle of the external ear. It arises thin and membranous, near the posterior part of the zygoma, and is inserted into a small eminence on the back of the helix, opposite to the concha, which it draws a little forwards and upwards.

ANTERIOR INTERCOSTAL NERVE. *Nervus intercostalis anterior.* This is also called the splanchnic nerve, and is a branch of the great intercostal that is given off in the thorax.

ANTERIOR MALLEI. See *Laxator tympani.*

ANTERIT. Mercury.

ANTEUPHO'RBIUM. See *Cacalia.*

ANTEVE'RSIO UTERI. See *Uterus, anteversion of.*

ANTHANOR. See *Athanor.*

ANTHÆMORRHA'GIC. (*Anthæmorrhagicus;* from αντι, against, and αἱμορῥαγια, a flow of blood.) Applied to a medicine used to check hæmorrhage.

A'NTHELIX. (*Antihelix;* from αντι, opposite to, and ἑλιξ, the margin or circumference of the external ear.) An eminence on the cartilage of the ear, situated before, or more properly within, the helix, and consisting, at its upper part, of two ridges, which unite as they descend.

ANTHE'LMIA. (*a, æ.* f.; from αντι, against, and ἑλμινς, a worm: so called on account of its anthelmintic virtues.) The trivial name of the Indian pink. See *Spigelia anthelmintica.*

ANTHELMI'NTIC. (*Anthelminthicus;* from αντι, against, and ἑλμινς, a worm.) Medicines are so called which procure the evacuation of worms from the stomach and intestines. Some anthelmintics seem to act mechanically, destroying or dislodging the worms by the sharpness or roughness of their particles. Others owe their efficacy to their cathartic power; and others again seem to have no other qualities than those of powerful bitters, by which they either prove noxious to the worms, or remove that debility of the digestive organs with which the formation of these animals seems generally to be connected. Among the medicines of this class which are supposed to operate as direct poisons on the worms, the oil of turpentine is perhaps the only one which unequivocally possesses such a power. The principal medicines belonging to this class, are, mercury, iron, tin, olive oil, oil of turpentine, cowhage, worm-seed, spigelia marilandica, male fern, tansy, the bark of the cabbage tree, and gamboge. An account of these is given under their respective heads. See also *Invermination.*

A'NTHEMIS. (*is, idis.* fem.; from ανθος, a flower.) 1. The name of a genus of plants in the Linnæan system. Class, *Syngenesia;* Order, *Polygamia superflua.*

2. The name in the London Pharmacopœia for chamomile. See *Anthemis nobilis.*

ANTHEMIS CO'TULA. The mayweed, or stinking chamomile; called also *Cotula fœtida*, and *Chamæmelum fœtidum*, in the pharmacopœias. This plant, *Anthemis — receptaculis conicis, paleis setaceis, seminibus nudis*, of Linnæus, has a very disagreeable smell, and the leaves a strong, acrid, bitterish taste; the flowers, however, are almost insipid. It is said to have been useful in hysterical affections, but is very seldom employed.

ANTHEMIS NO'BILIS. The common chamomile: called also *Chamæmelum, Chamæmelum nobile, Chamomilla romana*, and *Euanthemon. Anthemis* of the last London Pharmacopœia. *Anthemis — foliis pinnato-compositis linearibus acutis subvillosis*, of Linnæus. Both the leaves and flowers of this indigenous plant have a strong though not ungrateful smell, and a very bitter, nauseous taste: but the latter have the more bitterness, and are considerably more aromatic. The flowers are the part generally used. They possess tonic and stomachic qualities, and are much employed as a light tonic in debility of the digestive organs. They were formerly used in the treatment of intermittent and other fevers, and in visceral obstructions. They have been found useful in hysterical affections, flatulent colic, and dysentery; but Dr. Cullen tells us they prove hurtful in diarrhœas, from their laxative quality. A simple infusion of the flowers is frequently taken to excite vomiting, or to promote the operation of emetics. Externally they are used in the *decoctum pro fomento*, and are an ingredient in the *decoctum malvæ compositum.*

Anthemis pyʹrethrum. The Spanish chamomile; pellitory of Spain. *Pyrethrum* of the pharmacopœias: called likewise *Asterantium*, *Buphthalmum creticum*, *Bellis montana putescens acris*, *Dentaria*, *Herba salivaris*, and *Pes alexandrinus*. *Anthemis — caulibus simplicibus unifloris decumbentibus, foliis pinnato-multifidis*, of Linnæus. This plant is cultivated in England; but the root, which is the part used in medicine, is brought principally from the Levant and the coast of Barbary. Its taste is hot and acrid: the acrimony appears to reside in a fixed oil which is contained in vesicles in the bark. The ancient Romans, it is said, employed the root of this plant as a pickle. In its recent state, it is not so pungent as when dried, and yet, if applied to the skin, it excites inflammation. Its qualities are stimulant; but it is never used, except as a masticatory, for relieving toothachs, rheumatic affections of the face, and paralysis of the tongue, in which it affords relief by stimulating the excretory ducts of the salivary glands.

Aʹnther. *Anthera*, *æ*. f. A part of the fructification of plants. The stamen, or male genital organ of plants, consists of a filament, or slender stem, and an anther, which is situated on the top of the filament, and contains the pollen, farina, or fecundating matter.

Different terms are applied to anthers, according to their *figure*:

Oblong; as in *Lilium candidum*.

Globose; as in *Mercurialis annua*.

Semilunar; as in *Fragaria vesca*.

Angular; as in *Tulipa gesneriana*.

Linear; as in the grasses, and *Protea*.

Didymous, or double; as in *Digitalis purpurea*.

Arrow-shaped; as in *Crocus sativus*.

Bifid, divided half way down; as in the grasses.

Peltate, shield-shaped; as in *Taxus baccata*.

Dentate, with a tooth-like margin.

Bicorn, two-horned; as in *Arbutus uva ursi*, and *Vaccinium myrtillis*.

Cristate, crested.

Crucial; as in *Melittis*.

Rostrate, beaked; as in *Osbeckia*.

Subulate, or awl-shaped; as in the genus *Roella*.

Cordate; as in *Cusparia*.

Reniform, kidney-shaped; as in *Tradescantia* and *Ginora*.

Trigonal, or triangular; as in the *Rose*.

Tetragonal, or quadrangular; as in *Cannabis*, and *Dictamnus*.

According to their *situation*:

Erect, with the base upon the apex of the filament; as in *Tulipa gesneriana*.

Incumbent, lying horizontally upon the filament; as in *Amaryllis formossima*.

Versatile, when the incumbent anther adheres so loosely to the filament, that the least agitation of the plant puts it in motion; as in *Secale cereale*.

Lateral, adhering laterally to the filament; as in *Dianthera*.

Sessile, the filament almost wanting; as in *Aristolochia clematitis*.

Free, not united to any other anther.

Connate, united together; as in *Viola odorata*.

Anthe'ra. (From *ανθηρος*, *floridus*.) A medicament used by the ancients, composed of myrrh, sandarach, alum, rose leaves, saffron, and other ingredients. It was applied in the form of powder, liniment, electuary, or collyrium. It was named from its bright red colour.

Anthe'rion. *Ανθερεων*. The chin.

Anthe'sis. (*Ανθησις*, from *ανθεω*, to flower.) The period of full inflorescence in a plant.

ANTHO'DIUM. (*um*, *i*. n.; from *ανθος*, a flower.) A species of calyx, which contains many flowers, being common to them all.

It is distinguished into,

Monophyllous, consisting of one leaflet perfect at its base, but cut at its limb or margin; as in *Tragopogon*.

Polyphyllous, consisting of several leaflets; as in *Carduus*, and *Centaurea*.

Simple, consisting of one series of leaflets; as in *Cacalia porophyllum*.

Equal, when all the leaves of the *Anthodium simplex* are of the same length; as in *Ethulia*.

Imbricate or *squamose*; as in *Centaurea cyanus*.

Squarrose, the leaflets bent backward at their extremities.

Scabrous, rough, consisting of dry leaflets; as in *Centaurea glastifolia* and *jacea*.

Spinous, the leaflets having thorns; as in *Cynara scolymus* and *Centaurea sonchifolia*.

Turbinate, turban-shaped; as in *Tarchonanthus camphoratus*.

Globose, globular: as in *Centaurea calcitrapa*.

Hemispherical, round below and flat above; as in *Anthemis*, and *Chrysocoma*.

Cylindrical, long and round; as in *Eupatorium*.

Calyculate, the basis surrounded by another small leafy anthodium; as in *Leontodon taraxacum*, *Senecio*, and *Crepis*.

Anthophy'llus. (*us*, *i*. m.; from *ανθος*, a flower, and *φυλλον*, a leaf: so called from the fragrance of the flowers and the beauty of the leaves.) The clove is so termed when it has been suffered to grow to maturity. — *Bauhin*.

Aʹnthora. (*a*, *æ*. f.; *quasi antithora*; from *αντι*, against, and *φθορα*, corruption.) The name given to a species of aconite which was supposed not to be poisonous like the rest, but, on the contrary, to possess alexipharmic virtues: it has also been recommended as an anthelmintic. It is a mistake, however, to suppose that the *Aconitum anthora* is not poisonous; all the plants of this genus are more or less so.

Aʹnthos. *Ανθος*. The Greek word for a flower of any kind: it has been applied in particular to that of rosemary. The alchemists gave this name also to the quintessence or elixir of gold, and to a medicine extracted from pearls. See *Rosmarinus officinalis*.

Anthosatum. The flower of rosemary.

Anthos philosophorum. A method of transmuting the metals by means of vitriol was so called by the alchemists.

Anthraco'sis ocu'li. A red, livid, burning, sloughy, very painful tumour, occurring on the eyeball or eyelids. — *Paulus Ægineta*.

ANTHRAX. (*ax*, *acis*. m.; from *ανθραξ*,

a live-coal: so denominated from the redness and fiery heat of the inflammation.) A carbuncle: called also *Anthracia*, *Anthrocosia*, *Anthrocoma*, *Carbunculus*, *Carbo*, *Rubinus verus*, *Codisella*, *Granatristum*, *Pruna*, and *Ignis persicus*. A hard and circumscribed inflammatory tumour, the most common situation of which is on the neck, back, or loins. A carbuncle is nearly allied to a boil, but is more aggravated in all its symptoms. The swelling is larger, the pain more severe; the livid pustule in the centre appears earlier; there is no defined central core, as in a boil; and the gangrene spreads wider and more rapidly. The tumour soon becomes shining, somewhat œdematous at the sides, and black in the middle; a bloody pus or ichor is discharged through several small openings, and at length the slough is detached, leaving a deep ragged ulcerous cavity. The effect on the constitution varies according to the size of the tumour and the extent of the gangrene. There is always considerable irritation: if the slough be small and easily detached, this soon abates; but if the gangrene be extensive, the worst typhoid symptoms frequently ensue, and the patient sinks rapidly. The tumour is of various size; it is sometimes inconsiderable, but at others has been as large as a plate. The tumour may be solitary, or several carbuncles may appear at the same time. Carbuncle sometimes appears as an idiopathic affection, in which case it occurs most frequently in elderly persons, and especially those whose constitution is debilitated by intemperance; it is also a well-known accompaniment of the plague, and has been observed in the course of other malignant fevers. This disease is alleged, in some instances, to have assumed a pestilential and contagious form, but in general there is nothing contagious in its character. Carbuncle requires both local and constitutional treatment. With respect to the former, as soon as the tumour becomes a little soft at the centre, a free crucial incision should be made into it, and as much of the gangrenous part pressed out as can be done without pain or inconvenience; warm emollient poultices are then to be applied, in conjunction with which anodyne fomentations may be serviceable, if the part be extremely painful. When the slough is completely separated, and the ulcer clean, simple dressings alone are requisite. When the detachment of the slough is tardy, it may be necessary to use stimulating applications, as the red oxide of mercury, the resinous ointment, or oil of turpentine; but when the powers of the constitution are properly supported, these are seldom needful. The constitutional treatment is, on the whole, the same as in any other case of mortification, and must be modified according to the extent of the gangrene, and the state of the system. Where the sloughing is limited, and the vital powers little depressed, a moderately antiphlogistic plan may be pursued at the commencement; but, as carbuncle usually occurs in patients of a debilitated habit, bleeding is seldom advisable, and the treatment should consist in the use of saline laxatives, gentle diaphoretics, and a regulated diet; opiates are generally required to allay pain and irritation. When the gangrene is extensive, and the actions of the system very low, a free use of wine and opium is indicated; and during the separation of the sloughs, the vis vitæ is to be supported by a generous diet. Some practitioners have great confidence in the powers of cinchona, in this and other forms of gangrene: in the form of quinine, there can be no objection to its use.

ANTHRI'SCUS. See *Scandix* and *Caucalis*.

ANTHROPO'GENY. (*Anthropogenia*; from ανθρωπος, man, and γενεσις, generation.) The study of the generation of man.

ANTHROPO'METRY. (*Anthropometria*; from ανθρωπος, man, and μετρον, a measure.) The measurement of the dimensions of man.

ANTHROPO'GRAPHY. (*Anthropographia*, æ. f.; from ανθρωπος, a man, and γραφω, to write.) A description of the structure of man.

ANTHROPO'LOGY. (*Anthropologia*, æ. f.; from ανθρωπος, a man, and λογος, a discourse.) The description of man.

ANTHROPOMO'RPHOUS. (*Anthropomorphus*; from ανθρωπος, a man, and μορφη, shape.) Of the shape of man. This term has been applied to animals, plants, and stones, which bear some resemblance to the human form. The mandrake, in particular, has been called Anthropomorphus. See *Atropa mandragora*.

ANTHROPOPHA'GIA. (*a*, æ. f.; from ανθρωπος, a man, and φαγειν, to eat.) The act or habit of eating human flesh. See *Anthropophagus*.

ANTHROPO'PHAGUS. (*us*, *i*. m.; from ανθρωπος, a man, and φαγειν, to eat.) A man-eater, a cannibal. Some savage tribes, even to the present time, feed on the bodies of their captive enemies; and among civilised nations a form of depraved appetite has been observed, combined probably with insanity, in which individuals have evinced a disposition to feed on human flesh.

ANTHROPOSCO'PIA. (*a*, æ. f.; from ανθρωπος, a man, and σκοπεω, to inspect or contemplate.) The art of judging or discovering a man's character, disposition, passions, and inclinations, from the lineaments of his body. See *Physiognomy*.

ANTHROPOSOMATO'LOGY. (From ανθρωπος, man, σωμα, body, and λογος, a discourse.) The study of the structure of the human body.

ANTHROPOSO'PHIA. (*a*, æ. f.; from ανθρωπος, a man, and σοφια, knowledge.) The philosophy of man.

ANTHY'LLIS. Ανθυλλις. 1. A name given by the ancients to a number of plants. 2. The name of a genus of plants in the Linnæan system. Class, *Diadelphia*; Order, *Decandria*.

ANTHYLLIS VULNERA'RIA. This plant is common in England, France, and other European countries. It is used by the peasantry as an application to wounds, bruises, &c.

ANTHYLLIS CRE'TICA. This plant is supposed to have laxative properties.

ANTHYPNO'TIC. (*Anthypnoticus*; from αντι, against, and ὑπνος, sleep.) Applied to medicines which prevent sleep. Coffee is well known to possess this power in a remarkable degree; strong tea, taken immediately before going to bed, has a similar effect on many persons.

ANTHYPOCHO'NDRIAC. (*Anthypochondriacus;* from αντι, against, and ὑποχονδριακος, hypochrondriacal.) Applied to medicines used against hypochrondiasis.

ANTHYSTE'RIC. (*Anthystericus;* from αντι, against, and ὑστερα, the womb.) Applied to medicines used against hysteria.

ANTI'ADES. (From αντιος, opposite.) 1. The tonsils have been so called, because they are opposite to each other.

2. Some writers use this term for inflammation of the tonsils.

ANTIADI'TIS. Inflammation of the tonsils.

ANTIADO'NCUS. (From αντιας, a tonsil, and ογκος, a tumour.) A swelling of the tonsils.

ANTI'AGRI. (From αντιας, a tonsil.) Swelling of the tonsils. — *Ulpian.*

ANTIARIS TOXICARIA. See *Upas.*

ANTIARTHRI'TIC. See *Antarthritic.*

ANTIASTHMA'TIC. See *Antasthmatic.*

ANTIATRO'PHIC. See *Antatrophic.*

ANTIBALLO'MENOS. (From αντιβαλλο, *contra jacio*; here taken in the sense of to *substitute.*) Applied to a medicine used as a succedaneum or substitute for another.

ANTIBRA'CHIAL. Appertaining to the fore-arm.

ANTIBRA'CHIUM. The fore-arm.

ANTICACHE'CTIC. (*Anticachecticus;* from αντι, against, and καχεκτικος, cachectic.) Applied to a medicine used against a cachexy, or bad habit of body.

ANTICADMIA. An old name for a fictitious kind of cadmia.

ANTICA'RDIUM. (*um, i.* n.; from αντι, opposite to, and καρδια, the heart.) The hollow at the bottom of the breast, commonly called scrobiculus cordis, or pit of the stomach.

ANTICATARRHAL. (*Anticatarrhalis;* from αντι, against, and καταῤῥος, a catarrh.) Applied to a medicine used against a catarrh.

ANTICAUSO'TIC (*Anticausoticus;* from αντι, against, and καυσος, a burning fever.) Applied to a medicine used against an ardent fever.

A'NTICHEIR. (From αντι, against, and χειρ, the hand.) The thumb. — *Galen.*

ANTI'CIPANS. Anticipating. A term that has been applied to certain phenomena of the living body occurring before their accustomed time; as to the menses anticipating their monthly period: or to the paroxysm of an ague coming on before the expected hour.

ANTICIPA'TIO. Anticipation. The recurrence of morbid or other phenomena before the period at which they are expected. See *Anticipans.*

ANTICNE'MION. (From αντι, opposite to, and κνημη, the calf of the leg.) The shin. — *Galen.*

ANTICO'LIC. (*Anticolicus;* from αντι, against, and κωλικη, the colic.) Applied to a medicine used against the colic.

ANTIDE'SMA. A genus of East Indian plants which has not yet been classified. The leaves of the *A. Alexiteria* are used as an antidote to the bite of serpents. The *A. Zeylanica* is supposed to be an antidote to the bite of the naja.

ANTIDI'NICUS. (From αντι, against, and δινος, giddiness.) Applied to a medicine used against vertigo or giddiness.

ANTI'DOTAL. Possessed of the powers of an antidote.

ANTIDOTA'RIUM. (*um, i.* n.; from αντιδοτος, antidotal.) A term formerly applied, 1. To what we now call a dispensatory; a book containing directions for the preparation of medicines. 2. To a place where medicines were prepared.

ANTIDOTE. A medicine which prevents or removes the effects of poison.

ANTI'DOTUM. See *Antidotus.*

ANTI'DOTUS. (From αντι, against, and διδωμι, to give.) Applied 1. To a medicine used to prevent or remove the effects of poison.

2. To an internal remedy of any kind, which is its original signification. This word is properly an adjective, but the neuter, *antidotum,* has been generally used as a substantive; *medicamentum* is understood.

ANTIDOTUS LAPIS. The philosopher's stone.

ANTIDYSENTE'RIC. (*Antidysentericus;* from αντι, against, and δυσεντερια, a dysentery.) Applied to a medicine used against a dysentery.

ANTIEME'TIC. See *Antemetic.*

ANTIEPHIA'LTICUS. See *Antephialtic.*

ANTIEPILE'PTIC. See *Antepileptic.*

ANTIFEBRILE. (*Antifebrilis;* from αντι, against, and *febris,* a fever.) Applied to a febrifuge medicine, or one which is used against fever.

ANTIGALA'CTIC. (*Antigalacticus;* from αντι, against, and γαλα, milk.) Applied to medicines or other means which diminish the secretion of milk.

ANTIHE'CTIC. More properly Anthectic. (*Anthecticus;* from αντι, against, and ἑκτικος, hectic.) Applied to a medicine used against hectic fever.

Antihectic Mixture of Griffith. See *Mixtura Ferri Composita.*

ANTIHE'CTICUM POTERII. A medicine invented by Poterius, called also *Diaphoreticum Joviale,* formerly extolled for its efficacy in hectic fevers, but now disregarded. It was made by fusing antimony and tin together in a crucible, reducing them to powder when cool, and then detonating them with nitre.

ANTIHELIX. See *Anthelix.*

ANTIHELMI'NTIC. See *Anthelmintic.*

ANTIHYDRO'PIC. (*Antihydropicus;* from αντι, against, and ὑδρωπς, dropsy.) Applied to medicines used against dropsy.

ANTIHYPNO'TIC. See *Anthypnotic.*

ANTIHYPOCHO'NDRIAC. See *Anthypochondriac.*

ANTIHYSTE'RIC. See *Anhysteric.*

ANTI'ICTERIC. (*Anti-ictericus,* from αντι, against, and ικτερος, jaundice.) Applied to medicines used against jaundice.

ANTILI'THIC. (From αντι, against, and λιθος, a stone.) Synonymous with *Lithontriptic.*

ANTILLY. A village in the diocese of Meaux, in France. It has a mineral spring, to which marvellous virtues have been ascribed. The water has not been analysed.

ANTILO'BIUM. (*um, i.* n.; from αντι, opposite, and λοβος, the lobe of the ear.) The tragus, or that part of the ear which is opposite the lobe.

ANTILOI'MIC. (*Antiloimicus;* from αντι, against, and λοιμος, a pestilence.) Applied to a preservative against the plague, or other pestilence.

ANTILOPUS. (*us, i.* m.; corrupted from *anthlops*, which is from ανθος, a flower, and ωψ, the eye. Flowery-eyed, beautiful-eyed: the beauty of the eye in the antelope, gazelle, and other animals of this family, is proverbial.) Antelope. A genus of ruminating animals, of which the different species inhabit India and Africa. The horns and hoofs of these animals were formerly supposed to possess antispasmodic virtues, and were given in hysteria and epilepsy.

ANTILY'SSUS. (From αντι, against, and λυσσα, canine madness.) Applied to a medicine which is administered against the effect of a mad dog's bite; as *pulvis antilyssus*. No medicine of this kind hitherto discovered is worthy of the smallest confidence.

ANTIMELANCHO'LIC. (From αντι, against, and μελαγχολια, melancholy.) Applied to a medicine given to remove melancholy.

ANTIMO'NIAL. (*Antimonialis;* from *antimonium*, antimony.) Applied to a preparation or composition in which antimony is the chief ingredient.

Antimonial powder. See *Antimonialis pulvis.*

Antimonial wine. See *Antimonii tartarizati vinum.*

ANTIMONIALIS PULVIS. Antimonial powder. Take of sulphuret of antimony, powdered, a pound; hartshorn shavings, two pounds. Mix, and throw them into a broad iron pot, heated to a white heat, and stir the mixture constantly until it acquires an ash colour. Having taken it out, reduce it to powder, and put it into a coated crucible, upon which another inverted crucible, having a small hole in its bottom, is to be luted. Then raise the fire by degrees to a white heat, and keep it so for two hours. Reduce the residuary mass to a very fine powder.

This preparation was introduced into the former London Pharmacopœia as a substitute for a medicine of extensive celebrity, Dr. James's powder; to which, however, the present form more nearly assimilates in its dose, by the reduction of the proportion of antimony to one half.

The activity of antimonials entirely depends upon the state of oxidisement of the metal: the protoxide is very active; the peroxide comparatively inert, and requiring, therefore, to be administered in very large doses to produce the effects which result from very small doses of the former; and even then it is but uncertain in its operation. All antimonials, therefore, which are liable to contain the metal in uncertain or indeterminate degrees of oxidisement, or rather which may contain varying proportions of the two oxides, are highly objectionable, and among them none more so than antimonial powder, which sometimes is active and sometimes inert, according as more or less of the protoxide is left in the product.

By the action of heat as above directed, the sulphur is in the first instance burnt off, and the antimony converted into protoxide, as in the process for making glass of antimony. The protoxide itself is volatile; and, accordingly, at the high temperature above directed, it also is partly volatilised, and partly converted into a fixed peroxide; and what remains is chiefly bone-earth, with this peroxide and a trace of protoxide; the quantity and state of the oxide depending upon slight modifications in the process, which can scarcely be controlled. Accordingly, on submitting pulvis antimonialis, prepared by different persons, and at different times, to analysis, its composition has been found to be extremely variable, and in two instances scarcely any oxide of antimony could be detected in it. Mr. Phillips analysed two samples, with the following results: —

Peroxide of antimony	35	38
Phosphate of lime	65	62
	100	100

Mr. Brande says, he generally found a greater discordance, and, in some instances, as much as 5 per cent. of protoxide has been detected, contributing, of course, to the activity of the powder.

This preparation of antimony is principally employed as a sudorific in febrile diseases: in consequence of its insolubility, it must be given in the form of pill or bolus, or mixed with some thick substance. Minute doses of emetic tartar produce the same diaphoretic effect as the antimonial powder, and with much greater certainty.

ANTIMO'NIATE. A salt formed by the combination of the antimonic acid with a base. See *Antimony.*

Antimonic acid. See *Antimony.*

Antimonii butyrum. See *Antimony.*

Antimonii calx. See *Calx antimonii.*

Antimonii cinnabaris. See *Cinnabaris.*

Antimonii clyssus. See *Clyssus.*

Antimonii crocus. See *Antimony.*

Antimonii flores argentini. See *Antimony.*

Antimonii flores Helmontii. See *Flores antimonii Helmontii.*

Antimonii flores rubri. See *Flores antimonii rubri.*

Antimonii hepar. See *Antimony.*

ANTIMONII NIX. Snow of antimony. A name which has been given to the flores antimonii argentini. See *Antimony.*

ANTIMONII OLEUM. The butter of antimony.

ANTIMONII OXYDUM. Oxide of antimony. See *Antimony.* In the former London Pharmacopœia, a preparation thus named was directed to be made by dissolving an ounce of tartarised antimony, and two drachms of subcarbonate of ammonia, separately, in distilled water, mixing the solutions, and boiling till the oxide of antimony is precipitated, which is to be washed with water, and dried. This preparation is discarded from the present pharmacopœia, as being violent and uncertain in its operation.

Antimonii regulus. See *Regulus.*

Antimonii sulphur auratum. See *Antimonii sulphuretum.*

ANTIMONII SULPHURE'TUM. Sulphuret of antimony is an abundant natural product, and is found in the form of the common grey ore of

antimony in Great Britain and throughout the continent of Europe. It is met with in commerce in cakes or loaves which have been fused, and exhibits a brilliant lead grey colour, and radiated or fibrous crystalline texture. In this state it is chiefly imported from Holland and Germany, often contaminated with lead, iron, and arsenic. If lead be present in any quantity, the texture of the cakes is foliated, and indistinctly striated. Iron is recognised by the brown colour produced by deflagration with nitre, and arsenic by its peculiar odour during volatilisation. By exposure to a dull red heat in contact with the air, the greater proportion of the sulphur is expelled, and the antimony becomes protoxidised: a slight increase of heat fuses this protoxide, a portion being at the same time volatilised; and the substance, on cooling, concretes into a reddish brown vitreous mass, known under the name of *glass of antimony*. It is a protoxide combined with a variable proportion of sulphuret, generally about one tenth, and is a very useful article in the pharmaceutical laboratory.

When the sulphuret of antimony is exposed to heat in a close vessel, it is fused without undergoing any other change. When it is boiled in a solution of potash or soda, a liquid is obtained which deposits, on cooling, an orange-red precipitate, which is called kermes mineral. See *Kermes mineral*. By the addition of an acid to the cold solution, a further precipitate of a similar substance is obtained. See *Antimonii sulphuretum præcipitatum*.

The sulphuret of antimony occurs so abundantly in nature, that it is never found artificially prepared in commerce: it may, however, be formed by fusing together antimony and sulphur. It consists of one equivalent of antimony to one and a half of sulphur.

The sulphuret of antimony has no medicinal activity, unless it meet with an acid in the stomach; in which case it sometimes produces a diaphoretic or moderate cathartic effect, but, at others, causes excessive vomiting and purging: it is therefore an uncertain and unmanageable medicine, and is now seldom prescribed. It has, however, been used in various chronic affections, in doses of from 5 to 20 grains.

Antimonii sulphuretum præcipitatum. *Sulphur antimonii præcipitatum. Sulphur auratum antimonii. Golden sulphur of antimony.* Precipitated sulphuret of antimony. A preparation which is made thus: — Take of sulphuret of antimony, in powder, two pounds; — of the solution of potash, four pints; — of distilled water, three pints.

Mix, and boil the mixture over a slow fire for three hours, stirring it well, and occasionally adding distilled water, so that the same measure may be preserved. Strain the solution quickly through a double linen cloth, and, while it is yet hot, drop in, gradually, as much sulphuric acid as may be required to precipitate the powder; then wash away the sulphate of potash with hot water; dry the precipitated sulphuret of antimony and reduce it to a fine powder. The following is the explanation which has usually been given of this process.

The sulphur of the sulphuret of antimony combines with the potash during the boiling, and forms sulphuret of potash; this decomposes a portion of the water, and, attracting its hydrogen, is partly converted into a sulphuretted hydrosulphuret of potash; while the oxygen, aided by the sulphuretted hydrogen, oxidises the antimony, which is dissolved by the sulphuretted hydrosulphuret of potash. Thus the solution, while it is hot, contains oxide of antimony, potass, sulphur, and hydrogen. The sulphuric acid which is added combines with the potash, expelling some sulphuretted hydrogen gas, and the oxide of antimony is precipitated, combined with the disengaged sulphur and the remaining sulphuretted hydrogen. If the decanted liquor be allowed to cool before the addition of the acid, the orange red precipitate, called kermes mineral, will be thrown down. It is to be added, that much difference of opinion at present exists among chemists, as to the constitution of the kermes mineral, and the golden sulphuret of antimony. The *kermes* has generally been regarded as a hydrosulphuret of the oxide of antimony. Berzelius and Rose believe it to be a hydrated sesquisulphuret of antimony, differing from the native sulphuret only in being combined with water; while Gay Lussac considers it as a hydrated oxy-sulphuret. According to Berzelius, the oxide of antimony, and the potash (a variable proportion of which always exists in the kermes, as commonly prepared), are not essential to its constitution; since, by fusing sulphuret of antimony with black flux, boiling the residue in water, and letting the solution cool, he obtained a perfect kermes, apparently quite free from oxide of antimony.

The *golden sulphuret*, as obtained by the common process, appears to differ from the kermes in containing no potash, but more oxide of antimony, and some free sulphur.

The precipitated sulphuret of antimony is diaphoretic and expectorant in small doses, and emetic in a larger dose. In modern practice it is only used as an alterative. It is useful in many cutaneous affections, and in chronic rheumatism, especially combined with calomel, as in the Plummer's pill. The dose of the precipitated sulphuret is from gr. i. to gr. iv., twice a day. Acids increase the emetic effect of this medicine, and should therefore be avoided during its use.

Antimonii tartariza'ti vinum. Wine of tartarised antimony. Take of tartarised antimony, one scruple; boiling distilled water, eight fluid ounces; rectified spirit, two fluid ounces. Dissolve the tartarised antimony in the boiling distilled water, and add the spirit to the filtered liquor. Four fluid drachms of this contain one grain of tartarised antimony. For an account of its medicinal uses, see *Antimonium tartarizatum*.

Antimonii vitriolum. See *Sulphate of antimony.*

Antimonii vitrum. Glass of antimony. A preparation which is thus made: — Sulphuret of antimony in powder is exposed in a shallow iron dish to a very moderate heat, and is kept constantly stirred to prevent agglutination. If the

happens, it must be removed from the fire, and again reduced to powder. When a moderate heat ceases to cause the evolution of sulphureous vapours, the fire must be gradually increased till they again appear, and in this way it may be slowly augmented till the bottom of the dish becomes red hot, and fumes of sulphur are no longer evolved. The grey powder thus obtained answers well for the formation of tartarised antimony; but if it is to be vitrified, it must be put into a covered iron crucible, and exposed to a strong heat until it fuses into a clear glass, when it may be poured out upon a brass plate: the glass should be transparent, and of a bright brownish red or hyacinthine colour. It consists of oxide and sesquisulphuret of antimony, in proportions which are somewhat variable: as it is usually prepared, it contains also a small quantity of peroxide of iron and silica; the former derived from the native sulphuret, from which it is prepared; the latter probably from the crucible.

This preparation was formerly employed as a diaphoretic, aperient, and emetic, but it is now only used in making some other preparations.

Antimonious acid. See *Antimony.*

Antimonite. A salt formed by the combination of the antimonious acid with a base. See *Antimony.*

Antimonium calcina'tum. Oxide of antimony, as obtained by calcining the sulphuret. It is of an ash-grey colour, and is probably not quite pure.

Antimonium diaphore'ticum. Diaphoretic antimony. An old preparation, called also *Calx antimonii Anglorum;* made by deflagrating in a crucible one part of grey antimony with three of nitre. According to Berzelius, it is an antimoniate of potash. It used to be in esteem with many as a gentle diaphoretic and laxative; it seems, however, to be inert in itself, and to acquire activity only when it meets with an acid in the stomach.

Antimonium diaphoreticum lotum. This is the diaphoretic antimony, deprived of some of its potash by washing with water.

Antimonium diaphoreticum martia'le. *Anticachecticum Ludovici.* An old medicine, made by fusing together equal weights of powdered sulphuret of antimony and iron filings, reducing them when cool to powder, deflagrating them with three times their weight of nitre, and dissolving the product in water; a yellowish brown precipitate is formed, which is the martial diaphoretic antimony. It was given as a tonic in doses of 15 or 20 grains.

Antimonium tartariza'tum. Tartarised antimony; tartar emetic: called also *Tartras antimonii, Tartarus emeticus, Tartarum emeticum, Tartarus antimonialis, Tartris antimonii cum potassa,* and *Tartarum stibiatum.* This salt is directed in the London Pharmacopœia to be made in the following manner:—Take of glass of antimony finely levigated, supertartrate of potash in powder, of each a pound; boiling distilled water, a gallon; mix the glass of antimony and the supertartrate of potash well together, and then add them by degrees to the distilled water, which is to be kept boiling and constantly stirred; boil the whole for a quarter of an hour, and then set it by. Filter it when cold, and evaporate the filtered liquor so that crystals may form in it. A solution of this salt in diluted wine is ordered in the Pharmacopœia. See *Antimonii tartarizati vinum.*

The result of this process is a double salt. The glass of antimony is a protoxide combined with sulphur and a little silica; when it is boiled with the supertartrate of potash, the excess of acid dissolves the oxide of antimony, separating it from the sulphur and silica: the tartrate of potash which remains is held in solution along with the tartrate of antimony, and the crystals obtained are those of the double tartrate of potash and antimony.

Pure tartar emetic is in crystals, the primary form of which is an octohedron with a rhombic base. They are transparent when first formed, but become white and opake by exposure to the air. It reddens litmus. Its taste is slightly styptic and metallic. Exposed to the air, it effloresces slowly. It is insoluble in alkohol. Boiling water dissolves half its weight, and cold water a fifteenth part. If the aqueous solution be long kept, the salt is spontaneously decomposed. Sulphuric, nitric, and muriatic acids, when poured into a solution of this salt, precipitate a bitartrate of potash and a sub-salt of antimony: potash, soda, and ammonia, throw down some of the oxide of antimony, but their carbonates precipitate it much more completely. Baryta, strontia, and lime-water occasion not only a precipitate of oxide of antimony, like the alkalies, but also of insoluble tartrates of these earths. Sulphuretted hydrogen, and the hydrosulphurets, throw down the orange-coloured sulphuret of antimony, or kermes mineral. The decoctions of cinchona, and several bitter and astringent vegetables, as rhubarb, galls, and catechu, also decompose tartar emetic, and precipitate a dirty white powder, which is probably a compound of oxide of antimony and tannin. When tartar emetic is exposed to a red heat, it blackens, and is decomposed, leaving a residuum of metallic antimony and subcarbonate of potash. From the number of re-agents by which it is affected, tartar emetic is easily detected in any fluid. Tincture of galls affords the most copious precipitate; and if this be dried and exposed to a red heat, mixed with the black flux, metallic antimony is immediately evolved.

Tartar emetic is the most useful of all the antimonial preparations, and, in varied doses, is capable of fulfilling almost every intention with which antimonial medicines are given. Its action is little contingent on the state of the stomach; and, from the solubility of the salt in water, its dose is easily managed, and the effect speedily produced. In doses of from one to three, four, or five grains, it generally acts powerfully as an emetic, and is employed whenever we wish to obtain the effects which result from full vomiting. As patients are differently affected by this medicine, the safest mode of exhibiting it is by dissolving three or four grains in as many ounces of water, and giving ℥ss. of the solution every ten minutes till vomiting is excited. After the

emetic effect is over, the medicine frequently operates upon the bowels.

For young children, this salt is not so safe an emetic as ipecacuanha: when great debility of the system is present, even a small dose has been known to prove fatal; and it occasionally happens that no emetic effect whatever is produced; but if the doses be repeated, excessive purging comes on, with sinking of the pulse and cold sweats, which terminate in death. Even with adults, where much debility is present, as in the advanced stages of typhoid fever, tartar emetic is a dangerous medicine, and ought not to be given.

In smaller doses emetic tartar is of great utility as a nauseating medicine, a diaphoretic, and an expectorant. In the quantity of one fourth or one sixth of a grain, given every three or four hours, it keeps up a continual nausea, which depresses the actions of the vascular system, and relaxes the cutaneous vessels; thus serving as a valuable auxiliary to the lancet in acute inflammatory diseases. Where the diaphoretic effect alone is desired, the medicine answers best in very small and frequently repeated doses: if a single grain be dissolved in a pint of water, and an ounce of this solution given every hour, it will seldom fail to excite a gentle and continued perspiration. It is generally given with this view in doses somewhat larger and at longer intervals, as the sixth or eighth of a grain every three hours; but the mode of administering it above mentioned will be found the most effectual. In very small doses it produces an expectorant effect, when conjoined with other medicines of that class: antimonial wine, in the quantity of ten drops to each dose, is a common addition to squill mixtures. In minute doses, and combined with calomel, the emetic tartar is found to be a powerful alterative in many diseases of the skin. Towards the close of last century Dr. Maryatt, of Bristol, recommended the use of large and frequently repeated doses of emetic tartar in cases of fever.

The same practice was followed by Dr. Rasori, of Genoa, and with so much success that he was induced to try it in other acute diseases, especially peripneumony, in which he pushed the dose of the medicine to an extent that was at first hardly credited, sometimes commencing with twenty or thirty grains in the course of the twenty-four hours, and increasing the quantity to one, two, or more drachms! The accounts published by Rasori were corroborated by Laennec, who did not, however, find it necessary to administer the medicine in such enormous doses. The use of full doses of emetic tartar has now become general in the treatment of inflammation; and when it is given in this manner its effect is found to be quite different from that produced by the ordinary small doses: it either excites no vomiting or purging, or, what is more usual, it does so only for the first day; and the remedy has been observed to be most effectual in subduing inflammation when it produces no sensible evacuation of any kind. (See *Inflammation.*) When rubbed into the skin, or applied to the surface of a wound, tartarised antimony produces its characteristic effects on the system.

An ointment, formed by triturating ʒij. of tartarised antimony with ʒi. of lard, and rubbed into the skin, has the singular property of bringing out a crop of large and inflamed pustules, something resembling those of small pox. This is used with great effect in all cases where powerful counter-irritation is required, and has the advantage of all other means in one particular, namely, that it not only excites inflammation, but establishes a new and specific action, and imitates closely the natural process by which internal disease is sometimes thrown upon the surface. When taken in a poisonous dose, emetic tartar produces effects very analogous to those of arsenic: violent vomiting and purging, with severe colic, pain and sensation of burning in the stomach, difficult respiration, fainting, convulsions, and death. The treatment consists in evacuating the poison by the copious use of bland diluents, decomposing it by decoctions of yellow bark or infusion of galls, and abating the inflammation of the bowels by bleeding and opium.

Antimonium vitrificatum. See *Antimonii vitrum.*

A'NTIMONY. (*Antimonium*, *i.* n. Derivation unknown.) Antimony, anciently called *Stibium.* A metal found native, but very rarely: it occurs, in that state, in masses of different shapes, having a metallic lustre, and a white colour running into bluish-grey. It generally contains a small portion of arsenic. It is likewise met with in the state of an oxide, *antimonial ochre.* The most abundant ore of it is that in which it is combined with sulphur, *the grey ore of antimony, or sulphuret of antimony.* This ore is of a bluish or steel-grey colour, of a metallic lustre, and often beautifully variegated. Its texture is either compact, foliated, or striated. The striated variety is found crystallised, massive, and disseminated. From this native sulphuret all the antimony used in medicine, and various arts and manufactures, is obtained.

Antimony is a metal of a greyish white, having a slight bluish shade, and very brilliant. Its texture is lamellated, and exhibits plates crossing each other in every direction. Its specific gravity is about 6·7. It is moderately hard, very brittle, easily broken, and pulverisable. It fuses at 810° Fahr.; and, if the heat be increased, it is volatilised in white fumes of oxide of antimony. Thenard, however, has found, that if the air be perfectly excluded, and no gaseous matter, such as carbonic acid or watery vapour, evolved during the process, antimony will bear an intense white heat without being sublimed. When antimony is heated to a full red or white heat in a covered crucible, and then suddenly exposed to the air, it inflames and burns with a white light; the vapour which rises condenses on cool surfaces, frequently in the form of small acicular crystals of a silvery whiteness: these were formerly called *argentine flowers of antimony*, and have generally been considered as a binoxide; Berzelius, however, regards them as a protoxide. When perfectly fused, and suffered to cool gradually, it crystallises in octohedrons, or dodecahedrons. It

nites with sulphur and phosphorus. It decomposes water strongly at a red heat. It is soluble in alkaline sulphurets. Sulphuric acid acts feebly upon it, and only at a boiling temperature. Nitric acid dissolves it in the cold. Muriatic acid scarcely acts upon it. Chlorine as inflames it, and a sesquichloride of the metal is generated. Arsenic acid dissolves it with difficulty by the aid of heat. It unites, by fusion, with gold, and renders it pale and brittle. Platina, silver, lead, bismuth, nickel, copper, arsenic, iron, cobalt, tin, and zinc, unite with antimony by fusion, and form with it compounds, more or less brittle. Mercury does not amalgamate with it easily, unless it be very pure.

To obtain metallic antimony, heat 32 parts of iron filings to redness, and project on them, by degrees, 100 parts of the native sulphuret of antimony; when the whole is in fusion, throw in it, by degrees, 20 parts of nitrate of potash, and after a few minutes' quiet fusion, pour it into an iron melting cone, previously heated and greased.

It may also be obtained by mixing eight parts of the ore with six of nitrate of potash, and three of supertartrate of potash, and throwing the mixture, in small successive portions, into a red-hot crucible. In the first process the iron abstracts the sulphur from the antimony, and, in the second, the sulphur is expelled in the form of sulphurous acid: in both instances the fused antimony collects at the bottom of the vessel, but in neither is it perfectly pure.

To obtain pure antimony, Margraaf melted some pounds of the sulphuret in a luted crucible, and thus scorified any metals it might contain. Of the antimony thus purified, which lay at the bottom, he took sixteen ounces, which he oxidised cautiously, first with a slow, and afterwards with a strong heat, until it ceased to smell of sulphur, and acquired a greyish-white colour. Of this grey powder he took four ounces, mixed them with six drachms of supertartrate of potash, and three of charcoal, and kept them in fusion in a well-covered and luted crucible for one hour, and thus obtained a metallic button that weighed one ounce, seven drachms, and twenty grains.

The metal, thus obtained, he mixed with half its weight of desiccated subcarbonate of soda, and covered the mixture with the same quantity of the subcarbonate. He then melted it in a well-covered and luted crucible, in a very strong heat, for half an hour, and thus obtained a button which weighed one ounce, six drachms, and seven grains, much whiter and more beautiful than the former. This he again treated with one ounce and a half of subcarbonate of soda, and obtained a button, weighing one ounce, five drachms, and six grains. This button was still purer than the foregoing. Repeating these fusions with equal weights of subcarbonate of soda three times more, and an hour and a half each time, he at last obtained a button so pure as to amalgamate with mercury with ease, very hard, and in some degree malleable: the scoriæ formed in the last fusion were transparent, which indicated that they contained no sulphur; and hence it is the obstinate adherence of the sulphur that renders the purification of this metal so difficult.

The combinations of antimony with oxygen have occupied the attention of many eminent chemists. Thenard makes no less than six oxides, Proust only two, Thomson three, and Berzelius four. The researches of Berzelius are generally thought to have been most successful. According to him, antimony forms one oxide, which is a salifiable base, and two acids. Berzelius admits the existence of a *suboxide*. "When antimony is used," says this distinguished chemist, "as the positive conductor to discharge the voltaic pile through water, grey flocculi are detached from the surface of the metal, which gradually augment in quantity. These flocculi appear to be a suboxide: when hydrochloric acid is poured upon them, they undergo a change of form and volume, and are converted into antimony, which remains, and oxide of antimony, which is dissolved by the acid." Dr. Turner regards the substance in question as being probably only a mixture of the oxide and metallic antimony; with respect to the other combinations with oxygen, he adopts the views of Berzelius. The following account of the oxides of antimony is taken from Dr. Turner's Elements of Chemistry.

According to the experiments of Berzelius, which are now admitted by Dr. Thomson himself to be more accurate than his own, we may consider 64·6 as the equivalent of antimony; and the oxygen in the oxide and acids is in the ratio of $1\frac{1}{2}$, 2, $2\frac{1}{2}$, or 3, 4, 5. Their composition, therefore, may be thus stated: —

	Antimony.	Oxygen.
Oxide - -	64·6 or 1 eq.	12 or $1\frac{1}{2}$ eq. = 76·6
Antimonious acid	64·6	16 or 2 eq. = 80·6
Antimonic acid	64·6	20 or $2\frac{1}{2}$ eq. = 84·6

It is very probable, however, that the equivalent of all these compounds should be doubled.

1. *Oxide.* — When muriate of antimony, made by boiling the sulphuret in muriatic acid, is poured into water, a white curdy precipitate, formerly called *powder of Algaroth*, subsides, which is a submuriate. On removing the acid from this salt by digestion with carbonate of potash, and then edulcorating it with water, the oxide is obtained in a state of purity. It may also be procured directly by adding carbonate of potash or soda to a solution of tartar emetic. It is also generated during the combustion of metallic antimony; but as thus formed, seems not to be quite pure.

The oxide of antimony, when prepared in the moist way, is a white powder of a somewhat dirty appearance. When heated it acquires a yellow tint; and at a dull red heat, in close vessels, it is fused, yielding a yellow fluid, which becomes an opake greyish crystalline mass on cooling. It is very volatile, and if protected from atmospheric air may be sublimed completely without change. When heated in open vessels it absorbs oxygen; and when the temperature is suddenly raised, and the oxide is porous, it takes fire and burns. In both cases antimonious acid is generated. It is the only oxide of antimony which forms regular salts

with acids, and is the base of the medicinal preparation *tartar emetic*, the tartrate of antimony and potash. Most of its salts, however, are either insoluble in water, or, like muriate of antimony, are decomposed by it, owing to the affinity of that fluid for the acid being greater than that of the acid for oxide of antimony. This oxide is therefore a feeble base; and, indeed, possesses the property of uniting with alkalies. To the foregoing remark, however, tartrate of antimony and potash is an exception; for it dissolves readily in water without change. By excess of tartaric or muriatic acid, the insoluble salts of antimony may be rendered soluble in water.

2. *Antimonious acid.* — When metallic antimony is digested in strong nitric acid, the metal is oxidized at the expense of the acid, and a white hydrate of the peroxide is formed; and on exposing this substance to a red heat, it gives out water and oxygen gas, and is converted into antimonious acid. It is also generated when the oxide is exposed to heat in open vessels. Thus, on heating sulphuret of antimony with free exposure to the air, sulphurous acid and oxide of antimony are generated; but on continuing the roasting until all the sulphur is burned, the oxide gradually absorbs oxygen and passes into antimonious acid. Hence this acid is formed in the process of preparing the *pulvis antimonialis* of the pharmacopœia. Antimonious acid is white while cold, but acquires a yellow tint when heated, is very infusible, and fixed in the fire; two characters by which it is readily distinguished from the oxide. It is insoluble in water, and likewise in acids after being heated to redness. It combines in definite proportion with alkalies, and its salts are called *antimonites*. Antimonious acid is precipitated from these salts by acids as a hydrate, which reddens litmus paper, and is dissolved by muriatic and tartaric acids, though without appearing to form with them definite compounds.

3. *Antimonic acid*, sometimes called *peroxide* of antimony, is obtained as a white hydrate, either by digesting the metal in strong nitric acid, or by dissolving it in nitromuriatic acid, concentrating by heat to expel excess of acid, and throwing the solution into water. When recently precipitated it reddens litmus paper, and may then be dissolved in water by means of muriatic or tartaric acid. It does not enter into definite combination with acids, but with alkalies forms salts, which are called *antimoniates*. When the hydrated peroxide is exposed to a temperature of 500° or 600° F. the water is evolved, and the pure peroxide of a yellow colour remains. In this state it resists the action of muriatic acid. When exposed to a red heat, it parts with oxygen, and is converted into antimonious acid.

Antimony combines with chlorine in several proportions. When metallic antimony is thrown into a jar of chlorine gas, it undergoes combustion, and is converted into the sesquichloride or *butter of antimony*.

This compound is more frequently formed by distilling metallic antimony with rather more than twice its weight of corrosive sublimate; the volatile chloride of antimony passes over, and the mercury remains in the retort. The butter of antimony is soft, dissolves with a gentle heat, and crystallises on cooling. When it is thrown into water the greater part of the oxide subsides in the state of a submuriate, which is the *powder of Algaroth* of the old chemists. A perchloride of antimony may be obtained by passing dry chlorine gas over heated metallic antimony: it is a transparent volatile liquid, which emits fumes on exposure to the air; when mixed with water it is decomposed, and deposits a hydrated peroxide; the perchloride consists of one equivalent of antimony, and two and half of chlorine. There is yet another compound of chlorine and antimony, which is a *dichloride*, consisting of one equivalent of chlorine and two of antimony.

Antimony forms an important series of compounds with sulphur. The common sulphuret, kermes mineral, and golden sulphuret, have already been described. See *Antimonii sulphuretum*, and *Antimonii sulphuretum præcipitatum*. A bisulphuret is formed, according to Rose, by transmitting sulphuretted hydrogen gas through a solution of antimonious acid in diluted muriatic acid. There are several oxysulphurets of antimony which are of rather variable composition, according as more or less of the sulphuret is oxidised during their formation. Of this nature are the *glass of antimony*, see *Antimonii vitrum*; the *crocus* or *saffron of antimony*, see *Crocus antimonii*; and the *liver of antimony*, see *Hepar antimonii*. The compound of antimony most important to the physician is the double tartrate of antimony and potash, or emetic tartar of the shops. See *Antimonium tartarizatum*.

The preparations of antimony used in medicine were formerly very numerous. Those now retained in the British Pharmacopœias are the following: —

1. *Sulphuretum antimonii.*
2. *Sulphuretum antimonii præcipitatum.*
3. *Antimonium tartarizatum.*
4. *Vinum antimonii tartarizati.*
5. *Pulvis antimonialis.*

Antimony, bichloride of. See *Antimony.*

Antimony, butter of. See *Antimony.*

Antimony, chloride of. See *Antimony.*

Antimony, crude. The sulphuret of antimony, as it is found in commerce, is called crude antimony.

Antimony, glass of. See *Antimonii vitrum.*

Antimony, sulphuret of. See *Antimonii sulphuretum.*

Antimony, tartarised. See *Antimonium tartarizatum.*

Antimony, vitrified oxide of. See *Antimonii vitrum.*

ANTINEPHRI'TIC. (*Antinephriticus*; from αντι, against, and νεφριτις, a disease of the kidneys.) Applied to medicines used against disorders of the kidneys.

ANTLI'A LACTEA. (Αντλια, a pump.) *Antlia Mammaria.* A milk pump. An instrument contrived for drawing milk from the breast.

ANTIODONTA'LGIC. See *Antodontalgic.*

ANTIORGA'STIC. (*Antiorgasticus*; from αντι, against, and οργαζω, to excite vehemently.) Ap-

ed to medicines or other means employed to ay orgasm, erethism, or irritation. A very necessary term, as it is precisely synonymous th *sedative*.

ANTIPARALY'TIC. (*Antiparalyticus;* from αντι, ainst, and παραλυσις, palsy.) Applied to edicines used against palsy.

ANTIPA'THIC. Possessed of an antipathy. pplied to things whose nature is adverse and congruous.

ANTI'PATHY. (*Antipathia*, æ. f.; from ντι, against, and παθος, an affection.) Anpathy. Disgust and horror at the presence of rticular objects, with great restlessness or inting. It comprises two species, viz. *Antithia sensilis*, and *Antipathia insensilis*.

1. *Sensile antipathy*. Antipathy excited rough the medium of the external senses.

Very singular examples of this are recorded the collectors of medical curiosities; while hers are of every day occurrence. Some may e accounted for from frights during childhood, ursery tales, or the incongruous association of leas in early life; but many are of difficult olution, and others altogether inexplicable.

Under the species before us, we may mention n antipathy to the smell of roses, of strawberries, f mint, and some other herbs; to the sound of usic, or the sight of a drawn sword, which is aid to have existed in King James I.; or the attling of a carriage over a bridge, which connued for some years after mature life in Peter he Great of Russia, who was frightened, while n infant, by a fall from a bridge into the ater, and who only overcame the antipathy by esolutely accustoming himself to the object of error.

The sight of crabs and lobsters, and, still more requently, of toads, vipers, rats or mice, has prouced the same effect. A few instances are also ecorded of its being occasioned by what might e little expected as a cause, the appearance of read and cheese, or even bread alone. The bject itself, however, seems to be of little or no mportance: the feeling in most of these cases esults from an association of such object, whatver it may be, with some painful occurrence in arly life, of which it continues to be as much he symbol or expression as words are of ideas. n many instances the original occurrence is orgotten, but the impression remains inseparbly connected with the object. There is reason o believe, however, that antipathy is often a reult of idiosyncrasy, or something peculiar in he intimate organisation of the individual.

2. *Insensile antipathy*. — This is produced hrough an unknown medium. In the preceding species, the feeling of antipathy is excited hrough the medium of one of the external enses, to which the object of antipathy presents itself, or with which it is associated on recollection; for it is the sight, taste, smell, touch, or hearing of the object, or the idea of such ensible impression, that alone calls the antiathy into action.

There are some persons, however, who are truck with a peculiar and indescribable horror at the presence of an object which is unperceived by any of these senses. The presence of a cat has been often known to produce this effect, when the animal, though present, has been concealed, and not one of the senses has been alive to its presence. Instances of this kind are to be found in most of the collections of medical curiosities, as well as in various other works. The affection, in this case, depends unquestionably upon an extraordinary idiosyncrasy; but in what such idiosyncrasy consists, or how it is brought into activity, we are entirely ignorant. Sauvages inquires whether the effluvium thrown from the object of aversion into the atmosphere may not, in combining with the fluids of the affected person, produce an irritating and distressing *tertium quid*, as corrosive sublimate is produced by a combination of marine acid with mercury?

In any case of antipathy, the only means in our power of destroying the anomalous or morbid impression is by introducing a counterhabit; or, in other words, by gradually inuring the sensorium to the influence of the disgustful object. If this treatment be adopted in early youth, it will often succeed in eradicating the morbid instinct; and even in adult age, much may be done by resolution and perseverance; but when a strong antipathy has grown up with an individual from his childhood, it is generally incurable.

ANTIPERISTA'LTIC. (*Antiperistalticus;* from αντι, against, and περιστελλω, to contract around.) Applied to an inverted action of the intestines, by which their contents are urged upwards. It is opposed to *Peristaltic*, which see.

ANTIPERI'STATIS. (From αντι, against, and περιϊστημι, to oppose or press upon in every direction.) This term was formerly used to express the antagonism of powers which are naturally opposed to each other, as heat and cold, dryness and moisture.

ANTIPESTILENTIAL. The same as *antiloimic*.

ANTIPHA'RMIC. (*Antipharmicus;* from αντι, against, and φαρμακον, a poison.) The same as *alexipharmic*.

ANTIPHLOGI'STIC. (*Antiphlogisticus;* from αντι, against, and φλεγω, to burn.) A term applied to those means, whether medicinal or regiminal, which tend to reduce inflammation. Bleeding, purging, and a low diet, form the most important part of the antiphlogistic treatment.

ANTIPHTHI'SIC. (*Antiphthisicus;* from αντι, against, and φθισις, a wasting.) Against a consumption.

ANTI'PHTHORA. See *Anthora*.

ANTIPHY'SIC. (*Antiphysicus;* from αντι, against, and φυσαω, to blow.) Synonymous with carminative.

ANTIPLEURI'TIC. (*Antipleuriticus;* from αντι, against, and πλευριτις, pleurisy.) Against a pleurisy.

ANTIPODA'GRIC. (*Antipodagricus;* from αντι, against, and ποδαγρα, the gout.) Applied to medicines which relieve the gout.

ANTIPRA'XIA. From αντι, against, and πρασσω, to work.) A contrariety of diseased states co-existing in the same patient, as spasm of the muscles in one limb, and paralysis in another.

ANTIPROSTATÆ GLANDULÆ. Cowper's glands, so called, because they are situated before the prostate.

ANTIPSO'RIC. (From αντι, against, and ψωρα, the itch.) Applied to medicines used against the itch.

ANTIPYIC. (*Antipyicus;* from αντι, against, and πυον, *pus.*) Applied to medicines, or other means used to prevent suppuration.

ANTIPYRE'TIC. (*Antipyreticus;* from αντι, against, and πυρετος, fever.) Against a fever.

ANTIPYRO'TIC. (*Antipyroticus;* from αντι, against, and πυρ, fire.) Applied to remedies used in the cure of burns.

ANTIQUARTANA'RIUM. A remedy against a quartan ague.

ANTIQUA'RTICUM. The same as *Antiquartanarium.*

Antiquarticum Peruvianum. The cinchona or Peruvian bark.

ANTI'QUI MORBI. Chronic diseases.

ANTIRACHI'TIC. Against rachitis or the rickets.

ANTIRRHI'NUM. (*um, i.* n.; αντιῤῥινον; from αντι, against, and ῥιν, the nose: so called because the flower is said to resemble the nose of a calf.) The name of a genus of plants in the Linnæan system. Class, *Didynamia;* Order, *Angiospermia.*

ANTIRRHINUM ELATI'NE. The systematic name of the plant we call fluellen, or female speedwell. *Elatine* of the shops. The leaves of this plant have a roughish bitter taste, but no smell. It was formerly much used against scurvy and old ulcerations, but is now entirely discarded.

ANTIRRHINUM LINA'RIA. The systematic name of the common toad-flax. *Linaria* of the pharmacopœias, called also *Osyris,* and *Urinaria. Antirrhinum — foliis lanceolatis linearibus, confertis, caule erecto, spicis terminalibus sessilibus, floribus imbricatis,* of Linnæus. A perennial indigenous plant, common in barren pastures, in hedges, and by the sides of roads, flowering from July to September. The leaves have a bitterish and somewhat saline taste, and when rubbed between the fingers, have a faint smell, resembling that of elder. They are said to be strongly diuretic, whence the name *urinaria;* they are also alleged to be carthartic. They have been recommended in dropsies and other disorders requiring powerful evacuations, and also in jaundice, and diseases supposed to arise from visceral obstructions. The plant has, however, been chiefly valued as an external application, especially in hæmorrhoidal affections, for which both the leaves and flowers have been employed in various forms of ointment, fomentation, and poultice. Dr. Wolph invented an ointment for the piles, which was made of this plant. The Landgrave of Hesse, to whom he was physician, constantly interrogated him, to discover its composition; but Wolph obstinately refused to give any information, till the prince promised to give him a fat ox annually for the discovery: hence, to the following verse, which was made to distinguish the linaria from the esula, viz.

"*Esula lactescit, sine lacte linaria crescit:*"

the hereditary Marshal of Hesse added,

"*Esula nil nobis, sed dat linaria taurum.*"

ANTISCO'LIC. (*Antiscolicus;* from αντι, against, and σκωληξ, a worm.) Against worms. See *Anthelmintic.*

ANTISCORBU'TIC. (*Antiscorbuticus;* from αντι, against, and *scorbutus,* the scurvy.) Against the scurvy.

ANTISCRO'FULOUS. Against scrofula.

ANTISE'PTIC. (*Antisepticus;* from αντι, against, and σηπω, to putrefy.) A term applied to any substance which has the power of preventing animal matter from passing into a state of putrefaction, and of obviating putrefaction when already begun. Antiseptic medicines are those which are used to correct the tendency to putrescency, which is supposed to exist in the fluids in certain malignant diseases. This class of medicines has been divided into,

1. *Tonic antiseptics;* as cinchona, cusparia, anthemis, &c.

2. *Refrigerating antiseptics;* as the mineral acids.

3. *Stimulating antiseptics;* as wine and alkohol.

4. *Antispasmodic antiseptics;* as camphor and asafœtida.

ANTI'SPASIS. (From αντι, against, and σπαω, to draw.) A revulsion of the humours. See *Revulsion.*

ANTISPASMO'DIC. (*Antispasmodicus;* from αντι, against, and σπασμος, a spasm.) An antispasmodic medicine properly means one which has the power of allaying spasm of the muscles: the term, however, is usually extended to those medicines which allay severe pain from any cause unconnected with inflammation; and hence it is not easy to draw the line between antispasmodics and narcotics. Spasm may arise from various causes. One of the most frequent is a strong irritation, continually applied; such as that arising from dentition or worms. In these cases, narcotics prove useful by diminishing irritability and sensibility. Sometimes spasm arises from mere debility; and the obvious means of removing this is by the use of tonics. Both narcotics and tonics, therefore, are occasionally useful as antispasmodics, such as opium, camphire, and ether, in the one class, and zinc, mercury, and Peruvian bark, in the other; but there are many other substances which cannot with propriety be referred to either of these classes, but which, nevertheless, have the property of allaying spasm and relieving nervous pain and agitation. The principal of these substances are musk, castor, oleum animale empyreumaticum, petroleum, ammonia, asafœtida, sagapenum, galbanum, ammoniacum, valerian, saffron, and cajeput oil. The narcotics chiefly used as antispasmodics are ether, opium, and camphire. The tonics most frequently employed with the same intention are iron, nitrate of silver, copper, zinc, and cinchona.

ANTISPA'STIC. (*Antispasticus;* from αντι, against, and σπαω, to draw.) Synonymous with Antispasmodic.

ANTISTE'RNUM. (Αντιστερνον. The back, so called because it is opposite the breast.) *Rufus Ephesius.*

ANTISTROPHA. The first and second ribs have been so called.

ANTISYPHILI'TIC. (From αντι, against, and *syphilis*, the venereal disease.) Against the venereal disease.

ANTI'TASIS. (From αντι, against, and τασις, extension.) 1. The position of one organ opposite to another, as the spleen to the liver.

2. *Counter-extension*, as applied to the reduction of dislocations and fractures.

ANTI'THENAR. (From αντι, against, and θεναρ, the palm of the hand, or sole of the foot.) This name has been given to two muscles. 1. To that muscle of the thumb otherwise called *adductor ad indicem*. 2. To the adductor muscle of the great toe.

ANTITRA'GICUS. The name of a muscle of the external ear, the use of which is to turn the tip of the antitragus a little outwards, and to depress the extremity of the antihelix.

ANTI'TRAGUS. (*us*, *i.* m.; from αντι, and τραγος, the tragus.) An eminence of the outer ear, opposite to the tragus.

ANTIVENEREAL. (*Antivenereus*; from αντι, against, and *venereus*, venereal.) A term that has been applied, 1. To medicines which are supposed to extinguish the venereal appetite. 2. To medicines used in the cure of the venereal disease.

ANTIZY'MIC. (From αντι, against, and ζυμοω, to ferment.) Applied to that which prevents fermentation.

ANTONII SANCTI IGNIS. See *Erysipelas*.

ANTOPHY'LLOS. See *Anthophyllos*.

ANTRI'TIS. (From *antrum*, a cave.) Inflammation of any cavity of the body.

A'NTRUM. (*um*, *i.* n. a cave.) A cavity which has a small opening. The term is applied by anatomists to several cavities.

ANTRUM BUCCINOSUM. The cochlea of the ear.

Antrum genæ. See *Antrum Highmorianum*.

Antrum of Highmore. See *Antrum Highmorianum*.

ANTRUM HIGHMORIA'NUM. *Antrum of Highmore*. Called also *Antrum genæ*, *Sinus maxillaris pituitarius*, and *Antrum maxillæ superioris*. Maxillary sinus. A large cavity in the middle of each superior maxillary bone, between the eye and the roof of the mouth, lined by a prolongation of the Schneiderian membrane. This cavity is named after Highmore, an English anatomist of the seventeenth century.

The maxillary sinuses are liable to several morbid affections. Sometimes their membranous lining inflames, and secretes a great quantity of mucus or pus. Various polypi, fungi, and other tumours are produced in them. Their bony parietes are occasionally affected with exostosis, or caries. Extraneous bodies may be lodged in them, and insects are alleged to have been found within them, the presence of which had produced excessive pain for many years. Abscess is by far the most common disease of the antrum. Violent blows on the cheek, inflammatory affections of the adjacent parts, and especially of the pituitary membrane lining the nostrils, exposure to cold and damp, and, above all things, decayed teeth, may induce inflammation and suppuration in the antrum. The earliest symptom is a pain, which may at first be taken for the toothach, particularly if there should be a carious tooth near the part. This pain, however, extends more into the nose than is usual with that arising from a decayed tooth; it also affects, more or less, the eye, the orbit, and the frontal sinuses. But even such symptoms are insufficient to characterise the disease, the nature of which is not unequivocally manifested till a much later period. The complaint is, in general, of much longer duration than one entirely dependent on caries of a tooth, and it goes on increasing, until at last a hard tumour becomes perceptible below the cheek-bone. The swelling by degrees extends over the whole cheek; but it afterwards rises to a point, and a very circumscribed hardness may be felt above the back grinders. This symptom is accompanied by redness, and sometimes by inflammation and suppuration of the external parts. It is not uncommon, also, for the outward abscess to communicate with that within the antrum. The circumscribed elevation of the tumour, however, does not occur in all cases. There are instances in which the matter makes its way towards the palate, causing the bones of the part to swell, and at length rendering them carious, unless timely assistance be given; there are other cases, in which the matter escapes between the fangs and sockets of the teeth: lastly, there are examples, in which matter, formed in the antrum, makes its exit at the nostril of the same side, when the patient is lying with his head on the opposite side, and in a low position. If this mode of evacuation should be frequently repeated, it prevents the tumour both from pointing externally, and bursting, as it would do if the purulent matter could find no other vent. This evacuation of the pus from the nostril is not very common. The method of cure consists in extracting one of the molar teeth from the affected side; and then perforating through the socket into the maxillary cavity. A mild injection may afterwards be employed to cleanse the sinus occasionally.

A much more serious affection than that above described is caused by the formation of tumours within the antrum. These may be of a polypous, cancerous, bony, cartilaginous, or other character, but they are most frequently of a fungous nature. At an early period, the presence of a fungous tumour in the antrum is often indicated by pain darting through the cheek towards the orbit, a feeling of fulness in the corresponding nostril, and repeated hæmorrhage from that nostril. When the tumour has attained any considerable magnitude, its existence becomes evident from the distension of the cheek, loosening of the molar teeth of the affected side, irritation of the eyeball, and a fetid discharge from the nostril when the cheek is pressed, or when the patient lies with his head turned to the opposite side. This disease is extremely fatal; when left to itself it is invariably so, and, unfortunately, the result of treatment is not often much more favourable. The only chance of safety for the patient is in a surgical operation, consisting in laying the cavity of the antrum freely open, cutting away the tumour, and destroying its roots, if needful, by the actual or potential cautery. It too often happens, however, that the fungus either cannot be entirely extirpated, or is gene-

rated anew, so that the operation is eventually ineffectual.

Antrum maxillæ. See *Antrum Highmorianum.*

Antrum maxillâre. See *Antrum Highmorianum.*

Antrum pylo'ri. The small extremity of the stomach approaching the pylorus.

Anty'lion. Αντυλιον. An astringent malagma, or cataplasm, described by Paulus Ægineta.

Anucar. An alchemical name of borax.

A'NUS. (*us, i.* m.) 1. The fundament, or termination of the rectum. 1. Its office is to form an outlet for the fæces. The anus is furnished with muscles which are peculiar to it, viz. the *sphincter*, which forms a broad circular band of fibres, and keeps it habitually closed; and the *levatores ani*, which retract it into its natural situation, after the expulsion of the fæces. It is surrounded with a very loose cellular substance. The anus is subject to various diseases, especially piles, ulceration, abscesses, excrescences, and prolapsus; and to imperforation in new-born infants.

2. This name is given to the opening, otherwise called *foramen commune posterius*, situated in the brain, between the commissura mollis and the pineal gland.

3. In *Botany*, the posterior opening of a monopetalous flower.

Anus, artificial. 1. An accidental opening in the parietes of the abdomen, to which opening some part of the intestinal canal leads, and through which the fæces are either wholly or in part discharged. When a strangulated hernia occurs which has not been relieved by the usual means, or when the necessary operation has not been practised in time, the protruded portion of intestine sloughs, the adjoining part of it adheres to the neck of the hernial sac, the integuments also slough; or an incision is made through them by the surgeon, and the fæces are discharged through the orifice, and what is called an artificial anus is established. This miserable state of things is temporary or permanent, according to circumstances. Nature sometimes effects a cure; the fæces after a time resume their natural course, and the preternatural opening closes up. When this fortunate occurrence does not take place, the treatment is palliative or curative according to the judgment of the surgeon. The palliative treatment has reference chiefly to cleanliness by the use of an apparatus adapted for the purpose. The radical cure has been attempted in several ways, and with various success. The general indications, as stated by Desault, are — 1. To reduce the intestine when it protrudes and is everted. 2. To prevent the fæces from escaping through the morbid orifice, that they may be obliged to pass onward to the rectum, and to promote the healing of the external opening. 3. To remove any internal impediment to the passage of the fæcal matter towards the lower part of the intestinal canal. For the methods of fulfilling these indications the reader is referred to works on practical surgery.

2. An artificial opening made by the surgeon in the situation of the anus in cases where the rectum is imperforate.

ANXIETY. *Anxietas.* In medical language this term is applied to a painful restlessness and inquietude, usually accompanied with a sense of weight in the præcordial region.

Any'dron. (From α, priv. and ὑδωρ, water: so called, because they who eat of it become thirsty.) A species of nightshade. — *Blancard.*

AO'RTA. (*a, æ,* f.; αορτη, from αειρω, to raise or suspend, because it is suspended from the heart.) The main trunk of the arterial system which gives rise to every artery in the body except the pulmonary. The aorta rises behind the pulmonary artery from the upper and back part of the left ventricle of the heart opposite the third dorsal vertebra. Its mouth is closed by three semilunar valves, which are described in the article *Cor.* The course of the aorta from its origin is directed, first a little to the right, and then upwards, backwards, and a little to the left. It ascends as far as the top of the second dorsal vertebra under the name of *Ascending Aorta*, and afterwards passes obliquely backwards over the right branch of the pulmonary artery and root of the left branch of the trachea till it reaches the third dorsal vertebra, thus describing a curve, which is called the *Arch of the aorta.* It then runs down close upon the spine as the *Descending aorta* till it reaches the fourth lumbar vertebra, where it terminates by dividing into the two common iliac arteries. In this course the aorta gives rise to all the arteries of the body except the pulmonary. Immediately after its origin from the heart it gives off the coronary arteries; from its arch spring the arteria innominata, left carotid and left subclavian; the descending aorta in the thorax gives off the bronchial, œsophageal, and inferior intercostal arteries, and in the abdomen the inferior diaphragmatic, cœliac, superior mesenteric, inferior mesenteric, renal, spermatic, inferior mesenteric, lumbar, and middle sacral.

Aorta, arch of. The bend of the great artery between the ascending and descending portions.

Aorta, ascending. That portion of the aorta which goes from the heart to the bend or arch.

Aorta, descending. The whole of the aorta from the termination of the arch to its bifurcation into the iliac arteries.

Aorta, thoracic. The portion of the aorta between the heart and the diaphragm.

Aorteuri'sma. (From αορτη, and ευρυνω, to dilate.) Aneurism of the aorta. — *Swediaur.*

Aortic. Appertaining to the aorta, as *aortic valves.*

Aortic valves. See *Aorta.*

AORTI'TIS. Inflammation of the aorta. This is occasionally met with, both in an acute and chronic form, but more frequently the latter. It is commonly consecutive on inflammation of the internal surface of the heart, and takes place also during the course of certain fevers.

The internal membrane of the vessel is sometimes alone inflamed, particularly when the disease takes place during fevers, or extends to it from the internal surface of the heart's cavities; but, in several cases, the subjacent cel-

lular tissue, or both it and the internal membrane, are chiefly affected. Aortitis seldom originates in the exterior coats of the vessel.

The causes of aortitis are, 1st, external injuries, as blows, contusions, falls, &c.; violent, or too long-continued exertion; the use of hot, stimulating, and acrid ingesta, spirituous liquors, and the introduction, by absorption or otherwise, of irritating poisons and morbid secretions, &c. into the circulation; the extension of inflammation from the heart, lungs, pleura, and pericardium; the suppression of the eruption in eruptive fevers — in which case M. Portal states that he has met with it: lastly, it arises from those causes which are productive of diseases of the heart.

This disease, which is generally met with in conjunction with other maladies; particularly fevers, and inflammations of the heart, lungs, pericardium, and pleura, is scarcely distinguishable by any well marked symptoms; and is detected only by *post mortem* examination. When inflammation more or less *acute* extends along the descending aorta, the patient generally complains of a painful smarting in the direction of the spine, with a violent feeling of pulsation of the aorta, extending to the iliacs; without any appearance of enlargement or tumour; and unaccompanied by smallness of pulse in the remoter arteries, particularly those of the superior parts and extremities of the body. In the more acute cases, a sensation of heat is felt in the region of the vessel, sometimes with oppressive anxiety, leipothymia, or tendency to fainting, and always increased force of the pulsations.

b. The *chronic* states of this disease admit not of recognition until they have produced some one of those organic lesions, which occasion marked obstruction of the circulation, or aneurismal dilatations. Dyspnœa upon slight exertion, emaciation, a pale yellowish tint of countenance, palpitations, hypertrophy and dilatation of the heart's cavities, œdema of the extremities, &c. are then the usual symptoms; and, although they furnish no certain evidence of the existence of this disease, yet when they are present, without the signs of narrowing of, or obstruction in, the orifices of the heart's cavities, and of the origin of the aorta, chronic disease of the aorta may be presumed to exist.

The prognosis of this disease is always unfavourable, on account both of our ignorance of much that is important respecting its symptoms, complications, and consequences, and of the fatal nature, sooner or later, of a great part of the effects to which it gives rise.

Aortitis, particularly in its chronic states, is occasionally complicated with hypertrophy of the left ventricle: the hypertrophy either causing the inflammation of the aorta, or the latter occasioning the former, particularly when the canal of the vessel is narrowed or obstructed by the effects of the inflammation. It is chiefly owing to the more frequent occurrence of the disease in a complicated, than in a simple form, that it is so commonly overlooked, and so difficult to be ascertained, even when its existence is suspected.

Inflammation produces nearly the same lesions in the aorta as in other arteries. In the more acute cases, the internal surface of the vessel is of a deep or dark red, sometimes approaching to purple; and both the internal membrane and the middle coat are easily torn. The connecting cellular structure and the fibrous coat are much more injected with blood than natural; and coagula, more or less firm, and of a fibrous character, sometimes adhere to the internal surface of the inflamed part: but this is not often observed in the aorta, as the current of the circulation through it seems to wash away the fluid as soon as it is effused. Obliteration of the aorta may, however, arise either from external pressure, or from false membranes formed in its internal surface, so as to obstruct the current of the circulation; or from depositions of lymph between its coats, sufficient to produce the same effect, the obliteration being thus a remote consequence of the obstruction.

The results of chronic aortitis, are more frequently met with than those of the acute. These are yellow spots, or yellow curdy matter deposited under the inner membrane, which may burst from the distension and the friability occasioned by the inflammatory state; the curdy matter projecting like a tubercle into the canal of the vessel; bony deposits, which are also just formed under the internal membrane, and in like manner become exposed and washed by the current of the blood in the vessel; thickening and induration of the coats of the aorta; friability and softening of one or more of them; ulceration commencing in the lining membrane, and extending more or less through the exterior tunics, till at last dilatation of the external coats in the form of a pouch, or fatal hæmorrhage, ensues; and cracking, and laceration or dilatation, which, with the former lesions, generally originate the different forms of aneurism to which this vessel is liable.

Dilatation of the coats of the aorta may first occur, and then the inner or middle coats give way when it has reached a certain pitch: or the laceration of the inner coats, with or without previous ulceration, may take place previous to the dilatation. But either state of disease — dilatation or laceration — especially the latter, seems to proceed from a nearly similar pre-existing change of the internal tunics, one evidently connected with slow inflammatory action. Even dilatation, which has been attributed to debility of structure, is more frequently a result of inflammation, which in fact occasions here, as it does every where else, debility of structure; defective vital cohesion of the texture being a general result of inflammation.

The treatment of acute aortitis, involves general and local blood-letting, perfect repose, and the rest of the antiphlogistic regimen. *Digitalis* in order to quiet the heart's action, cooling aperients to remove fæcal accumulations, and counter-irritants to cause a determination of the fluids to external parts, are amongst the most efficacious means. We should be careful to avoid those counter-irritants which are likely to excite general irritation; hence tartar-emetic ointments and liniments, are the only means of

this kind, except issues, which can be used with propriety.

When those symptoms appear which have been stated to result from *chronic* aortitis, or its effects, local depletions, — particularly when signs of congestion of either the heart, lungs, or head, appear — a restricted diet and regimen, perfect repose of body and mind, attention to the abdominal functions, and the use of the tartar-emetic ointment, or setons or issues, are the chief means that can be called to our aid.— *Copland.*

Ao'rtra. (Αορτρα. From αειρω, to raise or suspend.) The lungs, because they are as it were suspended in the chest.

Apa'gma. (From απο, from, and αγνυμι, or αγω, to break.) The fracture of a bone near its head, with wide separation of the fractured portions. — *Hippocrates.*

Apalachi'ne gallis. See *Ilex Vomitoria.*

Apa'nthropy. (*Apanthropia, æ.* f.; from α, priv. and ανθρωπος, a man.) A species of melancholy characterised by a dislike to society.

Apari'ne. (*e, es.* f.; απαρινη from ῥινη, a file, because the whole plant is rough and prickly.) Goose-grass. See *Galium aparine*

Aparthro'sis. (From απο, and αρθρον, a joint.) The same as *Abarticulation.*

APATHY. (*Apathia, æ.* f.; from α, priv. and παθος, affection.) In medical language this denotes a morbid suspension of the natural passions and feelings. It is a common symptom in low fevers, and other diseases which greatly impair the energy of the brain.

Apeche'ma. (Απηχημα, from απηχεω, *dissono.*) That kind of fracture of the skull which is called a counter-fissure. See *Contra fissura.*

APE'LLA. This term has been applied to one whose prepuce does not cover the glans penis, whether owing to circumcision or any other cause. The name Apella is found in the well-known expression of Horace, *credat Judæus Apella,* and appears to have been the proper name of some Jew well known in Rome at that time. Some have derived the word from α, priv., and *pellis,* a skin, and supposed it to have been used by Horace as a general expression for a Jew, as being circumcised: but Salmasius has shown that this cannot be the case, because such a derivation would make the first syllable long, whereas in the line of Horace alluded to it is short; and because a Latin word having this signification would probably have been *impella* or *appella,* according to the analogy of other words similarly formed, as *imberbis, absimilis,* &c.

Ape'psia. (*a, æ.* f. Απεψια; from α, priv. and πεπτω, to digest.) Indigestion. See *Dyspepsia.*

APE'RIENS. (From *aperio,* to open.) Applied — 1. To a medicine which gently opens the bowels.

2. To the levator palpebræ muscle, which has been called *aperiens palpebræ.*

Aperiens palpebrarum rectus. See *Levator palpebræ superioris.*

Aperi'statos. (From α, neg. and περιστημαι, to surround.) An epithet applied by Galen to a small hollow ulcer which is not surrounded by inflammation, or accompanied with any particular morbid disposition.

Ape'rtor. (*or, oris,* m.; from *aperio,* to open.) The levator palpebræ superioris has been called *Apertor oculi.*

Aperto'rium. An instrument that has been used to dilate the os uteri during labour.

APE'TALOUS. (*Apetalus;* from *a;* priv. and *petalum,* a petal.) Without a petal. Applied to flowers which have no corolla.

Apeuthy'smenos. (From απο, and ευθυς, straight.) A name given by the Greeks to the intestinum rectum, or straight gut.

A'PEX. (*ex, icis.* m.) The extremity of a part; as the apex of the tongue, apex of the nose, apex of a leaf, &c. The stamina of plants have been called *apices* by some botanists.

APHE'RESIS. (From αφαιρεω, to remove.) This term was formerly much used in the schools of surgery, to signify the removal of any diseased or preternatural part of the body.

APHE'LXIA. (*a, æ.* f.; from αφελκω, to abstract.) Revery. Dr. Mason Good has applied this term to a genus of mental diseases which he thus defines: "Inactivity of the attention to the impressions of surrounding objects during wakefulness." There are three species: —

1. *Aphelxia socors,* absence of mind.
2. ——— *intenta,* abstraction of mind.
3. ——— *otiosa,* brown study.

Aphepse'ma. (Αφεψημα.) A decoction.

A'phesis. (From αφιημι, to remit or relax.) This term is used by Hippocrates to signify, 1. The remission or resolution of a disease. 2. Laxity and debility of the whole body or of any part.

APHO'NIA. (Αφωνια, *a. æ.* f.; from α, priv. and φωνη, the voice.) Speechlessness, dumbness.

Dumbness may proceed from three different causes: —

1. From *destitution of the tongue.* This may be a congenital defect, or it may be produced by mutilation or disease. The glottis is the chief organ employed in the production of simple tones or notes; while the tongue is chiefly instrumental, either singly or by co-operation with other organs, in forming distinct articulations. In most cases, therefore, an individual deprived of the tongue, whether by congenital defect, mechanical force, or disease, will be deprived also of the power of articulation.

There are, however, exceptions to this. Dumbness is not a necessary result of congenital destitution, and still less so of privation of the organs of the tongue after speech has been acquired. The glottis alone, in some instances, either from a greater pliancy of the muscles proper to it, or from the possession of some superadded muscle or membrane, seems to have a power of forming distinct articulations without the assistance of the tongue. This appears to be the case with ventriloquists; and there are numerous cases on record of persons, who, having lost the whole of the tongue, and a few of them the uvula also, have still retained the power of speaking, and even of expressing themselves with a clear and accurate enunciation.

such examples, indeed, are not very common; but they seem to have occurred in all ages, and especially when it was the barbarous custom among the Turks, Goths, and other half-civilised nations, to cut out the tongues of prisoners taken in war.

There are some persons who profess to disbelieve all the stories of this kind that have descended to us, but the accounts are too numerous and well authenticated to be treated with scepticism; and as the evidence cannot be set aside, we must endeavour to account for the fact.

Hundreds of cases might be quoted upon this subject; but the following, which are well authenticated, may be sufficient.

In the third volume of the *Ephemerides Germanicæ*, we have the history of a boy, who, at eight years of age, lost the whole of the tongue, in consequence of a sphacelus proceeding from the small-pox, and who was able to talk after its separation. The boy was exhibited publicly; but a trick being suspected, the boy and his friends were summoned to appear before the members of the celebrated university of Saumur. In the presence of this learned body he underwent a strict examination as to the loss he had sustained, and the power of articulation he still possessed. The report was found correct; and the university, in consequence, gave their official attestation to the fact, in order, as expressly asserted in the record, that its reality might not be called in question in succeeding times.

In the *Mémoires de l'Académie des Sciences* for the year 1718, is an account of a girl who was born without a tongue, but had nevertheless learned to speak, and talked as easily and distinctly as if she had enjoyed the full benefit of that organ. The case is given by a physician of character, who had accurately and repeatedly examined the girl's organs of speech, and was desirous that others should examine them also.

About seventy years ago another equally striking example occurred in this country, and forms the subject of various papers in the Philosophical Transactions, drawn up chiefly by Dr. Parsons at the time, and printed in the volumes that were published between the years 1742 and 1747. It is the history of a young woman named Margaret Cuttings, of Wickham market, near Ipswich, in Suffolk; who, when only four years old, lost the whole of her tongue, together with the uvula, from what is said to have been a cancerous affection; but still retained the powers of speech, taste, and deglutition, without any imperfection whatever: articulating, indeed, as fluently and with as much correctness as other persons; and articulating, too, those peculiar syllables which ordinarily require the aid of the tip of the tongue for exact enunciation. She also sang to admiration, and still articulated her words while singing; and could form no conception of the use of a tongue in other people. Neither were her teeth in any respect able to supply the place of the deficient organs; for these also were but few, and rose scarcely higher than the surface of the gums, in consequence of the injury to the sockets from the disease that had destroyed the tongue. The case, thus introduced before the Royal Society, was attested by the minister of the parish, a medical practitioner of repute, and another respectable person. From its singularity, however, the Society evinced a commendable tardiness of belief. They requested another report upon the subject, and from another set of witnesses, whom they themselves named for the purpose, and for whose guidance they drew up a regular form of examination. This second report soon reached the Society, and minutely coincided with the first: and to set the question completely at rest, the young woman was shortly afterwards brought to London, and afforded the Society an opportunity of verifying the fact.

To explain such cases we should not only turn our attention to what is actually and in our own day accomplished by ventriloquists; but should recollect that the tongue is only a single organ employed in the articulation of sounds, and that the fauces, nostrils, lips, and teeth bear, at least, an equal part; while the glottis, which forms all the vocal or vowel sounds, is the chief organ of the whole. In reality, out of the articulate sounds which constitute the alphabet, the only two in which the tongue takes a distinct lead are those of *l* and *r*, though it is auxiliary to several others; but the guttural, or palatine, as *g*, *h*, *k*, *q*; the nasal, as *m* and *n*; the labial, as *b*, *p*, *f*, *v*, *w*; most of the dental, as *c*, *d*, *z*; together with all the vowels, are but little indebted to its assistance.

It is singular that so delicately sensible an organ as the tongue should receive the most violent injuries, and submit to very severe operations, with less serious mischief than almost any other organ of the same size in the body. And it is on this account that the cruel manner in which the tongue was extirpated by the ferocious tribes that formerly overran Europe from the East was rarely productive of fatal consequences. Sir Everard Home published, many years ago, a paper upon this subject, containing various cases of sections of the tongue to a less or greater depth which had been performed for the removal of disease. The operation was, in every instance, effected by the ligature. He does not state what effect was in any instance produced on the speech, and we are hence led to conjecture that nothing in this respect occurred of material importance; but he draws the following conclusions: — The internal structure of the tongue is less irritable than almost any other organised part of the body. Its nerves appear to be more easily compressed, and deprived of their power of communicating sensation than nerves in general; and any injury done to them is not productive of diseased action in the trunk of the injured nerve. The tongue appears to have a power of throwing off its sloughs in a shorter time than any other part.

2. From *atony of the vocal organs*. This atony is chiefly if not altogether confined to the nerves of these organs, which may be injured by violence, or exhausted by mental or other excitement, independently of the occasional occurrence of the disease as a symptom of paralysis, quinsey,

or catarrh; thus furnishing us with two distinct varieties: from lesion of the nerves of the tongue or glottis; and from sudden or overwhelming commotion, or shock of any kind.

The instances of speechlessness produced by an injury to the lingual nerves are not common. But a division of the recurrent nerves which are offsets from the par vagum, and distributed over the larynx and glottis, produce a speechlessness that is rarely, if ever, recovered from; for here the muscles belonging to the arytenoid cartilages being rendered atonic or paralytic, can never be brought into a due degree of constriction, the glottis remains permanently open, and the diameter of the larynx suffers no variety of contraction or dilatation.

Where the speechlessness has followed upon an injury to some branches of the lingual nerves, we have numerous examples of recovery. In one instance, the dumbness ceased suddenly, after the patient had been speechless for not less than ten years.

In other instances dumbness is produced suddenly from a total exhaustion of nervous power in the vocal organs, without any organic lesion. A sudden and overwhelming emotion of the mind from terror, anger, or any other passion, has frequently had this effect in irritable habits. So has a violent fit of hysterics; or any other vehement shock which instantaneously deprives the nerves of their sensorial power, and the muscular fibres of their irritability; in like manner as a stroke of lightning, or a severe blow on the stomach, will sometimes exhaust the entire system of its vital energy, and cause the immediate cessation of life. A sudden chill, as from drinking cold water when the body is very much heated, or the shock of a sudden fall, has frequently produced dumbness, of which numerous instances are recorded in the Ephemerides of Natural Curiosities. Speechlessness of this kind has sometimes arisen from deleterious exhalations; from eating mushrooms; and, in one instance, recorded in Hufeland's Annals, by repeatedly rubbing the wound made by a poisonous insect with saliva, and as often putting the finger to the mouth to obtain a supply of fresh fluid. In like manner, Bonnet informs us, that the same effect has followed from putting into the mouth and swallowing a piece of money covered with verdigris.

Where medical aid is required, our dependence must be on tonics, local or general, and topical stimulants. Blisters and masticatories have chiefly been made use of, and frequently with good effect; the vellication of a hair-brush contrived for the purpose has also been found serviceable. The dumbness has sometimes yielded to emetics, at others to electricity, and in a few cases to a severe cough; and the violence or inordinate excitement which has caused the disease in some instances, has removed it in others: thus we have examples of its having yielded abruptly to a fit of anger, or terror; in one instance to a fit of laughter, in another to a blow on the head.

3. From *deafness congenital, or produced during infancy.* The ears are as necessary to speech, or articulate sounds, as the tongue, or even the glottis; for if such sounds be not heard, and distinctly discriminated, they can never be imitated. Persons who become deaf after the acquisition of speech do not become dumb, because the habit of articulation has already been formed, and can easily be preserved by practice. But if deafness be congenital, or take place antecedently to such habit, articulation can never be acquired afterwards, unless by some rare good fortune the sense of hearing should be acquired or restored, and the unfortunate individual can only receive and interchange ideas by the eye; through which medium, however, he may be taught written, though not oral language; and thus, happily for himself, have his mind richly stored, though his ideas be not so readily communicated as through the outlet of speech.

Apho'ria. (From α, neg. and φερω, to bear.) Barrenness. Sterility in the female.

APHRODI'SIA. (α, æ. f.; from Αφροδιτη, Venus. 1. The generative act.

2. In the language of Paracelsus and his followers it means the age of puberty.

APHRODI'SIAC. (*Aphrodisiacus;* from αφροδισια, venery.) Applied to articles of food, medicines, &c. which excite the venereal appetite.

Aphrodisia'smus. The same as *Aphrodisia.*

Aphrodisia'sticus. The same as *Aphrodisiac.*

Aphrodi'sius morbus. (From Αφροδιτη, Venus.) The venereal disease.

Aphrodita'rium. The name of a powder described by Paul of Ægina, consisting of equal parts of incense, scales of copper, lesser pomegranate, starch, and cerusse.

Aphrodisia'sticon cli'dion. The name of a troch which was given in dysenteries.—*Galen. Paulus.*

A'PHTHA. (α, æ. f.; Αφθαι; from απτω, to inflame.) The thrush; called also *Aphtha lactucimen, Ulcera serpentia oris, Pustula oris, Alcola, Vesiculæ gingivarum.* Small white ulcers upon the tongue, gums, inside of the lips and palate, resembling particles of curdled milk. This disease is ranked by Cullen in the class *Pyrexiæ*, order *Exanthemata.* His definition and description apply more especially to the aphthæ of infants, or milk thrush, and it may be doubted whether this be not in effect the only idiopathic form of the disease. Dr. Mason Good, and other modern writers, make three species of this affection. 1. *Aphtha Infantum.* This appears in children soon after birth. When it is mild it is confined to the mouth, or extends no farther than the fauces; but when violent and of long standing, it is apt to extend through the whole course of the alimentary canal, from the mouth down to the anus; and to excite severe purging, with great constitutional irritation. The disease, when recent and confined to the mouth, may in general be easily removed; but when it is of long standing, and has extended to the stomach and intestines, it very frequently proves fatal.

2. *Aphtha Maligna.* In this the ulceration spreads from the larynx to the mouth, the sloughs are black, and the patient is affected with typhoid fever. This form of aphtha has occasionally been observed to occur in persons debilitated by extreme old age; but it most

frequently presents itself as an accompaniment of malignant fever: it is also alleged to have prevailed epidemically in an idiopathic and contagious form; but it may be questioned whether in these instances the aphthæ were any thing more than a prominent symptom of a contagious fever. A gangrenous form of thrush has frequently been very fatal among children, especially in foundling hospitals.

3. *Aphtha Chronica.* The thrush sometimes occurs as a chronic disease, both in warm climates and in those northern countries where the cold is combined with a considerable degree of moisture, or where the soil is very marshy. It may, in some cases, be considered as an idiopathic affection; but it is more usually symptomatic. It comes on with an uneasy sensation, or burning heat in the stomach, which gradually increases in violence. After some time small pimples, about the size of a pin's head, show themselves on the tip and edges of the tongue; and these, at length, spread over the whole inside of the mouth, and occasion such a tenderness and rawness that the patient cannot take any solid food, nor receive any vinous or spirituous liquor into his mouth, without great pain being excited. Little febrile heat attends; but there is a dry skin, pale countenance, small pulse, and cold extremities. These symptoms will probably continue for some weeks, the general health being sometimes better and sometimes worse, and then the patient will be attacked with acid eructations, or severe purgings, which greatly exhaust his strength, and produce considerable emaciation. After a little time, these symptoms cease, and he again enjoys better health; but, sooner or later, the disease shows itself once more in the mouth, with greater virulence than before, and undergoes frequent translations to the stomach and intestines, and so from these to the mouth again, until, at last, the patient is reduced to a perfect skeleton. Elderly persons, and those of a shattered constitution, are most liable to its attacks. The treatment of the thrush in children is generally to be begun by clearing out the bowels with rhubarb and magnesia, castor oil, or other mild aperients. In general, the prevalence of acid in the primæ viæ appears to accompany this complaint; whence antacid remedies prove beneficial in its progress: when the patient is costive, the preference should be given to magnesia; when relaxed, to chalk, which may be sometimes joined with aromatics, the mild vegetable astringents, or even a little opium, if the diarrhœa be urgent. Where the child is very weak, and the aphthæ of a dark colour, bark and other tonics must be had recourse to. The separation of the sloughs and healing of the ulcers may be promoted by washing the mouth occasionally with the honey of borax, diluted with two or three parts of rose water, or by applying the honey of borax to the ulcers with a camel's hair pencil: where they are of a dark colour, the decoction of bark, acidulated with sulphuric acid, may be used as a wash. The diet should be light and nutritious. As the complaint is subsiding, particular attention must be paid to the state of the bowels, which are to be kept freely open. In the malignant variety of thrush the treatment must, of course, vary according to circumstances; and when, as most generally happens, it is symptomatic, its treatment becomes involved in that of the disease which it accompanies. In the chronic aphthæ of adults, the treatment to be pursued is nearly the same with that applicable to the infantile disease; in addition to this, the compound powder of ipecacuanha and other diaphoretics, assisted by the occasional use of the warm bath, and wearing flannel next the skin, appear to be beneficial, especially where the climate is cold and damp.

Aphthous. Partaking of the nature of aphtha. Applied to any disease complicated with aphtha.

APHY'LLUS. (From α, priv. and φυλλον, a leaf.) Aphyllous; leafless. Applied to parts of plants; thus a stem is said to be aphyllous when it is altogether void of leaves, as in *Cuscuta europæa*, dodder; *Asphodelus fistulosus*, &c.

Aphyllæ plantæ. Aphyllous plants, or plants without leaves. Some plants being entirely devoid of leaves, are naturally arranged under one head, to which this name is given.

Apia'strum. (From *apis*, a bee, because bees are fond of it.) The mountain balm. See *Melittis melissophyllum*.

Api'nthion. See *Absinthium*.

A'pios. This name was given by the Greeks to a species of spurge. See *Euphorbia apios*. The name has been applied by the moderns to three other plants, the *Bunium bulbocastanum*, *Lathyrus tuberosus*, and *Glycine apios*.

A'PIS. (*is*, *is*. f.) The name of a genus of Hymenopterous insects. The bee.

Apis mellifica. The systematic name of the honey-bee. It was formerly dried and powdered, and given internally as a diuretic. It is to the industry of this little animal that we are indebted for honey and wax. See *Mel*, and *Cera*. The venom of the bee, according to Fontana, bears a close resemblance to that of the viper. It is contained in a small vesicle, and has a hot acrid taste like that of the scorpion. The immediate ill effects of the sting of this and other insects of the same kind, are best removed by dilute compound spirit of ammonia, or *eau-de-luce* well diluted.

"The domesticated or hive bee is the same, according to Latreille, in every part of Europe except in some districts of Italy, and probably also in the Morea and the isles of the Archepelago, where a different species (Apis *ligustica* of Spinola) is commonly cultivated. Honey is obtained however in Asia and America from many other species, both wild and domestic. In South America quantities are collected from the nests built in trees by Trigona *Amalthea* and other species of this genus, recently separated from Apis. The Apis *fasciata* of Latreille, which is extensively cultivated in Egypt, is supposed to have been attended to for ages before our hive bee. In Madagascar the inhabitants have domesticated Apis *unicolor*. Apis *indica* is cultivated in India, at Pondicherry, and in Bengal; A. *Adansonii* at Senegal; and according to Fabricius the A. *acraensis*, *laboriosa*, and others in the East and West Indies might be domesticated with greater advantage than

even the Apis *mellifica*." — *Stevenson's Medical Zoology.*

A'PIUM. (*um, i.* n.; derived, according to some, from *apex*, because the *heads* of the victors in athletic contests, &c. were crowned with it; and, according to others, from *apis*, a bee, because bees are fond of it.) 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Digynia.*

2. The pharmacopœial name of the herb smallage. See *Apium graveolens.*

Apium graveo'lens. The systematic name for the *Apium* of the pharmacopœias. Smallage. *Apium — foliolis caulinis cuneiformibus, umbellis sessilibus*, of Linnæus. The root, seeds, and fresh plant are said to be aperient and carminative, but the whole plant is acrid and poisonous. When cultivated it loses its poisonous properties, and is well known as the common celery of our gardens.

Apium hortense. See *Apium petroselinum.*

Apium petroseli'num. The systematic name for the *petroselinum* of the pharmacopœias, or common parsley; called also *Petroselinum vulgare*, and *Apium hortense*. *Apium — foliis caulinis lincaribus, involucellis minutis*, of Linnæus. Both the roots and seeds of this plant were formerly directed by the London College for medicinal use, but they are now expunged from the pharmacopœia: the former have a sweetish taste, accompanied with a slight warmth of flavour, somewhat resembling that of carrot; the latter are of a warmer and more aromatic taste than any other part of the plant, and have a degree of bitterness. The roots are said to be aperient and diuretic, and have been employed in nephritic pains and obstructions of urine. The seeds possess aromatic and carminative powers, but are seldom prescribed.

Apleu'ros. (From α, priv. and πλευρα, or πλευρον, a rib.) Applied to a person who has no ribs! — *Galen.*

Apnœ'a. (*a, æ.* f.; from α, priv. and πνεω, to breathe.) An extreme feebleness of respiration, in which the patient seems scarcely to breathe at all, as in syncope and some cases of hysteria.

Apocapni'smus. (From απο, and καπνος, smoke.) A fumigation.

Apoca'rpason. *Apocarpathon. Apocalpason.* See *Carpasus.*

APOCATHA'RSIS. (From απο, and καθαιρω, to purge.) A purgation, whether upwards or downwards.

Apocatha'rtic. The same as *cathartic.*

APOCENO'SIS. (*is, is.* f.; from απο, and κενοω, to evacuate.) 1. A flow or evacuation of any humour.

2. An order in the class *Locales* of Cullen is called *Apocenoses*, which embraces diseases characterised by a flux of blood, or other fluid, without pyrexia.

Apochyli'sma. (Αποχυλισμα; from αποχυλιζω, to extract the juice from any thing.) The inspissated juice of any vegetable, with or without the addition of sugar, honey, &c. An extract or rob.

Apochy'ma. Αποχυμα. Pitch impregnated with sea salt, which was procured from the hulks of ships and used in medicine by the Greeks.

Apocla'sma. (From αποκλαω, to break off.) Synonymous with *Apagma.*

Apo'cope. (From αποκοπτω, to cut off.) Abscission, or the removal of a part by cutting it off.

Apo'crisis. (From αποκρινω, to secrete from.) An excretion of superabundant humours.

Apocru'sticus. (From αποκρουω, to repel.) Repellant.

Apocye'sis. (From απο, and κυω, to bring forth.) Parturition, or the bringing forth of a child.

Apocy'neæ. A family of plants, of which the genus *Apocinum* is the type.

APO'CYNUM. (From απο, and κυων, a dog, because it was believed by the ancients to be poisonous to dogs.) Dog's-bane. A genus of plants: Class, *Pentandria*; Order, *Monogynia.*

Apocynum Androsæmifo'lium. A plant common in the United States of America. The powder of the root is given as an emetic, thirty grains producing about the same effect as a scruple of ipecacuan.

Apocynum mari'timum, or *Venetum.* This grows near Venice, and contains a milky poisonous juice.

Apocynum Juve'ntas. This plant is given by the natives of India to old persons as a cordial.

Apodacry'ticus. (From αποδακρυω, to weep.) A term applied by the ancients to substances which first excite a flow of tears and then repress them.

Apodyte'rium. (Αποδυτηριον; from αποδυομαι, to put off one's clothes.) The ante-room where the bathers stripped themselves in the ancient baths.

Apogalacti'smus. (From απο, and γαλα, milk.) The same as *Ablactatio.*

APOGEU'SIS. (From απο, and γευομαι, to taste.) A generic term used by Vogel, including the various disorders of the sense of taste.

Apoglauco'sis. A term used by Dioscorides synonymously with Glaucoma. See *Glaucoma.*

Apo'conum. (From απο, and γινομαι, to beget.) A living fœtus in the womb. — *Hippocrates.*

APOLE'PSIS. (Απολημψις; from απολαμβανω, to intercept.) This term is of frequent occurrence in the writings of Hippocrates and Galen, and seems to have been applied to retention or suppression of any natural evacuation, as that from the bladder, bowels, &c.; and also to a suppressed flow of the animal spirits, to which apoplectic and cataleptic affections were ascribed.

Apole'xis. Απολημξις. Declining age. — *Hippocrates.*

Apolino'sis. (Απολινωσις; from απο, and λινον, flax.) A method of curing fistula in ano, practised by the Greeks. It consisted in the application of a ligature made of raw flax.

Apo'lysis. (From απολυω, to release.) Relaxation. Debility of the limbs or looseness of bandages. — *Erotian.* Expulsion of the fœtus

secundines. Resolution or termination of a disease. — *Hippocrates. Galen.*

APO'MELI. (From απο, from, and μελι, oney.) A diluted hydromel: also an oxymel.

APONEURO'SIS. (*is, is.* f.; from απο, nd νευρον, a nerve, or a tendon, which the ancients confounded together. A tendinous expansion. See *Muscle.*

A'PONOS. (From α, priv. and πονος, pain.) ynonymous with *Anodyne.*

APOPALLE'SIS. (From αποπαλλω, to shake ff.) *Apopalsis.* Expulsion. Protrusion. — *Hippocrates.*

Apopálsis. See *Apopallesis.*

APOPHLEGMA'TIC. (*Apophlegmaticus;* from πο, and φλεγμα, phlegm.) A term applied y the ancients to a medicine which excites discharge of mucus from any of the cavities of the head, as the mouth, nose, frontal nd maxillary sinuses, pharynx or larynx. The erm, therefore, includes errhines, masticatories, letergent gargles, &c.

APOPHLEGMATI'SMUS. An apophlegmatic medicine.

APO'PHRADES. (From απω, and φραζω, to peak.) Unlucky days, *dies nefandi*, were called y the Greeks αποφραδες, ἡμεραι; and the term as been applied by some medical writers to lays which are not critical, or those on which o favourable change in a disease is expected to ake place — *Dies apophrades.*

APOPHTHA'RMA. The same as Apophthora.

APO'PHTHORA. (From αποφθειρω, to corrupt.) Abortion. The expulsion of the fœtus at an early period of gestation.

APO'PHYAS. (From αποφυω, to send forth shoots.) An appendix or continuation of any part. Hippocrates calls the ramifications of veins αποφυαδες.

APO'PHYSIS. (*is, is.* f.; from αποφυω, o produce or send forth.) A process.

1. In *Anatomy*, it is also called *Appendix, Probole, Ecphysis, Processus, Productio, Projectura*, and *Protuberantia*, and means a process, projection, or protuberance of a bone or other part.

2. In *Botany*, it is applied to a fleshy tubercle under the basis of the pericarp of some mosses.

APOPIE'SMA. (From αποπιεζω, to press out.) Hippocrates uses this term to signify the pressing out of humours by means of bandages in cases of wounds and fractures.

APOPLE'CTA VE'NA. The internal jugular vein has been so called.

APOPLECTIC. *Apoplecticus;* from αποπληξια, an apoplexy.) Appertaining to apoplexy.

Apople'xia. See *Apoplexy.*

APOPLE'XIA HYDROCEPHA'LICA. The name given by Dr. Cullen to the disease commonly called acute hydrocephalus.

APOPLEXIA CATALE'PTICA. Catalepsy is thus named by Dr. Cullen.

APOPLEXIA INFA'NTUM. A form of apoplexy which has been observed to occur in children from the effect of teething, worms, or intestinal irritation.

APOPLE'CTICÆ VE'NÆ. The jugular veins.

A'POPLEXY. (*Apoplexia, æ.* f.; αποπληξια; from αποπλησσω, to strike or astound; so called from the sudden and violent invasion of the disease.) A sudden abolition, or great diminution of the powers of sense and voluntary motion, the patient lying in a sleep-like state; the action of the heart continuing, as well as the respiration, which is often accompanied with a stertorous sound. The fit of apoplexy is frequently attended with convulsions of one side of the body and paralysis of the other. The disease has also been called *Morbus attonitus; Attonitus stupor; Sideratio.*

The more prominent symptoms of apoplexy being analogous to those which indicate compression of the brain, the disease was, till lately, naturally enough referred by pathologists to effusion of blood or serum within the cranium. Thence the distinction of apoplexy into *sanguineous* and *serous:* the former was supposed to arise from an overflow of blood propelled with impetuosity by the arteries of a robust and plethoric system; and the latter from a thin and dilute state of the blood, with relaxation of the mouths of the vessels causing serous effusion. This distinction has pervaded the writings of modern pathologists from the time of Morgagni downwards. It is true, that apoplexy occurs under two forms corresponding with those called *sanguineous* and *serous;* the first being characterised by a hard full pulse, flushed countenance, and stertorous breathing; the second by a feeble pulse and pale countenance: but the notion that one of these forms is essentially connected with sanguineous effusion, and the other with serous, must be entirely relinquished, for it is now well ascertained that either variety of the disease may be accompanied with effusion of blood or of serum, and that either variety may occur without any effusion at all. This being perfectly understood, we may nevertheless admit the validity of the old distinction, as far as the nosography of the disease is concerned, and consider the majority of apoplectic cases as referrible to one of two classes, which, in order to avoid hypothesis, we may call *sthenic* and *asthenic*, instead of *sanguineous* and *serous;* the real difference between them residing not in the pathological cause, but in the state of the system on which it operates.

1. In the sthenic form, the fit is generally sudden and without warning; though it is occasionally preceded by a dull pain in the head, accompanied with a sense of weight, somnolency, and vertigo. The inspirations are deeper than natural; the face is red and the eyes bloodshot; and there is not unfrequently hæmorrhage from the nose. On the accession of the paroxysm, the patient falls to the ground, and lies as in a heavy sleep, from which he cannot be roused. The breathing is remarkably oppressed: though at first slow and regular, it becomes more frequent, feeble, and irregular, with the progress of the fit, till at length, in many cases, it is intermitting and spasmodic.

In this form of the disease, stertorous breathing almost invariably occurs, arising from an accumulation of mucus in the trachea and

larynx, which impedes the passage of the air in respiration.

There is often, also, an accumulation of frothy saliva, which, as it becomes troublesome by its increase, is occasionally blown away from the lips with considerable force.

The skin is nearly at its ordinary temperature, and covered with a copious perspiration; the pulse is full and hard; the face flushed; the eyes bloodshot and prominent, and generally closed. The cornea is dull and glassy, and the pupil for the most part dilated. In a few cases, however, there is a tendency to spastic action, sometimes extending to the limbs, but more generally confined to the muscles of the head and face, so that the teeth are firmly clenched, and deglutition is impeded; and where this state exists, the pupil, instead of being dilated, is strongly contracted. This contraction of the pupil is a symptom indicative of extreme danger. Dr. Cooke remarks, that although all writers on apoplexy mention the dilated pupil, the contracted pupil has been noticed only by Aretæus among the ancients, and Dr. Cheyne among the moderns. Dr. Cooke states, that he never knew a person recover from apoplexy, who had the pupil greatly contracted, and that the experience of Sir Gilbert Blane and Dr. Temple agrees in this particular with his own. The remark has been fully justified by subsequent observation. The paroxysm of apoplexy varies in duration from eight to eight and forty hours, or longer. Forestus relates the case of a woman, who lay in a fit of strong apoplexy for three days, and yet recovered.

The asthenic form of apoplexy rarely makes its attack so unexpectedly as the other; and is usually preceded by some precursory symptoms, as headach, vertigo, imaginary sounds, faltering speech, failure of the memory, or some other mental faculty, and at length a sense of drowsiness, and a tendency to clonic spasms. On the attack of the paroxysm, the patient is as completely prostrated as in the sthenic variety. The countenance, instead of being flushed, is here pale or sallow, but at the same time full and bloated; the pulse is weak and compressible, and the breathing, though always heavy and laborious, is not always stertorous. If spasms occur, they are generally of the clonic kind. The duration of the fit varies as in the preceding variety; and if the patient recover, he is more liable to a relapse, and more in danger of hemiplegia, or some other form of paralysis, than in the stronger modification of the disease. There does not appear to be the smallest reason to believe that this variety of apoplexy is more frequently connected with effusion of serum than the former. The difference between the two seems to reside principally in the greater vigour of the system in the one instance than in the other, and where effusion of blood is found, as it generally is, in the asthenic form, the vessels seem to have been ruptured, not from habitual distension, but from accidental, and often slight causes, that have produced a sudden excitement and determination of blood to the head, which the parietes of the vessels were unable to sustain: hence, a violent fit of coughing or vomiting, a sudden fright or fit of joy, immoderate laughter, the jar occasioned by a stumble in walking, or a jolt in riding, have been known to induce this form of apoplexy.

The foregoing distribution of apoplectic cases under two varieties, must be adopted only in a very general way, for there are many cases of an intermediate character, to which neither of the descriptions just given would accurately apply. A patient who has once suffered from apoplexy is extremely liable to a return of the disease. When the fit of apoplexy is not fatal, the patient sometimes recovers entirely and speedily, and a few days after is as well as if nothing had happened: at other times, some paralytic affection remains, most frequently hemiplegia, which is permanent or otherwise, according to the degree of injury sustained by the brain, the constitutional powers of the patient, and other circumstances. Apoplexy is a disease of advanced rather than of early life, although it may occur at any age, even in infancy.

Morgagni states, that of thirty apoplectic patients who came under his observation, seventeen were above the age of sixty, and only five below that of forty.

Apoplexy, in one or other of its forms, seems to be at least as common among the poor as the rich. Sir Gilbert Blane, indeed, has observed, from tables derived from ten years' practice in St. Thomas's Hospital, and his private consultations, that apoplexies and palsies bear a larger proportion to other diseases among the lower than the higher classes.

It is not yet sufficiently ascertained how far a tendency to apoplexy may be hereditary. Forest relates the history of a father and his three sons, all of whom died in succession of this disease; and Portal, Wepfler, and other writers have adduced instances favourable to the opinion that an hereditary tendency to apoplexy is occasionally manifested. It is probable that the frequency of apoplexy, as of other diseases, is sometimes determined by those causes connected with the constitution of external nature, which are usually called atmospheric causes. We learn from Baglivi that apoplexy was so general in certain parts of Italy in 1694, as to be considered epidemic, and Lancisi records a similar prevalence of the disease in 1705: at the former period the course of the seasons had been unusual, a very hot summer had been succeeded by an exceedingly cold winter; this was followed by a summer still hotter than the former, with an entire absence of rain for the space of five months, and the winter after this again was remarkable for incessant rains.

The predisposing causes of apoplexy are in general such as impair the energy of the brain or occasion too great a determination of blood to the head, or impede the return of blood from the head. Plethoric, corpulent persons, with a short thick neck, are very liable to apoplexy. Excess in drinking is one of the most frequent predisposing causes: Dr. Cheyne, indeed, believes that the habitual use of alkoholic liquors will in some cases induce apoplexy, even when not carried to any excess. "The daily use of

vine or spirits," says this author, "will lead a man of a certain age and constitution to apoplexy, as certainly as habitual intoxication."

Intense heat, on account of its stimulating effects on the vascular system, may be considered among the predisposing causes of apoplexy. Cold is also enumerated among the predisposing causes, and was regarded by Galen and the Greek physicians as a very frequent one: severe cold, by its depressing influence on the nervous system, and the congestion occasioned by the constriction of the cutaneous vessels, may easily be conceived as predisposing to apoplexy; but if the cold be extremely intense, *asphyxia* is more likely to be the result than apoplexy; for in this, as in some other instances, the same cause which, operating vehemently, excites the former, operating less powerfully, may excite the latter.

Apoplexy sometimes arises from the metastasis of gout or rheumatism. Some authors have doubted whether the cerebral disease thus produced be the same with genuine apoplexy; it is probable, however, that it differs in no essential particular from *simple apoplexy* or that unattended with effusion — a form of disease which will presently be described. Among the most frequent predisposing and accessory causes of apoplexy, are those which occasion an irregular distribution of blood to the brain, or habitually impede its return; as diseases of the heart, lungs, or their large vessels, and tumours in the neck or chest, so situated as to press upon the great veins. Diseases of the heart predispose very strongly to apoplexy, and are actually found to exist in a great number of apoplectic cases: the influence of such diseases on the cerebral circulation is obvious, and it is not uncommon for a patient to refer all his unpleasant sensations to the head, while the practitioner, who investigates his case, immediately detects a disease of the heart. The connexion between disease of the heart and apoplexy, though remarked by Valsalva and Morgagni, and by several eminent pathologists since their time, has not generally been sufficiently attended to by practical writers. The morbid condition of the heart most obviously conducive to apoplexy, is hypertrophy. Dr. Hope, in his excellent work on diseases of the heart, has strongly insisted on this fact in the following passage: —

"Eight or nine cases of suddenly fatal apoplexy, and numerous cases of palsy from hypertrophy, have within a few years fallen under my own observation. In the majority of them, the patient exhibited what is commonly called the 'apoplectic constitution;' that is, a robust conformation, a plethoric habit, and a florid complexion; in others these characteristics were absent; but the total number of the cases of apoplexy from hypertrophy is much greater than I have witnessed, during the same period, of apoplexy from causes independent of hypertrophy. Whence I am led to believe, with MM. Richerand and Bertin, that hypertrophy forms a stronger predisposition to apoplexy than the apoplectic constitution itself; and that in most instances, those persons who present the apoplectic constitution in conjunction with symptoms of increased determination to the head, are at the same time affected with hypertrophy."

Various diseased conditions of the parts within the cranium have been enumerated among the causes of apoplexy: hydatids, tumours of different kinds, polypous caruncles, abscesses, indurations of the membranes, &c., have, in many cases, been discovered on dissection, and have been supposed to operate by compression, in the same manner as an accumulation of blood or serum. But these affections seem often to have been too inconsiderable to produce any such effect; and in most instances can hardly be deemed influential otherwise than as local irritants, exhausting the sensorium, and predisposing to the attack of apoplexy, which is at length brought on by some of its ordinary exciting causes.

Most of the morbid appearances referred to are, indeed, as common to various other cerebral affections, as to apoplexy. They have been frequently observed in lethargy, epilepsy, and other convulsive affections, various species of cephalæa, and some forms of insanity; and hence, wherever they operate as morbid causes of any importance, it is most probable that the disease they immediately produce is determined by the predisposition of the individual to one form of sensorial affection rather than another, and, consequently, that the same exciting cause which, in one person, would produce apoplexy, in a second would excite epilepsy, in a third convulsion, and in a fourth madness. What the precise state of the brain may be, which especially predisposes to apoplexy, we are at present entirely ignorant; but that there is such a state, giving efficiency to causes which would otherwise be innocuous, and determining the accession of this rather than of any other cerebral disease, is a position which can hardly be called in question.

We are now led to inquire into the proximate cause of apoplexy, and to investigate the morbid conditions of the brain which are most frequently found to accompany it. We have stated that apoplexy was, till lately, generally referred by pathologists to compression of one kind or other. Some ascribed it exclusively to effusion of blood.

John Hunter was so convinced of the universality of this cause, that he would admit of no other. He regarded apoplexy and palsy as one and the same disease, merely differing in degree. "For many years," says he, "I have been particularly attentive to those who have been attacked with a paralytic stroke forming a hemiplegia. I have watched them while alive, that I might have an opportunity to open them when dead; and in all I found an injury done to the brain in consequence of the *extravasation of blood*. I must own I never saw one of them which had not an extravasation of blood in the brain, except in one who died of a gouty affection in the brain with symptoms similar to apoplexy." In our own day, M. Rostan is equally confident that apoplexy always arises from effusion of blood; he excludes all other causes, and calls the disease cerebral hæmorrhage. M. Cruveilhier is of the same opinion.

Numerous cases, however, are now on record,

in which patients have died with all the essential symptoms of apoplexy, and yet no morbid appearances of any sort have been discovered on dissection. Within the last few years the researches of Dr. Abercrombie have gone far to establish a view of the subject very different from that taken by Mr. Hunter. From numerous cases observed and commented upon with great accuracy and judgment, this distinguished physician has been led to conclusions of which the following is a summary: —

1. In many cases the patient speedily and perfectly recovers.

2. In many cases the disease is speedily fatal, and we find on inspection extensive extravasation of blood. Extravasation of blood, however, has not been found by Dr. Abercrombie to be a frequent accompaniment of genuine apoplexy. He has found it to appertain rather to a class of cases not primarily apoplectic, which generally commence with a sudden attack of violent headach, coma supervening at intervals varying in different cases from less than half an hour to three days or longer. In such cases there is rupture of a considerable vessel, owing probably to disease of its coats at the point where it gives way, and independent of any previous derangement of the cerebral circulation; the extravasation is large, and the symptoms throughout their course are strictly analogous to those which accompany extravasation on the surface of the brain from external injury.

3. In other cases which are fatal, generally after a longer interval, we find only serous effusion, often in no great quantity.

4. In many fatal cases, no morbid appearance whatever can be detected, after the most careful examination. It is probable that such cases, as well as those in which the recovery is immediate and perfect, depend upon some cause which is entirely referrible to a derangement of the cerebral circulation distinct from inflammation. Such cases Dr. Abercrombie denominates *simple apoplexy*.

5. The cases accompanied with serous effusion, and those which present no morbid appearances of any kind, are not distinguished from each other by any such diversity of symptoms as can be supposed to indicate any essential difference in their nature; it is hence probable that the effusion, where it occurs, is not the cause of the apoplectic symptoms. This inference is strengthened by the consideration that the quantity of fluid effused bears no proportion to the degree of the apoplectic symptoms, being often small where the symptoms have been well marked and long continued, and large where the symptoms have been slight; nay, that serous effusion often exists to a greater extent in cases where there have been no apoplectic symptoms at all, than in cases of distinct apoplexy: the inference is also strengthened by the consideration, that in other parts of the body serous effusion is very seldom a primary disease, but is the result either of inflammatory action or impeded circulation, and takes place gradually, the serum not accumulating at once in such quantity as to produce urgent symptoms. The affection, therefore, which has been called *serous apoplexy*, appears to be merely *simple apoplexy*, terminating in effusion.

According to the views of Dr. Abercrombie then, genuine apoplexy is not essentially connected with effusion of any kind, or with any inflammatory state of the brain or its membranes, but is supposed to depend primarily on some change in the cerebral circulation, the nature of which is not yet understood. This able pathologist has indeed succeeded in establishing his main position beyond a doubt, and it can no longer be denied that well marked apoplexy may occur without any effusion; but that sanguineous effusion is a comparatively rare accompaniment of true apoplexy, is a tenet opposed to the majority of observations hitherto recorded, and ought not to be implicitly received.

M. Serres, who was occupied for many years in a careful examination of the bodies of persons who died of apoplexy and paralysis, both at the Hôtel Dieu and the Hôpital de la Pitié, has arrived at some very singular conclusions. He instituted a long series of experiments upon the brains of dogs, pigeons, rabbits, and other animals, whose crania were trepanned, their lateral or longitudinal sinuses laid open, and their brains lacerated and excavated in various ways, so as to subject every part of the brain to the pressure of the effused blood; yet in none of them did somnolency or any other apoplectic symptom take place. He found that on whatever animal these experiments were made the result was the same; and he concludes, that apoplexy in man ought not to be ascribed to effusion on the brain. This, however, is a very unphilosophical conclusion, for it is drawn from a parallel between *injury* and *disease* — between the *human* brain and that of the *inferior animal* — between a *healthy* brain and one *predisposed to a morbid state*.

M. Serres's examinations of apoplectic patients after death do not seem to afford much countenance to his opinion. In a considerable number of subjects there was serous or sanguineous effusion, or both; sometimes in the convolutions of the brain, sometimes in the ventricles, sometimes in both. These effusions are regarded by M. Serres as the effects, not the causes, of the disease. In other cases the vessels of the meninges appeared distended with blood, and the membranes themselves thickened. In others again he found considerable alteration in the structure of the brain, but without effusion; and in these instances the patients had been affected with palsy rather than apoplexy. The general conclusion at which M. Serres arrives is, that apoplexy, or that state in which the stupor is greater, is occasioned by irritation of the *membranes* of the brain; and palsy, or that state in which the stupor is less, by a morbid change in its *substance;* in consequence of which he proposes to call the first *meningic*, and the second *cerebral* apoplexy. But this conclusion is neither fairly deducible from the facts brought forward, nor consonant with the doctrines of general pathology, which teach us, that inflammation of serous membranes, whether in the cranium or any other cavity, are usually accompanied with acute pain and strong arterial excitement.

On the whole, it appears to be sufficiently roved that apoplexy may occur independently f effusion or any other marked lesion of the rain; at the same time the great frequency of anguineous effusion in this disease leads us to efer many of its prominent symptoms to compression in the greater number of cases; especially as such symptoms are precisely those which re well known to result from compression of he brain arising from injuries of the head or other causes. There are no symptoms *uniformly* ndicative of compression of the brain, whether resulting from disease or injury, and there are probably few practitioners who could not testify to the truth of this position from their own experience; nevertheless, when a patient dies in a state of profound coma with immovable pupils and stertorous respiration, we expect to find on dissection that there has been some cause of compression; and the fact that these symptoms are occasionally met with where there is no compression, does not prevent us from regarding them as the ordinary characteristics of that morbid state of the brain.

The blood effused in apoplexy is found in some instances to have issued from a number of small arteries, and in others to have proceeded from the rupture of a single one of greater magnitude: the hæmorrhage may also be venous; and a case is related by Dr. Douglas, in which the left lateral sinus was ruptured. The quantity of extravasated blood has been found to vary from a few drops to five or six ounces. Morgagni states that the most frequent seat of the sanguineous effusion is the corpus striatum, and the statement has been confirmed by the observations of M. Rouchoux and other modern pathologists. Such effusions do not seem to be more frequent on one side of the brain than the other, though Morgagni thought that they were most common on the right. Of forty-one cases examined by M. Rouchoux, eighteen presented extravasation in the left hemisphere, seventeen in the right, and six in both — a striking series of cases, it may be remarked, in favour of the opinion that there is usually extravasation *somewhere*.

While the observations of Dr. Abercrombie render it probable that effusion of serum cannot often be a cause of apoplexy, it would be premature to deny absolutely that it is ever so; for, as Dr. Mason Good has justly observed, "it is possible for effused serum to become occasionally a cause of that which from its symptoms is ordinarily denominated sanguineous apoplexy; for it is possible for the exhalents of the brain to participate so largely in the high vascular excitement by which this form of the disease is characterised as to secrete an undue proportion of fluid into any of its cavities, and thus become as direct a cause of apoplexy as extravasated blood."

In the *prognosis* of apoplexy regard must be had to the peculiar character of the disease. Generally speaking, the asthenic is more dangerous than the sthenic form of apoplexy, for we have here less to expect from the remedial power of nature. As to the rest, in either modification the degree of danger will be generally measured by the violence of the symptoms. When, in the first variety, the breathing is not much disturbed, the pupil is dilated, and there is no appearance of spastic action; where the perspiration is easy, the skin warm rather than hot, the bowels are readily kept in a due state of evacuation, and more especially where there is any spontaneous hæmorrhage, as from the nose or hæmorrhoidal vessels, and in sufficient abundance, we may entertain reasonable hopes of recovery. But where the symptoms are directly opposed to these; where the stertor is very loud, and accompanied with much foaming at the mouth; where the teeth are firmly clenched, or deglutition impeded by rigid spasm, and the pupil, instead of being dilated, is contracted to a point, we have little reason to expect a favourable event.

Dr. Cheyne regards convulsions as indicative of great danger; Portal, on the contrary, thinks they sometimes announce a diminution of the morbid cause, on the principle that slight pressure on the brain of a living animal causes convulsions, while a stronger pressure produces stupor and stertorous breathing: but such analogies are altogether inadmissible in pathological reasoning. On the whole, convulsions are generally to be regarded as a bad symptom in apoplexy.

In the treatment of apoplexy, if we be consulted during the existence of the precursory symptoms which have been noticed as frequently taking place, we shall often be able to ward off a paroxysm by bleeding, purgatives, perfect quiet, and, in the sthenic variety, a reducing regimen. Where, however, the state of the pulse, and other symptoms, give proof of weak vascular action and nervous debility, depletion should be practised with caution; and purgatives will often be found preferable to blood-letting. Yet, whatever be the degree of general debility, if there be drowsiness, vertigo, and a dull pain in the head, we must have recourse to bleeding, either local or general, for such symptoms will assuredly lead to a fit unless timely subdued.

In the actual paroxysm of apoplexy, the patient should be immediately placed in a cool and airy apartment, and in a posture which the least favours determination of blood to the head. All ligatures, especially those about the neck, should be removed; and the feet and legs put in warm water, or rubbed with stimulating applications. These means are equally applicable to both forms of the disease. The collateral means to be had recourse to require discrimination, and it will be most convenient to consider them in relation to the actual form under which the apoplexy presents itself.

When the pulse is strong and hard, and the countenance flushed, copious and repeated bleeding is the remedy which naturally suggests itself as the most effectual; yet the opinions of the best practitioners, as well in ancient as in modern times, have been strangely at variance upon this subject. Hippocrates, who regarded apoplexy as chiefly dependent upon a weak and pituitous habit, discountenanced the use of the lancet, as adding to the general debility; and even where it is accompanied with symptoms of strong vascular action, he was equally op-

posed to it, from an idea that the case was utterly hopeless when it assumed this form, and that to have recourse to bleeding would only bring a reproach upon the art of medicine. The authority of Hippocrates has, in this instance, had too much influence even to the present time, and has led several distinguished authors to proscribe every thing like vigorous practice. Thus Forest prohibited bleeding altogether, and would not even admit the use of purgatives; and in our own country, Heberden and Fothergill, regarding apoplexy chiefly as a disease of nervous debility, were fearful of adding to this debility by abstracting blood, and thereby inducing hemiplegia or some other form of paralysis. Dr. Heberden speaks with great hesitation concerning the practice, rather than with an absolute and general condemnation of it; and only makes it a rule not to bleed either in an attack of apoplexy or palsy if there would have been just objections to taking away blood before the incursion of the disease.

Dr. Fothergill expresses himself more decidedly against bleeding than Dr. Heberden. He suspects that the weakness it occasions checks the natural effort to produce absorption; and that even the hard, full, and irregular pulse, which seems imperatively to call for a very free use of the lancet, "is often an insufficient guide;" since "it may be that struggle which arises from an exertion of the *vires vitæ* to restore health." And hence, he adds in another place, "I am of opinion that bleeding in apoplexy is, for the most part, injurious, and that we should probably render the most effectual aid by endeavouring, in all cases, to procure a plentiful discharge from the bowels; as, by these revulsions, the head is, perhaps, much more effectually relieved from plenitude, and that without weakening or interrupting any other effort of nature to relieve herself, than by venesection."

It is singular, as Dr. Mason Good has observed, that in adverting to the remedial power of nature, these distinguished writers were not more impressed by the salutary effects of spontaneous hæmorrhages from the nose, the lungs, or hæmorrhoidal vessels, a copious discharge of blood from which has seldom failed to remove the apoplexy.

Galen, though he always hesitated in departing from the practice of Hippocrates, ventured to deviate from him in recommending bleeding in apoplexy. Aretæus, Paul of Ægina, and Cælius Aurelianus, carried this remedy to greater extent, and Celsus regarded it as the only means of effecting a cure.

The Arabians adopted the practice of the ancients, as far as relates to the employment of blood-letting in the strong apoplexy; and by far the greater number of modern practitioners have followed their example.

It has been a question from which side of the body it may be most advantageous to take blood. Aretæus drew it from the sound side, wherever the distinction could be made. Valsalva and Morgagni recommend the same practice; as does also Cullen, observing that "dissections show that congestions producing apoplexy are always on the side not affected." Baglivi recommends bleeding from the diseased side, except where blood is abstracted locally. The question appears to be of no importance: the grand object in general bleeding is to diminish the quantity and momentum of the circulating fluid, to enable the ruptured vessels to contract with greater facility, and to afford time for the absorption of whatever may have been effused.

In sanguineous or strong apoplexy, general and local bleeding may both be employed with advantage, and the quantity of blood drawn should in every instance depend upon the urgency of the symptoms. Dr. Cheyne advises us to begin with two pounds, and tells us that six or eight pounds must often be abstracted before the disease will give way.

Morgagni, Valsalva, Cullen, Portal, and many others, have recommended that the temporal artery or the jugular vein should be opened; but any advantage that may be derived from the greater proximity of these vessels to the seat of disease, is much more than counterbalanced by the greater certainty and promptness with which the necessary quantity of blood may be taken from the arm; venesection in the arm should therefore always be preferred. Local bloodletting by cupping and leeches is recommended in addition to the general, by many excellent writers: there is no objection to it as an auxiliary, but our main dependence must be on the lancet.

Some years ago, M. Dejean, of Caen, proposed to the Academy of Sciences, to open the superior longitudinal sinus after raising the bone which covers it, and asserted that he had employed this practice with great success on *strangled dogs!* Portal and Tenon, however, who were appointed commissioners to report on Dejean's memoir, agreed that bleeding from the jugular vein is preferable to that from the sinus, as producing the same effect more speedily, and with more facility of restraint when a sufficient quantity of blood has been taken away. In this, as in other cases, however, rash and indiscriminate bleeding has often merely hastened the death of the patient; the remedy should be persevered in only as long as some benefit appears to be derived, or as long as the state of the patient fairly indicates that blood-letting, whether effectual or otherwise, will not be injurious.

"General opinion," says Dr. Cooke, "as well as reasoning, appears to be very much in favour of free and repeated evacuations of blood, both general and topical, in the strong apoplexy; and I am persuaded that greater advantage may be reasonably expected from this than from any other practice; yet I am very much inclined to think that it may be, and actually sometimes has been, carried too far. I have seen several cases, and heard of many others, in which very large quantities of blood have been drawn without the smallest perceptible advantage, and with an evident and considerable diminution of the strength of the patient."

The next important means to be pursued is

at of exciting the bowels by active purgatives, id thus endeavouring to lessen the pressure the brain by revulsion. A full dose of alomel may be given immediately, and its action promoted by a free use of saline purgatives id stimulating enemata. Dolæus employed alomel so as to excite salivation, on the principle that all evacuations are useful: he gives account of several cures effected in this way, id particularly relates the case of a woman ho was considerably relieved by the ptyalism, at died on its cessation.

The collateral remedies are of less importnce, though there are some which may add to e general effect. Emetics have been given the principle of their producing a sudden rostration of strength, and faintness; but this a result of nausea, not of vomiting, and the nguor hereby occasioned is not exactly of the ind we stand in need of, regard being had to he nervous character of the disease, and the anger of inducing hemiplegia. Full vomitng may, indeed, determine from the head to he surface of the body; but we cannot answer hat the straining will not renew the extravasaion, or even rupture a vessel where no rupture as previously existed. The only instance in which it may be prudent to prescribe an emetic, s where the disease has evidently proceeded rom a loaded state of the stomach.

Cordials were much used by the ancient hysicians, from a belief that apoplexy is in lmost every case the result of a debilitated and ituitous habit; and their use has been too eneral down to the present time, though the pinion on which it was founded has been reinquished. Stimulants and cordials of all inds should be abstained from; and the neural salts, with small doses of antimonial, or ther diaphoretics, employed in their stead: f a gentle moisture on the skin be thus induced t may prove highly beneficial. Blisters and ther counter-irritants, though not much to be epended upon, may be of some service. They hould be applied to the extremities, or between he shoulders, but by no means to the scalp; since in the latter situation they preclude the application of cold water to the head, which, next to bleeding and purgatives, is the most important of the means to be used in the cure of apoplexy. The *douche*, though by far the most effectual method of employing cold in *inflammatory* affections of the brain, is here objectionable, on account of the great depression of the nervous power which it produces: cloths, dipped in cold water, or vinegar and water, constantly applied to the head, will have a more moderate, and often a very beneficial effect.

In the asthenic form of apoplexy the treatment must vary in many points from the preceding. Bleeding is here to be used with more caution; yet, as dissections show us that even in this case compression from effusion either of blood or serum is seldom absent, there are few cases in which we should be justified in abstaining altogether from bloodletting. Where there is much debility we are advised by most authors to use topical instead of general bleeding; but this we submit is bad advice; for, in the first place, the case being very urgent, if any good is to be done it must be done promptly; and in the second place since we are doubtful as to whether the system will bear bloodletting, we surely ought to employ that form of it in which its effects are most immediately appreciable, and in which it is most directly under control. Now the lancet combines every advantage; it can be instantly applied, the impression it produces can be exactly watched, and we can stop the bleeding the moment we think it has been pushed far enough: in a great many cases it is borne well, and produces the best effects.

Purgatives should also be had recourse to, but not to the same extent as in the stronger form of the disease.

Some have thought that less danger is to be apprehended from the use of emetics in this than in the sthenic variety; they are strongly recommended by Sauvages, and were regarded by Grubelius as almost specific: they are said to have the triple advantage of freeing the stomach from indigestible matters, rousing the whole system, and determining from the head to the surface of the body; but the objection already stated holds in the present instance as strongly as in the former.

Counter-irritants are of more avail in this form of the disease than in the other. The use of internal stimulants is resorted to by some practitioners even in the present day, though the more powerful agents of this class, as alkohol and ether, are, fortunately, no longer admitted. With respect to ammonia, horseradish, mustard, marjoram, lavender, and other medicines of this kind which have been recommended, the best that can be said is, that they will probably do no particular harm unless used in excessive quantity; but it is difficult to conceive what benefit can be derived in this case from internal stimulants of any kind.

In that kind of apoplexy which is sometimes produced by an immoderate quantity of alkoholic spirits, or an overdose of a narcotic, as opium, there is an almost instantaneous exhaustion of the nervous power, and the case approaches nearly to asphyxia, though with apoplectic stertor on the breathing. In this case the stomach should first be thoroughly emptied by vomiting or the stomach pump; the patient should be stimulated by an extensive application of blisters, and kept in a state of continual motion by walking or other exercise, so as to prevent sleep till the narcotic effect is over. An interesting case of this kind is related by Dr. Marcet, in the Medico-Chirurgical Transactions.

Since apoplexy appears in most cases to depend primarily on some morbid predisposition in the brain, which renders the individual obnoxious to repeated attacks though he should recover entirely from the first, our attention should be as sedulously directed to preventing the future recurrence of the paroxysm as to obviating its immediate effects.

After sthenic apoplexy, the patient should habituate himself to a plain diet, regular exercise, early hours of meals and retirement, and preserve as much as possible an uniform tranquillity of mind: the most particular attention

must also be given to the state of the bowels. After the asthenic variety, the same general plan may be followed; but the diet should be more liberal, and in many cases a course of vegetable tonics may be adopted with advantage.

Apoplexy, Cutaneous. *Apoplexie cutanée.* This extraordinary designation has been given by some French writers to a great and sudden determination of blood towards the skin and subjacent cellular membrane.

Apoplexy, Pulmonary. The very inapposite name of *pulmonary apoplexy* has been given by Lænnec and some preceding writers to extravasation of blood in the lungs from the rupture of vessels. Andral proposes to call it *pneumo-hæmorrhagia*, as distinguished from *broncho-hæmorrhagia*, or an exhalation of blood from the surface of the bronchial membrane. The "bursting of a blood-vessel in the lungs" has long been a popular synonyme for any alarming expectoration of blood, and every case of hæmoptysis was formerly ascribed by most pathologists to the rupture of vessels; but the increased cultivation of morbid anatomy of late years has demonstrated that a very considerable proportion of cases of hæmoptysis arise from simple exudation of blood from the bronchial membrane, and that even a fatal hæmorrhage may proceed from this cause. In other cases, however, the pulmonary vessels are ruptured, and the substance of the lungs becomes infiltrated or gorged with blood to a greater or less extent, according to the magnitude of the ruptured vessel. Sometimes the evil is limited to the infiltration of one or two lobules, and the expectoration of a few ounces of blood; at other times the whole lung is suddenly deluged with blood and the patient dies almost instantaneously: occasionally the hæmorrhage is so violent as to burst through the investing membrane of the lung, and pour the blood into the pleural cavity. The anatomical characters of pulmonary apoplexy vary considerably according to the degree of effusion. Though partially described by Haller and other pathologists, they were first accurately delineated by Lænnec; they have since been further investigated by Andral and other writers, and to the works of these authors we must refer the reader for an account of them. The treatment of pulmonary apoplexy will be considered in the article *Hæmoptysis.*

APOPNI'XIS. (*is, is.* f.; from αποπνιγω, to suffocate.) Suffocation.

Apopsy'chia. (*a, æ.* f.; from απο, from, and ψυχη, the soul.) Complete syncope. Galen has been cited as the authority for this term, but the word used by him is αψυχια, *apsychia.*

Aporrhœ'a. (From απορρεω, to flow from.) *Defluvium, effluvium.* 1. A morbid exhalation, effluvium, or miasm.

2. A falling off of the hair, according to some writers.

Aposce'mma. (Αποσκημμα, from αποσκηπτω, to lie down upon, fall upon.) 1. The metastasis of a disease.—*Hippocrates.*

2. The translation of humours from one part to another. — *Galen.*

3. The alvine evacuations. — *Galen.*

Aposceparni'smus. (Αποσκεπαρνισμος; from απο, from, and σκεπαρνιζω, to strike with a hatchet.) A wound of the cranium or any other bone, from which a fragment has been chipped off by a sharp instrument. — *Gorrhæus.*

Aposce'rsis. The same as *Aposcemma.*

Apo'schasis. (From αποσχαζω, to scarify.) *Aposchasmus.* A scarification. Venesection. — *Hippocrates.*

Apose'pidin. (From απο, and σηπεδων, putrefaction.) The caseous oxide is thus named by Braconnot, because it results from the putrefaction of cheese. See *Caseous oxide.*

Apo'sia. (From α, priv. and πινω, to drink.) Absence of thirst.

Aposi'tia. (From απο, from, and σιτος, food.) A loathing of food.

Aposi'tic. (Same etymon.) Applied to medicines or other means which take away the appetite for food.

Apospa'sma. (From αποσπαω, to draw away.) A solution of continuity, attended with recession of the divided parts from each other, as laceration of tendons, &c. — *Galen.*

Aposphaceli'sis. (Αποσφακελισις; from απο, and σφακελος, a mortification.) The same as sphacelus. Hippocrates uses this word to denote a mortification of the flesh in cases of wounds or fractures, caused by too tight a bandage.

Apo'stasis. (*is, cos,* f.; from αφιστημι, to separate.) The Greek writers apply this term, 1. To abscesses in general.

2. To the separation of a fragment of bone.

3. To the resolution of a disease by excretion, αποστασις κατ' εκρουν, or what we should call a critical discharge. Sauvages uses the word as the specific name of an abscess, arising from metastasis, and without previous inflammation of the part in which it is formed; this he calls *Apostema apostasis.*

Aposta'xis. See *Staxis.*

Apostolo'rum unguentum. See *Unguentum Apostolorum.*

APOSTE'MA. (*a, atis.* n.: from αφιστημι, *discedo, abscedo;* whence the Latins employed *abscessus* to express the same general idea.) An *apostem, imposthume,* or *apostume.* The term apostema was somewhat vaguely applied by the ancients to any considerable swelling, caused by an afflux of humours of whatever kind. The moderns have restricted it to a collection of purulent matter, or an abscess. See *Abscess.*

Aposteri'gma. (Αποστηριγμα; from αποστηριγω, to prop or support.) A fulcrum or prop. Galen uses this term to signify a cushion or other support for a diseased part. Hippocrates (lib. de flatib. xiv. 1.) seems to mean by the same term a fixed and inveterate disease; Foësius, however, suspects the correctness of the reading, and it is certainly difficult to conceive how the word could have been so applied.

Apostume. See *Apostema.*

Aposy'rma. Αποσυρμα. An abrasion.

APOTHE'CA. (Αποθηκη, a repository or storehouse; from αποτιθημι, to put by or deposit.) A storehouse for medicines; an apothecary's shop.

APO'THECARY. (*Apothecarius, i.* m.; from αποθηκη, an apothecary's shop.) An apothecary. This term formerly signified a druggist. It is now used in this country to denote a practitioner of medicine who also deals in drugs; in all other countries the business of the apothecary is merely to compound and dispense the prescriptions of the physician or surgeon.

APOTHE'CIA or APOTHE'CIUM. (From αποθηκη, a repository.) A name given to the receptacle which encloses the reproductive corpuscles in the lichens.

APOTHERAPEI'A. (From απο, and θεραπευω, to cure.) 1. The completion of a cure. — *Hippocrates.*

2. The friction, unction, or bathing used at the conclusion of the ancient gymnastics to remove fatigue. — *Galen.*

APOTHERAPEU'TICA. That branch of medicine which related to the *apotherapeia.*

APOTHLI'MMA. (From αποθλιβω, to press out.) The expressed juice of a plant, or the dregs remaining after the juice has been expressed.

APOTHRAU'SIS. (From αποθραυω, to break.) A splintered fracture of a bone; or the removal of the splinters of a broken bone.

APO'TOCUS. (Αποτοκος; from αποτικτω, to bring forth.) Abortive; premature. — *Hippocrates.*

A'POZEM. See *Apothema.*

APO'ZEMA. (*a, atis.* n. Αποζεμα; from αποζεω, to boil.) A decoction or apozem.

APPARA'TUS. (*us, ûs.* m.; from *apparo*, to prepare.) This word properly means the preparation for any thing, or the implements or materials necessary for any operation or process. In scientific language it has been applied — 1. In a general sense, to the instruments used in the practice of any art, as *chemical apparatus, surgical apparatus.*

2. In *Surgery*, to certain *methods* of performing operations, as *apparatus major*, and *apparatus minor* — particular methods of operating for the stone.

3. In *Physiology*, to a catenation of organs all ministering to the same function, as the *respiratory apparatus*, the *digestive apparatus.*

APPARATUS ALTUS. The high operation for the stone. See *Lithotomy.*

Apparatus, chemical. The principal instruments that are required for chemical investigations, such as furnaces, crucibles, evaporating vessels; the still and vessels for distillation, as alembics, retorts, receivers, adopters; the Argand lamp; Woolfe's apparatus; glass and other vessels for precipitation and solution; glass or other rods and hollow tubes; accurate balances, with weights; the blow-pipe; the apparatus for experiments on gases, &c. With skilful management, a comparatively small and simple apparatus will be found sufficient for most of the purposes of scientific chemistry.

APPARATUS MAJOR. See *Lithotomy.*

APPARATUS MINOR. See *Lithotomy.*

Apparatus, pneumatic. The name given to various contrivances for collecting the gases that result from chemical processes, and subjecting them to experiment. Any kind of air is specifically lighter than any liquid; and, therefore, if not decomposed by it, rises through it in bubbles: and on this principle the common pneumatic apparatus is constructed. The pneumatic trough, invented by Dr. Priestley, and now universally employed under one modification or another, is a kind of reservoir for the liquid, through which the gas is conveyed and caused to rise, and is filled either with water or quicksilver. Some inches below its brim an horizontal moveable shelf is fastened, extending through only half or one third of the area of the trough; and in the water-trough this is provided towards the edge with a row of holes, into which, from underneath, short-necked funnels are fixed. The trough is filled with water sufficient to cover the shelf which supports the receivers, and these being previously filled with water, are placed in an inverted position over the above-mentioned holes, through which the gases, conveyed there and directed by means of the funnels, rise in the form of air-bubbles.

In some cases the trough must be filled with quicksilver, because water absorbs or decomposes certain gases. On account of the price and great specific gravity of this metal, the quicksilver trough is made of smaller dimensions. It is either cut in marble, or made of wood well joined. Several contrivances are in use for lessening the quantity of mercury required.

APPARATUS OF NOOTH. See *Nooth's Apparatus.*

APPARATUS OF WOOLFE. See *Woolfe's Apparatus.*

APPE'NDICES CEREBE'LLI VERMIFO'RMES. Two eminences on the cerebellum, one of which is situated on the anterior and superior part, the other on the posterior and inferior. They somewhat resemble earth-worms coiled up, whence their name.

APPENDI'CULA. (*a, æ.* f.; diminutive of *appendix.*) A term applied by anatomists to certain parts appended to others.

Appendicula cæci vermiformis. See *Appendix cæci vermiformis.*

APPENDICULÆ EPIPLO'ICÆ. *Appendices coli adiposæ, vel pinguedinosæ.* Numerous small appendages of the colon and rectum, consisting of productions of the peritoneal tunic filled with adipose matter. They are supposed to have the same use as the omentum.

APPENDI'CULATE. *Appendiculatus.* Applied to leaves, leaf-stalks, &c., that are furnished with an additional organ for some particular purpose, as the leaves of the *Dionæa muscipula*, which terminate in a pair of toothed irritable lobes, that close over and imprison insects; the leaf of the *Nepentha distillatorea*, which bears a covered receptacle for water; and the petiolus of the *Dipsacus pilosus*, which has little leaves at its base.

APPENDIX. (*ix, icis.* f.) An appendage. Several parts are so named by anatomists.

APPENDIX CÆCI VERMIFORMIS. *Appendicula cæci vermiformis.* A hollow process attached to and communicating with the cæcum in man and some other animals. It is of variable length, usually about four inches, and of the diameter

of a goose-quill. It is named from its resemblance to an earth-worm. Its use is unknown.

APPETITE. (*Appetitus, ûs.* m.; from *appeto*, to desire.) An instinctive desire to perform certain natural functions, especially those of digestion and generation. This is attended with an internal sensation which becomes uneasy or painful only when the appetite remains too long unsatisfied.

Appetite, canine. See *Bulimia.*

Appetite, depraved. See *Pica.*

Appetite, insatiable. See *Bulimia.*

Appetite, morbid. The sensation of hunger is seated in the stomach; and, like that of thirst, is healthy and necessary. It may, however, become disordered, and lose its natural character in various ways, in consequence of different diseased states of the digestive organs. Such deviations from the natural appetite constitute what is commonly called *morbid appetite.* See *Bulimia, Pica, Dyspepsia.*

Apple. See *Pyrus.*

Apples, acid of. See *Malic acid.*

APPLICATION. (From *applico*, to apply.) In medical language, remedial agents which are used externally, as poultices, lotions, &c., are called *external applications*, as opposed to *internal medicines.*

APPREHE'NSIO. (From *apprehendo*, to take hold of.) Catalepsy has been so called.

APPROPRIATE AFFINITY. Another name for intermediate affinity. See *Affinity, intermediate.*

APPROXIMATE. *Approximatus.* A term used in botany. See *Adpressus.*

APPROXIMATION. (*Approximatio, onis.* f.) The name given by Ettmuller to a pretended method of curing diseases by making them pass from the human body into animals or vegetables.

APRICOT. See *Prunus armeniaca.*

APSYCHIA. (From α, priv., and ψυχη, the soul.) Complete fainting. — *Galen.*

APTY'STOS. (From α, priv., and πτυω, to spit up.) A term applied by Hippocrates to a pleurisy in which there is no expectoration.

APULO'TIC. See *Epulotic.*

APYE'TUS. (Απυητος; from α, priv., and πυον, pus.) A term applied by the ancients to external tumours which do not suppurate.

APYRE'TIC. (*Apyreticus*, απυρετος; from α, priv., and πυρ, fire.) A term that has been applied — 1. To those days on which the intermission happens in agues.

2. To local affections which are not accompanied with febrile excitement of the system.

APYRE'XIA. (α, æ. f.; from α, priv., and πυρεξια, fever.) Apyrexy. The intermission of an ague.

APYROME'LE or APYRONOME'LE. (Απυρομηλη vel απυρηνομηλη; from α, priv., πυρην, a nucleus, and μηλη, a probe.) A probe without a button or rounded head at the end of it.

APYROTHI'UM. (From α, priv., πυρ, fire, and θειον, sulphur.) Native sulphur, which has not been exposed to fire. — *Blancard.*

APYROUS. (*Apyrus*; from α, neg., and πυρ, fire.) Applied — 1. To a body which sustains the action of a strong heat without change. Mica, talc, and asbestus were called apyrous minerals by the old writers.

2. To a body which has not been subjected to the action of fire.

A'QUA. (*a, æ.* f.) The Latin word for water. See *Water.*

AQUA AËRIS FIXI. Water impregnated with fixed air. See *Carbonic acid.*

AQUA ALEXITE'RIA. A water distilled from leaves of spearmint, fresh tops of sea wormwood, and fresh angelica leaves. It was formerly prescribed as a vehicle for alexipharmic medicines.

The *aqua alexiteria spirituosa* was made from the same ingredients, but with the addition of proof spirit. The latter preparation, with vinegar added to it, was called *aqua alexiteria spirituosa cum aceto.*

AQUA ALKALINA OXYMURIA'TICA. The Dublin Pharmacopœia directs this preparation to be made thus: Take of muriate of soda, dried, two pounds; powdered manganese, one pound; water and sulphuric acid, of each two pounds. Mix the muriate of soda and the manganese together, put them into a matrass and add the water; then, by means of a proper apparatus, add the sulphuric acid gradually, and at intervals, and transmit the disengaged gas through a solution consisting of four ounces of carbonate of kali, and twenty-nine ounces, by measure, of water. Towards the end of the operation, apply a moderate heat to the matrass. The specific gravity of this solution is to that of distilled water as 1087 to 1000. The result of this process is a solution of chlorate of potash containing some uncombined chlorine. This preparation was at one time in repute as a remedy for syphilis and scurvy, when these complaints were attributed to a deficiency of oxygen in the system. It is now scarcely used as medicine, but is well known in the arts under the name of Bleaching liquid, or *Eau de Javelle.*

AQUA ALU'MINIS COMPOSITA. Compound solution of alum, formerly called *aqua aluminosa Bateana.* See *Liquor aluminis compositus.*

AQUA AMMIO'NIÆ ACETA'TÆ. See *Ammoniæ acetatis liquor.*

AQUA AMMONIÆ PURÆ. See *Ammonia.*

AQUA ANETHI. See *Anethum graveolens.*

AQUA BENEDICTA RULANDI. A solution of crocus of antimony in wine. It is an active emetic.

AQUA CALCIS. See *Calcis liquor.*

AQUA CARUI. See *Carum carui.*

AQUA CERASORUM NIGRORUM. Black cherry water. A preparation formerly in great repute but now disused. It was prepared by bruising black cherries so as to break the stones, and then distilling with only a small proportion of water. This water was used by physicians as a vehicle for other medicines, as we now use peppermint and other waters. It was also much employed as a popular remedy for the convulsive disorders of children. It was found, however, to act as a poison in some instances and was therefore laid aside as unsafe. Its activity depends on the prussic acid contained in the kernels; the quantity of this must vary according to circumstances, and hence the bad effects that appear sometimes to have followed the use of the water.

Aqua cinnamomi. See *Laurus cinnamomum.*

Aqua cœlestis. Water holding ammoniated copper in solution. See *Cupri ammoniati liquor.*

Aqua cœrulea. See *Aqua sapphirina.*

Aqua cupri ammonia'ti. See *Aqua sapphirina.*

Aqua cupri vitriola'ti composita. See *Solutio sulphatis cupri composita.*

Aqua distillata. Distilled water. This is obtained by distilling water in clean vessels, until about two thirds have come over. In nature, no water is found perfectly pure. Spring or river water always contains a portion of saline matter; and, from this impregnation, is unfit for many pharmaceutical purposes. By distillation water is obtained nearly pure. The London College directs ten gallons of common water; of which, first distil four pints, which are to be thrown away; then distil four gallons. This distilled water is to be kept in glass vessels.

Aqua ferne'lii. A mixture of corrosive sublimate and lime-water, with the addition of a little spirit of wine.

Aqua florum aurantii. *Aqua naphæ.* Orange-flower water. A simple water distilled from orange flowers. It has a fragrant but sickly smell. It is scarcely used in this country, but is much esteemed on the Continent as an antispasmodic. The dose is from ʒj. to ʒiv. or more.

Aqua fœniculi. See *Anethum fœniculum.*

Aqua fortis. A weak and impure nitric acid, commonly used in the arts. It is distinguished by the terms *double* and *single*, the single being only half the strength of the other. The artists who use these acids call concentrated nitric acid *spirit of nitre.* See *Nitric acid.*

Aqua græca. A weak solution of nitrate of silver, which is sold by venders of nostrums to turn red hair black.

Aqua grysea. An aqueous solution of nitrate of mercury mixed with a decoction of various plants.

Aqua kali præparati. See *Potassæ subcarbonatis liquor.*

Aqua kali puri. See *Potassæ liquor.*

Aqua lithargyri acetati. See *Plumbi acetatis liquor.*

Aqua lithargyri acetati composita. See *Plumbi acetatis liquor dilutus.*

Aqua marina. Sea-water.

Aqua menthæ piperitæ. See *Mentha piperita.*

Aqua menthæ sativæ. See *Mentha viridis.*

Aqua menthæ viridis. See *Mentha viridis.*

Aqua mirabilis. This was variously made, according to different Pharmacopœias, by digesting aromatics in alkohol, and then distilling. It was used as a cordial and carminative.

Aqua di na'poli. See *Aquetta.*

Aqua obscura. The cataract. A term translated from the Arabian authors.

Aqua pelagica. Sea-water.

Aqua phagedæ'nica. The common yellow wash. See *Yellow wash.*

Aqua pimentæ. See *Myrtus pimenta.*

Aqua pulegii. See *Mentha pulegium.*

Aqua regia. *Aqua regalis.* The nitro-muriatic acid was formerly called *aqua regia* from its power of dissolving gold. See *Chlorine.*

Aqua rosæ. See *Rosa centifolia.*

Aqua sapphirina. *Aqua cærulea. Aqua cupri ammoniati.* Blue eye-water. This is made by mixing ʒj. of sal ammoniac with ℔j. of lime-water, and putting into the mixture a small piece of clean copper, which is to remain till the fluid has acquired a fine blue colour.

Aqua sere'na. A term for amaurosis, translated from the Arabian authors.

Aqua sty'ptica. A name formerly given to a solution of sulphate of copper and alum in water, with the addition of sulphuric acid. It is the same with the *Solutio sulphatis cupri composita* of the present Edinburgh Pharmacopœia.

Aqua toffania. See *Aquetta.*

Aqua ve'geto-minera'lis. *Eau vegeto-minerale.* Goulard water is so called from its being made of vinegar and lead.

Aqua vitæ. Ardent spirit of the first distillation has been distinguished in commerce by this name. In France *Eau de vie* is the name given to the common brandy distilled from high-coloured white, or pale red wines. The finest brandy, or *Cogniac,* is distilled from the palest white wines.

Aqua zinci vitriola'ti cum ca'mphora. *Aqua vitriolica camphorata.* A preparation directed in the older London Pharmacopœias. It is made by dissolving half an ounce of sulphate of zinc in a quart of boiling water, adding half an ounce of camphorated spirit, and filtering. This is used by surgeons as an astringent application to ulcers; and, when properly diluted, is a good collyrium in chronic ophthalmia.

Aquæ distilla'tæ. Distilled waters. These are made by distilling vegetables or other substances with common water, and continuing the process as long as the water which comes over is strongly impregnated with the volatile part of the substance employed. Vegetable distilled waters are the only preparations of this kind now in use. The London College orders the waters to be distilled from dried herbs, because fresh ones are not ready at all times of the year. Whenever the fresh are used, the weights are to be increased. But whether the fresh or dried herbs be employed, the operater may vary the weight according to the season in which they have been produced and collected. Herbs and seeds, kept beyond the space of a year, are improper for the distillation of waters. To every gallon of these waters five ounces, by measure, of proof spirit are to be added. It is unnecessary to enumerate all the distilled waters that have been used in medicine, as their name indicates the substance with the virtues of which they are impregnated.

Aquæ minerales. See *Mineral waters.*

Aquæ stillati'tiæ simplices. Simple distilled waters.

Aquæ stillatitiæ spirituosæ. Spirituous distilled waters, now called spirits. See *Spiritus.*

AQUÆDU'CTUS. An aqueduct. This name has been given by anatomists to several canals in different parts of the body, but not very correctly, as several of them contain no fluid.

Aquæductus co'chliæ. A very narrow canal, which begins at the under part of the scala tympani, near the fenestra rotunda, and, passing through the pars petrosa of the temporal bone, terminates by a triangular opening on the surface of the dura mater.

Aquæductus cotu'nnii. The aqueducts of Cotunnius. The *aquæductus cochliæ* and *aquæductus vestibuli*, were called aqueducts of Cotunnius; because they were first accurately described by that anatomist. He supposed that their use was to carry off the superfluous part of the aqua labyrinthi, but their real use is not known.

Aquæductus fallopii. The aqueduct or canal of Fallopius, so called after the anatomist of that name. It commences within the meatus auditorius internus, passes through the pars petrosa of the temporal bone, and terminates in the stylo-mastoid foramen. It transmits the portio dura of the seventh pair of nerves.

Aquæductus sylvii. From the under and back part of the third ventricle of the brain there is a passage leading to the fourth ventricle; this is called *Aquæductus Sylvii, Iter ad quartum ventriculum*, or *canalis medius*.

Aquæductus vestibuli. A canal which commences in the vestibule of the internal ear, near the common orifice of the semicircular canals, and terminates between the layers of the dura mater on the posterior surface of the pars petrosa of the temporal bone. Its use is not known.

Aquatic nut. See *Trapa natans.*

Aqua'ticæ plantæ. Aquatic plants, or such as grow in or near water.

AQUA'TICUS. (From *aqua*, water.) Aquatic: applied generally in natural history to distinguish things which belong to the water, as aquatic insects, birds, plants, &c.

Aqueous humour. *Humor aquosus.* The limpid watery fluid which fills the space between the cornea and crystalline lens in the eye. See *Eye.*

AQUETTA. *Aqua Toffania; Aqua della Toffana; Aquetta di Napoli.* A celebrated poison prepared by a woman named *Toffana* or *Tophana*, who resided first at Palermo and afterwards at Naples. It was contained in small glass phials, bearing the inscription, "Manna of St. Nicholas Bari," and ornamented with an image of the saint. From four to six drops were a fatal dose. Tophana distributed this poison to women who wanted to get rid of their husbands. Being put to the rack, she confessed that she had destroyed upwards of 600 persons. She was executed in 1709. The *aquetta* is generally supposed to have been a preparation of arsenic: some have thought that it was composed of opium and cantharides, but this is very unlikely. The Emperor Charles VI., who had been governor of Naples at the time of Toffana's trial, declared to his physician Garelli that it was a solution of arsenic in *aqua cymbalariæ*. The water was probably a mere vehicle; the only plant now known under the name of cymbalaria is a species of antirrhinum, which has no poisonous qualities. Gerarde makes the cymbalaria identical with pennywort, and says that the aquatic species of this plant is highly poisonous.

Aquifo'lium. (*um, i.* n.; from *acus*, a needle, and *folium*, a leaf: so called on account of its prickly leaf.) See *Ilex aquifolium.*

A'QUILLA. (*a, æ.* f.) The Latin for an eagle.

An alchemical name of *sal ammoniac*, the *mercurius metallorum*, *arsenic*, *sulphur*, and the *philosopher's stone.*

Aquila alba. An alchemical name of calomel.

Aquila cœlestis. A panacea extolled by the alchemists: it was some preparation of mercury.

Aquila lachrymæ. A preparation of which calomel was an ingredient.

Aquilæ lapis. Eagle stone. See *Aëtites.*

Aquilæ lignum. See *Lignum aloës.*

Aquila nigra. Some preparation of cobalt.

Aquila philosophorum. The *mercurius metallorum.*

Aquilæ venæ. The temporal veins.

Aquila veneris. An old chemical preparation, made by subliming verdigris with sal ammoniac.

AQUILE'GIA. (*a, æ.* f.: so called from the shape of the nectaries, which are curved like the talons of an eagle.) The herb columbine.

1. The name of a genus of plants in the Linnæan system. Class, *Polyandria*; Order, *Pentagynia.*

2. The name for columbine in the Pharmacopœias. See *Aquilegia vulgaris.*

Aquilegia vulgaris. The systematic name of the columbine. The seeds, flowers, and the whole plant, have been used medicinally in exanthematous diseases, scurvy, jaundice, &c. It is retained in several foreign Pharmacopœias but is not used in this country.

Aquili'cia. A genus of plants of the class *Pentandria*, and order *Monogynia.* It contains only one species, the *aquilicia sambucina*, which is a native of Java, the Moluccas, &c. The decoction of the root is used against heartburn; that of the wood is said to allay thirst.

Aquili'na. The same as *Aquilegia.*

Aquula. (*a, æ.* f.; diminutive of *aqua*, water.) In Latin this word properly signifies a pool, or brook. In medical language it has been applied to an hydatid.

Aquula acustica. The fluid which fills the cavity of the vestibule in the internal ear has been so called. See *Aqua labyrinthi.*

Arabic gum. See *Acacia vera.*

Arabica antidotus hepatica. A powder composed of myrrh, costus, white pepper, and cassia leaves. It is not now used.

Arabicus lapis. A kind of white marble brought from Arabia, which was formerly regarded as an absorbent, and used against hæmorrhoids.

A'rabis. (In Greek, Δραβη, whence the appears to have changed into A.) A species of nasturtium, used by the ancients in pickle

What particular plant was no named is not now known. The name Arabis is at present applied to a genus of plants in the Linnæan system. Class, *Tetradynamia;* Order, *Siliquosa.* There are several species, none of which are applied to any use.

Arac. See *Arack.*

A'RACHIS. A genus of plants in the Linnæan system. Class, *Diadelphia;* Order, *Decandria.* It contains only one species.

Arachis hypogea. American earth-nut. This plant grows wild in Florida, Peru, and Brazil, and is cultivated in the southern countries of Europe. The pods become buried in the earth to ripen after fœcundation. The seeds yield an abundance of oil, which is used for the same purposes as that of the olive.

Ara'chnida. (From αραχνη, a spider.) The spider tribe. A class of articulated animals. See *Animal Kingdom.*

Arachni'tis. A term generally applied to inflammation of the arachnoid membrane, but very incorrectly, since it would really signify inflammation of a spider, or its web! The disease has been called with more propriety *Arachnoïditis,* or *Arachnoditis.* See *Encephalitis,* and *Spinal cord, diseases of the.*

ARA'CHNOID. (*Arachnoides;* from αραχνη, a spider or spider's web, and ειδος, likeness: so named from its resemblance to a spider's web.) Cobweb-like.

Arachnoid membrane. *Membrana arachnoides. Tunica aranea.* 1. A very thin and transparent membrane, investing the brain, cerebellum, medulla oblongata, and spinal cord. It is situated between the dura mater and pia mater. Over the whole upper surface of the brain the arachnoid membrane adheres so closely to the pia mater as to be scarcely separable from it; but, in different parts of the base of the brain, especially about the tuber annulare, it is merely in contact with the pia mater, and can easily be raised with the aid of the blow-pipe The arachnoid membrane does not, like the pia mater, insinuate itself between the convolutions of the brain. The inner serous surface of the dura mater seems, in all respects, similar to the arachnoid membrane; it is, therefore, probable that the latter membrane is reflected from the base of the brain to line the dura mater, just as the peritoneum is reflected from the viscera upon the abdominal muscles: it is also supposed that the arachnoid membrane accompanies the pia mater in its expansion through the ventricles; but, from the extreme tenuity of the arachnoid, it is impossible to demonstrate these points satisfactorily. No blood-vessels or absorbents have hitherto been detected in the arachnoid membrane, although the phenomena of disease sufficiently evince that it is endowed with both. The inner surface of this membrane is constantly bedewed with a serous exhalation, and there is little doubt that, like other membranes of this class, it forms, in its whole extent, a shut sac.

2. The term arachnoid was also applied by the Greek anatomists to the hyaloid membrane, or tunic of the vitreous humour of the eye.

3. The capsule of the crystalline lens has been called *tunica aranea* by modern anatomists.

A'RACK. (Indian.) *Arac.* An Indian spirituous liquor, prepared in many ways; often from rice, sometimes from sugar, fermented with the juice of cocoa-nuts; frequently from toddy, the juice which flows from the cocoa-nut tree by incision, and from other substances. It is used like brandy and other spirits, but seems to be of a more heating quality.

Aracon. An alchemical name of copper.

A'rados. (From αραδεω, to disturb or agitate.) A commotion. This term is variously applied by Hippocrates to the disturbance occasioned in the stomach by the digestion of heterogeneous aliments — to the commotion produced by the operation of a purgative — to the excitement and palpitation produced by violent exercise.

Araeo'ticus. (Αραιωτικος; from αραιοω, to rarefy.) Applied to medicines or other means which are supposed to rarefy the fluids of the body.

ARA'LIA. (*a, æ.* f.) The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Pentagynia.* The berry-bearing angelica.

Aralia nudicaulis. *False sarsaparilla.* A native of North America. The roots are sometimes chopped up and mixed with the sarsaparilla of the shops. It is said to be a mild stimulant and diaphoretic, and has been recommended as a substitute for sarsaparilla.

Aralia spinosa. *Angelica tree. Prickly ash. Tooth-ache tree.* The berries of this species are said to have been useful in tooth-ache and colic.

Aralia umbellifera. This species affords an aromatic gum resin which exudes from the bark.

Aralia'ceæ. *Araliæ.* A natural family of plants, of which the genus *Aralia* is the type.

Aralia'strum. The ginseng. See *Panax quinquefolium.*

Ara'nea. 1. A Spider. This insect was formerly held to be highly poisonous, and also very efficacious in medicine. Placed on the wrist or temple, it was believed to possess great power as a febrifuge; and with the same intention it was enclosed in a filbert-shell, and suspended from the neck. The web was likewise used externally and internally as a febrifuge. Even in the present day, spiders' webs are believed by the credulous to drive away agues. The web is not a bad mechanical styptic, and is sometimes used as a popular application to stop the bleeding from small cuts and leech bites.

2. The herb Paris has been called *Aranea.* See *Paris quadrifolia.*

Aranea Tunica. See *Arachnoid membrane.*

Araneo'sa urina. Urine which contains filaments resembling a spider's web.

Araneum ulcus. See *Astakillos.*

Arantia. The same as aurantium. See *Citrus aurantium.*

A'RBOR. (*or, oris.* f.) A tree. A plant which has a perennial woody trunk, rising to a considerable height, and divided at its top into branches which do not perish in the winter; as the oak, elm, ash, &c.

In anatomy and chemistry, the name *arbor*

has been applied to things more or less resembling a tree, as *arbor vitæ*, *arbor Dianæ*.

Arbor dianæ. *Arbor philosophorum*, *arbor mineralis philosophica*. If mercury be thrown into a dilute solution of nitrate of silver, the silver is gradually precipitated in a beautiful arborescent form, constituting what is called the *Arbor Dianæ*.

Arbor maris. Coral has been so called.

Arbor mineralis philosophica. See *Arbor Dianæ*.

Arbor philosophorum. See *Arbor Dianæ*.

Arbor vitæ. The tree of life. 1. When the cerebellum is cut vertically, the medullary substance appears ramified so as to represent a tree; this dendriform arrangement of the white matter is named *Arbor vitæ*.

2. The Thuya occidentalis is named *Arbor vitæ*. See *Thuya occidentalis*.

Arbores'cens. Arborescent. Applied — 1. In *Botany*, to plants which, as they grow older, become more or less woody, and approach to trees; or to stems of plants which become woody.

2. In general scientific language, to various things bearing some resemblance to the shape of a tree, as an *arborescent crystallisation*, &c.

Arbo'reus. Tree-like; having a permanent woody stem. Applied to plants.

Arbusti'va. (From *arbustum*, a copse of shrubs or trees.) The name of a natural order of plants.

A'RBUTUS. (*us*, *i.* f.) The name of a genus of plants in the Linnæan system. Class, *Decandria*; Order, *Monogynia*.

Arbutus, trailing. See *Arbutus uva ursi*.

Arbutus u'nedo. The systematic name of a plant which grows in the western parts of Europe, called also *Unedo papyracea*. The leaves are astringent, and a decoction of them is used in diarrhœa.

Arbutus uva ursi. The systematic name of the officinal trailing arbutus; called also Bear's berry, Bear's whortle-berry, Bear's bilberry, wild cranberry, &c. *Arbutus — caulibus procumbentibus, foliis integerrimis*, of Linnæus. This plant, though employed by the ancients as an astringent, had almost entirely fallen into disuse until the middle of last century, when it got into vogue as an useful remedy in calculous and other diseases of the urinary organs. Little confidence is placed in it by most physicians of the present day. The powder of the leaves is given in doses of from ℈j. to ʒj. twice or thrice a day.

A'rca arcanorum. The *mercurius philosophorum*.

Arca cordis. The pericardium.

ARCA'NUM. (*um*, *i.* n.) A secret. 1. A nostrum or medicine, the composition of which is concealed.

2. The term arcanum was much used in the jargon of the alchemists, and, like many of their other terms, is not susceptible of very lucid explanation. "Arcanum," says Ruland, "is a thing secret, incorporeal, and immortal, which can only be known to man by experience; for it is the virtue of each thing, which operates a thousand times more than the thing itself."

Arcanum bechicum. A name given by Willis to a solution of liver of sulphur, and sugar, in water.

Arcanum cora'llinum. An old preparation made by digesting the nitric oxide of mercury in solution of potash, washing it, and burning spirit of wine upon it. It was used internally to excite salivation, and externally as an escharotic.

Arcanum duplicatum. *Panacea Holsatica*. An old name for sulphate of potash.

Arcanum duplicatum catholicum. An amulet composed of the root of colchicum and plantain. It was strongly recommended by Wedel as a preservative from pestilential diseases.

Arcanum lu'demanni. An obsolete name of the oxide of zinc.

Arcanum ta'rtari. The acetate of potash.

Arceuthos. Αρκευθος, juniper.

Archæ'us. See *Archeus*.

Archangelica. See *Angelica*.

A'rche. (Αρχη, a beginning.) The earliest stage of a disease.

Arche'nda. A powder made of the leaves of alcanna, mixed into a paste with water, used by the Egyptians to correct the fœtid odour of the feet, and to tinge the hands and feet with a golden colour. — *Prosper Alpinus*.

ARCHE'US. A term of which Paracelsus claims the invention, and which, as was usual with him, he applied in vague and contradictory acceptations: at one time making it "the nature and disposer of all things;" at others, a kind of assistant to nature, which accomplished all things by means of three subordinate agents, namely, salt, sulphur, and mercury. Van Helmont adopted the term Archeus, to designate an intelligent vital principle which presided over all the functions of the body. The chief Archeus kept watch at the cardiac orifice of the stomach; but there were a number of subordinate archei placed in the different organs, and acting according to the orders they received from head quarters. Archeus became a general favourite among the alchemical philosophers, and seems to have had his functions indefinitely extended. He was an exalted and invisible spirit; an occult power of nature; the artificer of all things; physician general to the universe, &c. &c.

ARCHIA'TER. (From αρχη, authority, and ιατρος, a physician; or from αρχων, a prince or leader, and ιατρος, a physician.) Different opinions have been held as to the original meaning of this term. Some think that it meant a physician to a sovereign, or other person of high rank; others have applied it to a physician holding the highest rank in his profession. The elder Andromachus, who lived in the reign of Nero, is said to have been the first who bore this title. It seems afterwards to have been extended from one to a number of physicians, all in the pay of the emperor, who came at length to form a sort of college, the president or head of which was called *comes archiatrorum*.

Archil. See *Lichen rocella*.

Archilla. See *Lichen rocella*.

Archima'gia. The name given by the alchemists to the sublimest part of their art,

namely, that which related to making gold and silver.

Archi'mia. That branch of alchemy which related to the transmutation of the imperfect into the perfect metals.

Archingeay. A town of France, three leagues from St. Jean d'Angely. It has mineral waters, which contain carbonate of lime, muriate of soda, carbonate of iron, and a kind of bitumen. They have been recommended for all sorts of diseases.

Archopto'ma. (From αρχος, the rectum or anus, and πιπτω, to fall down.) Prolapsus ani.

Arcœ'us, balsam of. An unguent applied to sores and bruises. It consists of two parts of mutton suet, one of hog's lard, one part and a half of turpentine, and the same of resin, mixed into a paste with water.

Arcta'tio. (*o, onis.* f.; from *arcto*, to contract.) *Arctitudo.* Narrowing or constriction in any sense; the term has been chiefly applied to constipation of the bowels, and preternatural narrowness of the female pudenda.

A'RCTIUM. (*um, i.* n.; αρκτειον.) The name of a genus of plants in the Linnæan system. Class, *Syngenesia*; Order, *Polygamia æqualis.* The burdock.

Arctium lappa. The systematic name of the herb burdock, or clit-bur; called also *Bardana*, *Arctium*, and *Ilaphis.* The plant so called in the Pharmacopœias is the *Arctium — foliis cordatis, inermibus, petiolatis*, of Linnæus. It grows wild in uncultivated grounds. The seeds have a bitterish subacrid taste: they are recommended as very efficacious diuretics, given either in the form of emulsion, or in powder, to the quantity of a drachm. The roots have a sweetish, but slightly austere and bitter taste: they are esteemed aperient, diuretic, and sudorific. Decoctions of them have been used in rheumatic, gouty, venereal, and other disorders; and have been preferred by some to those of sarsaparilla. Two ounces of the roots are to be boiled in three pints of water to a quart; to this two drachms of sulphate of potash are generally added. Of this decoction, a pint may be taken every day in scorbutic and rheumatic cases.

Arctosta'phylos. (From αρκτος, a bear, and σταφυλη, a grape.) The *uva ursi.* See *Arbutus.*

Arctu'ra. (*a, æ.* f.; from *arcto*, to straiten.) Inflammation of a finger, or toe, from incurvation of the nail. — *Linnæus.*

Arcua'lis. (From *arcus*, a bow.) Shaped like a bow. The coronal suture has been called *sutura arcualis*; and the parietal, as also the temporal bones, have been called *ossa arcualia.*

Arcua'tio. (From *arcus*, a bow.) A gibbosity or projection of the sternum.

Arcua'tus morbus. *Morbus arquatus.* Latin names of the jaundice. See *Icterus.*

A'rcula. (Diminutive of *arca*, a chest.) The orbits or sockets of the eyes have been called *arculæ.*

Ardea. (*a, æ.* f.) The heron; a well-known bird. The fat or lard of this bird was formerly believed to alleviate the pain of gout, to discuss nebulæ in the eye, and, when introduced into the ears, to remove dulness of hearing.

Ardens. See *Ardent.*

Ardent. (*Ardens*; from *ardeo*, to burn.) Burning: applied to fevers and to alkoholic spirits. As *ardent fever*, a fever accompanied with great heat of the surface; *ardent spirits*, brandy, rum, &c.

A'RDOR. (*or, oris.* m.; from *ardeo*, to burn.) Intense heat. Applied in medicine to morbid increase of temperature, or a morbid sensation of heat. See *Morbid temperature.*

Ardor febri'lis. Feverish heat.

Ardor uri'næ. Scalding of the urine; a painful sense of heat in the urethra in making water. It is a common symptom in gonorrhœa.

Ardor ventri'culi. Heartburn. See *Cardialgia.*

A'REA. (*a, æ.* f.; the space contained within the boundaries of a plane figure.) 1. This term was applied by Celsus to a cutaneous disease, of which he makes two varieties, one corresponding to *alopecia*, the other to *ophiasis.*

2. It has been used by some to designate a variety of alopecia, in which the hair changes colour, but does not fall out. The term is rather a vague one, and has been variously applied.

ARE'CA. (*a, æ.* f.) The name of a genus of plants, of the Class *Palmæ.*

Areca catechu. *Areca indica.* This species is a native of the East Indies. It yields a nut somewhat resembling the nutmeg, but larger and harder. Two kinds of catechu are extracted from this nut by the Indians, one called *cuttacamboo*, and the other *cashcutti.*

Areca oleracea. *Areca americana.* The cabbage-tree palm. A very lofty and beautiful tree which grows wild in South America, and is abundantly cultivated in both the Indies. The medulla, or pith, forms an inferior kind of sago; the young buds are cut and eaten as cabbage; and the fruit yields oil.

Are'gon. (From αρηγω, to help: so called from its valuable qualities.) The name of a resolvent ointment not now in use.

Aremaros. An alchemical name of cinnabar.

Are'na. (*a, æ.* f.) Sand. Applied to gravel deposited from the urine.

ARENA'RIA. Sandwort. A genus of plants, so called because its different species grow in sandy situations. Class, *Decandria*; Order, *Trigynia.*

Arenaria peploi'des. Sea-side sandwort. Sea chickweed. This herb has been used as an application to whitlows.

Arenamen. Armenian bole. — *Ruland.*

Arena'tio. (*o, nis.* f.; from *arena*, sand.) A practice formerly prevailed of immersing the whole body or the feet only in hot sand: this was called *arenatio*, and was used in cases of dropsy.

Are'nga. A genus of palms, of which only one species is known. It grows in the Moluccas. The sap affords sugar by evaporation, and a pleasant liquor by fermentation. The pith affords a kind of sago. The green fruit, preserved with sugar, is much esteemed in Cochin-China; but the ripe fruit, when eaten, causes insupportable itching of the skin.

ARE'OLA. (*a*, æ. f. ; diminutive of *area*.) Applied, 1. In *Anatomy*, to the small interstices of cellular or other tissues.

2. A circle of a pale reddish colour, which surrounds the nipple in women. During pregnancy, and for some time after, the areola is considerably enlarged, and of a darker colour.

3. An inflamed ring around pustules, &c. The areola surrounding the vaccine vesicle affords an important indication of the disease being genuine.

Areola papilla'ris. The areola round the nipple in women.

Areo'meter. See *Hydrometer*.

Ares. In the jargon of Paracelsus, this word was used to signify a principle which gives to each substance in nature its specific form.

Are'sta bo'vis. The herb rest-harrow. See *Ononis*.

Aretænoi'des. See *Arytænoides*.

Arfar. Arsenic.

A'RGAL. Argol. Crude tartar, in the state in which it is taken from the inside of wine-vessels, is known in the shops by this name. It is called red or white, according as it is deposited from red or white wine.

A'rgema. (From αργος, white.) *Argemon*. An ulcer of the eye, situated on the margin of the cornea.

ARGEMO'NE. (Said to be so called from its curing the *argema*.) A genus of plants in the Linnæan system. Class, *Polyandria;* Order, *Polygynia*.

Argemone mexicana. *Papaver spinosum*. *Prickly poppy*. A plant which grows wild in Mexico and the Antilles, and is naturalised in the south of Europe. It contains a yellow acrid juice. The seeds are purgative, and the flowers narcotic. An infusion of the leaves is said to be useful in ophthalmia.

Argenson. A place in Dauphiny, where there are chalybeate waters used in cases of jaundice, biliary obstructions, &c.

Argentate of ammonia. Fulminating silver. See *Argentum*.

Arge'nti ni'tras. Nitrate of silver ; called also *Argentum nitratum*, *Causticum lunare*, and *Lapis infernalis*. Take of silver, an ounce; nitric acid, a fluid ounce ; distilled water, two fluid ounces. Mix the nitric acid and water, and dissolve the silver therein on a sand-bath ; then increase the heat gradually, that the nitrate of silver may be dried. Melt the salt in a crucible over a slow fire, until the water being evaporated, it shall cease to boil ; then pour it quickly into moulds of convenient shape. Nitrate of silver, thus prepared, is in small solid cylinders of a dark gray colour, and presenting a crystalline texture when broken. It is inodorous; has a very nauseous, metallic, and caustic taste ; and when applied to the skin, immediately tinges it black, owing to the separation of oxide of silver. It is soluble in its own weight of water at 60°, and in half its weight of boiling water; but the solution is imperfect, owing to the impure state of the salt. Nitrate of silver, as prepared in the manner above directed, is never pure. It is dark and opake, owing to some of the nitrate being decomposed during the process ; and it is deliquescent, from its containing nitrate of copper : whereas the pure nitrate of silver, whether in crystals or fused, is colourless and transparent, and does not deliquesce. The presence of copper in the lunar caustic is detected by its striking a blue colour with liquor ammoniæ. Nitrate of silver is decomposed and the oxide precipitated by exposure to light ; it is usual, therefore, to keep the sticks of nitrate of silver carefully rolled up in paper ; and if the aqueous solution be kept a while for any purpose, it is preserved in an opake bottle.

Nitrate of silver is incompatible in prescriptions with the alkalies and their carbonates, with the alkaline earths, with soap, with the sulphuric, muriatic, and tartaric acids, with the hydrosulphurets, arsenic, astringent vegetable infusions, and undistilled water. For a further account of the chemical relations of nitrate of silver, see *Argentum*.

Lunar caustic has long been in esteem among surgeons, as a powerful, safe, and manageable escharotic. Moistened with water and applied to any part, it rapidly destroys its texture; and is hence applied to warts and fungous excrescences, and also to incipient chancres, with a view of destroying the texture of the part before the specific action is fully developed, or has time to be communicated to the system. An aqueous solution, in the proportion of from 5 to 10 grains of the nitrate to ℥j. of distilled water, is often a very useful application both to indolent and to irritable ulcers ; applied to their surface with a hair pencil, it produces in either instance a salutary change of action. In the proportion of 5 grains to ℥vj. of water, it forms a good injection in the chronic stage of gonorrhœa ; of late years, however, it has been the practice with some in this case, to use an injection containing 10 grains of the nitrate of silver to ℥j. of water !

A very important local application of the nitrate of silver is in the treatment of purulent ophthalmia. A few years since, Dr. Ridgway recommended the use of a solution containing 12 grains of the nitrate to an ounce of water, of which solution one or two drops were introduced into the eye every other day. Mr. Guthrie has since applied an ointment consisting of 10 grains of the nitrate carefully levigated with ʒj., and whoever has tried the practice to any extent cannot but be convinced of its efficacy.

Another important local use of this substance in checking the extension of erysipelas has been lately illustrated by Mr. Higginbottom of Nottingham. (See *Erysipelas*.) As an internal remedy, the nitrate of silver is alleged to have proved highly efficacious in epilepsy, chorea, angina pectoris, and dyspepsia. One eighth of a grain made into a pill with bread crumb may be given three times a day, the dose being gradually increased to four grains or more; but little benefit is found to result from this practice, unless it be preceded by a course of purgatives. The chief objection to the internal use of this remedy is the purple hue of the skin which it sometimes produces, owing to the de-

position of the oxide of silver in the rete mucosum. It has been asserted by Clementini, that this effect may be obviated by avoiding the sunshine; but this is a point not easily ascertained, because the discoloration of the skin results only occasionally from the use of the medicine.

Argenti'na. See *Potentilla anserina.*

Argentine flowers of antimony. See *Antimony.*

Arge'ntum. (*um, i.* n.) Silver. This metal occurs both native and combined with gold, lead, copper, mercury, cobalt, arsenic, sulphur, &c. The native silver, and the sulphuret of silver or silver glance, are the most productive ores. The new world possesses the richest silver mines; those of Mexico and Peru far exceed in value all the European and Asiatic mines put together. In Europe, the principal silver mines are those of Bohemia, Hungary, Transylvania, Saltzburg, Moravia, and Austria, all included in the Austrian dominions. The next in importance are those of Russia and Saxony. Mines of considerable value are worked in Hanover, Prussia, Bavaria, and Sweden. Norway also has its silver mines, and most countries of Europe afford ores of this metal in greater or less abundance, and more or less worth the trouble and expense of reducing.

There are two processes in general use for extracting silver from its ores—the one adapted to those which are free from lead; the other, to those in which the silver is combined with that metal.

In the former instance, the ore is finely powdered and mixed with common salt; if the ore contain no sulphur, pyrites is added to supply this material. The powdered mass is roasted in a reverberatory furnace: sulphuric acid is formed, which unites with the soda, while the chlorine of the salt combines with the silver. The roasted mass is ground to fine powder, and is put along with mercury, water, and fragments of iron, into barrels which are made to revolve by machinery, in order to bring the materials into intimate contact. During this operation the chloride of silver is decomposed by the iron, the silver unites with the mercury, and the chloride of iron is dissolved by the water. A liquid substance results, which consists of an amalgam of silver and mercury mixed with uncombined mercury; the mercury is got rid of by pressing the mixture in bags of thin leather, through the pores of which the superfluous mercury exudes, and a solid amalgam of mercury and silver is obtained. The mercury is distilled off in a particular apparatus adapted to the purpose, and the silver remains in the shape of a porous mass. The foregoing method is styled the process by *amalgamation*, and is that generally used in South America, and at Freyberg in Saxony.

When the silver is associated in the ore with lead, it is separated by a process founded on the different oxidability of the two metals, and the easy fusibility of the protoxide of lead. The ore containing sulphurets of lead and silver is kept at a red heat in a flat furnace, and constantly exposed to a draught of air; the lead is rapidly oxidised; and the oxide, being fused as fast as it is formed, escapes through an aperture at the side of the furnace, and the silver remains. The silver, however, still retains some lead, to free it of which it is put into a smaller furnace called the *test*, which contains lixiviated wood ashes; a greater heat is applied than in the first furnace, and the remaining oxide of lead is completely absorbed by the porous ashes, leaving the silver nearly pure. By the foregoing processes silver is obtained sufficiently pure for all ordinary purposes. To obtain it absolutely pure, it is to be dissolved in nitric acid, and a solution of muriate of soda added as long as it occasions a precipitate. The precipitate, which is chloride of silver, is to be washed with water and dried. A quantity of carbonate of potash, double the weight of the chloride of silver, is to be fused at a red heat, in a clean black-lead crucible, and the chloride projected upon it in successive portions. Effervescence takes place with evolution of oxygen and carbonic acid gases; chloride of potassium is formed, and a silver subsides in a state of purity.

Silver is the whitest of all the metals, very ductile and malleable, but considerably less so than gold. It is harder than gold, but soft enough when pure to be cut with a knife. Its specific gravity is from 10·4 to 10·5. It ignites before melting, and requires a strong heat to fuse it. Pure silver does not become oxidised by exposure to air and moisture. When melted in open vessels, it absorbs oxygen in large quantity, but parts with it all again as it resumes the solid form. M. Gay-Lussac has found that this absorption and subsequent evolution of oxygen is greater in proportion as the metal is purer, and that a very small admixture of copper prevents it altogether. When silver, in the form of leaf or fine wire, is intensely heated by means of electricity, galvanism, or the oxy-hydrogen blowpipe, it burns with a beautiful green light, and is converted into the oxide. Only one oxide of silver has hitherto been generally recognised by chemists. Mr. Faraday, however, believes that the pellicle formed by exposing to the air a solution of the brown oxide in ammonia, consists of an oxide containing a smaller proportion of oxygen; and Ritter has described one containing a larger proportion, which last is also admitted by Berzelius.

The common oxide of silver is most conveniently obtained by mixing a solution of pure baryta with one of nitrate of silver. It is of a brown colour; it is insoluble in water, and is completely reduced by a red heat. Berzelius considers this oxide as composed of 93·11 parts of silver, and 6·89 of oxygen. For the following account of the chemical relations of silver, we are indebted to Dr. Ure's Dictionary of Chemistry: —

Silver combines with chlorine, when the metal is heated in contact with the gas. This chloride is, however, usually prepared by adding muriatic acid, or a muriate, to nitrate of silver. It has been long known by the name of *luna cornea*, or *horn-silver*; because, though a white powder as it falls down from the nitrate

solution, it fuses at a moderate heat, and forms a horny-looking substance when it cools. It consists of 13·75 silver + 4·5 chlorine.

When pulverised chloride of silver is boiled in a nearly saturated solution of common salt, a compound of the two solutions is produced, which crystallises as the temperature falls. The crystals are not affected by light, but are decomposed by water.

The sulphuret of silver is a brittle substance, of a black colour and metallic lustre. It is formed by heating to redness thin plates of silver stratified with sulphur. It consists of 13·75 silver × 2 sulphur.

Fulminating silver is formed by pouring lime-water into the pure nitrate, filtering, washing the precipitate, and then digesting on it liquid ammonia in a little open capsule. In twelve hours the ammonia must be cautiously decanted from the black powder, which is to be dried in minute portions, and with extreme circumspection, on bits of filtering-paper or card. If struck, in even its moist state, with a hard body, it explodes; and if in any quantity, when dry, the fulmination is tremendous. The decanted ammonia, on being gently heated, effervesces from disengagement of azote, and small crystals appear in it when it cools. These possess a still more formidable power of detonation, and can scarcely bear touching even under the liquid. It seems to be a compound either of oxide of silver and ammonia, or of the oxide and azote. The latter is probably its true constitution, like the explosive iodide and chloride. The sudden extrication of the condensed gas is the cause of the detonation. Silver is soluble in sulphuric acid when concentrated and boiling, and the metal in a state of division.

Muriatic acid does not act upon it; but the nitric acid, if somewhat diluted, dissolves it with great rapidity, and with a plentiful disengagement of nitrous gas; which, during its extrication, gives a blue or green colour to the acid, that entirely disappears if the silver made use of be pure: if it contain copper, the solution remains greenish; and if the acid contain either sulphuric or muriatic acid, these combine with a portion of the silver, and form scarcely soluble compounds, which fall to the bottom. If the silver contain gold, this metal separates in blackish-coloured flocks.

Nitric acid dissolves more than half its weight of silver; and the solution is very caustic; that is to say, it destroys and corrodes animal substances very powerfully.

The solution of silver, when fully saturated, deposits thin crystals as it cools, and also by evaporation. These are called lunar nitre, or nitrate of silver. A gentle heat is sufficient to fuse them, and drive off their water of crystallisation. In this state the nitrate, or rather subnitrate, for the heat drives off part of the acid, is of a black colour, and may be cast into small sticks in a mould, in which form it constitutes the lapis infernalis, or lunar caustic, used in surgery. A stronger heat decomposes nitrate of silver, the acid flying off, and the silver remaining pure. It is obvious that, for the purpose of forming the lunar caustic, it is not necessary to suffer the salt to crystallise; but that it may be made by evaporating the solution of silver at once to dryness; and as soon as the salt is fused, and ceases to boil, it may be poured out. The nitric acid driven off from nitrate of silver is decomposed, the products being oxygen and nitrogen.

Nitrate of ammonia and silver is easily obtained by adding ammonia to the nitrate of silver. The salt is very soluble, readily crystallises, and consists of nitric acid 264, oxide of silver 550, ammonia 180, being in the ratio of an atom of each of the former, and two atoms of the last constituent. A triple sulphate of ammonia and silver may be formed in the same way.

The sulphate of silver, which is formed by pouring sulphuric acid into the nitric solution of silver, is sparingly soluble in water; and on this account forms crystals, which are so small that they compose a white powder. The muriatic acid precipitates from nitric acid the saline compound called luna cornea, or horn-silver; which has been so distinguished, because, when melted and cooled, it forms a semi-transparent and partly inflexible mass resembling horn. It is supposed that a preparation of this kind has given rise to the accounts of malleable glass. This effect takes place with aqua regia, which acts strongly on silver, but precipitates it in the form of muriate as fast as it is dissolved.

If any salt with base of alkali, containing the muriatic acid, be added to the nitric solution of silver, the same effect takes place by double affinity; the alkaline base uniting with the nitric acid, and the silver falling down in combination with the muriatic acid.

Since the muriatic acid throws down only silver, lead, and mercury, and the latter of these two is not present in silver that has undergone cupellation, though a small quantity of copper may elude the scorification in that process, the silver which may be revived from its muriate is purer than can readily be obtained by any other means. When this salt is exposed to a low red heat, its chlorine is not expelled; and a greater heat causes the whole concrete either to rise in fumes or to pass through the pores of the vessel. To reduce it, therefore, it is necessary that it should be triturated with its own weight of fixed alkali and a little water, and the whole afterward exposed to heat in a crucible, the bottom of which is covered with soda; the mass of muriate of silver being likewise covered with the same substance. In this way the acid will be separated from the silver, which is reduced to its metallic state.

As the precipitate of muriate of silver is very perceptible, the nitric solution of silver is used as a test of the presence of muriatic acid in waters; for a drop of this solution poured into such waters will cause a very evident cloudiness. The solution of silver is also used by assayers to purify the nitric acid from any admixture of muriatic acid. In this state they call it precipitated aquafortis.

M. Chenevix found that a chlorate of silver may be formed by passing a current of chlorine through water in which oxide of silver is sus-

pended. It requires only two parts of hot water for its solution; and this affords, on cooling, small, white, opaque, rhomboidal crystals. It is likewise somewhat soluble in alkohol. Half a grain, mixed with half as much sulphur, and struck or rubbed, detonates with a loud report and a vivid flash.

Compounds of silver with other acids are best formed by precipitation from its solution in nitric acid; either by the acid itself, or by its alkaline salts. Phosphate of silver is a dense white precipitate, insoluble in water, but soluble in an excess of its acid. By heat it fuses into a greenish opake glass. Carbonate of silver is a white insoluble powder, which is blackened by light. The fluate and borate are equally soluble. Distilled vinegar readily dissolves the oxide of silver, and the solution affords long white needles, easily crystallised.

The precipitates of silver, which are formed by the addition of alkalies or earths, are all reducible by mere heat, without the addition of any combustible substance.

A detonating powder has been sold lately at Paris as an object of amusement. It is enclosed between the folds of a card, cut in two lengthwise; the powder being placed at one end, and the other being notched, that it may be distinguished. If it be taken by the notched end, and the other be held over the flame of a candle, it soon detonates, with a sharp sound and violent flame. The card is torn and changed brown; and the part in contact with the composition is covered with a slight metallic coating, of a grayish-white colour.

This compound, which M. Descotils calls detonating silver, to distinguish it from the fulminating silver of M. Berthollet, may be made by dissolving silver in pure nitric acid, and pouring into the solution, while it is going on, a sufficient quantity of rectified alkohol; or by adding alkohol to a nitric solution of silver with considerable excess of acid.

In the first case, the nitric acid into which the silver is put must be heated gently till the solution commences, that is, till the first bubbles begin to appear. It is then to be removed from the fire, and a sufficient quantity of alkohol to be added immediately, to prevent the evolution of any nitrous vapours. The mixture of the two liquors occasions an extrication of heat; the effervescence quickly recommences, without any nitrous gas being disengaged; and it gradually increases, emitting at the same time a strong smell of nitric ether. In a short time the liquor becomes turbid, and a very heavy, white, crystalline powder falls down, which must be separated when it ceases to increase, and washed several times with small quantities of water.

If a very acid solution of silver previously made be employed, it must be heated gently, and the alkohol then added. The heat excited by the mixture, which is to be made gradually, soon occasions a considerable ebullition, and the powder immediately precipitates.

It would be superfluous to remind the chemist, that the mixture of alkohol with hot nitric acid is liable to occasion accidents, and that it is consequently prudent to operate on small quantities.

This powder has the following properties:—It is white and crystalline; but the size and lustre of the crystals are variable. Light alters it a little. Heat, a blow, or long-continued friction, causes it to inflame with a brisk detonation. Pressure alone, if it be not very powerful, has no effect on it. It likewise detonates by the electric spark. It is slightly soluble in water. It has a very strong metallic taste.

Concentrated sulphuric acid occasions it to take fire, and is thrown by it to a considerable distance. Dilute sulphuric acid appears to decompose it slowly.

A fulminating silver may be made by adding fragments of caustic potash to a solution of chloride of silver in ammonia. When the effervescence has ceased, the black liquor obtained is to be diluted and filtered; the black powder, being washed and dried, detonates upon the application of heat.

Sulphur combines very easily with silver, if thin plates, imbedded in it, be exposed to a heat sufficient to melt the sulphur. The sulphuret is of a deep violet colour, approaching to black, with a degree of metallic lustre, opake, brittle, and soft. It is more fusible than silver, and this in proportion to the quantity of sulphur combined with it. A strong heat expels part of the sulphur.

Sulphuretted hydrogen soon tarnishes the surface of polished silver, and forms on it a thin layer of sulphuret.

The alkaline sulphurets combine with it by heat, and form a compound soluble in water. Acids precipitate sulphuret of silver from this solution.

Phosphorus left in a nitric solution of silver becomes covered with a metal in a dendritic form. By boiling, this becomes first white, then a light black mass, and is ultimately converted into a light brown phosphuret. The best method of forming a phosphuret of silver is Pelletier's, which consists in mixing phosphoric acid and charcoal with the metal, and exposing the mixture to heat.

Most metals precipitate silver from its solution in a metallic state. The assayers make use of copper to separate the silver from the nitric acid used in the process of parting. The precipitation of silver by mercury is very slow, and produces a peculiar symmetrical arrangement, called the *Arbor Dianæ*. In this, as in all precipitations, the peculiar form may be affected by a variety of concomitant circumstances; for which reason one process usually succeeds better than another.

Make an amalgam, without heat, of four drachms of leaf silver with two drachms of mercury. Dissolve the amalgam in four ounces or a sufficient quantity of pure nitric acid of a moderate strength; dilute this solution in about a pound and a half of distilled water; agitate the mixture, and preserve it for use in a glass bottle with a ground stopper. When this preparation is to be used, the quantity of one ounce is put into a phial, and the size of a pea of amalgam of gold, or silver, of the consistence of butter, is to be added; after which the vessel must be left at rest. Soon afterwards, small

filaments appear to issue out of the ball of amalgam, which quickly increase, and shoot out branches in the form of shrubs.

Silver unites with gold by fusion, and forms a pale alloy. With platina it forms a hard mixture, rather yellower than silver itself, and of difficult fusion; but the two metals do not unite well.

Silver combines very readily with mercury. A sensible degree of heat is produced when silver leaf and mercury are kneaded together in the palm of the hand. With lead it forms a soft mass, less sonorous than pure silver. With copper it becomes harder and more sonorous, at the same time that it remains sufficiently ductile: this mixture is used in the British coinage. $12\frac{1}{2}$ parts of silver, alloyed with one of copper, form the compound called standard silver. The mixture of silver and iron has been little examined. With tin it forms a compound, which, like that of gold with the same metal, has been said to be brittle, however small the proportion; though there is probably as little foundation for the assertion in the one case as in the other. With bismuth, arsenic, zinc, and antimony, it forms brittle compounds. It does not unite with nickel. The compound of silver and tungsten, in the proportion of two of the former to one of the latter, extends under the hammer during a few strokes; but afterwards splits in pieces.

The only preparation of silver used in medicine is the nitrate. Leaf silver was formerly employed to give a coating to pills.

Argentum fugitivum. Quicksilver.

Argentum mobile. Quicksilver.

Argentum nitra'tum. See *Argenti nitras.*

Argentum vivum. Quicksilver. See *Mercury.*

ARGI'LLA. (*a, æ.* f.; αργιλλος or αργιλος, from αργος, white.) Argil. See *Alumina.*

Argilla vitriola'ta. Alum.

Argilla'ceous. *Argillaceus.* Of or belonging to argil, or aluminous earth. See *Clay.*

Argillaceous earth. See *Clay.*

Argyrei'a. A genus of plants. Class, *Pentandria;* Order, *Monogynia.* It includes some shrubs natives of Cochin-China. Cataplasms made of their leaves and roots are applied to tumours of the breast.

Argyri'tis. (From αργυρος, silver.) *Spuma argenti.* Litharge or semivitrified oxide of lead has been so called, because it is separated in the process of extracting silver from its ores.

Argyritis terra was a name formerly given to earth containing particles of silver.

Argyro'come. (*e, es.* f.; from αργυρος, silver, and κομη, hair.) A name given to a subgenus of *gnaphalium* or cud-weed, because the species it includes have white silvery flowers.

Argyro'damas. A species of talc of a silvery appearance mentioned by Pliny and others. It was supposed to act as a mechanical poison when swallowed, owing to its sharp laminæ penetrating the coats of the stomach and intestines.

Argyrogonia. The alchemical art of making silver. Also the *semen argentificum*, or tincture by which silver might be generated.

Argyroli'banos. The white olibanum.

Argyro'phora anti'dotus. A medicine described by Nicolaus Myrepsus, consisting of opium, various gums, and aromatics, and other ingredients. Myrepsus says, it is named from its high price; and recommends it in all diseases of the head, and a number of other cases.

Argyropœ'ia. (*a, æ.* f.; from αργυρος, silver, and ποιεω, to make.) The art of making silver. The term was applied chiefly to the alchemical transmutation of baser metals into silver; but it has been used also to designate the separation of silver from its ores.

Argyrotrophie'mia. (From αργος, white, and τροφημα, food.) A white cooling food, made with milk. — *Galen.*

Ari'a. *Aronia.* See *Cratægus.*

Aricy'mon. (*on, onis.* f.; from αρι, an intensive particle, and κυω, to be pregnant.) A woman who conceives readily and often.—*Hippocrates.*

Aridu'ra. (From *areo*, to be dried up.) Wasting of any particular limb or other part, as opposed to atrophia, or general wasting of the body. — *Ettmuller. Sauvages.*

Arilla'tus. Provided with an arillus. See *Arillus.*

ARI'LLUS. (*us, i.* m.) A tunic investing the seed of some plants, completely or partially. It is fixed to the base of the seed, and envelopes the other parts more or less closely.

The varieties are,

The *succulent*, pulpy; as in *Euonymus europæus*, and *Lætia.*

Cartilaginous; as in *Coffea arabica.*

Dimidiate, halved; as in *Taxus baccata.*

Lacerate, cut; as in the mace of the *Myristica moschata.*

Reticulate, net-like, surrounding the seed like a net; as in the *Orchis* tribe.

Tricuspid; as in *Malva coromandiliana.*

Hirsute, hairy; as in *Geranium incanum.*

Villous; as in *Geranium dissectum.*

ARI'STA. (*a, æ.* f.) The awn. A sharp bristle-like appendage, which proceeds from the husk or glume of grasses. It is distinguished into

Naked, without villi; as in *Stipa arguens* and *juncea.*

Plumose, having white villi; as in *Stipa pennata.*

Straight; as in *Bromus secalinus.*

Geniculate, bent like a knee; as in *Avena sativa.*

Recurved, bent back; as in *Holcus lanatus*, and *Agrostis canina.*

Tortile, twisted like a rope; as in *Agrostis rubra*, and *Aira montana.*

Terminal, fixed to the apex of the husk; as in *Agrostis miliacea.*

Dorsal, fixed to the back or outer part of the husk; as in *Agrostis canina, Bromus, Alopecurus.*

Uncinate, hooked; as in *Panicum hirtellum.*

Ariobarza'nium. Αριοβαρζανιον. The name of a discutient plaster mentioned by Aëtius and Paul of Ægina. It contained cerusse, seawater, turpentine, frankincense, and other ingredients.

ARISTA'RCHI ANTI'DOTUS PAULI'NA. A compound medicine extolled by Aëtius in a variety of diseases. It consisted of opium, castor, styrax, galbanum, and aromatics, mixed up with honey.

Aristi Emplastrum Nigrum. See *Tetrapharmacum.*

ARISTIO'NIS MACHINAMENTUM. An apparatus invented by Aristion for the reduction of dislocations.

ARISTALTHÆ'A. (*a, æ.* f.; from αριστος, best, and αλθαια, the marsh-mallow.) The common marsh-mallow. See *Althæa officinalis.*

ARISTA'TUS. (From *arista*, an awn.) Awned: applied to leaves, leaf-stalks, &c., terminated by a long rigid spine, which in a leaf does not appear as a contraction. In *Galium aristatum*, the leaf-stalk is awned.

ARISTOLOCHI'A. (*a, æ.* f.; from αριστος, best, and λοχεια, parturition: so called because it was supposed to be useful to women after childbirth, by promoting the lochial discharge.) 1. The name of a genus of plants in the Linnæan system. Class, *Gynandria;* Order, *Hexandria.*

2. The pharmacopœial name of the long-rooted birthwort. See *Aristolochia longa.*

ARISTOLOCHIA ANGUICI'DA. Snake-killing birthwort. *Aristolochia — foliis cordatis, acuminatis; caule volubili, fructicoso; pedunculis solitaris; stipulis cordatis,* of Linnæus. The juice of the root of this plant has the property of so stupifying serpents, that they may be handled with impunity. One or two drops are sufficient; and if more be dropt into the mouth it kills them. So ungrateful is the smell of the root to these reptiles, that they are said immediately to fly from it. The juice is also esteemed as a preservative against the effects usually produced by the bite of venomous serpents.

ARISTOLOCHIA CLEMATI'TIS. The systematic name of the *Aristolochia vulgaris* of some Pharmacopœias; called also *Aristolochia tenuis.* This plant is diaphoretic; it is retained in some Pharmacopœias, but has no great activity.

ARISTOLOCHIA FABA'CEA. See *Fumaria bulbosa.*

ARISTOLOCHIA GRANDIFLO'RA. This plant grows in the West Indies. Its flowers have a very fœtid smell, and its root is said to be a deadly poison to all animals that eat of it.

ARISTOLOCHIA LONGA. The systematic name for the aristolochia of our Pharmacopœias. *Aristolochia — foliis cordatis, petiolatis, integerrimis, obtusiusculis; caule infirmo, floribus solitariis,* of Linnæus. The root of this plant only is in use; it possesses a somewhat aromatic smell, and a warm bitterish taste, accompanied with a slight degree of pungency. It is sometimes given as an aromatic stimulant in gout and other diseases.

ARISTOLOCHIA ROTUNDA. The root of this species of birthwort, *Aristolochia — foliis cordatis, subsessilibus, obtusis; caule infirmo; floribus solitariis,* of Linnæus; is used indiscriminately with that of the *Aristolochia longa.* See *Aristolochia longa.*

ARISTOLOCHIA SERPENTA'RIA. The systematic name of the *Serpentaria virginiana.* Virginian snake-root of the Pharmacopœias; called also *Aristolochia, Colubrina virginiana, Viperina, Viperina virginiana, Pestilochia,* and *Contrayerva virginiana.* The plant which affords this root is the *Aristolochia — foliis cordato-oblongis planis; caulibus infirmis, flexuosis teretibus; floribus solitariis,* of Linnæus. This plant is a native of North America. Its root has an aromatic smell, approaching to that of valerian, but more agreeable; and a warm, bitterish, pungent taste. It affords with water a yellowish-brown infusion possessing all its active qualities. The alkoholic tincture is of a bright green colour, and is rendered turbid by the addition of water. Its active principles appear to be a bitter resin and an essential oil. It was formerly recommended as a medicine of extraordinary power in counteracting the poisonous effects of the bites of serpents: this, however, is now wholly disregarded; but as it possesses stimulant and diaphoretic virtues, it is employed, in the present day, in some fevers where these effects are required. It is thought to increase the efficacy of cinchona in cases of protracted ague, and is a useful tonic in dyspepsia. It may be given in powder in doses of gr. xv. increased to ʒ ss., or an infusion may be made by macerating ℥ j. of the bruised root in ℥ xij. of boiling water, and ℥ jss. or ℥ ij. may be given several times a day. Decoction impairs its virtue by dissipating the essential oil. A tincture is directed by the three British Pharmacopœias.

ARISTOLOCHIA TE'NUIS. See *Aristolochia clematitis.*

ARISTOLOCHIA TRILOBA'TA. Three-lobed birthwort. The root and every part of this plant, *Aristolochia — foliis trilobis, caule volubili, floribus maximis,* of Linnæus, is diuretic, and has been employed against the bite of serpents.

ARISTOLOCHIA VULGA'RIS. See *Aristolochia clematitis.*

ARISTOLOCHIÆ. The name given by Jussieu to a natural family of plants, of which the genus *Aristolochia* is the type.

ARISTOLOCHICA MEDICAMENTA. Medicines which promote the flow of the lochia.

ARI'STON. Avicenna describes two medicines of this name, a greater and a less *Ariston.* These both contained opium, euphorbium, sulphur, stimulants, aromatics, &c.; and are recommended by the author in phthisis, fevers, colic, &c.

ARISTOPHANEI'ON. (From *Aristophanes*, its inventor.) The name of an emollient plaster used by the Greeks, composed of pitch, the substance called *apochyma*, wax, opoponax, and vinegar.

ARISTRIOS. See *Astragalus.*

ARLADA. *Arladar.* Calcined realgar.

ARMADI'LLO. A genus of apterous insects. The *Armadillo officinalis,* which is brought chiefly from Italy, is sometimes prescribed on the Continent as a diuretic, anti-icteric, &c. These insects are sold in France under the name of *cloportes préparés.* The armadillo is one of several species of millepedes to which credulity has ascribed divers virtues. See *Millepedes.*

ARM. *Brachium.* 1. That part of the

upper extremity which extends from the shoulder to the wrist. It is divided into the brachium, properly so called, which extends from the shoulder to the bend of the arm; and the antibrachium, or fore-arm, which is between the bend of the arm and the wrist.

A'RMA. (*a, orum.* pl. n. arms.) Applied in botany to various sharp-pointed appendages of plants, as the *aculeus, furca, spina,* and *stimulus.*

ARMA'LIA OSSA. The temporal bones.

ARMARIUM UNGUENTUM. See *Unguentum armarium.*

ARMATU'RA. Armour. The amnion has been so called.

ARMENI'ACA MALUS. The apricot. See *Armeniaca vulgaris.*

ARME'NIUS LAPIS. Αρμενιος λιθος. Armenian stone. A variety of the blue carbonate of copper. It was formerly brought from Armenia, and was esteemed as a cordial and as a purgative in melancholia.

ARMI'LLA. The Latin for a bracelet. The annular ligament of the carpus has been so called.

Armoniacum sal. See *Ammoniacum sal.*

ARMORA'CIA. (*a, æ.* f.) So called because it was cultivated abundantly in Armorica. See *Cochlearia armoracia.*

ARMUTHEUS LAPIS. The Armenian stone.

ARNALDIA. A term said to have been applied to a chronic and malignant disease formerly prevalent in England. It was attended with falling off of the hair, and is thought by some to have been alopecia, and by others a form of syphilis.

A'RNICA. (*a, æ.* f.) Derivation unknown.

1. The name of a genus of plants in the Linnæan system. Class, *Syngenesia;* Order, *Polygamia superflua.*

2. The pharmacopœial name of the leopard's bane. See *Arnica montana.*

ARNICA MONTANA. The systematic name for the *arnica* of the Pharmacopœias; called also *Leopard's bane; Doronicum germanicum; Panacea lapsorum; Ptarmica montana Acyrus; Caltha alpina, Calendula alpina,* &c. *Arnica — foliis ovatis integris; caulinis geminis oppositis,* of Linnæus. This plant grows abundantly in several mountainous regions of Europe, as among the Alps; it is also met with in the northern parts of Europe, Asia, and America. The plant, when dried, has a slight aromatic odour; the leaves and flowers have a weak bitter and aromatic flavour; the root is bitter and acrid. The whole plant is used medicinally; the leaves and flowers are narcotic, stimulant, diaphoretic, and errhine; the root is aromatic and tonic. The leaves and flowers have been greatly extolled in paralysis, amaurosis, gout, rheumatism, and other cases; in an over-dose they produce similar bad effects with other narcotic poisons. The root has been highly recommended as a substitute for cinchona in ague, typhus, and gangrene. The leopard's bane may be given in powder in doses of from gr. v. to gr. x. twice or thrice a day; or an infusion may be made with ʒjss. of the dried leaves or flowers, or ʒj. of the root, to ℥ xij. of water, and given in the quantity of ʒjss.

ARNICA SUEDE'NSIS. See *Inula dysenterica.*

ARNOGLO'SSUM. (Αρνογλωσσον; from αρνος, gen. of αρς, a lamb, and γλωσσα, a tongue.) The Greek name of the plantain, from the resemblance of its leaves to a lamb's tongue. See *Plantago.*

Arno'tto. See *Bixa orleana.*

AROHOT. Quicksilver.

AROÏDEÆ. A family of plants in the natural arrangement of Jussieu. Its type is the genus *Arum.*

ARO'MA. (*a, atis.* n. αρωμα.) 1. The odoriferous principle of plants, which resides either in a volatile oil or a resinous matter. Boerhaave calls this principle *spiritus rector.*

2. A substance having an aromatic smell.

AROMA'TIC. (*Aromaticus;* from αρωμα, an odour.) A term applied to certain vegetable substances which have a peculiar spicy odour and a warm and generally agreeable flavour, as cinnamon, cardamom, &c. Substances of this class are more or less similar in their operation on the animal economy, being all stimulant and carminative.

Aromatic vinegar. See *Acetum aromaticum.*

AROMA'TICÆ PLANTÆ. Plants having an aromatic odour. The name of a class of plants in some natural arrangements.

AROMA'TICUS CORTEX. A name of canella alba. See *Wintera aromatica.*

AROMATI'TES. A name given, according to Pliny — 1. To a bituminous stone found in Arabia, having the colour and odour of myrrh.

2. To a factitious wine containing various aromatics.

Aronia. See *Aria.*

AROPH. A barbarous term, to which various meanings have been assigned. Paracelsus seems to have applied it to a medicine formed by subliming equal parts of hæmatite and sal ammoniac, to which great virtues were ascribed in quartan ague, plica polonica, and hypochondriasis: also to a mixture of saffron, bread, and wine kept for some days in horse-dung, and then distilled. According to some, he used this term generally for a lithontriptic medicine. According to Ruland, the *aroph* means the *mandrake.*

ARQUEBUSA'DE. (A French word from *arquebuse,* a kind of hand gun.) The name of a vulnerary water. See *Eau d'arquebusade.*

Arrack. See *Arack.*

A'RRAPHON or ARABON. (From α, priv., and ραφη, a suture.) A term that has been applied to a cranium without sutures.

ARRHÆ'A. (*a, æ.* f.; from α, neg., and ρεω, to flow.) The suppression of any natural flux, as the menses, &c.

ARRHI'ZUS. (From α, priv., and ριζα, root.) Destitute of a root: applied to parasitic plants which have no root, but adhere to other plants, and derive their nourishment from them. Richard uses the term *Arrhiza* to designate a great division of plants which have no radicle and consequently no true embryo, as fungi, mosses, &c. corresponding with the cryptogamia of Linnæus. The word, however, is improperly spelled with only one *r.*

Arrowhead. See *Sagittaria.*

Arrow-root. See *Maranta.*

ARSE'NIATE. *Arsenias.* A salt formed by the combination of the arsenious acid with a base. See *Arsenic acid.*

AR'SENIC. (*Arsenicum*, *i.* n. Αρσενικον or αῤῥενικον, *masculine*, so called on account of its strength as a poison.) The αῤῥενικον of Theophrastus, or αρσενικον of Dioscorides, was not the simple metal known to modern chemists under the name of arsenic, but the yellow sulphuret of that metal, now called *orpiment.* In the present day the term arsenic is properly applied to a metal of a steel gray colour, and considerable brilliancy; it is also loosely used to designate the *arsenious acid*, or *white oxide of arsenic*, which is called in commerce *white arsenic.* Arsenic is met with abundantly in nature, sometimes in its metallic state, occasionally in that of an oxide, but more frequently combined with sulphur and with other metals. United with sulphur it forms the *native realgar* and *native orpiment* of mineralogists; with iron and sulphur it constitutes the common *arsenical pyrites;* and along with cobalt and sulphur it forms the mineral called *cobalt pyrites*, in which the arsenic is the predominating ingredient.

The white arsenic of commerce, which is arsenious acid, is obtained chiefly from the cobalt pyrites, which yield both metals abundantly. The arsenious acid, which is formed and volatilised during the roasting of the cobalt ore, is first condensed in an impure state, and afterwards purified by a second sublimation in an iron vessel. White arsenic is also obtained in some places from the arsenical pyrites.

Metallic arsenic is most conveniently obtained by mixing the white oxide or arsenious acid with twice its weight of black flux, and exposing the mixture to a red heat in a crucible, over which another crucible is luted; the arsenic is readily sublimed, and collects in the upper crucible, which should be kept cool to favour its condensation.

Arsenic is extremely brittle. It is of a crystalline texture. Its specific gravity has been stated at 5·235 by Dr. Thomson, 5·700 by Berzelius, and 5·8843 by Dr. Turner. It sublimes at 356° Fahr., without previous fusion. Its vapour has a strong alliaceous smell, which has been thought characteristic of this metal, but erroneously so, since the fumes of zinc have the same odour. In close vessels it sublimes without change; but if it be freely exposed to the atmosphere during the application of heat, it is converted into arsenious acid. According to Hahnemann, arsenic is slowly oxidised and dissolved by boiling it in water.

When it is exposed to the air its surface soon tarnishes, and a black film is formed, which by further exposure to the air falls to powder, and constitutes what is called on the Continent *mort à mouches*, and is used for poisoning flies. This substance is regarded by Berzelius as an oxide, but is generally believed by chemists to be a mixture of metallic arsenic and arsenious acid.

The known compounds of arsenic and oxygen are two, and they both possess acid properties: one is the *arsenious acid*, which is the same with the well-known and virulent poison called white arsenic, or simply *arsenic* in commerce; the other, containing a larger quantity of oxygen, is called *arsenic acid.* See *Arsenious acid*, and *Arsenic acid.*

Arsenic combines with hydrogen, forming *arseniuretted hydrogen*, the existence of which was discovered by Scheele. It is generally prepared by digesting an alloy of arsenic and tin in muriatic acid; but the gas thus obtained always contains some free hydrogen. M. Soubeiran has found that, by fusing equal weights of arsenic and granulated zinc, and decomposing the alloy with strong muriatic acid, a perfectly pure arseniuretted hydrogen is evolved. Arseniuretted hydrogen consists of 2 atoms of arsenic and 3 of hydrogen. When exposed to the atmosphere it is decomposed with the formation of water and deposition of metallic arsenic and arsenious acid. When subjected to an intense cold it condenses into a liquid resembling ether. The specific gravity of this gas when pure is 2·695 according to Dumas; when prepared in the ordinary way, however, from the alloy of arsenic and tin, its density is much less, being about 0·5. Arseniuretted hydrogen has a very fœtid smell, and is highly deleterious to animals, proving fatal even in the proportion of one tenth of the air respired.

There is another compound of arsenic and hydrogen, and this assumes a solid form. It is obtained by employing arsenic as the negative conductor during the decomposition of water by galvanism, or by the action of water on an alloy of arsenic and potassium; Sir H. Davy obtained it by the former method, and Gay-Lussac and Thenard by the latter. It is of a brown colour, and probably consists of 1 equivalent of arsenic and 1 of hydrogen.

Arsenic and chlorine combine, forming chloride of arsenic. When the metal in a state of powder is thrown into chlorine gas, it undergoes combustion, and chloride of arsenic is generated. The same compound may be formed by distilling a mixture of 6 parts of perchloride of mercury with 1 of arsenic. A chloride which Dumas considers as a *protochloride*, and therefore different from the above, may be prepared by putting a mixture of 1 part by weight of arsenious acid with 10 of strong sulphuric acid, heating the mixture to nearly 212°, and adding gradually fragments of fused muriate of soda. The chloride of arsenic comes over nearly pure, and is to be collected in cool receivers. The chloride that comes over towards the end of the process is mixed with some water: this diluted portion, however, does not mix with the anhydrous chloride that first comes over, but floats on its surface. Chloride of arsenic is a colourless liquid, is very volatile, and emits copious fumes when exposed to the air, whence it is called *Fuming liquor of arsenic.* It is decomposed by the addition of water, which resolves it into muriatic and arsenious acids. Its atomic constitution has not yet been ascertained.

Of the combinations of arsenic with sulphur three are distinctly known. The *protosulphuret*, well known in commerce under the name of *realgar*, occurs in a native state, and may be formed

artificially by fusing arsenious acid with half its weight of sulphur in a covered crucible. It is of a ruby-red colour, transparent and crystalline. Its specific gravity is about 3·338. It sublimes without change in close vessels. It consists of 1 equivalent of arsenic and 1 of sulphur.

The *sesquisulphuret* is also familiar under the name of *orpiment*. This substance is found in nature, and is artificially prepared by transmitting a stream of sulphuretted hydrogen gas through a solution of arsenious acid. Orpiment is of a fine yellow colour, and is the principal ingredient in the pigment called *King's yellow*. Orpiment is easily fusible, and assumes a crystalline texture on cooling. It sublimes without change in close vessels. When heated under free exposure to the air, it burns with a pale blue flame and evolution of sulphurous acid. It is readily soluble in the pure alkalies, but insoluble in water and acids. Nitric acid and chlorine decompose it. It consists of 1 equivalent of arsenic and $1\frac{1}{2}$ of sulphur.

The *persulphuret* may be obtained by transmitting sulphuretted hydrogen gas through a solution of arsenic acid. In colour and general properties it nearly resembles orpiment. It consists of 1 equivalent of arsenic and $2\frac{1}{2}$ of sulphur.

Arsenic does not combine with hydrogen. It unites with iodine by the aid of a gentle heat, forming a deep red compound called *iodide of arsenic*.

When arsenic is brought into contact with bromine they unite spontaneously, with vivid evolution of light and heat, forming what is called bromide of arsenic. This substance is solid at temperatures below 68° Fahr., liquefies between this temperature and 77°, and boils at 428°. In the liquid form it is transparent and slightly yellow, and yields prismatic crystals by evaporation. The addition of water decomposes it, forming arsenious and hydrobromic acids. It consists of 1 equivalent of arsenic and $1\frac{1}{2}$ of bromine.

Arsenic readily combines with most of the metals, communicating bitterness to those which are ductile, and fusibility to those which do not easily melt. Its union with potassium and sodium is attended with disengagement of heat; the resulting compounds are decomposed by water, the oxygen combining with the potassium or sodium, and the hydrogen forming with the arsenic the brown arseniuret of hydrogen.

The alloys of arsenic are of little importance. It is probable that arsenic in its metallic state does not act as a poison. "Arsenic," says Dr. Paris, "does not appear to possess any deleterious properties; but it is almost impossible to reduce the metal to powder, so as to adapt it for exhibition, without its becoming oxidised. M. Renault, therefore, in order to decide the question, had recourse to its alloys; and he found that *Mispickel* (an alloy of arsenic and iron), when given to the extent even of two drachms, scarcely produced any effect; a result which very satisfactorily accords with the conclusion drawn by Bayeu in his work on tin, and which proves that the arsenic contained in that metal need not excite the least alarm, since it exists in a metallic state." Dr. Paris also observes, "that the little injury experienced by workmen who solder silver filigree with an arsenical alloy, may probably depend upon the de-oxidised state of its fumes."

The compounds of arsenic in which it is changed from its metallic state are all found to be poisonous, as far as their action on animals has been investigated. The point has been ascertained with reference to the fly powder, or protoxide of Berzelius, arsenious acid, arsenic acid, arsenite of copper or Scheele's green, arsenite and arseniate of potash, the sulphurets of arsenic, and arseniuretted hydrogen.

Arse'nic acid. This acid is obtained by dissolving arsenious acid in nitric acid, or a mixture of nitric and muriatic acids, and distilling the solution to perfect dryness. Nitrous gas comes over, and arsenic acid remains in the retort. Arsenic acid is of a milk-white colour. It is soluble in five or six times its weight of cold, and in a smaller quantity of boiling, water. It does not crystallise. It is very deliquescent. It fuses when exposed to a red heat; and if the heat be increased, is resolved into oxygen and arsenious acid. It is decomposed by sulphuretted hydrogen gas, and a persulphuret of arsenic is formed. Arsenic acid combines with various bases, forming salts called *arseniates*, which are of no great importance in a chemical point of view. The arseniates generally are insoluble in water, except those of potash, soda, and ammonia. The soluble arseniates yield a red precipitate with the salts of silver, and a blue one with those of copper. Arsenic acid is composed, according to Berzelius, of 2 atoms of arsenic and 5 of oxygen. It is poisonous in the highest degree, more so apparently even than the arsenious acid.

Arsenic, bromide of. See *Arsenic.*

Arsenic, chloride of. See *Arsenic.*

Arsenic, fuming liquor of. See *Arsenic*

Arsenic, iodide of. See *Arsenic.*

Arsenic, oxide of. See *Arsenic.*

Arsenic, sublimed white. See *Arsenicum album sublimatum.*

Arsenic, sulphuret of. See *Arsenic.*

Arsenic, white. See *Arsenious acid.*

Arsenic, white oxide of. See *Arsenious acid.*

Arsenical caustic. A species of caustic which was used by Mr. Justamond in the treatment of cancer. It was composed of 2 parts of white arsenic to 1 of levigated antimony, melted together in a crucible. The caustic was rendered milder, and an anodyne power communicated to the application, by mixing with it powdered opium at discretion. The use of arsenical caustics is now properly abandoned in this country.

Arsenical solution. See *Arsenicalis liquor.*

Arsenica'lis liquor. Arsenical solution. Take of sublimed oxide of arsenic in very fine powder, subcarbonate of potash from tartar, of each 64 grains; distilled water a pint. Boil them together in a glass vessel, until the arsenic be entirely dissolved. When the solution is

old, add compound spirit of lavender, four uid drachms. Then add as much distilled ater as may exactly fill a pint measure. This reparation accords with the formula of Dr. owler, of Stafford, who first introduced it in nitation of a celebrated popular remedy for ntermittents, sold under the name of the taste- ss ague-drop. The compound spirit of lavender only intended to give some colour and taste, ithout which there would be greater danger of nistakes. Each ounce of this fluid contains our grains of the oxide, and each drachm half grain. In the above preparation, the solubility f the oxide of arsenic or arsenious acid is much ncreased by its combination with potash, its nedicinal activity remaining the same; so that solution of more uniform strength is obtained, ne dose of which can be accurately apportioned. The dose is from ♏ v. to ♏ xx. given twice or hrice a day. The medicinal properties of this olution are noticed under the head *Arsenious cid.* It is incompatible in prescription with ime water, nitrate of silver, hydrosulphuret of otash, the salts of copper, and cinchona bark.

Arsenical paste. See *Pâte arsenicale.*

Arsenici oxydum præparatum. See *Arsenium album sublimatum.*

Arsenicum album sublimatum. Reduce white arsenic to powder, then put it into a crucible and expose it to the fire, so as to sublime t into another crucible inverted over the former. This is intended to render the arsenic more pure, but it is an unnecessary process, because the white arsenic of commerce, having been already twice sublimed, is as pure as sublimation can make it.

Arsenicum crystallinum. See *Arsenious acid.*

ARSE'NIOUS ACID. *White oxide of arsenic. White arsenic.* This is a substance of great importance both to the practitioner and the medical jurist, since the salt it forms with potash is an active and useful medicine, and the acid itself is the form under which arsenic is most frequently given for the purposes of poisoning. Arsenious acid is principally obtained from the ores of cobalt, in the manner stated in the article *Arsenic.* For the following account of its properties and the re-agents by which it is detected in cases of suspected poisoning, we are indebted to Dr. Ure's Dictionary of Chemistry.

The arsenious acid reddens the most sensible blue vegetable colours, though it turns the syrup of violets green. On exposure to the air it becomes opake, and covered with a slight efflorescence. Thrown on incandescent coals, it evaporates in white fumes, with a strong smell of garlic. In close vessels it is volatilised; and, if the heat be strong, vitrified. The result of this vitrification is a transparent glass, capable of crystallising in tetraëdrons, the angles of which are truncated. It is easily decomposed by hydrogen and carbon, which deprive it of its oxygen at a red heat, and reduce the metal, the one forming water, the other carbonic acid, with the oxygen taken from it; phosphorus and sulphur also act upon it, being in part converted into acids by its oxygen, and in part forming an arsenical phosphuret or sulphuret with the arsenic reduced to the metallic state. Its specific gravity is 3·7.

It is soluble in 13 times its weight of boiling water, but requires 80 times its weight of cold. The solution crystallises, and the acid assumes the form of regular tetraëdrons, according to Fourcroy; but according to Lagrange, of octaëdrons, and these frequently varying in figure by different laws of decrement. It crystallises much better by slow evaporation than by simple cooling.

The solution is very acrid, reddens blue colours, unites with the earthy bases, and decomposes the alkaline sulphurets. Arsenious acid is also soluble in oils, spirits, and alkohol; the last taking up from 1 to 2 per cent. It is composed according to Berzelius of 9·5 of metal + 3 oxygen; its prime equivalent being therefore 12·5. But Dr. Thomson considers it as a compound of 4·75 metal + 2 oxygen = 6·75.

Dr. Wollaston first observed, that when a mixture of it with quicklime is heated in a glass tube at a certain temperature, the mass becomes suddenly ignited, and metallic arsenic sublimes. As arseniate of lime is found at the bottom of the tube, we perceive that a portion of the arsenious acid is robbed of its oxygen, to complete the acidification of the rest.

The action of the other acids upon the arsenious is very different from that which they exert on metallic arsenic. By boiling, sulphuric acid dissolves a small portion of it, which is precipitated as the solution cools. Nitric acid does not dissolve it, but by the help of heat converts it into arsenic acid. Aqueous chlorine acidifies it completely, so as to convert it into arsenic acid.

Arsenious acid combines with the earthy and alkaline bases. The earthy arsenites possess little solubility; and hence the solutions of baryta, strontia, and lime, form precipitates with that of arsenious acid.

With the fixed alkalis the arsenious acid forms viscid arsenites, which do not crystallise, and which are decomposable by fire, the arsenious acid being volatilised by the heat. The arsenite of potash is the active ingredient in the arsenical solution of the Pharmacopœias.

With ammonia it forms a salt capable of crystallisation.

The nitrates act on the arsenious acid in a very remarkable manner. On treating the nitrates and arsenious acid together, nitrous vapour is extricated: part of its oxygen is absorbed by the arsenious acid which is thus converted into arsenic acid, and an arseniate is left in the retort. The same phenomena take place on detonating nitrates with arsenious acid; for it is still sufficiently combustible to produce a detonation, and a true arseniate remains at the bottom of the crucible. It was in this way that chemists formally prepared their fixed arsenic, which was the acidulous arseniate of potash. The nitrate of ammonia exhibits different phenomena in its decomposition by arsenious acid, which requires considerable precaution. Pelletier, having mixed equal quantities, introduced the mixture into a large retort of coated glass, placed in a reverberatory furnace, with a glo-

bular receiver. He began with a very slight fire; for the decomposition is so rapid, and the nitrous vapours issue with such force, that a portion of the arsenious acid is carried off undecomposed, unless you proceed very gently. Chlorate of potash, too, by completely oxidising the arsenious acid, converts it into arsenic acid, which, by the assistance of heat, is capable of decomposing the muriate of potash that remains.

Arsenious acid is used in numerous instances in the arts, under the name of white arsenic, or simply arsenic. In many cases it is reduced, and acts in its metallic state.

Since it acts on the animal economy as a deadly poison in quantities so minute as to be insensible to the taste when diffused in water or other vehicles, it has been often given with criminal intentions and fatal effects. It becomes therefore a matter of the utmost importance to present a systematic view of the phenomena characteristic of the poison, its operation and consequences.

It is a dense substance, subsiding speedily after agitation in water. Dr. Ure finds its sp. gr. to vary from 3·728 to 3·730, which is a little higher than the number given above: 72 parts dissolve in 1000 of boiling water, of which 30 are retained after cooling. Cold water dissolves, however, only $\frac{3}{1000}$ or $\frac{1}{10}$ of the preceding quantity. This water turns the syrup of violets green, and reddens litmus paper. Lime water gives with it a fine white precipitate of arsenite of lime, soluble in an excess of the arsenious solution: sulphuretted hydrogen gas, and hydrosulphuretted water, precipitate a golden yellow sulphuret of arsenic. By this means $\frac{1}{100000}$ of arsenious acid may be detected in water. This sulphuret, dried on a filter, and heated in a glass tube with a bit of caustic potash, is decomposed in a few minutes, and converted into sulphuret of potash, which remains at the bottom, and metallic arsenic of a bright steel lustre, which sublimes, coating the sides of the tube. The hydrosulphurets of alkalis do not affect the arsenious solution, unless a drop or two of nitric or muriatic acid be poured in, when the characteristic golden yellow precipitate falls. Nitrate of silver is decomposed by the arsenious acid, and a very peculiar yellow arsenite of silver is precipitated; which, however, is apt to be redissolved by nitric acid, and therefore a very minute addition of ammonia is requisite: but even this also, if in much excess, redissolves the silver precipitate.

As the nitrate of silver is justly regarded as one of the best precipitant tests of arsenic, the mode of using it has been a subject of much discussion. The presence of muriate of soda, indeed, in the arsenical solution, obstructs, to a certain degree, the operation of this re-agent, and common salt is almost always present in the *primæ viæ*, and is a usual ingredient in soups, and other vehicles of the poison. If, after the water of ammonia has been added, (by immersing the end of a glass rod dipped in it into the supposed poisonous liquid,) we dip another rod into a solution of pure nitrate of silver, and transfer it into the arsenious solution, either a fine yellow cloud will be formed, or at first merely a white curdy precipitate. But at the second or third immersion of the nitrate rod, a central spot of yellow will be perceived, surrounded with the white muriate of silver. At the next immersion this yellow cloud on the surface will become very conspicuous. Sulphate of soda does not interfere in the least with the silver test.

The ammoniacal sulphate, or the ammoniacal acetate of copper, added in a somewhat dilute state to an arsenious solution, gives a fine grass-green precipitate of arsenite of copper, a substance well known as a pigment under the name of *Scheele's green*. This green arsenite of copper, well washed, being acted on by an excess of sulphuretted hydrogen water, changes its colour, and becomes of a brownish red. Ferrocyanate of potash changes it to a blood red. Nitrate of silver converts it into the yellow arsenite of silver. Lastly, if the precipitate be dried on a filter, and placed on a bit of burning coal, it will diffuse a garlic odour.

The voltaic battery, made to act by two wires on a little arsenious solution placed on a bit of window glass, develops metallic arsenic at the negative pole; and if this wire be copper, it will be whitened like tombac.

We may here remark, however, that the most elegant mode of using all these precipitating re-agents is upon a plane of glass; a mode practised by Dr. Wollaston in general chemical research, to an extent, and with a success, which would be impracticable in less skilful hands. Concentrate by heat in a capsule the suspected poisonous solution, having previously filtered it if necessary. Indeed, if it be very much disguised by animal or vegetable matters, it is better first of all to evaporate to dryness, and by a few drops of nitric acid to dissipate the organic products. The clear liquid being now placed in the middle of the bit of glass, lines are to be drawn out from it in different directions. To one of these a particle of weak ammoniacal water being applied, the weak nitrate of silver may then be brushed over it with a hair pencil. By placing the glass in different lights, either over white paper or obliquely before the eye, the slightest change of tint will be perceived. The ammoniacal acetate should be applied to another filament of the drop, deut-acetate of iron to a third, weak ammoniacal acetate of cobalt to a fourth, sulphuretted water to a fifth, lime water to a sixth, a drop of violet syrup to a seventh, and the two galvanic wires at the opposite edges of the whole. Thus with one single drop of solution many exact experiments may be made.

But the chief, the decisive trial, or *experimentum crucis* remains, which is to take a little of the dry matter, mix it with a small pinch of dry black flux, put it into a narrow glass tube sealed at one end, and after cleansing the sides with a feather, subject the bottom of the tube to the action of the blowpipe till it has been red-hot for a minute: a garlic odour will then be perceptible, and the steel-lustred coating of metallic arsenic will be seen in the tube about one fourth of an inch above its bot-

om. Cut the tube across at that point by neans of a fine file; detach the scale of arsenic vith the point of a penknife; put a fragment of it into the bottom of a small wine-glass along with a few drops of ammoniacal acetate of copper, and triturate them well together for a few minutes with a round-headed glass rod: he mazarine blue colour will soon be transmuted into a lively grass-green, while the metallic scale will vanish. Thus we distinguish perfectly between a particle of metallic arsenic and one of animalised charcoal. Another particle of the scale may be placed between two mooth and bright surfaces of copper, with a ouch of fine oil; and whilst they are firmly pressed together, exposed to a red heat: the ombac alloy will appear as a white stain. A hird particle may be placed on a bit of heated metal, and held a little under the nostrils, when he garlic odour will be recognised. No danger can be apprehended, as the fragment need not exceed the tenth of a grain.

In cases of poisoning with arsenic, says Berzelius, the individual may have taken the leadly poison, either in the pulverulent form, or n a state of solution. In the first case, we can almost always detect visible particles of arsenic n the contents of the stomach, or on its inner coat, where they are distinguished by dark red spots of inflammation. The following method will detect the nature of these particles, though less than one tenth of a grain in weight. A glass tube, from one tenth to one seventh of an inch in diameter, is drawn out at one extremity into a fine point, from two to three inches in length, which part ought not to be wider internally than the thickness of a coarse knitting needle, and it is then hermetically closed at the end. The particle of arsenic is moved downwards to the sealed point, and covered with charcoal powder previously exposed to the flame of the blowpipe, to drive off any moisture. The charcoal is now heated to redness in the flame of a spirit lamp, and then the arsenic is brought under the influence of the heat, which, volatilising it, makes it traverse the ignited charcoal, whereby it is reduced. The metallic arsenic condenses beyond the influence of the spirit flame, in the shape of a dark metallic ring, which, by gently heating, can be driven further forward, and thus more is accumulated, by which it acquires a higher lustre. The small diameter of the tube prevents all circulation of air, so that no part of the metal is oxidised. It now remains to determine the arsenic by its smell. This is effected if we cut the tube between the charcoal and the metal, then beat it gently in the place where the metal rests, while the nose is held over it at a little distance.

When the poisoning has been caused by the solution of arsenic, or by the substance in fine powder, the contents of the stomach are to be heated, or even boiled with caustic potash, and then with muriatic acid. The filtered fluid is reduced by evaporation; and, if necessary, again filtered, and then subjected to a stream of sulphuretted hydrogen. The fluid is now heated to cause the precipitate to collect, or evaporated till it subsides. The sulphuret of arsenic is to be mixed with saltpetre, and deflagrated at the end of a glass tube hermetically sealed. A little saltpetre is first melted in the tube, and then small portions of the mixture are gradually dropped into it. The mass is to be dissolved in as few drops of water as possible; then lime water is to be added in excess, and heated to boiling, by which the arseniate of lime is more easily collected and washed. The precipitate is collected, mixed with fresh-burned charcoal powder, and put into a glass tube, drawn out as above described, with its sealed end inflated into a very small bulb, in which the mixture is made to lie. The tube is first gently heated, to drive off any moisture the mixture may have absorbed, and then the under point of the bulb is kept in the flame of the blowpipe until the glass begins to melt. The arsenic is now reduced and collected in the neck of the bulb, where it is spread over so small a surface that the smallest quantity may be detected. In fact, one tenth of a grain of sulphuret of arsenic is sufficient to afford a satisfactory and decisive reduction test. — Another mode of treating sulphuret of arsenic is, to introduce it into the narrow end of the tube first described, and to insert a piece of piano-forte wire, an inch in length, into the tube, so far as the surface of the sulphuret. The steel wire is next to be heated in a spirit of wine lamp, and the heat gradually raised in such a manner that the sulphuret, in the state of vapour, passes along the surface of the glowing iron. In this way, sulphuret of iron and sublimed metallic arsenic are obtained. The operation ought to be conducted slowly. Iron turnings will not answer, because the arsenic combines with them without any sublimation. The garlic smell should never be trusted to without actual reduction of the arsenic.

For detecting the precise nature of the metallic crust of revived arsenic, when its quantity is too minute for its physical characters to be unequivocally ascertained, Dr. Christison has added a very elegant test, which was suggested to him by Dr. Turner. It consists in chasing the crust up and down the tube by heat, till all is oxidated; when it assumes the form of sparkling crystals, which may be ascertained by a microscope of four powers to be octahedrons.

It is to be observed, that one or two of the precipitating tests may be equivocal from admixtures of various substances. Thus tincture of ginger gives with the cupreous re-agent a green precipitate; and Dr. Ure states that he was once led to suspect, from this appearance, that an empirical tincture, put into his hands for examination, contained arsenic; which, however, on a careful analysis, proved not to be the case. Tea covers arsenic from the cupreous test. Such poisoned tea becomes, by its addition, of an obscure olive or violet red, but yields scarcely any precipitate. Sulphuretted hydrogen, however, throws down from it a fine yellow sulphuret of arsenic.

To remove the colouring matter of a vegetable or animal kind, Mr. Phillips has very properly recommended to mix the poisoned

liquid with well washed animal charcoal (bone-black), and thereafter to filter, before applying the tests. 100 grains of black mixed with 500 of port wine, containing one grain of arsenious acid, decolored the wine so as to admit of the application of tests.

A good way of obviating all these sources of fallacy is to evaporate carefully to dryness, and expose the residue to heat in a glass tube. The arsenic sublimes, and may be afterwards operated on without ambiguity. M. Orfila has gone into ample details on the modifications produced by wine, coffee, tea, broth, &c. on arsenical tests, of which a good tabular abstract is given in Dr. A. T. Thomson's London Dispensatory. But it is evident that the differences in these menstrua, as also in beers, are so great as to render precipitations and changes of colour by re-agents very unsatisfactory evidence in a case of life and death. Hence the method of evaporation above described should never be neglected. If the arsenic be combined with oil, the mixture ought to be boiled with water, and the oil then separated by the capillary action of wick-threads; if with resinous substances, these may be removed by oil of turpentine, not by alkohol (as directed by Dr. Black), which is a good solvent of arsenious acid. It may moreover be observed, that both tea and coffee should be freed from their tannin by gelatin, which does not act on the arsenic previous to the use of re-agents for the poison. When one part of arsenious acid in watery solution is added to ten parts of milk, the sulphuretted hydrogen present in the latter, occasions the white colour to pass into a canary yellow; the cupreous test gives it a slight green tint, and the nitrate of silver produces no visible change, though even more arsenic be added; but the hydrosulphurets throw down a golden yellow, with the aid of a few drops of an acid. The liquid contained in the stomach of a rabbit poisoned with a solution of 3 grains of arsenious acid, afforded a white precipitate with nitrate of silver, greyish white with lime water, green with the ammoniacal sulphate, and deep yellow with sulphuretted hydrogen water.

The preceding description of the habitudes of arsenious acid in different circumstances, is equally applicable to the soluble arsenites. Their poisonous operation, as well as that of the arsenic acid, has been satisfactorily referred by Sir B. Brodie to the suspension of the functions of the heart and brain, occasioned by the absorption of these substances into the circulation, and their consequent determination to the nervous system and the alimentary canal. This proposition was established by numerous experiments on rabbits and dogs. Wounds were inflicted, and arsenic being applied to them, it was found that in a short time death supervened, with the same symptoms of inflammation of the stomach and bowels as if the poison had been swallowed.

He divides the morbid affections into three classes: — 1st, Those depending on the nervous system, as palsy at first of the posterior extremities, and then of the rest of the body, convulsions, dilatation of the pupils, and general insensibility: 2d, Those which indicate disturbance in the organs of circulation; for example, the feeble, slow, and intermitting pulse, weak contractions of the heart immediately after death, and the impossibility of prolonging them, as may be done in sudden deaths from other causes, by artificial respiration: 3d, Those which depend on lesion of the alimentary canal, as pains of the abdomen, nausea, and vomiting, in those animals which were suffered to vomit. At one time it is the nervous system that is most remarkably affected, and at another the organs of circulation. Hence inflammation of the stomach and intestines ought not to be considered as the immediate cause of death, in the greater number of cases of poisoning by arsenic. However, should an animal not sink under the first violence of the poison, if the inflammation has had time to be developed, there is no doubt that it may destroy life. Mr. Earle states, that a woman who had taken arsenic survived the alarming symptoms which at first appeared, but died on the fourth day. On opening her body, the mucous membrane of the stomach and intestines was ulcerated to a great extent. Yet authentic cases of poisoning with arsenic are recorded, where no trace of inflammation was perceptible in the *primæ viæ*.

The effects of arsenic have been graphically represented by Dr. Black: — "The symptoms produced by a dangerous dose of arsenic begin to appear in a quarter of an hour, or not much longer, after it is taken. First sickness, and great distress at stomach, soon followed by thirst, and burning heat in the bowels. Then come on violent vomiting and severe colic pains, and excessive and painful purging. This brings on faintings with cold sweats, and other signs of great debility. To this succeed painful cramps and contractions of the legs and thighs, and extreme weakness, and death." Similar results have followed the incautious sprinkling of cancerous ulcers with powdered arsenic, or the application of arsenical pastes. The following more minute specification of symptoms is given by Orfila: — "An austere taste in the mouth; frequent ptyalism; continual spitting; constriction of the pharynx and œsophagus; teeth set on edge; hiccup; nausea; vomiting of brown or bloody matter; anxiety; frequent fainting fits; burning heat at the præcordia; inflammation of the lips, tongue, palate, throat, stomach; acute pain of stomach, rendering the mildest drinks intolerable; black stools of an indescribable fetor; pulse frequent, oppressed, and irregular — sometimes slow and unequal; palpitation of the heart; syncope unextinguishable thirst; burning sensation over the whole body, resembling a consuming fire — at times an icy coldness; difficult respiration cold sweats; scanty urine, of a red or bloody appearance; altered expression of countenance a livid circle round the eyelids; swelling and itching of the whole body, which become covered with livid spots, or with a miliary eruption; prostration of strength; loss of feeling especially in the feet and hands; delirium convulsions, sometimes accompanied with a

insupportable priapism; loss of the hair; separation of the epidermis; horrible convulsions; and death."

It is uncommon to observe all these frightful symptoms combined in one individual; sometimes they are altogether wanting, as is shown by the following case, related by M. Chaussier. A robust man of middle age swallowed arsenious acid in large fragments, and died without experiencing other symptoms than slight fits of syncope. On opening his stomach, it was found to contain the arsenious acid in the very same state in which he had swallowed it: there was no appearance whatever of erosion or inflammation in the intestinal canal. Etmuller mentions a young girl's being poisoned by arsenic, and whose stomach and bowels were sound to all appearance, though the arsenic was found in them. In general, however, inflammation does extend along the whole canal, from the mouth to the *rectum*. The stomach and duodenum frequently present gangrenous points, eschars, perforations of all their coats; the villous coat in particular is commonly detached, by this and all other corrosive poisons, as if it were scraped off or reduced into a paste of a reddish brown colour. From these considerations we may conclude, that from the existence or non-existence of intestinal lesions, from the extent or seat of the symptoms alone, the physician should not venture to pronounce definitively on the fact of poisoning.

The result of Brodie's experiments on brutes teaches, that the inflammations of the intestines and stomach are more severe when the poison has been applied to an external wound, than when it has been thrown into the stomach itself.

The best remedies against this poison in the stomach are copious draughts of bland liquids, of a mucilaginous consistence, to inviscate the powder, so as to procure its complete ejection by vomiting. Sulphuretted hydrogen condensed in water is the only direct antidote to its virulence; Orfila having found, that when dogs were made to swallow that liquid, after getting a poisonous dose of arsenic, they recovered, though their œsophagus was tied to prevent vomiting; but that when the same dose of poison was administered in the same circumstances, without the sulphuretted water, it proved fatal.

When the viscera are to be subjected after death to chemical investigation, a ligature ought to be thrown round the œsophagus and the beginning of the colon, and the stomach and intervening intestines removed. Their liquid contents should be emptied into a basin; and thereafter a portion of hot water introduced into the stomach, and worked thoroughly up and down this viscus, as well as the intestines.

After filtration, a portion of the liquid should be concentrated by evaporation in a porcelain capsule, and then submitted to the proper reagents above described. We may also endeavour to extract from the stomach, by digestion in boiling water with a little ammonia, the arsenical impregnation, which is known to have been retained in some instances with wonderful obstinacy. This precaution ought, therefore, to be attended to. The heat will dissipate the excess of ammonia in the above operation; whereas, by adding potash or soda, as directed by the German chemists, we introduce animal matter in alkaline solution, which complicates the investigation.

The matters rejected from the patient's bowels before death should not be neglected. These, generally speaking, are best treated by cautious evaporation to dryness; but we must beware of heating the residuum to 400°, since at that temperature, and perhaps a little under it, the arsenious acid itself sublimes.

Vinegar, hydroguretted alkaline sulphurets, and oils, are of no use as counterpoisons. Indeed, when the arsenic exists in substance in the stomach, even sulphuretted hydrogen water is of no avail, however effectually it neutralise an arsenious solution. Syrups, linseed tea, decoction of mallows, or tragacanth, and warm milk, should be administered as copiously as possible, and vomiting provoked by tickling the fauces with a feather. Clysters of a similar nature may be also employed. Many persons have escaped death by having taken the poison mixed with rich soups; and it is well known, that when it is prescribed as a medicine, it acts most beneficially when given soon after a meal. These facts have led to the prescription of butter and oils; the use of which is, however, not advisable, as they screen the arsenical particles from more proper menstrua, and even appear to aggravate its virulence. Morgagni, in his great work on the seats and causes of diseases, states, that at an Italian feast the desert was purposely sprinkled over with arsenic instead of flour. Those of the guests who had previously eaten and drunk little, speedily perished; those who had their stomachs well filled, were saved by vomiting. He also mentions the case of three children, who ate a vegetable soup poisoned with arsenic. One of them, who took only two spoonfuls, had no vomiting, and died; the other two, who had eaten the rest, vomited and got well. Should the poisoned patient be incapable of vomiting, the stomach pump should be used, and the viscus thoroughly cleansed by injecting appropriate liquids, and withdrawing them afte they have remained a few seconds.

It has been for some time known in Germany, that the bodies of persons poisoned with arsenic have been found, after several months, nay, two years and a half, in a state of remarkable preservation, or converted externally into a species of adipocerous matter; and the stomach and intestines firm, flexible, reddish, as if they had been pickled in brine; and the appearances of disease, caused by the arsenic, often as distinct as in a recent body. Dr. Christison has verified these results by experiments on dogs. Dr. Kelch, of Königsberg, buried, in February, the internal organs of a man who had died of arsenic, and whose body had remained without burial till the external parts had begun to decay; and on examining the stomach and intestines, five months afterwards, he found that the hamper which contained them was very rotten, but that they had a

peculiar smell, very different from that of putrid bowels, were not yet acted on by putrefaction, and were still as fresh as when they were taken from the body, and might have served to make instructive preparations. In the stomach, the inflamed spots seen originally had not disappeared. In consequence of this preservation of the body, arsenic has been detected in Germany *fourteen months after interment*. This preservative power is, however, subject to exceptions, the causes of which have not been investigated.

Arsenic, like many other virulent poisons, is a safe and useful medicine when judiciously employed. The arsenious acid, and the arsenite of potash, are the only preparations used internally, and their effects are precisely analogous. They are powerfully tonic and febrifuge. The "tasteless ague drop," which is a solution of arsenite of potash, had long been in use as an empirical remedy for the ague, when Dr. Fowler introduced it to the notice of the profession in 1786. Its officinal substitute, the *Liquor arsenicalis* of the Pharmacopœia, is now in general use; but, though decidedly efficacious, it is much inferior to quinine, because it often fails of its effect unless the dose be increased beyond the limits of prudence. It is best to begin with a very moderate dose, as five drops twice a day, during the intermissions, and this may be gradually increased to twenty drops three times a day. The power of arsenic seems to extend, like that of bark, to most diseases which assume a periodical type; and it has been found very useful in megrim and other periodical headachs. As a tonic, it is administered with great advantage in many cutaneous diseases, especially lepra; and has been employed in chronic rheumatism, lues venerea, and other cases, in which its efficacy is more doubtful. The arsenious acid may be exhibited either in substance or in solution. One grain may be triturated with ten grains of sugar, and the mixture beat up with a sufficient quantity of bread-crumb to form ten pills, of which one is a dose: or four grains may be dissolved in a pint of water, and a table spoonful given for a dose. During the exhibition of arsenic, its effects on the system should be carefully watched. When its operation is becoming too strong, it is indicated by swelling, stiffness, itching, and soreness of the eyelids, soreness of the gums, salivation, headach, and giddiness, cough, sickness, pain in the stomach and bowels. Dr. Paris states, that he has occasionally observed paucity of urine and strangury among the effects of too large an administration of arsenic. It is not yet distinctly ascertained in how small a dose the arsenious acid may, under ordinary circumstances, be expected to prove fatal. Hahnemann states, that, in circumstances favourable to its action, 4 grains may cause death within 24 hours, and that 1 or 2 grains may prove fatal in a few days. Dr. Christison, on a comparison of different cases, is of opinion that this statement cannot be very wide of the truth. The latter distinguished writer sees no reason to believe that habit has any power of diminishing the effects of arsenic on the constitution: his own experience has taught him that it has quite an opposite effect; and many practitioners, whom he has consulted, coincide in this observation.

Externally applied, arsenic is a powerful escharotic, and as such, has been much used in the treatment of cancer. *Plunkett's ointment*, the *Pâte arsenicale, Davidson's remedy for cancer*, and other preparations, owe their activity to this poison. Repeated observation has shown, that arsenic applied externally to a raw surface produces its deadly effects just as certainly as when internally administered; and many cases are on record of persons who have fallen victims to such applications as those alluded to. They are entirely discarded in this country, though the *Pâte arsenicale* is still used in France.

A'RSENITE. A salt formed by the union of the arsenious acid with a base.

Arsenite of Copper. See *Arsenious acid*.

ARTANECK. *Artanech*. Arsenic.

ARTEMI'SIA. (*a*, *æ*. f.: according to Pliny, this word is derived from Artemisia, the wife of Mausolus, king of Caria; according to others, it is from Artemis, Diana.) The name of a genus of plants in the Linnæan system. Class, *Syngenesia*; Order, *Polygamia superflua*.

ARTEMISIA ABRO'TANUM. Common southernwood. The systematic name of the *Abrotanum* of the Pharmacopœias. Called also, *Abrotanum mas*, and *Abrathan*. *Artemisia — foliis setaceis ramosissimis*, of Linnæus. A plant which grows wild in the south of Europe, in China, Siberia, and other countries, and is abundantly cultivated in our gardens. It has a strong, and, to most people, an agreeable smell; a pungent, bitter, and somewhat nauseous taste. It is said to be tonic, diaphoretic, anthelmintic, and emmenagogue, but is now scarcely used unless in anodyne fomentations.

ARTEMISIA ABSINTHIUM. Common wormwood. The systematic name of the *Absinthium vulgare* of the Pharmacopœias. *Artemisia — foliis compositis multifidis floribus subglobosis pendulis; receptaculo villoso*, of Linnæus. This plant is a native of Britain, and grows on heaps of rubbish, rocks, and road sides. The leaves of wormwood have a strong disagreeable smell: their taste is nauseous, and proverbially bitter. The flowers are more aromatic and less bitter than the leaves, and the roots discover an aromatic warmth, without bitterness. Caventou has discovered a peculiar bitter principle in this plant, which he has named *absinthine*. This species of wormwood yields an essential oil by distillation, which is said to possess narcotic powers. According to Bergius, wormwood is antiseptic, antacid, anthelmintic, resolvent, tonic and antispasmodic. We are told of its good effects in a great variety of diseases, as intermittent fevers, hypochondriasis, obstructions of the liver and spleen, gout, calculi, scurvy, dropsy, worms, &c. Notwithstanding which it is so seldom used in the present day, that it is difficult to find it in the shops. Both alkohol and water extract the virtues of the plant. It is sometimes administered as a tonic in dyspepsia either in the form of powder or infusion. The powder of the dried leaves may be given in the dose of ℈j. to ʒij. Of the infusion made with

℥ vj. of the herb to ℥ xij. of boiling water, from one to two ounces may be given three times a day.

Externally this species of wormwood is applied in anodyne and discutient fomentations.

Artemisia chinensis. *Artemisia sinensis. Artemisia latifolia.* Mugwort of China; called also *Moxa japonica*, and *Musia pattræ*. A soft lanuginous substance, called *Moxa*, is prepared in China and Japan, from the young leaves of this species of mugwort, by beating them when thoroughly dried, and rubbing them between the hands, till only the fine fibres are left. Moxa burnt upon the skin has been celebrated for many centuries in the East, for the prevention and cure of a variety of disorders; a little cone of it laid upon the part, previously moistened, and set on fire at the top, burns gradually down with a glowing heat, and produces a slough, the separation of which is promoted by applying a little garlic, and the ulcer is either healed up when the eschar separates, or kept running for a length of time, as different circumstances may require. In Europe, the same operation is practised with a cylinder made of cotton wool, or the pith of the great sunflower soaked in a solution of nitre and dried. In order to limit the inflammation and sloughing, liquor ammoniæ is usually applied to the part immediately after the operation. The moxa is applicable in every case where powerful counter-irritation is desired. In France it is much used, but as it seems to have no advantage over the caustic issue, and is more alarming to the patient, it is seldom resorted to by British practitioners.

Artemisia glacialis. Mountain wormwood. This is found in Alpine situations, and has similar virtues to common wormwood.

Artemisia judaica. The name given by some botanists to the *Artemisia santonica.*

Artemisia latifolia. See *Artemisia chinensis.*

Artemisia maritima. Sea wormwood. The systematic name for the *Absinthium maritimum* of the Pharmacopœias. *Artemisia — foliis multipartitis, tomentosis; racemis cernuis; flosculis fœmineis ternis*, of Linnæus. This plant grows plentifully about the sea-shore, and in salt marshes. Its taste and smell are considerably less unpleasant than those of the common wormwood; and the essential oil, on which its flavour depends, is somewhat less ungrateful, and the watery extract less bitter than those of the common wormwood. Hence it has been preferred to the absinthium, as being less nauseous; but it is also less active, and is now hardly ever used.

Artemisia pontica. The systematic name for the *Absinthium ponticum*, or Roman wormwood, not now used medicinally.

Artemisia rupestris. The systematic name for the *Genipi album* of the Pharmacopœias. *Artemisia — foliis pinnatis; caulibus adscendentibus; floribus globosis, cernuis; receptaculo papposo.* It has a grateful smell, and is used in some countries in ague and amenorrhœa.

Artemisia santo'nica. The Tartarian southernwood or wormseed. The systematic name of the plant which affords the *Semen santonici* of the shops; called also, *Absinthium santonicum Alexandrinum, Sementina, Absinthium seriphium Ægyptium, Scheba Arabum, Zedoariæ semen, Xantolina, Lumbricorum semina, Cina, Semen contra, Semen sanctum*, and *Artemisia Judaica. Artemisia — foliis caulinis lineari bus, pinnato-multifidis; ramis indivisis; spicis secundis reflexis; floribus quinquefloris*, of Linnæus. This plant is a native of Tartary and Persia, and is cultivated in our gardens. The seeds are small, light, and oval, composed of a number of thin membranous coats of a yellowish green colour, with a cast of brown, easily friable, upon being rubbed between the fingers, into a fine chaffy kind of substance. They are brought from the Levant; have a moderately strong and not agreeable smell, and a very bitter subacrid taste. Their virtues are extracted both by watery and spirituous menstrua. They have been esteemed as stomachic and emmenagogue, but were chiefly prized for their anthelmintic virtues. For adults, the dose in substance is from 1 to 2 drachms, twice a day. Lewis thinks that the spirituous extract is the most eligible preparation of the santonicum, for the purposes of an anthelmintic; but the medicine is now little used with any intention.

Artemisia vulgaris. Mugwort. This plant, *Artemisia — foliis pinnatifidis, planis, incisis, subtus tomentosis; racemis simplicibus, recurvatis; floribus radio quinquefloro*, of Linnæus, is slightly bitter, and, although in high esteem in former days, is now entirely neglected.

Artemo'nium. Αρτεμωνιον. The name of a collyrium mentioned by Galen.

Arteria venosa. This name was given by the ancient anatomists to the pulmonary vein, or rather veins, for there are four trunks.

Arteri'acus. (From αρτηρια, an artery, as referring to the windpipe, αρτηρια τραχεια.) Galen applied this term to medicines used against diseases of the windpipe — αρτηριακα φαρμακα.

Arteriosa vena. See *Vena arteriosa.*

Arteriosus ductus. See *Ductus arteriosus.*

ARTERIO'TOMY. (*Arteriotomia, æ.* f.; from αρτηρια, an artery, and τεμνω, to cut.) The opening of an artery for the purpose of abstracting blood from the system. This operation is only practised by modern surgeons on the temporal artery; but the ancients used also to open the frontal and occipital, and the artery of the thumb between it and the forefinger. We find from Prosper Alpinus, that all these modes of arteriotomy were still in common use among the Egyptian surgeons of his day.

A'RTERY. (*Arteria, æ.* f.; from αηρ, air, and τηρεω, to keep: so called, because the ancients believed the arteries to contain air only.) The arteries are membranous, elastic, pulsating canals, conveying blood from the heart to all parts of the body. The main arterial trunks are only two in number; the *aorta* rising from the left ventricle of the heart, and the *pulmonary artery* from the right: all the other arteries are branches of the aorta. The arteries are distributed to every part of the frame, and form the great apparatus of nutrition, continually supplying the waste of every texture and organ. The arteries terminate in veins; in capillary vessels;

in glands and follicles, by secretory ducts; in exhalent vessels; in cells, as those of the penis; or, lastly, they anastomose with each other. When an arterial trunk runs a certain distance without sending off branches, it is of a cylindrical shape; but when it ramifies, the capacity of its tube is diminished according to the number of branches sent off. Wherever an artery divides into two branches, the area of these two branches taken conjointly is found to be nearly one half greater than that of the trunk from which they proceed. All the arteries convey red blood except the pulmonary, which conveys purple blood like that of the veins. The arteries are composed of three tunics; an *external* or cellular, a *middle* commonly called muscular, and an *internal* or proper coat. The opinions of anatomists and physiologists as to the nature of these coats, and the part sustained by the arteries in the propulsion of the blood, have been much divided even to the present time: on these points the reader is referred to the article *Circulation*.

The following table exhibits a general view of the arterial system. The anatomy of the individual arteries is more particularly described under their respective titles.

A Table of the Arteries.

All the arteries originate from the pulmonary artery and the aorta.

The *pulmonary artery* emerges from the right ventricle of the heart, and soon divides into a right and left branch, which are distributed by innumerable ramifications through the lungs.

The *aorta* arises from the left ventricle of the heart, giving off the anterior and posterior *coronary* arteries immediately at its origin. It then proceeds to supply every part of the body with blood, in the following order: —

a. It first forms an *arch*.

b. It then descends along the spine; and,

c. It divides into the two *common iliac arteries*.

a. The ARCH OF THE AORTA gives off three branches.

1. The *arteria innominata*, which divides into the *right common carotid* and *right subclavian*.
2. The *left common carotid*.
3. The *left subclavian*.

I. The *common carotids* are divided into *external* and *internal*.

The *external carotids* give off,

1. The *superior thyroid*.
2. The *lingual*.
3. The *facial*.
4. The *inferior pharyngeal*.
5. The *occipital*.
6. The *posterior auris*.
7. The *internal maxillary*, from which the *spinous artery of the dura mater*, the *lower maxillary*, and *several branches about the palate and orbit* arise.
8. The *temporal*.

The *internal carotid* affords,

1. The *ophthalmic*.
2. The *middle cerebral*.
3. The *communicans*, which inosculates with the *vertebral*.

II. The *subclavians* give off the following branches.

1. The *internal mammary*, from which arise the *thymic*, *comes phrenici*, *pericardiac*, and *phrenico-pericardiac arteries*.
2. The *inferior thyroid*, which gives off the *tracheal*, *ascending thyroid*, and *transversalis humeri*.
3. The *vertebral*, which ascends on each side through a canal formed by foramina in the transverse processes of the cervical vertebræ, and, having given off the *anterior arteries of the spinal cord*, joins its fellow of the opposite side within the cranium to form the *basilar artery*, from which proceed the *anterior cerebelli*, the *posterior cerebelli*, which usually give off the *posterior arteries of the spinal cord*, the *posterior cerebri*, and *many branches about the brain*.
4. The *cervicalis profunda*.
5. The *cervicalis superficialis*.
6. The *superior intercostal*.
7. The *supra-scapular*.

As soon as the subclavian arrives at the armpit, it is called the *axillary artery*; and when the latter reaches the arm, it is called the *brachial*.

The *axillary artery* gives off,

1. *Four external thoracic* or *mammary arteries*.
2. The *sub-scapular*, which divides into the *scapularis interna* and *dorsalis scapulæ inferior*.
3. The *posterior circumflex*, and
4. The *anterior circumflex*, both of which are ramified about the shoulder-joint.

The *brachial artery* gives off,

1. *Many lateral branches*.
2. The *profunda humeri superior*.
3. The *profunda humeri inferior*.
4. The *great anastomosing artery*, which ramifies about the elbow-joint.

The *brachial artery* then divides, about the bend of the arm, into the *ulnar* and *radial arteries*, which are ramified to the ends of the fingers.

The *ulnar artery* gives off,

1. The *ulnar recurrent*.
2. The *posterior interosseous*.
3. The *anterior interosseous*.

The ulnar artery terminates by forming the superficial palmar arch, from which proceed the *digital arteries*.

The *radial artery* gives off,

1. The *radial recurrent*.
2. The *superficialis volæ*.
3. The *palmaris profunda*, which forms the deep palmar arch.

b. The DESCENDING AORTA gives off,

In the thorax,

1. The *bronchial* and
2. The *æsophageal* arteries both varying in number.
3. The *inferior intercostals*.

In the abdomen,

1. The *inferior diaphragmatic*.
2. The *cœliac*, which divides into three branches
   1. The *hepatic*, from which are given off before it reaches the liver,
      α. The *duodeno-gastric*, which sends off the *right gastro-epiploic* and the *pancreatico-duodenal*.
      β. The *pylorica superior hepatica*.
   2. The *coronaria ventriculi*.
   3. The *splenic*, which emits the *great* and *small pancreatics*, the *posterior gastric*, the *left gastro-epiploic*, and the *vasa brevia*.

3. The *superior mesenteric.*
4. The *renal* or *emulgents.*
5. The *spermatics.*
6. The *inferior mesenteric.*
7. The *lumbar arteries.*
8. The *middle sacral.*

c. The aorta then bifurcates into the *common iliacs*, each of which divides into an *external* and *internal iliac.*

The *internal iliac*, called also hypogastric, gives off,

1. The *ileo-lumbar.*
2. The *lateral sacrals.*
3. The *gluteal.*
4. The *obturatory.*
5. The *umbilical.*
6. The *uterine.*
7. The *middle hæmorrhoidal.*
8. The *pudic*, which gives off the external *hæmorrhoidal, perineal*, and *arteriæ penis.*
9. The *ischiadic.*

The *external iliac* gives off, in the groin,

1. The *epigastric.*
2. The *circumflexa iliaca.*

It then passes under Poupart's ligament, and is called the *femoral artery*, sending off,

1. The *external pudics.*
2. The *profunda*, which gives off the *rami perforantes.*
3. The *internal circumflex.*
4. The *external circumflex.*
5. The *ramus anastomoticus magnus*, which ramifies about the knee-joint.

The femoral artery having reached the ham, is termed the *popliteal*, and here gives off the *articular arteries.* It then divides into the *anterior* and *posterior tibial.*

The *anterior tibial* gives off,

1. The *recurrent.*
2. The *internal malleolar.*
3. The *external malleolar.*
4. The *tarsal.*
5. The *metatarsal.*
6. The *dorsalis halicis.*

The *posterior tibial* divides into the *fibular* or *peroneal*, and the *posterior tibial* properly so called.

The *peroneal* divides into the *anterior peroneal* and *posterior peroneal.*

The *posterior tibial* properly so called sends off,

1. The *nutritia tibiæ.*
2. *Many small branches.*
3. The *internal plantar.*
4. The *external plantar*, from which an arch is formed, that gives off the *digitals of the toes.*

ARTHANI'TA. (A word of Arabic derivation.) The herb sow-bread. See *Cyclamen europæum.*

ARTHE'TICUS. *Arthereticus.* The same as *Arthriticus.*

ARTHOICUM. *Pannonium.* A barbarous term applied by Paracelsus to a certain red oil, expressed from a mixture of bread and herbs digested in dung.

ARTHRE'MBOLUM. (From αρθρον, a joint, and εμβαλλω, to insert.) An instrument for reducing luxated bones. The acceptation of this Greek word in medical, and in ordinary language, was very different, for αρθρεμβολα commonly meant instruments of torture for dislocating the limbs.

ARTHRI'TICA HERBA. Several plants were so called, and especially the *Teucrium Chamæpytis*, or ground-pine.

ARTHRI'TICUS. (From αρθριτις, the gout.) Arthritic. Pertaining to the gout.

ARTHRI'TIS. (*is, idis.* f.; from αρθρον, a joint.) *Morbus articularis.* Gout. Inflammation of a joint. The ancients distinguished arthritis into four principal varieties, according to its seat: *Chiragra*, in the hand; *Podagra*, in the feet; *Ischias*, in the hip; *Gonagra*, in the knee.

ARTHRITIS PLANE'TICA. (*Planetica*, πλανητικα; from πλαναομαι, to wander.) *Arthritis vaga.* Wandering gout. See *Podagra.*

ARTHROCA'CE. (*e, es.* f.; from αρθρον, a joint, and κακη, a vice or evil.) This term has been used in the same vague manner as *spina ventosa.* The most general meaning attached to it seems to be a collection of matter within the cavity of a bone.

ARTHRO'DIA. (*a, æ.* f.; from αρθρον, a joint.) A species of moveable connexion of bones, in which the head of one bone is received into a superficial cavity of another, so as to admit of free motion in every direction, as the articulation of the head of the humerus with the glenoid cavity of the scapula.

ARTHRODY'NIA. (*a, æ.* f.; from αρθρον, a joint, and οδυνη, pain.) The name given by Cullen to chronic rheumatism.

ARTHRO'MBOLE. (From αρθρον, a joint, and βαλλω, to cast.) Coaptation. The reduction of a dislocation or fracture.

ARTHRO'NCUS. (From αρθρον, a joint, and ογκος, a tumour.) The name given by Swediaur to the detached cartilaginous bodies which sometimes form within the knee-joint.

ARTHROPHLOGO'SIS. (From αρθρον, a joint, and φλογωσις, inflammation.) Inflammation of a joint.

ARTHROPUO'SIS. (*is, is.* f.; from αρθρον, a joint, and πυον, pus.) *Arthropyosis.* Cullen applies this term to suppuration in the cavity of a joint.

ARTHRO'SIA. (*a, æ.* f.) The generic name given by Mason Good to articular inflammation.

ARTHRO'SIS. (*is, is.* f.; from αρθρον, a joint.) Articulation.

A'RTIA. Αρτια. Αρτιη. The same as *arteria*; but applied by some especially to the *aspera arteria*, or windpipe.

ARTI'CALUS. The artichoke.

Artichoke. See *Cinara scolymus.*

Artichoke, French. See *Cinara scolymus.*

Artichoke, Jerusalem. See *Helianthus tuberosus.*

ARTICO'CA *Articocalus.* The artichoke. See *Cinara scolymus.*

ARTICULAR. (*Articularis*; from *articulus*, a joint.) Belonging to a joint; as articular cartilages, articular arteries, &c.

ARTICULARIS MORBUS. Synonymous with arthritis, or gout.

ARTICULATION. (*Articulatio, onis.* f.; from *articulus*, a joint.) 1. In *Physiology*, the formation of distinct syllables by the organs of speech.

2. In *Anatomy*, the natural connexion of one

bone with another in the skeleton. Anatomists distinguish three kinds of articulation: the first they name *Diarthrosis*; the second, *Synarthrosis*; and the third, *Symphysis*; which see, under their respective heads.

Articula'ta. Articulated animals. A great division of the animal kingdom. See *Animal kingdom*.

ARTICULA'TUS. Articulate; jointed. Applied generally in natural history to objects which are formed of distinct pieces, united as if one piece grew out of another. In *Botany*, the term is applied to roots, stems, and other parts.

In the *Radix articulata*, or articulate root, radicles shoot out from each joint; as in the *Oxalis acetosella*, or wood sorrel.

The *Caulis articulata*, or articulate stem, is exemplified in the *Cactus flagelliformis*, and *Lathyrus sylvestris*.

The articulate leaf is exemplified in the *Cactus opuntia*.

The *Oxalis acetosella* has articulate leaf-stalks.

ARTI'CULUS. (*us, i.* m.; diminutive of *artus*.) 1. In *Anatomy*, a joint or articulation. The phalanges of the fingers have also been called *articuli*.

2. In *Botany*, this term is applied to that part which is intercepted, or lies between two knots in an articulated stem; and also to the knots themselves.

Arti'scus. (From αρτος, bread.) A troch: so called, because it is made like a little loaf.

Artoca'rpeæ. A tribe of dicotyledonous plants, of which the genus *Artocarpus* is the type.

ARTOCA'RPUS. (From αρτος, bread, καρπος, fruit.) A genus of plants including the several kinds of bread-fruit.

Artocarpus incisa. The Bread-fruit tree. This tree is about the size of a small oak. It is a native of the South Sea Islands, from which it has been conveyed to the West Indies, South America, and other parts of the world. The fruit, which is contained in a round catkin, varies in size, from that of a child's to that of a man's head. It is gathered when it has attained its full growth, but is yet green and hard: it is baked in an oven; and on removing the rind, the internal part is found to resemble the crumb of bread, and forms a substitute for bread in the countries in which it grows.

Artocarpus integrifolia. The jack or jaca tree. The fruit of this tree is used as food, like that of the preceding species. It is of larger size, but inferior in flavour.

Artocarpus benghalensis. The fruit is preserved in salt and used in cookery.

Ary'thmus, more properly *Arrhythmus*. (Αρρυθμος; from α, priv., and ρυθμος, a measure.) A term applied by Galen to the pulse when irregular.

Arto'meli. (*i, itos.* n.; from αρτος, bread, and μελι, honey.) A cataplasm made of bread and honey. — *Galen*.

A'RUM. (*um, i.* n. Αρον.) 1. The name of a genus of plants in the Linnæan system. Class, *Gynandria*; Order, *Polyandria*.

2. The pharmacopœial name of the common arum. See *Arum maculatum*.

Arum colocasia. *Colocasia*. This species is cultivated in the East Indies, Syria, Egypt, and the south of Europe. The leaves and root boiled in water are much used as food.

Arum dracontium. See *Dracontium pertusum*.

Arum dracunculus. The systematic name of the plant called, in English, dragon's wort, and many-leaved arum, the *Dracunculus polyphyllus, Colubrina dracontia, Serpentaria gallorum, Erva de Sancta Maria, Gigarus serpentaria, Arum polyphyllum*. This plant is extremely acrimonious; more so than the *Arum maculatum*, with which, however, it agrees in its general properties, and, like it, becomes bland and nutritious by drying or boiling.

Arum esculentum. Is used as a pot-herb in the West Indies and elsewhere.

Arum maculatum. The systematic name of common arum, or wake-robin. *Arum* of the Pharmacopœias. *Arum — acaule; foliis hastatis, integerrimis; spadice clavato*, of Linnæus. The root is the medicinal part of this plant. When recent, it is very acrimonious; and, on being chewed, excites an intolerable sensation of burning and prickling in the tongue, which continues for several hours. When cut in slices, and applied to the skin, it has been known to produce blisters. This acrimony, however, is gradually lost by drying, and may be so far dissipated by the application of heat as to leave the root a bland farinaceous aliment. In this state, it has been made into a wholesome bread. It has also been prepared as starch. Its medicinal qualities reside entirely in a volatile principle, which seems to be of a peculiar nature, as the plant yields no essential oil. Arum is a powerful stimulant, and has been recommended in cachectic and chlorotic cases, in chronic rheumatism, and various other diseases of debilitated constitutions. The medicine, however, is an unmanageable one, for the acrimony of the fresh root varies extremely, so that it is difficult to apportion the dose; and the dried root, on the other hand, is inert. Dr. Lewis advises us to administer the fresh root in the form of emulsion, with gum-arabic and spermaceti, increasing the dose from ten grains to upwards of a scruple three or four times a day. In this way, he found that it generally occasioned a slight sensation of warmth about the stomach, and afterwards in the remoter parts; manifestly promoted perspiration, and frequently produced a plentiful sweat. Obstinate rheumatic pains were, in several cases, removed by this medicine. Bergius tells us, that when taken in doses of half a scruple of the compound powder, he never knew the arum fail of giving relief in nervous headach, even after the most celebrated remedies had proved useless, or even added to the distress. The root answers quite as well as garlic for stimulating cataplasms. The London College, in their Pharmacopœia, 1788, ordered a conserve, in the proportion of half a pound of the fresh root to a pound and a half of double-refined sugar, beat together in a mortar. This conserve appears to be one of the best forms for exhibiting arum, as its virtues

are destroyed by drying, and are not extracted by any menstruum; it may be given to adults in the dose of a drachm.

Arum seguinum. See *Caladium seguinum.*

Arum venenosum. See *Caladium seguinum.*

ARUNDINA'CEUS. (From *arundo*, a reed.) Arundinaceous or reed-like.

ARUNDINACEÆ. The name of a natural tribe of plants of which the genus *Arundo* is the type.

ARU'NDO. (*o, inis.* f.) A reed. The name of a genus of plants in the Linnæan system. Class, *Triandria;* Order, *Digynia.*

ARUNDO BAMBOS. The bamboo plant. See *Bambusa arundinacea.*

ARUNDO PHRAGMI'TES. The common reed. This plant has been used in syphilis and some diseases of the skin; but there is no reason to believe that it possesses any medicinal activity.

ARUNDO BRACHII MAJOR. The ulna.

ARUNDO BRACHII MINOR. The radius.

ARUNDO SACCHARIFERA. The sugar-cane. See *Saccharum officinale.*

ARVI'NA. A name for hog's lard.

ARYTÆ'NO-EPIGLOTTIDE'US. *Arytæno-epiglotticus.* A muscle which runs on each side, from the arytænoid cartilage to the epiglottis. The use of the two muscles, which act together, is to draw the epiglottis directly downwards upon the glottis during the act of deglutition.

ARYTÆ'NOID. (*Arytænoides;* often improperly called *arytænoideus;* from αρυταινα, a funnel, and ειδος, shape.) Funnel-shaped: applied to two cartilages of the larynx, and also to the muscles, glands, &c. connected with these cartilages.

ARYTÆNOID CARTILAGE. *Cartilago arytænoides.* See *Larynx.*

ARYTÆNOIDE'US MAJOR. See *Arytænoideus transversus.*

ARYTÆNOIDEUS MINOR. See *Arytænoideus obliquus.*

ARYTÆNOIDEUS OBLIQUUS. A muscle of the glottis. *Arytænoideus minor* of Douglas. It arises from the base of one arytænoid cartilage, and crossing its fellow, is inserted near the tip of the opposite arytænoid cartilage. This muscle is occasionally wanting; but when present, its use, in conjunction with its fellow, is to pull the arytænoid cartilages towards each other.

ARYTÆNOIDEUS TRANSVERSUS. An azygos, or single muscle of the glottis. *Arytænoideus major* of Douglas. It arises from the side of one arytænoid cartilage, from near its articulation with the cricoid to near its tip. The fibres run across, and are inserted in the same manner into the other arytænoid cartilage. Its use is to shut the glottis, by bringing the two arytænoid cartilages, with their ligaments, nearer to each other.

As, or ASSIS. (*is, is.* m.) The Roman pound, which was divided into twelve equal parts, or ounces.

ASA DULCIS. An old name for benzoin. See *Styrax benzoin.*

Asab. See *Borozail.*

Asafœtida. See *Ferula assafœtida.*

Asaphatum. See *Saphatum.*

ASAPHI'A. (Ασαφεια; from α, neg. and σαφης, clear.) Hippocrates uses this term to designate a defect of speech, whether arising from weakness of voice or indistinct articulation; he also applies it to the state of low delirium. Vogel has given this name to a defect of voice arising from malformation of the soft palate.

Asarabacca. See *Asarum europæum.*

A'SARINE. A species of stearoptene discovered by Görtz in the *Asarum europæum.* It has an emetic quality.

A'SARUM. (*um, i.* n.; so called, according to Pliny, from α, neg. and σαιρω, to adorn, because it was not admitted into the ancient coronal wreaths.) 1. The name of a genus of plants in the Linnæan system. Class, *Dodecandria;* Order, *Monogynia.*

2. The pharmacopœial name of the asarabacca. See *Asarum europæum.*

ASARUM EUROPÆUM. The systematic name of the *asarabacca* of the shops: called also *Nardus montana, Nardus rustica,* and *Nardus sylvestris. Asarum—foliis reniformibus, obtusis, binis,* of Linnæus. This plant is sufficiently abundant in the central parts of France, and is also indigenous, though not very frequent, in England. Its leaves are acrid, bitter, nauseous, and slightly aromatic. The root is extremely acrid, and appears to contain the same active principle as the *arum;* like that plant, the asarabacca loses much of its medicinal activity by drying. Both the leaves and root, especially the latter, are emetic and cathartic, and prior to the introduction of ipecacuanha were used to excite vomiting; the dose of the dried leaves is ℈ j., and of the root, grs. x. They are violent in their operation, and are now disused. The leaves, however, are still employed as a sternutatory; and in doses of three or five grains, snuffed up the nose, for several evenings, produce a pretty large watery discharge, which continues for several days together, by which headach, toothach, ophthalmia, and some paralytic and lethargic complaints have been effectually relieved. The leaves should be very recently dried, and without the application of much heat.

Asarum hypocistus. See *Cytinus hypocistus.*

A'SBOLINE. (From ασβολη, soot.) The name given by Braconnot to a substance found by him in soot, and which he regards as a peculiar principle. Berzelius, however, believes that "it consists simply of acid pyretine, combined with that species of pyretine and pyrelaïne which is formed during the distillation of pyretine." Braconnot believes that the anthelmintic virtue which has been ascribed to soot, resides in the *asboline.*

ASCALO'NIA, or ASCALO'NIUM. A species of onion, so called because it was brought from Askalon. — *Pliny.*

ASCA'RIDES. The plural of *ascaris.*

A'SCARIS. (*is, idis.* f.; from ασκαριζω, to leap, so called from their troublesome movements.) The name of a genus of intestinal worms. See *Entozoa.*

ASCE'NDENS. (From *ascendo*, to ascend.) *Adscendens.* Ascending. Applied in *Anatomy* to various parts, as *musculus obliquus ascendens;* and in *Botany* to leaves, stalks, &c.,

as the leaves of the *Geranium vitifolium*, and stem of the *Hedysarum onobrychis*.

Ascendens obliquus. See *Obliquus internus abdominis.*

Ascending aorta. See *Aorta, ascending.*

Asce'nsus. (*us, us.* m.) An ascent. This term has been applied, 1. In *Pathology*, to the increase of a disease.

2. In *Chemistry*, to sublimation, which was sometimes called by the older writers *distillatio per ascensum.*

A'scia, or Dola'bra. The spiral bandage, said to be so called from its having the shape of a hatchet when applied; but this resemblance is not very obvious.

Ascidia'tus. (From ασκιδιον, a small round bottle.) Ascidiate or bottle-shaped: a term applied to leaves and other parts of plants which are so formed; the *folium ascidiatum* is seen in the *Nepenthes distillatoria*, and in *Sarracenia.*

ASCI'DIUM. (*um, i.* n.; from ασκιδιον, a small round bottle.) A term introduced by Willdenow into botany to express a hollow appendage, resembling a small bottle. It occurs on the stem, as in *Cephalotus follicularis;* on the leaf, as in the genus *Nepenthes;* on the peduncle, as in *Surubea guianensis.*

ASCI'TES. (*es, æ.* m.; ασκιτης, from ασκος, *uter*, a bottle: so called from its bottle-like protuberance.) *Hydrops utricularius.* Dropsy of the belly.

Ascites is distinguished into two species: the true ascites, in which the fluid collects in the cavity of the peritoneum; and encysted dropsy, in which the fluid is contained in a distinct sac, as in the ovarium, omentum, and other parts. The several forms of encysted dropsy, however, as well as dropsy of the womb, which has also been included under the term *ascites*, are affections of quite a different character from common dropsy of the abdomen; we shall therefore, in the present article, limit the term ascites to an accumulation of serous fluid within the cavity of the peritoneum.

Ascites is generally recognised with great facility. The symptoms are, swelling of the abdomen coming on gradually, equable when the patient is upright or laid upon the back, and following the motions of the body by gravitating to the side towards which the patient leans. To the touch the swelling is somewhat tense; and if one hand be placed on either side of the abdomen, and the opposite side be sharply struck with the other hand, a sense of fluctuation is communicated, which can hardly be mistaken by an experienced observer. There is generally anasarca of the lower extremities and other parts of the body, the urine is commonly high-coloured and very scanty, the breathing is difficult, and those parts of the body which are not puffed up by watery infiltration are emaciated. The fluid effused into the abdomen consists of serum varying in colour from a light straw colour to a deep brown. In cases where the effusion has been connected with peritoneal inflammation, the serum is mixed with pus, or flakes of coagulable lymph are found floating in it. It is of great importance to form an accurate diagnosis between ascites and the various forms of encysted dropsy, as also between the former affection and tympanites. Ovarian and other encysted dropsies will be recognised by a careful investigation of the history of the case as to the position and progress of the tumour; by the absence of the symptoms of a general hydropic diathesis, which usually accompany ascites; and by the comparatively small impression made on the constitution by the more limited disease. Tympanites can hardly be mistaken for ascites by an attentive observer. The absence of fluctuation and of hydropic symptoms, the tense elastic tumour, and its resonance when struck, are sufficiently characteristic of tympanitic enlargement of the abdomen. There is occasionally some difficulty in distinguishing ascites from pregnancy; and a combination of the two states, which sometimes occurs, forms rather a puzzling case; but the practitioner who is perfectly familiar with the ordinary signs of pregnancy, and particularly with the condition of the uterus as ascertained by examination per vaginam, will very seldom fall into error on this point.

Ascites is sometimes observed as an idiopathic affection; in which case it comes on suddenly without any assignable cause, without any marked constitutional disturbance, and is unaccompanied by anasarca. An acute form of ascites also exists, which has usually been attributed to cold, and which is probably in most instances connected with active inflammation of the peritoneum. Ascites also presents itself among the forms of dropsy which are frequently consecutive on scarlatina and other exanthematous diseases. Ascites, however, is most familiarly known as a chronic disease resulting from slow inflammation of the peritoneum, or long-continued obstruction of the large vessels of the thoracic or abdominal viscera; with this allowance, that there appears to be what medical writers have termed an *hydropic diathesis*, or constitution, liable to be called into activity by very slight causes, which exists, in some persons, prior to distinct malady, and in others seems a good deal connected with that universal debility which follows the ravages of any severe disease. Hence ascites is a very common accompaniment of organic affections of the heart, lungs, or liver; indeed, the latter stages of protracted organic disease in the heart or liver are seldom unaccompanied with some form of dropsy. The proximate cause of ascites evidently consists in a want of equilibrium in the action of the exhalant and absorbent vessels of the peritoneum, the excess of activity on the one side, or its defect on the other, causing the accumulation of serum which constitutes the disease.

Dropsy is always a dangerous condition, and the prognosis is generally unfavourable. This will, however, be a good deal modified by the age and temperament of the patient, the continuance of the disease, and the intensity of the symptoms. When occurring in delicate children or at an advanced period of life, with great prostration of strength; when accompanied by fever, great emaciation, livid spots on the skin, cough and dyspnœa, scanty and fetid urine,

ntermitting pulse, and hæmorrhage from the nouth or anus, we must expect an unfortunate ssue. The connexion of ascites with other iseases will throw light upon its probable ter-nination. As a consequence of organic disease f the thoracic or abdominal viscera, or as an dvanced symptom of phthisis or scurvy, it must lways be considered as a forerunner of death. On the other hand, dropsy suddenly coming on rom the suppression of customary evacuations, rom exposure to cold and fatigue, or appearing s a sequel to scarlatina or other exanthematous evers, is by no means so serious a malady. The dropsical symptoms which, as already men-ioned, occasionally show themselves in pregnant vomen, are generally relieved after delivery.

The treatment of ascites is, on the whole, to e conducted on the principles applicable to that f dropsy in general. In the acute idiopathic orm of the disease, bleeding, purgatives, and ther antiphlogistic means are to be resorted to; ut the extent to which they are carried must be egulated by the constitution of the patient, and he degree of arterial excitement. When there re evident symptoms of peritoneal inflammation, ocal bleeding by leeches, and the application of listers, are of manifest utility. In by far the greater number of cases, however, ascites pre-ents itself as a chronic affection, connected vith a shattered constitution, and too frequently vith incurable disease of some important viscus. Under such circumstances, bleeding, though it nay occasionally be necessary to obviate partial ttacks of inflammation, is to be avoided if ossible; and if indispensable, must be practised vith great caution, and locally rather than from he general system.

The use of diuretics is so naturally indicated, hat they have been employed in this and other orms of dropsy from a very early period. It is o be observed, with respect to this class of nedicines, that no one of them, however ef-ectual at first, retains its efficacy for any length f time, and hence that they require to be fre-uently changed and alternated with one another. It may also be remarked, that in cases of dropsy nattended with any inflammatory disposition, *ligitalis* is usually found to be more serviceable han any other diuretic.

The employment of purgatives, and especially he *hydrogogues*, when they are not too weaken-ng, is recommended by constant experience. The alternation of diuretics with purgatives, so that the full operation of both may be contin-ued without overpowering the patient, has fre-quently been found the most effectual method of evacuating the fluid. Many practitioners have joined chalybeates with diuretic medicines; and it has been stated as a practical remark, with-out, however, any attempt at explanation, that the effect upon the kidneys is generally greater in consequence of this combination. In other instances, the use of tonics and chalybeates has been advised, as if to counteract the debilitating effect of hydrogogue medicines. Mercury is a remedy so generally used in dropsy, and so fre-quently serviceable, that it calls for particular notice: it is employed as much to remove any enlargement or obstruction of the viscera on which the dropsical tendency may be supposed to depend, as for the purpose of stimulating the absorbents and equalising the circulation. Pro-fuse salivation, however, should be carefully avoided, on account of its debilitating effects on the constitution. The use of the blue pill, carried far enough to produce a slight effect on the mouth, sometimes produces very beneficial effects; and the combination of this medicine with squill, digitalis, and other diuretics, is often found to increase their effect upon the kidneys.

When the accumulation of fluid in the peri-toneal cavity has become so great as to distend the parietes of the abdomen to a painful degree, and difficulty of breathing and obstruction to other functions appear to arise from the same cause, recourse must be had to tapping, or *paracentesis abdominis*. This operation is per-formed rather to alleviate urgent symptoms, than with a view to the permanent cure of the disease, and it has consequently been repeated as often as sixty times in the same individual, and in some cases much oftener. The proper mode of performing paracentesis, and the pre-cautions necessary during the operation, are described in all works on practical surgery. Great attention should be given to the state of the patient immediately after tapping, since any advantage to be derived from the evacuation will depend, in a great measure, upon the judi-cious management of the subsequent symptoms. These are generally indicative of great exhaus-tion; but care must be taken not on that ac-count to stimulate to excess. After allowing the system to rally, any suspended method of treatment which may have been useful should be resumed; the evacuation of the fluid being merely incidental, and making no permanent alteration in the morbid state of the constitu-tion.

The diet of dropsical patients should be nourishing but light; and cooling and acidu-lated beverages may be safely allowed, notwith-standing a vulgar prejudice to the contrary.

Asci'tic. *Asciticus.* Affected with ascites.

ASCLE'PIAS. (*as, adis.* f.; probably named after *Asclepias* or *Æsculapius.*) The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Digynia.*

Asclepias asthmatica. *Cynanchum vomi-toria. Cynanchum Ipecacuanha.* Coromandel ipecacuan. This is emetic and diaphoretic, and has been much celebrated for its efficacy in asthma.

Asclepias curassa'vica. Bastard ipecacuan. White ipecacuan of St. Domingo. The leaves of this plant are used as an emetic in the dose of ʒ j. or ʒ ij. The root is mixed with that of ipecacuan, and possesses similar virtues, but in a less degree.

Asclepias gigantea. This plant, called in Hindostan *Mudar,* is a native of the East. It has a milky juice, which is very acrid. It is employed in the cure of cutaneous diseases, and a medicated oil prepared from it is used as a liniment in gout. The inner bark of the root is given in syphilis and tape-worm, in doses of gr. v. twice a day.

Asclepias syriaca. *Apocynum syriacum.* Syrian dog's bane. Common silk-weed. Milk-weed. The milky juice of this plant is an acrid poison. Boiling appears to destroy the poison in the young shoots, which are then said to be esculent, and flavoured like asparagus. The root is said to be useful in asthmatic and other pulmonary affections.

Asclepias tuberosa. *Butterfly weed. Pleurisy root.* The root of this species is diaphoretic and slightly purgative. It is said to be also expectorant and febrifuge. In Virginia and the Carolinas it is used in pulmonary affections.

Asclepias vincetoxicum. Swallow wort; tame poison. The systematic name of the *Vincetoxicum* of the Pharmacopœias; called also *Hirundinaria*, *Asclepias*, and *Contrayerva Germanorum.* The root of this plant smells, when fresh, somewhat like valerian; when chewed, it has at first a sweet taste, which is soon succeeded by an unpleasant subacrid bitterness. It was formerly in esteem as an alexipharmic, and has had diuretic and deobstruent virtues attributed to it; but it is now very seldom used.

Ascle'pios. Ασκληπιος. A name given to several different medicines by the Greek physicians.

Asco'ma. (Ασκωμα; from ασκος, a bottle.) The eminence of the pubes at the period of puberty in the female. — *Rufus Ephesius.*

A'SCYRUM. (*um*, *i.* n. Ασκυρον.) 1. The Greek name of the herb St. Peter's wort.

2. The name of a genus of plants of the family of the *Hypericeæ.* The species are natives of America.

Aseb. Alum.

Asedenigi. *Asdenigi.* A barbarous name for *Hæmatite.*

Asef. *Albasef.* An Arabic name of *Pemphigus.*

Asegon. *Asegen. Asogen.* Dragon's blood. See *Calamus rotang.*

Aseph. Alumen scissum. — *Ruland.*

Ash. See *Fraxinus.*

Asiaticum balsamum. Balm of Gilead.

Asininum lac. Ass's milk. See *Milk.*

A'SINUS. (*us*, *i.* m.) The ass. A species of the genus *Equus.* Its milk is preferred to cow's and other kinds of milk, in phthisical cases, and where the stomach is weak, as being more easy of digestion.

ASI'TIA. (*a*, *æ.* f.; from α, priv. and σιτος, food.) Loathing of food.

Asius lapis. See *Assius lapis.*

Asjogam. *Asjagan.* (Indian.) A tree growing in Malabar and the East Indies, the juice of which is used against the colic.

ASO'DES. (Ασωδες, neut. of ασωδης, affected with nausea; from αση, nausea.) An epithet given by the Greek physicians to a fever accompanied with great internal heat, anxiety, and nausea — ασωδες πυρ.

Asp. See *Naja.*

ASPA'LATHUS. (*us*, *i.* m. Ασπαλαθος.) 1. A thorny shrub mentioned by the Greek and Roman writers. Sprengel supposes it to have been the *Cytisus lanigerus* of De Candolle.

2. The name of a genus of plants in the Linnæan system. Class, *Diadelphia*; Order, *Decandria.* It comprises a number of shrubby plants which are natives of tropical countries.

Aspa'ragin. A peculiar principle discovered by Vauquelin and Robiquet in the asparagus, from the juice of which it is obtained by evaporation. It exists also in the root of the liquorice and marshmallow. It is crystallised in rhomboidal prisms of a white colour, hard and brittle, having a cool and slightly nauseous taste. They are soluble in hot water, but sparingly so in cold water, and not at all in alkohol. When heated they swell and emit penetrating vapours, which affect the eyes and nose like wood-smoke. Their solution does not change vegetable blues; nor is it affected by hydrosulphuret of potash, oxalate of ammonia, acetate of lead, or infusion of galls. Lime disengages ammonia from it; though none is evolved by triturating it with potash.

Asparagi'neæ. A natural family of plants, of which the genus *Asparagus* is the type.

ASPA'RAGUS. (*us*, *i.* m.; Ασπαραγος, a young shoot, before it unfolds its leaves.) 1. The name of a genus of plants in the Linnæan system. Class, *Hexandria*; Order, *Monogynia.* Asparagus.

2. The pharmacopœial name of the asparagus. See *Asparagus officinalis.*

Asparagus officinalis. The systematic name of the asparagus. The root of this plant has been esteemed as a diuretic. The young shoots are an agreeable and wholesome article of diet. A peculiar vegetable principle, called asparagin, has been found in this plant. See *Asparagin.*

Aspa'rtate. *Aspartas.* A salt formed by the union of the aspartic acid with a base.

Aspa'rtic acid. An acid obtained by Plisson from asparagin. When this substance is boiled for some time with hydrate of lead or magnesia, it is resolved into ammonia, and an acid, which is the *aspartic.*

Aspa'sia. A constrictive application, consisting of wool soaked in infusion of galls, for the pudendum muliebre. *Capivac.*

Aspen. See *Populus tremula.*

ASPER. Rough. Applied to parts which are rough; as the *linea aspera* of the thigh bone.

In the language of botany, *scaber* and *asper* are used synonymously: thus the *caulis scaber* or *asper* denotes a stem, the surface of which is rough to the touch, as in *Galium aparine*, *Lithospermum arvense*, *Centaurea nigra*, &c.

A'spera arteria. (Called *aspera* from its uneven surface.) The windpipe. See *Trachea.*

Aspe'rgula. Sometimes written for *Asperula.*

Asperifo'liæ. A natural family of plants which are characterised by the roughness of their leaves.

Asperifo'lius. (From *asper*, rough; and *folius*, a leaf.) Rough-leaved. Applied as a specific name to many plants.

Asperma'sia. (*a*, *æ.* f.; from α, priv. and σπερμα, seed.) Deficiency of semen.

Aspermati'smus. (From α, priv. and σπερμα

ed.) This name has been given to a reflux of e semen into the bladder, preventing its emis-on *in coitu*. It is the *Dyspermatismus refluus* Sauvage.

ASPE'RSIO. Sprinkling. The sprinkling of ie surface of the body, or any part of it, with a quid or a powder.

ASPE'RULA. (*a*, *æ*. f.; diminutive of *per*, the seeds being rough.) The name of a enus of plants in the Linnæan system. Class, *etrandria*; Order, *Monogynia*.

ASPERULA ODORATA. The systematic name the woodruff. Called also *matrisylva* and *alcitra virginis*. A small plant, growing wild woods and copses, and flowering in May. It is little odour when fresh, but when dried equires a fragrance resembling that of new ay; the taste is rather austere. The plant nparts its flavour to vinous liquors, and has een recommended as a cordial, diuretic, deob-ruent, and vulnerary.

ASPHA'LTIAS. Ασφαλτιας. The last lumbar ertebra. The word has been improperly written *sphalitis*, and *Asphaltitis*.

ASPHA'LTUM. (*um*,*i*. n.; from ασφαλτος, e Greek name for bitumen of any kind.) *umia mineralis*. *Bitumen solidum*. *Bitumen daicum*. Jews' pitch. A smooth, hard, brittle, ack, or brown substance, which melts easily hen heated, and if pure burns without residue. t is found in a soft or liquid state on the sur-ace of the Dead Sea, thence called *Lacus Asphaltites*. It grows dry and hard by keeping. A similar substance is found in other parts of ie world. In the island of Trinidad there is a ake three miles in circumference, the surface f which is covered with it. It occurs also as mineral production in various parts of Europe, sia, and America.

According to Neumann, the asphaltum of the ops is a very different substance from the ative bitumen, and varies of course in its pro-erties, according to the nature of the ingre-ients made use of in compounding it. A na-ve specimen from Avlona, in Albania, analysed y Klaproth, afforded, in 100 grains, 36 cubic nches of carburetted hydrogen, 32 grains of ituminous oil, 6 of ammoniacal water, 30 of arbon, 7·50 of silica, 4·50 alumina, 0·75 of me, 1·25 of oxide of iron, 0·50 oxide of man-anese.

The Egyptians used asphaltum in embalm-ng, under the name of mumia. It was used y the Babylonians instead of mortar for ce-enting bricks. Taken internally, asphaltum cts as a stimulant, but it is now hardly ever sed unless as an ingredient in some plasters nd ointments.

Asphodel. See *Asphodelus*.

ASPHODE'LIÆ. A natural family of plants, f which the genus *Asphodelus* is the type. Many botanists make them merely a group of ie *Liliaceæ*.

ASPHO'DELUS. (*us*, *i*. m. Ασφοδελος. Derivation uncertain: some say it is from πους, ashes, because the plant was sown by he ancients in sepulchres.) 1. The name of genus of plants in the Linnæan system. Class, *Hexandria*; Order, *Monogynia*.

2. The pharmacopœial name of the branched asphodel.

ASPHODELUS RAMOSUS. The systematic name of the branched asphodel or king's spear. *Asphodelus — caule nudo; foliis ensiformibus, carinatis, lævibus*, of Linnæus. The plant was formerly supposed to possess diuretic and em-menagogue virtues, and was applied locally to promote suppuration; but it is now entirely laid aside.

ASPHY'XIA. (*a*, *æ*. f.; from *a*, priv. and σφυξις, the pulse.) Asphyxy. This term pro-perly signifies absence of the pulse; but is usu-ally applied in medical language to that state in which the vital phenomena are suspended from some cause interrupting respiration, but in which life is not actually extinct, and may, under favourable circumstances, be restored. Dr. Mason Good, whom we shall chiefly follow in the nosography of this affection, though not in all relating to its treatment, divides asphyxia into the four following varieties, according to the occasional cause from which it arises.

1. *Asphyxia suffocationis*. Asphyxy, from suf-focation, produced by hanging or drowning: countenance turgid and livid.

2. ——— *mephytica*. Choke-damp; pro-duced by inhaling carbonic acid, or some other irrespirable exhalation: countenance pallid.

3. ——— *electrica*. Electrical asphyxy; produced by a stroke of lightning or electricity: limbs flexible, countenance pale, blood un-coagulable.

4. ——— *algida*. Frost-bitten asphyxy; produced by intense cold: limbs rigid, coun-tenance pale and shrivelled.

In the first variety, from hanging or drown-ing, the immediate cause is suffocation, or a total obstruction to the breathing. The face is turgid with blood, and of a livid hue. The coun-tenance has a semblance of apoplexy, as though there were congestion of blood in the head; and many eminent writers of earlier times referred asphyxia both from hanging and drowning to apoplexy, while Cullen made it as a subdivision of the latter disease. But in apoplexy the respiration is always oppressed and generally stertorous, which is never the case in asphyxia; unless indeed the exciting cause has operated only partially, and here the affection is in reality apoplexy, rather than as-phyxy; affording a proof that different maladies may arise from the same cause, according to the degree of its violence, or perhaps the acci-dental condition or constitution of the patient. In asphyxy, wherever we can trace any sign of diseased action, the lungs are chiefly affected; in apoplexy, the brain. In the first, the irrita-bility of the system is suddenly and totally abolished; in the second, partially and progres-sively. In the former, the patient is often re-stored, after having exhibited for some minutes, perhaps for nearly an hour, all the appearances of death; while in genuine apoplexy this is never the case. The appearances on the dissection of drowned animals are very accurately given by Dr. Curry, and precisely coincide with the dis-tinction here offered. The vessels of the brain were found, in every instance, free from disten-

tion, or any other morbid condition, while the lungs were overloaded.

The immediate cause of asphyxy is an occlusion of the larynx; and where this is partial, some apoplectic symptoms are generally observable. It is on this account that the faces of those who die by hanging is more frequently turgid, and the muscles give proof of more convulsive action, than the face of those who die by drowning: for in the former case, either from rigidity of the larynx, or from the rope not being properly applied, a small current of air is often admitted for some time, and particularly in suicides, many of whom suffer much before they die in consequence of applying the rope in a bungling manner, and whose cheeks, lips, eyes, and tongue are peculiarly turgid and prominent. The reason of this may be partly collected from the state of the heart in the act of dying. The immediate cause of the contraction or systole of the heart has not been satisfactorily settled; but we may safely affirm that a part of this cause, if not the whole, resides in a stimulant power acquired by the blood during the change it undergoes by exposure to the air in the lungs: for as the aëration of the blood becomes gradually more and more imperfect in those who are in the act of dying, the heart contracts more feebly; and when, with the last expiration of air, it ceases altogether, the heart instantly ceases to contract; the consequence of which is, that the lungs, the heart, and the larger vessels in the vicinity of the heart, are usually found filled with blood, the smaller vessels empty, and the general surface of the body pale. Whatever occasions an instantaneous cessation of the respiratory function, must necessarily produce the same effect: now it is well ascertained, that in the case of submersion the glottis instinctively and rigidly contracts to prevent the entrance of water into the trachea; and hence the gorged state of the lungs, and the livid hue of the countenance, in most cases of suffocation by drowning. The only reason why the lungs are not quite so full, and the countenance more turgid in most cases of suffocation by hanging, is, that from the inexpert manner in which the rope is frequently applied, and the necessary admission of a certain portion of air to the lungs, the heart is, for some time, able to keep up a feeble circulation, while the pressure of the rope on the jugular veins prevents a ready return of the blood from the head, and consequently accumulates it in all the vessels of the face; and hence, the more inexpertly this operation is performed, the more turgid these vessels become, and the more apoplectic is the general appearance.

It is the same with persons who are exposed to the action of carbonic acid or other mephitic gases, so far diluted with respirable air as to render them incapable of destroying life instantly; in which case there has not only been sometimes a feeble prolongation of the circulation, but even stertorous breathing, and many other symptoms of apoplexy, of which we shall have to speak further under the next variety.

Some of the narcotic poisons seem to act in a similar manner. Given in a full dose they destroy life instantly, but when the dose is smaller, the circulation is continued feebly, and apoplectic symptoms ensue. Thus, according to Sir B. Brodie's experiments, infusion of tobacco, *when injected into the intestines*, and the *Upas antiar*, when applied to a wound, have a power of rendering the heart insensible to the stimulus of the blood, and thus suddenly stopping the circulation: while alkohol, the juice of the leaves of aconite, the woorara, and essential oil of almonds, whether applied to wounded surfaces or taken internally, produce death by destroying the functions of the brain, while they act only indirectly on the circulation.

In like manner, De Haen gives one instance of apoplectic appearances discovered on the dissection of a criminal who had been publicly executed by hanging, in which the pia mater was found unusually florid, the vessels of the brain turgid, and some degree of serous effusion had taken place under the arachnoid membrane; but, in this case, it was found that the lungs were equally overloaded, and that the rope had not pressed upon the trachea, but upon the part lying between the thyroid cartilage and the os hyoides, and consequently that the compression had been imperfect.

With the exception of those cases in which the occlusion of the larynx has not been complete, a patient, labouring under asphyxy from hanging, is as void of apoplectic symptoms as one who is in the same state from drowning. In the dogs hanged by way of experiment by De Haen, and cut down as soon as they were dead: and in those drowned by Dr. Goodwin, there was an equal absence of apoplectic signs. In public executions, as they are now conducted in this country, the death by hanging is usually almost instantaneous, from the simultaneous arrest of the circulation and respiration. It has been asserted of late, that the suddenness of death in this instance is owing to luxation of the cervical vertebræ; it would appear, however, that this does not often take place even in public executions, and it is evident that it can hardly ever happen in cases of suicide.

That a total obstruction to respiration is the chief cause of death from hanging, is clear from the cases in which the asphyxy has been cured by inflation of the lungs after the unhappy wretch has been cut down, and from certain instances in which the individual has escaped death from an ossification of the trachea; of which we have a few curious examples in Bonet and Fallopius; and a very remarkable one in the case of Inetta de Balshan stated by Dr. Plott in his Natural History of Staffordshire, who having been hanged in the reign of Henry VI., according to due form of law, was cut down alive, after suspension from nine o'clock on Monday till later than sunrise of the ensuing Tuesday; in consequence of which she received the king's pardon. Dr. Plott ascribes this extraordinary escape, and with great reason, to an ossification of the larynx: — "She could not," says he, "be hanged, upon account that the larynx or upper part of her windpipe was turned to bone."

It has hence been occasionally proposed

save a criminal condemned to the gallows by introducing a silver canula into the trachea. It is commonly reported that such an attempt was in agitation among the friends of the unfortunate Dr. Dodd, but we have no reason to believe that it was then, or ever has been, actually tried.

The following experiment, however, as related by Dr. Curry, is almost conclusive as to the immediate cause of death from hanging. It was performed at Edinburgh many years ago, by the elder Dr. Monro, and, in the language of Dr. Curry, "clearly proves that the exclusion of air from the lungs is the immediate cause of death. A dog was suspended by the neck with a cord; an opening having been previously made in the windpipe, below the place where the cord was applied, so as to admit air into the lungs. In this state he was allowed to hang for three quarters of an hour, during which time both the circulation and breathing went on. He was then taken down without appearing to have suffered much from the experiment. The cord was now shifted from above to below the opening made into the windpipe, so as to prevent the ingress of air into the lungs, and the animal being again suspended, he was completely dead in a few minutes."

Asphyxy from *submersion* was till of late years accounted for, on the supposition that the water rushing into the lungs debars the access of air, and thus puts a stop to respiration. This idea, first perhaps advanced by Galen, has been adopted in modern times by Haller, Goodwin, Pouteau, and many other physiologists, and various experiments on drowned cats have been adduced in its support. It is now well ascertained, however, that in many cases of death from drowning, not a drop of water enters the lungs; that where it does enter, the quantity is, for the most part, very small; and that, whether small or large, it passes the trachea after death instead of before it, and, consequently, cannot be a cause of death.

The immediate cause, as in the case of suspension, is suffocation. The glottis is extremely irritable; the access of the surrounding water produces a rigid spasm of its muscles; and the rima is as completely closed as if a cord were drawn tightly round the throat: in the same way suffocation is often produced by a very small substance of any other kind accidentally thrust into or stimulating its aperture; as a minute crum of bread, a hair or blade of grass, a cherry-stone, or even a grape-stone; to which last Anacreon is well known to have fallen a victim.

How long the living principle may, under these circumstances, remain attached to the animal frame, so as to admit of the resuscitation of the individual, has not been ascertained with any degree of accuracy, even to the present time; and there is very probably some diversity in this respect according to the varying degree of irritability in different individuals.

It has been known, however, from a very early time, that torpitude from drowning may be induced and continue for some minutes without much danger, since this was a common practice among the Greeks and Romans for the cure of hydrophobia, and was carried by Van Helmont so far that he would not suffer the patient to be raised from under water till the psalm *Miserere* had been solemnly chanted, which was the measure of time he allowed. If the submersion have not exceded five minutes, and no blow against a stone or other violence have occurred, recovery may generally be brought about without much difficulty. After a quarter of an hour, recovery is not common, and after twenty minutes or half an hour, it is nearly hopeless.

Of twenty-three successful cases stated in the first report of the establishment for the recovery of drowned persons at Paris, one had been three quarters of an hour under water; four half an hour, and three a quarter of an hour; the rest had been submerged for a shorter period. Of twelve dogs, drowned by de Haen for the purpose of experiment, not a single one was recovered, though only confined under water for a few minutes. It is very possible, however, that in these cases the force necessary to keep them submerged may have co-operated with the other causes of death. Among mankind, where no such force is applied, this eminent physiologist conceives that one in sixteen is no unfavourable average of the proportion that recover.

There are, indeed, cases on record, of recovery from drowning after a submersion of some hours; but these are rare and wonderful, and some of them altogether incredible; we may, however, derive from them, taken collectively, an useful lesson on the necessity of making every exertion where there is the most remote possibility of recovery.

Unfortunately we have no means of determining whether the vital principle lies latent in the body or has utterly dropped its connexion. Want of heat is no more to be relied on than cessation of the pulse or of breathing: for while in submersion, heat, in consequence of its rapid absorption by the surrounding element, is one of the first properties of life that disappears, whether the patient recover or not: in death, from convulsions, and various other sudden causes, it has been known to continue for hours, and even for days after the event, cheating the bystanders with a delusive hope.

In the resuscitation of drowned persons, the two means on which we have principally to depend, are the regulated application of warmth and artificial inflation of the lungs. The body should be quietly conveyed to a warm and dry place, where it should be stripped of its clothing, wrapped in warm blankets, and placed on its back on a table, with the head, shoulders, and chest, a little raised. The room should be very freely ventilated, and all persons whose attendance is unnecessary excluded. A bladder filled with warm water should be placed over the region of the stomach, and bottles of hot water applied to the feet. It is necessary, however, to be cautious in the application of heat, since if too suddenly applied, or in too high a degree, it will immediately destroy the feeble vitality which remains. A restoration of the

action of the lungs is, however, the most important object of all. The manner of accomplishing this has been very accurately described by Dr. Currie as follows: — "While an assistant sustains the box-wood tube (into which a common pair of bellows can be made by the assistance of a strip of linen, riband, or tape, to fit accurately) in one nostril, and stops the other nostril with his left hand, and with his right hand accurately closes the mouth, another assistant (who ought to be placed on the opposite or left hand of the body) is, with his right hand, to press backwards, and draw gently downwards towards the chest, the upper end of the wind-pipe, that part which lies a little below the chin, and which, from its prominence in men, is vulgarly called *Adam's apple;* by doing this the gullet or passage to the stomach will be completely stopped up, whilst the wind-pipe will be rendered more open to let the air pass freely into the lungs. The left hand of this second assistant is to be spread lightly over the pit of the stomach, ready to compress the chest, and expel the air again as soon as the lungs have been moderately filled; the first assistant unstopping the mouth or nostril at the same time to let the air escape. The same operation is to be repeated in a regular and steady manner, either until natural respiration begins, or until this and the other measures recommended have been persisted in for at least *six hours*, without any appearance of returning life."

It is a frequent practice for an assistant to blow air from his own lungs into the mouth of the patient, while another hold his nostrils to prevent its escape; but what advantage can be expected from the respiration of air which having been already breathed, has lost its vivifying power?

It has been proposed to substitute oxygen gas for atmospheric air in the process of artificial respiration, on account of its greater stimulating powers; but according to Dr. Goodwyn's experiments, which are the only ones on this subject which have been recorded, oxygen gas, though it appears to produce its effect rather more expeditiously than common air, was never found to resuscitate an asphyxiated animal, where good atmospheric air had failed; and hence little advantage would probably be derived from its use, which, in most instances also would be out of the question, from a supply of it not being at hand, and the delay its preparation would occasion.

In addition to the means already stated, the surface of the body may be rubbed with ammoniacal or other stimulating liquids, and the vapour of ammonia applied to the nostrils. Stimulating injections, containing ammonia, and brandy, or other spirits, have often been introduced with success into the rectum, and will be found most beneficial when administered moderately warm. It is also advisable to convey some cordial, as warm negus, volatile alkali, or the compound spirit of lavender, into the stomach by means of a canula. In the Berlin Translations the use of a *ventriculi eructia*, or stomach-brush is recommended, to excite the internal surface of this viscus. Dr. Mason Good prefers a *stomach mop*, consisting of a sponge fixed to the end of a piece of whalebone, and impregnated with some stimulating fluid. These brushings and moppings of the stomach can hardly be contemplated with gravity; it is needless to add that they ought never to be reduced to practice.

Some German physicians have employed phosphorus in this as in other cases in which the nervous power is reduced to the lowest ebb, and Dr. Mason Good recommends it to be given in asphyxy, to the amount of two or three grains for a dose, dissolved in ether. But too little is known of the operation of this substance, to warrant so hazardous an experiment.

Venesection, and especially that of the jugular vein, has been strenuously recommended by physicians of high authority; and wherever there is reason to believe that the drowning has followed upon a sudden fit of apoplexy, the recommendation is rational enough, provided it can be practised with effect. But commonly speaking, it is advice to no purpose; for the blood will not flow; and, we have reason to believe, that, in ordinary cases of drowning, the abstraction of blood, if it could be effected, would do more harm by weakening, than good by removing what is erroneously supposed to be congestion. It may occasionally, perhaps, be serviceable as soon as the living powers begin to show themselves, but it is rarely to be tried in the first instance.

Returning life is usually first discoverable by the symptoms of sighing, gasping, twitching, or subsultus, and slight pulsation of the heart; in effect, by a weak or clonic action in most of the organs. Our efforts should here be redoubled; for the feeble spark of life still requires to be solicited and nourished into a permanent flame, and has often disappeared where sufficient assiduity has not been given. A spoonful or two of warm wine, or wine and water, should now be administered by the mouth, as soon as the power of swallowing is sufficiently restored; which should be shortly succeeded by a little light, warm, and nourishing food of any kind, with gently laxative clysters, a well-heated bed, and perfect tranquillity.

The general principles of the remedial treatment here recommended, apply to most of the other varieties of asphyxy, or suspended animation. We may observe, however, that in attempting the recovery of those who have been hanged, and particularly those who have inexpertly hanged themselves, bleeding from the jugular veins may be more frequently found necessary than in the drowned, since in the former, as already sufficiently explained, there is a greater tendency to apoplectic symptoms than in the latter; yet even here the quantity abstracted needs not be large.

In asphyxy from *inhalation of irrespirable gases* death, in many cases, takes place instantaneously; and, consequently, for reasons already advanced, the countenance, as well as the general surface of the body, is pale. Yet as the gas is often in some degree diluted with atmospheric air, the

circulation, and even the breathing, are occasionally continued for some time in a feeble and imperfect manner, and the asphyxy is united with symptoms of apoplexy, or genuine apoplexy takes place in its stead. In Cornwall and other mining regions, these gases are vulgarly called *damps*.

The direct effect of such gases, when in a concentrated state, is instantaneously to destroy the irritability and sensibility of the nervous system; of which we have frequent examples occurring in persons who incautiously descend foul beer-casks, or the shafts of mines. By what means, however, such exhalations, when they have entered the lungs, affect the nervous system so rapidly as to prove instantly fatal, is by no means easy to be explained. The fact would be most readily accounted for on the supposition of absorption, but this can hardly be admitted. In the case of hanging or drowning, it does not seem to be owing to a direct want of irritability that the heart instantly ceases to contract, but, as we have already remarked, to its being deprived of the necessary stimulus which is no longer afforded by the lungs. Yet in the present case there seems to be not only a cessation of action for want of a proper stimulus, but a total abolition of both sensific and motific power: and this as completely in one part of the frame as in another.

The gases that are found most fatal, are the carbonic acid, hydrogen, and several of a more compound kind, which are thrown forth from putrefying animal and vegetable substances, and especially from cemeteries, on opening fresh graves, in which the process of decomposition is proceeding rapidly, and the concentrated effluvium bursts forth with an intolerable stench. Of the powerful effects of this last exhalation, Fourcroy has furnished us with a very particular and striking account, from the narration of grave-diggers examined for the purpose: from which it appears, that those who are immediately hanging over a corpse, whose abdomen is accidentally struck into by a pickaxe, often fall down instantly in a state of insensibility and apparent death, while persons who happen to be at a little distance, and receive the exhalation considerably diluted with atmospheric air, are attacked with nausea, vertigo, faintness, and tremors, which continue for some hours.

The most common of these gases is the carbonic acid, which is chiefly found in close rooms where charcoal has been burnt, at the bottom of large beer casks, or of wells, and in many natural cavities of the earth. Its weight prevents it from escaping readily, even when there is an accession of atmospheric air; and its want of smell, when pure, prevents it from being detected otherwise than by its effects. As it will not support flame, the common and easiest test, where it is suspected to exist, is that of a lighted candle, which is well known to be extinguished immediately, if this gas be present in a quantity sufficient to be injurious to respiration.

Azote and hydrogen, when pure, have probably as little smell as carbonic acid gas; but they are generally combined with other gases, sulphur, carbon, or phosphorus. Azote or nitrogen, formerly denominated phlogistic air, and sometimes mofette, is thrown forth largely during the decomposition of animal matter, and in a small degree during that of vegetable matter. Fourcroy asserts that it possesses a peculiar and distinct odour, resembling that of fishes just beginning to putrefy: but this is probably at all times produced by combination with other materials. It seems chiefly concerned in giving the greenish colour to parts, and especially muscular parts, in a putrid state. In some gases of this kind a candle will burn freely.

Hydrogen issues also from fecal matter, and, in combination with sulphur, phosphorus, and carbon, produces the chief part of the nauseating and putrid stench thrown forth from decomposing animal and vegetable substances. It is emitted in a much purer state from the sides of coal and metallic mines, and often exists in considerable abundance without being perceived by the nostrils. If mixed with an equal proportion of oxygen, it may be breathed for about an hour without any great inconvenience. If inhaled beyond this time, or in a more concentrated form, it has a great tendency to occasion the effects we have just noticed, lower the irritability of the animal frame, and induce stupor or an inclination to sleep.

The fumes of mercury, lead, and some other metallic substances, when highly concentrated, seem to produce effects not very dissimilar to those of carbonic acid.

The fumes of charcoal are generally inhaled in a diluted form, but they are still highly deleterious, and produce asphyxy more or less complete, according to their degree of concentration, and in some cases according to the strength or weakness of frame of those who are exposed to them. We have a striking illustration of this in a case communicated by Dr. Babington to the Medico-Chirurgical Society. Two persons had gone to bed in a room, the atmosphere of which was strongly impregnated with carbonic acid gas, arising from a charcoal fire kept up during the whole night. Now according to the principles just stated, we ought here, from the dilution of the vapour, to expect that whatever tendency there might be to asphyxy would be united with a disposition to apoplexy: and such we find to have been the fact; for, of these two persons, the younger and less vigorous, a boy of thirteen, died apparently during his sleep, and without commotion; while the elder and more robust, a man of thirty-eight, was found, in the morning, between six and seven, in an apoplectic state, with a swollen projecting tongue, suffused and prominent eyes, and laborious breathing.

The patient, if any degree of sensibility remain, should in this variety of asphyxia be freely exposed to the open air, instead of a heated atmosphere, as in the preceding; and if he can swallow, moderately stimulating drinks may be given. If insensible, cold water should be dashed on the face; aromatic vinegar or spirits of hartshorn applied to the nostrils, and

stimulating clysters injected, as recommended under the first variety. The lungs should be artificially inflated, and if oxygen gas can be immediately procured, there is no objection to giving it a trial.

A proper use of voltaic electricity is also, in many instances, found highly serviceable. No advantage, however, is likely to accrue from passing the electric aura across the chest, directly through the heart and lungs, which is a common practice. The fluid should be transmitted along the course of the nerves, as from the phrenic nerve in the neck, towards the diaphragm, or from the pneumogastric and great sympathetic nerves, immediately under the sterno-mastoid muscle, where they lie in a common sheath. In Dr. Babington's case, the application of voltaic electricity surprisingly increased the power of the muscles of respiration, but appeared rather to diminish the action of the heart. It was hence used alternately with a forcible inhalation of oxygen gas and various external stimulants. Venesection was tried, but does not seem to have been beneficial. The man recovered in a few days.

Portal recommends bleeding from the jugular vein; but the blood will rarely flow from any vein, and still more rarely are any good effects found to follow even where it is obtained.

In the *third*, or *electric variety*, the system appears to be suddenly exhausted of all its nervous power, like a Leyden phial on the application of the discharging rod: in consequence of which the limbs are flexible, the countenance pale, and the blood uncoagulable. The mode in which the electricity is communicated is of little importance; for, if sufficiently powerful for the purpose, real or apparent death is instantaneously produced, whether the stroke flow from lightning, an electric battery, or a voltaic trough; and every organ is equally exhausted of its vital power.

It is singular, that while small doses of electricity prove a powerful stimulus to the nervous function, increase the development of sensorial power, and augment the irritability of the muscles, a violent shock, as we have just seen, exhausts the nervous system instantaneously, and leaves the muscular fibres flaccid and insusceptible of stimulation. These singular effects are extended to the blood in both cases: for its coagulability, or the firmness of its texture, is increased by the application of small doses of electricity, while the shock of lightning, which destroys the contractility of the muscles, renders the blood loose and uncoagulable. It is to this variety of effect that John Hunter makes a powerful appeal, in proof that the blood, though a fluid, is actuated by the same living principle as the muscular fibres.

The general principle of medical treatment has been laid down under the first variety. Stimulants of the most active kind should be resorted to without loss of time: but of all stimulants, that of electricity or voltaism seems to be specially called for in the present modification of asphyxy. It has not been tried to any great extent, in the variety before us, on the human subject, but Abildgaard, in the Transactions of the Copenhagen Medical Society, has related a few experiments on other animals that are well worthy of attention. The experiments were principally made on cocks and hens. These were first asphyxiated, or apparently deprived of life, by a strong shock of electricity passed through the head; and afterwards recovered by another shock passed through from the chest to the back, the animal instantly walking about as if nothing had happened. M. Abildgaard does not say what interval he allowed between the shocks thus administered: but he observed that where no second shock was employed, the apparent was converted into real death; for the animal, in no instance, showed any tokens of resuscitation; and he observed further, that if the second shock were thrown through the head like the first, instead of being directed from the chest to the back, the same lifelessness continued, and no benefit whatever was produced.

In *frost-bitten asphyxy*, or that produced by intense cold, the limbs are rigid, and the countenance pale and shrivelled. This variety is always preceded by an insurmountable desire to sleep, which the utmost exertion of the will is unable to counteract. The sleep in most cases terminates in death. Captain Cook, in the account he has given of his first voyage round the world, has strikingly exemplified this remark in the case of Dr. Solander and Mr. (afterwards Sir Joseph) Banks. "Dr. Solander" says, he, "who had more than once crossed the mountains which divide Sweden from Norway, well knew that extreme cold, especially when joined with fatigue, produces a torpor and sleepiness that are almost irresistible: he therefore conjured the company to keep moving, whatever pain it might cost them. 'Whoever sits down,' said he, 'will sleep, and whoever sleeps will wake no more.' Dr. Solander himself was the first who found the inclination, against which he had warned others, irresistible, and insisted upon being suffered to lie down. He soon fell into a profound sleep, from which, however, by the exertion of Mr. Banks, he was awakened. Several others of the party very narrowly escaped, and two of them slept, and perished from the cold."

For these symptoms it is easy to account. Cold, so long as the living power is capable of producing a reaction, is one of the most strenuous tonics we are possessed of, and the glow that accompanies the reaction is accompanied with a feeling of high health and vigour. But if it exceed this proportion, and no reaction ensue, the contraction of the vessels on the surface is converted into a rigid spasm, the blood is driven into the interior, and the surface must necessarily be pale. In this extremity of temperature, moreover, cold, instead of being a tonic, is a most formidable sedative: it carries off the heat of the body far more rapidly than it can be recruited, and effectually exhausts the system of its irritability and sensorial power. But such exhaustion is a cause of stupor or sleep, and a cause so cogent, that the will is, in many cases, entirely incapable of resisting it.

In applying remedial means to this modi-

ication of asphyxy, great caution is necessary respecting the employment of warmth; and particularly where the limbs are rigid from the effects of frost. In this last case it will be found most advisable to commence by immersing the body for a few minutes in a bath of cold sea-water or salted water, at the same time that the lungs are inflated with air moderately warm, and the stomach and rectum excited by gentle stimulants: for it does not follow that, because the limbs and surface of the body are frozen, the central parts have suffered to the same extent. After a short immersion in sea-water, the body should be taken out, wiped perfectly dry, laid in flannel in a moderately warm room, and submitted to the friction of warm hands; several persons being simultaneously engaged in this process.

Asphyxia neophytorum. This name has been unnecessarily given to defect of respiration in children just born, which may arise from various mechanical and physiological causes.

Aspidi'scus. (Ασπιδισκος, from ασπιδισκη, a small shield.) The sphincter muscle of the anus was formerly so called from its shape.

ASPI'DIUM. (*um*, *i.* n.; from ασπις, a shield.) The name of a genus of plants in the Linnæan system. Class, *Cryptogamia;* Order, *Filices.*

Aspidium filix mas. The male fern, or polypody; called also *Polypodium filix mas*, *Filix mas*, *Nephrodium crenatum*, *Pteris*, *Blanknon oribasii*, and *Lanchitis*. The root of this plant has been greatly celebrated for its effects upon the *tænia osculis superficialibus*, or broad tapeworm. Madame Noufer acquired great celebrity by employing it as a specific. This secret was thought of such importance by some of the principal physicians at Paris, who were deputed to make a complete trial of its efficacy, that it was purchased by the French king, and afterwards published by his order. The method of cure is the following: — After the patient has been prepared by an emollient glyster, and a supper of panada, with butter and salt, he is directed to take in the morning, while in bed, a dose of two or three drachms of the powdered root of the male fern. The powder must be washed down with a draught of water, and, two hours after, a strong cathartic, composed of calomel and scammony, is to be given, proportioned to the strength of the patient. If this does not operate in due time, it is to be followed by a dose of purging salts, and if the worm be not expelled in a few hours, this process is to be repeated at proper intervals. Of the success of this, or a similar mode of treatment, in cases of tænia, there is testimony sufficient to banish doubt; but whether the fern-root or the strong cathartic is the principal agent in the destruction of the worm, may admit of a question; and the latter opinion is the more generally adopted by physicians. It appears, however, from some experiments made in Germany, that the tænia has, in several instances, been expelled by the repeated exhibition of the root, without the assistance of any purgative.

ASPLE'NIUM. (*um*, *i.* n.; from *ad*, and *splen*, the spleen, because it was supposed to remove disorders of the spleen.) The name of a genus of plants in the Linnæan system. Class, *Cryptogamia;* Order, *Filices.*

Asplenium adia'nthum nigrum. Leek fern. Black maiden hair. This is used as an astringent and pectoral.

Asplenium ce'terach. The systematic name of the herb spleenwort; called also Miltwaste, *Asplenium officinarum*, *Ceterach officinarum*, *Lonchitis*, *Scolopendria vera*, and *Dorodilla*. This small bushy plant, *Asplenium — frondibus pinnatifidis, lobis alternis confluentibus obtusis*, of Linnæus, grows upon old walls and rocks. It has a mucilaginous, roughish taste, and has been recommended in diseases of the chest, and in nephritic and calculous cases.

Asplenium hemioni'tis. *Hemionitis.* Mules fern. Used with the same intentions as the *Scolopendrium vulgare.*

Asplenium murale. Wall-rue. Tent-wort. *Adianthum album*, *Ruta muraria*, *Salvia vitæ*, *Asplenium ruta muraria.* This plant has nearly the same qualities as the true maiden hair. It has been supposed by some to possess specific virtues in the cure of ulcers of the lungs, and is exhibited in the form of decoction.

Asplenium officinarum. See *Asplenium ceterach.*

Asplenium ruta muraria. See *Asplenium murale.*

Asplenium scolopendrium. See *Scolopendrium vulgare.*

Asplenium tricho'manes. The common maiden hair, or spleen-wort. *Trichomanes* of the pharmacopœias. *Adianthum rubrum. Asplenium — rondibus pinnatis, pinnis subrotundis, crenatis*, of Linnæus. The leaves of this plant have a mucilaginous, sweetish, subastringent taste, without any particular flavour; they have been esteemed as an expectorant and deobstruent.

Aspre'lla. (From *asper*, rough.) The *Equisetum majus*, or rough horsetail. See *Equisetum.*

Ass. See *Asinus.*

Assa dulcis. Benzoin.

Ass's milk. See *Milk, ass's.*

Assab. See *Borozail.*

Assafœtida. See *Ferula assafœtida.*

A'ssala. The nutmeg.

Assarabacca. See *Asarum europæum.*

Assa'rius. A Roman weight of two drachms.

ASSAY. An operation, the object of which is to determine the quantity of valuable metal contained in any mineral or metallic mixture. The practical difference between the analysis and the assay of an ore, consists in this: — the analysis, if properly made, determines the nature and proportions of all the ingredients of the compound; whereas the object of the assay consists in ascertaining how much of the particular metal in question is contained in a determinate quantity of the material under examination. Thus, in the assay of gold or silver, the baser metals with which they may be combined are not taken into consideration; and the problem to be resolved is simply, how much of either of the precious metals is contained in the ingot or metallic mass intended to be assayed.

Asserac. An intoxicating preparation used by the Eastern nations. It is made with opium, or with the cannabis sativa.

Asside'ntia signa. Accessory symptoms.

ASSIMILA'TION. (*Assimilatio, onis.* f.; from *assimilo*, to make like to.) Assimilation. The conversion of nutritious matter into the proper organic substance of the different textures of the animal body. The term is synonymous with *nutrition*. The subject of assimilation has been placed in a new and very important relation to physiology by Professor Tiedemann, who regards *every vital action as depending on some modification of the assimilative process*. According to the doctrine of this profound physiologist, vitality is to be considered as a property of excitability, or power of reaction when excited, connected with the germ in its original formation: the expansion of the germ into the complete organism is effected by the continual process of assimilation or nutrition, each new part acquiring a peculiar excitability of its own, which is called into activity by its appropriate stimuli, and which is an extension of the original power, modified by the structure of the new formation, and influencing the vital manifestations of the entire organism. The views of Professor Tiedemann on this subject are highly ingenious, and worthy of great attention; but it is must be remembered that their application is purely hypothetical with respect to many vital actions, the mechanism of which does not come under the cognisance of our senses, and which are known only by their results.

Assiste'ntes gla'ndulæ. The lobes of the prostate gland have been so called.

A'ssius lapis. (From *Assos*, a town of Troas, in Asia Minor.) A kind of soft sandy stone, celebrated in the writings of the ancients for its power of consuming fungous excrescences without pain. It is also said that dead bodies, enclosed in receptacles made of this stone, were entirely consumed, bones and all, within forty days, whence this stone was also called *sarcophagus*.

Assodes. See *Asodes.*

Assos. An alchemical name of alum.

Assurgens. Rising. A term applied by botanists to parts which first incline downwards and then ascend.

A'STACUS. (*us, i.* m.; αστακος.) The name of a genus of shell-fish.

Astacus fluviatilis. The officinal crevis, or cray-fish. See *Cancer astacus.*

Astacus marinus. The lobster. See *Cancer gammarus.*

A'staphis. Ασταφις. A raisin.

Astarzof. A term applied by Paracelsus, 1. To an ointment composed of litharge, spawn of frogs, juice of leeks, and white water-lily.

2. To a solution of camphor in rose-water.

Astera'ntium. (*um, i.* n.; from αστηρ, a star: so called from the star-like form of its flowers. See *Anthemis pyrethrum.*

Aste'ria. *Asterias. Astroites. Astrios.* A stone to which the ancients attributed imaginary virtues, as that of inducing sleep, dispersing fever, &c.

Astéricum. See *Anthemis pyrethrum.*

ASTHE'NIA. (*a, æ.* f.; from α, priv. and σθενος, strength.) Debility.

A'STHMA. (*a, atis.* neut. Ασθμα; from ασθμαζω, to breathe with difficulty.) A disease characterised by difficulty of breathing, recurring in paroxysms, accompanied with a wheezing sound, cough, and sense of constriction in the chest; and terminating in expectoration more or less copious. Asthma is more frequently met with at an advanced than at an early period of life: it seldom appears in infancy or youth, though many exceptions to this observation have occurred, more especially in infancy, at which period asthma is liable to be mistaken for croup, which it much resembles in its symptoms. Asthma seems, in some instances, to be hereditary. It attacks persons of all temperaments, but more particularly those of the melancholic, or of the melancholic mixed with the sanguineous.

The paroxysm of asthma is very generally preceded by languor, flatulency, headach, heaviness over the eyes, sickness, pale urine, disturbed rest, and sense of oppression about the præcordia. The accession usually happens about the middle of the night, and during the first and deepest sleep: the cause of this it would be difficult to explain.

For the most part, the patient wakes suddenly, and feels a distressing tightness about the chest, as if he were bound with cords: his anxiety is inexpressible, and he labours for breath as though every moment would be his last. He is obliged to sit erect, breathes laboriously with a wheezing sound, and has an urgent desire for cool fresh air. The extremities are cold; the heart palpitates; the pulse is sometimes quick, but usually weak and irregular, often intermitting; the abdomen is distended with flatulence; there is generally nausea, and sometimes vomiting of a slimy or frothy matter. The eyes project; the face is sometimes pale, but more commonly livid and bloated.

In many instances there is an ineffectual effort to spit, with a harsh and dry cough that brings up nothing but a little frothy mucus during the whole of the paroxysm. In such cases the fit is seldom of long duration, and often subsides in two or three hours. In other instances, the cough is violent and suffocative; and when it has lasted for an hour or two, an expectoration of tough viscid mucus commences, which gradually becomes copious and affords relief. It is occasionally mixed with blood from the severity of the struggle, and, when this occurs, it tends the more effectually to unload the bronchial vessels, and alleviate the symptoms.

It is often, however, many hours before the severity of the paroxysm is very sensibly diminished: the patient generally feels some degree of constriction during the whole of the ensuing day, and is fortunate if the next night be passed without a return of the fit. The tendency to such returns usually continues for several nights; in severe cases, for a week or a fortnight. Sir John Floyer, who, from describing his own sufferings, has given us one of the best his-

orical accounts of the disease that has ever een written, mentions a case in which the fits ecurred for seven weeks together, during the hole of which time the patient was obliged to t erect in a chair.

Notwithstanding the violence of the attack, is not often that asthma proves fatal during a aroxysm, and patients who are subject to a retty frequent recurrence of it, sometimes live o an advanced age, if no organic disease be perinduced. This, however, is not often the se: the repeated disturbance of the respiration and circulation seldom fails to produce rganic lesions of the heart or lungs, and the atient falls a victim to tubercular pthisis, or neurism of the heart, with the usual accomaniments of dropsy of the chest or abdomen. t occasionally happens, even where none of ese take place, that the mucous glands of the ronchiæ become relaxed, an habitual excess of ecretion ensues, and the overloaded state of ie air-cells and bronchial vessels occasions a oublesome dyspnœa; a mischief which, in such ases, is felt most oppressively on first awaking, nd is only relieved by a long and severe fit coughing. This overloaded state of the bronliæ and air-cells, from too large a secretion mucus, is indeed, at the time, an original xciting cause of the disease, and has been supposed to be the chief cause by some pathologists, specially by Dr. Bree, a distinguished writer f the present day. The ætiology of asthma is ery obscure; so far, indeed, from ascertaining s causes, we are yet in doubt as to the nature f the morbid state which gives rise to the symptoms. The most prevalent opinion as to the roximate cause of asthma, is that which asribes the oppression of the chest and difficulty f breathing, to a spasmodic constriction of the ronchial tubes. This opinion, which was aintained by Willis, has received the support f Floyer, Hoffman, Cullen, and other eminent uthors, and is pretty generally admitted by athologists in the present day.

The proximate cause of asthma has been pposed by other pathologists to reside in an ncreased secretion of mucus into the bronchial ubes and air cells of the lungs. This hypoesis has of late years found an able advocate n Dr. Bree, who has illustrated his views by umerous references to unquestionable facts, nd the opinions of earlier writers, especially hose of the humoral pathologists.

According to the former of the two hypotheses just alluded to, the spasm of the respiratory rgans is a diseased action from the beginning, nd under every degree and modification: while Dr. Bree only admits it to be so when the spasmodic affection is violent; contending, that in its commencement it is altogether a remedial effort, an instinctive attempt to expel the serum r mucus that obstructs the air tubes. And ence he accounts for the pathognomic wheezng, which he does not think can be sufficiently xplained on the supposition of mere spasm, nd also for the general inefficacy of opium nd antispasmodics, to whatever extent they nay be carried.

It has been already stated that an extensive secretion from the exhalents of the bronchiæ may be an exciting cause in many cases, and particularly in a relaxed and debilitated condition of the bronchial vessels in consequence of former attacks. But, notwithstanding the ingenuity with which Dr. Bree has argued this point, such a secretion cannot fairly be regarded as a common cause of asthma, since it often happens that the lungs do not appear to be much oppressed with mucus before the fit; and at the end of the fit the constriction of the chest frequently disappears before any considerable quantity is spit up: and in what is commonly called the dry asthma, there is generally very little mucus excreted, and sometimes none at all from the beginning to the end of the paroxysm. The existence of accumulated mucus in the bronchial vessels of those who have died of asthma, and whose bodies have been opened, does nothing more than establish the fact in those particular cases. And even here we are left in total darkness whether the effusion anticipated the suffocative spasm, and was the cause of it, or whether the latter anticipated and caused the effusion. On the whole, an impartial view of the actual phenomena of the disease can hardly leave us in doubt as to which of the two opinions ought to be preferred. The almost instantaneous accession of the paroxysm in some cases, and its equally sudden evanescence in others; the state of the pulse and of the urinary secretion; the expression of the countenance, and indeed the whole of the symptoms taken collectively seem very clearly to indicate a spasmodic disease; while, on the other hand, the hypothesis which attributes all these symptoms primarily to mucous effusion, is absolutely subverted by the consideration that in many cases we have no evidence of the existence of such effusion at any period of the paroxysm, and that the paroxysm ceases without any expectoration. It may, indeed, be maintained that the effused fluid is absorbed in such instances, but this supposition being entirely gratuitous, and not a little improbable, is scarcely worthy of notice. Admitting, however, which we may very fairly do, that asthma is essentially a spasmodic affection, a question arises as to the precise seat of the spasm: does it affect the ramifications of the bronchiæ, or the muscles of the larynx and glottis, or the external muscles of respiration, or all these parts? The first, as we have already stated, is the prevalent opinion; but some pathologists, of whom Dr. Wilson Philip is one, have referred the symptoms of asthma to spasm of the larynx, and others again to a similar state of the external muscles of respiration. Now, in the majority of cases of asthma, if we observe minutely the action of the external respiratory muscles, we shall find them acting forcibly as if to overcome some impediment to the dilatation of the chest; and in severe cases we shall find all the accessory muscles which come into play in forced respiration, lending their assistance for the same end; but all this muscular effort is perfectly natural, and seems in no degree to partake of the nature of spasm: the impediment to re-

spiration, therefore, is internal. Again, the symptoms of a paroxysm of asthma are quite different from those arising from spasm of the laryngeal muscles, for in the latter case the attack is usually instantaneous, putting an entire stop to respiration, and either disappearing in a few seconds, which is most common, or causing immediate death. Lastly, in cases of asthma, auscultation detects over the whole chest, sounds which can only proceed from the bronchiæ, and which cease along with the paroxysm.

From these considerations it may be affirmed with some confidence, that the ordinary seat of the asthmatic spasm is in the bronchial tubes. At the same time, it is not to be denied that the muscles of the larynx may, in some instances, become involved in the morbid action, or that in cases of extreme severity the external muscles of respiration, overpowered by ineffectual exertion, may participate in the spasm instead of opposing it; but this is evidently a state of things which could not endure long without occasioning death. Morbid anatomy appears hitherto to have thrown no light on the pathology of asthma. Chronic inflammation of the bronchial membrane and emphysema of the lungs, are the appearances most frequently observed. In cases of long standing, various organic lesions of the thoracic viscera are often discovered, but these are evidently the effects, not the causes, of the disease. In several well marked cases no morbid appearances of any sort have been found on dissection.

The copious expectoration which occurs in one kind of asthma, and the absence or small degree of this excretion in the other, has occasioned the division of asthma both in popular language, and in systems of nosology, into *dry* and *humid*, under which heads we shall consider it in the present article.

1. *Asthma siccum*, dry asthma, nervous asthma.

2. *Asthma humidum*, humid asthma, common asthma.

Asthma siccum. Paroxysm sudden, violent, and of short duration: cough slight; expectoration scanty, only appearing towards the close of the fit, or in some instances altogether absent.

This is the proper convulsive or nervous asthma of Willis, Hoffman, Floyer, and Akenside. Dr. Mason Good makes five varieties of dry asthma, the illustration of which is here taken from his great work on the Study of Medicine.

α *Simplex.* Simple nervous asthma. Without any obvious cause or connexion with any other affection.

β *Metastaticum.* From retropulsion of some acrid humour from the surface of the body.

γ *Phlegmaticum.* From repelled œdema of the extremities in phlegmatic or cachectic habits, with a scanty secretion of urine.

δ *Vaporosum.* From inhaled fumes of metals, especially of lead and arsenic; of sulphur, charcoal, nitric acid, and other deleterious substances.

ε *Organicum.* From organic derangement of the walls or contents of the chest.

Of the first of these varieties, Dr. Bree supposes the unknown and exciting cause to reside in some "subtile acrimony *always* present in the atmosphere in a greater or less degree, and ready to be inspired." It is at least difficult to disprove this opinion; but admitting the fact, we can make little use of it, and are nearly as much in the dark as ever; since we have no information of the nature of this acrimony, and have no means of determining whether it really exist in the atmosphere, in some proportion or other, at all times, as Dr. Bree affirms, or of measuring its occasional excesses, and consequently of guarding against it when it becomes mischievous.

This modification of asthma occurs most frequently in persons of a nervous temperament, and is very apt to make its attack under circumstances which are known to be most trying to such individuals. A sudden emotion of the mind will give rise to it, an alteration of the wind, a change of residence, or a meal that disagrees with the stomach; and the paroxysm is often attended with a large secretion of pale urine. More commonly, however, it comes on without any obvious cause. The small quantity of viscid mucus that is excreted through the whole of the struggle, proves evidently that the inner membrane of the bronchial vessels is in a state of peculiar dryness; and leads us to conceive that, at the onset, it was nearly or altogether destitute of its lubricating fluid. It is on this account that the cough and wheezing are both slight; and it is very possible that the spasmodic exertion is not without its use, as tending to promote an increased action of the exhalents, and to remove that aridity of the mucous tunic of the bronchiæ which may sometimes be an accessory cause of the disease.

Cases of this species of asthma, and even of humid asthma, occurring upon a sudden disappearance of scabid, herpetic, and other cutaneous eruptions, are so common that it is hardly necessary to dwell upon them. They are especially noticed by Sir John Floyer, and have rarely escaped the attention of any pathologist since his day; and that this is an actual cause of the disease, is perfectly manifest from the fact, that the asthma disappears and continues absent on the re-establishment of the cutaneous affection. A sudden recession of gout from the hand or foot, or the suppression of an habitual discharge, as that from the hæmorrhoidal vessels, or from an old ulcer, has in like manner given rise to asthma, which has ceased on the return of the original disease.

But persons of a relaxed and phlegmatic habit are peculiarly affected by such transfers of morbid action, especially when the feet and ankles are habitually œdematous, and accustomed to enlarge towards night.

It is not to be wondered at that asthma should be produced by the inhaled fumes of metals and other mineral substances, since we see it also frequently occasioned, in constitutions prone to the complaint, by clouds of common smoke or dust. Dr. Percival has met with two cases in which slight apoplexies were concomitants of asthma, produced by concentrated fumes of nitrous acid.

To this subdivision, also, belong such cases of asthma as proceed from fogs and mists, especially those of populous and extensive towns, which many asthmatics are obliged to abandon as soon as November begins. Where, however, the internal tunic of the bronchiæ is dry, hot, and habitually irritable, the moisture of such an atmosphere cools and softens the harsh membrane, and the patient longs for such a situation instead of flying from it; and hence, perhaps, one reason why fogs are poisonous to some asthmatics and salubrious to others. It is also probable that the varying gravity of the atmosphere, and the different proportion of its component parts, exert an influence that proves beneficial or injurious according to the peculiarity of the constitution or the actual state of the air-vessels; and hence, again, while some asthmatics can only live in a mountainous situation, others find their only relief in lowlands and valleys.

An impregnation of the atmosphere with odorous essences, has also been found, in a few cases of uncommon idiosyncrasy, a sufficient cause of the asthmatic paroxysm, which has been produced by the smell of musk, and, in one instance related by Timæus, by that of roses. Dr. Scott, of Northumberland, has given cases of the greatest severity and danger, occasioned by accidentally inhaling the effluvium of ipecacuan while pulverising.

Another and a very frequent cause of both species of asthma, but more particularly the asthma *siccum*, is some structural derangement of the walls or contents of the chest. Gibbosity is one of the most common of this group of causes. Lommius asserts after Hippocrates that if a person become gibbous before puberty, in consequence of asthma, he dies. On which Dr. Bree has well observed, that the authors have here substituted cause for effect, since it is rather the gibbosity that produces the asthma than the asthma that produces the gibbosity. An osseous, and consequently rigid, condition of the cartilaginous extremities of the ribs and sternum; pressure upon the lungs produced by dropsy of the pleura or pericardium, by empyema, by vomicæ, or tumours of whatever kind, in the substance of the lungs; an inordinate magnitude of the lungs themselves; have all been found to operate as occasional causes of asthma. Haller, Bonnet, Morgagni, and others, who have been peculiarly attentive to structural diseases and their effects, have recorded numerous instances of this kind.

Asthma humidum. Attack gradual. Paroxysm ingravescent and protracted; cough severe; expectoration commencing early; at first scanty and viscid, afterwards copious and affording great relief.

This species, like the preceding, generally appears without any obvious cause or marked connexion with any other disorder. In some cases, however, it seems to be connected with plethora, and a loaded state of the pulmonary vessels. In other instances, as in old age or after long-continued and repeated catarrhs, it is accompanied with, and perhaps excited by an excess of mucus flowing from a weakened and relaxed state of the mucous glands of the bronchiæ. We may hence consider it under the three varieties stated by Dr. Good.

α *Simplex.* Simple humid asthma. Without any manifest cause, or combination with any other affection.

β *Plethoricum.* From plethora, or the suppression of some accustomed sanguineous evacuation.

γ *Atonicum.* From local atony. From a debilitated and relaxed condition of the excretories of the air-vessels, as a consequence of chronic and neglected catarrhs, or of old age.

The attack of humid asthma is more severe, as well as of longer duration than that of the dry species. In the humid kind we have usually two distinct causes co-operating to aggravate the symptoms — a diminished diameter of the air tubes, and infarction from a surplus of viscid mucus. It is not to be denied, however, that in some cases of what would generally be called humid asthma, there is either no expectoration, or none at all sufficient to account for the relief of the symptoms, or the expectoration does not commence till the intensity of the paroxysm is already very sensibly diminished: hence we must not attribute the greater severity of the species under consideration to mere disordered secretion.

Whatever be the source of the aggravated distress endured in humid asthma, of which it may be as well at once to confess our ignorance, the patient feels less anxiety after some hours of suffering, breathes less laboriously, and experences general relief and tranquillity, which usually keep pace with the increasing freedom of expectoration. "Yet such is the irritable state of the affected organs," says Dr. Bree, "that even on the second day no change of posture is made with impunity, and particular distress affects him if he engage in the fatigue of dressing whilst the stomach is empty. During the day, if no particular hurry occur, the breathing becomes generally more free till the evening: an inexperienced asthmatic even flatters himself that his disease is leaving him; but he finds, at the approach of night, that he must sustain a new attack. The paroxysm recommences with the usual symptoms, and the night is passed nearly as the former, but the sleep is more perfect, and productive of more relief. The third day the remission is more complete; there is some additional expectoration, and bodily motion is performed with less distress, but still with great inconvenience. After the paroxysm has been renewed in this manner for three nights, the expectoration generally becomes free, but there is no certain termination of the fit at a fixed period. However, except in particular cases, it goes off after a few days; and as the daily remissions become more perfect, the urine is higher coloured and in smaller quantities; the expectorated mucus is more copious and digested; strength of pulse and vigour of action increase; and good humour again enlivens the mind."

In the treatment of asthma, our attention

should be directed to the paroxysm itself, and to the state of the constitution during the intervals of the paroxysms.

Cullen, who regarded plethora and vascular turgescence as the usual cause, advocates *bloodletting* at the commencement of the attack, especially in young persons; and with the same view of diminishing plethora, recommends acids and neutral salts, as employed by Sir John Floyer. The use of bleeding, however, demands a nice discrimination, and is rarely advisable in either species of the disease. The relief it affords is very transient; and Cullen admits that it cannot be persevered in without undermining the constitution and laying a foundation for dropsy.

Dr. Bree regards it as a doubtful remedy in the dry asthma, and as always imprudent in the humid. In this last he says, "I have repeatedly directed it; but I have never had reason to think that the paroxysm was shortened an hour by the loss of blood: and I have often been convinced that the expectoration was delayed, and that more dyspnœa remained in the intermission than was common after former paroxysms. In old people, who have been long used to the disorder, it is certainly injurious."

Nevertheless, when there is much general plethora, inflammatory action in any important organ, or great embarassment of the pulmonary circulation occasioning congestion in the brain, the propriety of venesection, under proper limitations, is sufficiently obvious.

Purgatives, except in as far as they may be needful to keep the bowels regularly open, have seldom proved beneficial. When, indeed, the disease is secondary, and depends evidently upon a disordered liver or stomach, or some suppressed evacuation, active cathartics will be of great use; but where the asthma is idiopathic, and especially where the constitution is infirm, as in old age, the irritation of strong purgatives will increase the spasm of the respiratory organs instead of diminishing it. *Emetics*, especially ipecacuan, have been highly extolled by many writers. A full dose of ipecacuan is serviceable if the stomach has been overloaded at the time of the attack, and may also do good by promoting expectoration and diaphoresis; but, on the whole, the efficacy of this class of medicines appears to have been overrated. Small doses of ipecacuan tend to promote expectoration in this as in other cases, and often produce excellent effects by the peculiar action of this medicine on the bronchial membrane, which is sufficiently attested by general experience, although we are entirely unable to account for it.

Blistering is of no great use during the paroxysm, on account of the tardiness of its operation. It may, however, go far to prevent or shorten a relapse on the ensuing night, and, at all events, can do no harm.

Sir John Floyer is said to have found great benefit in his own case from the use of very *strong coffee*. The same practice was afterwards adopted by Sir John Pringle, with equal success. "On reading the section on coffee, in the second volume of your Essays," says he, in a letter to Dr. Percival, "one quality occurred to me which I had observed of that liquor, confirming what you had said of its sedative powers. It is the best abater of the periodic asthma that I have seen. The coffee ought to be of the best Mocha, newly burnt, and made very strong immediately after grinding it. I have commonly ordered an ounce for one dish, which is to be repeated fresh after the interval of a quarter or half an hour, and which I direct to be taken without milk or sugar."

Narcotics and *antispasmodics*, given alone, have rarely been attended with any decided advantage. They have occasionally afforded relief in the dry asthma, but have little effect in the humid. Dr. Bree, in relating his own case, which was that of humoral asthma, tells us, that in the access of a paroxysm he took four grains of solid opium, which produced an almost apoplectic stupor for two days. A few hours after taking the opium, a most debilitating sickness supervened, with incessant efforts to vomit. The labour of the respiratory muscles abated, but the wheezing evidently increased, accompanied with an intense headach, and a countenance more than usually turgid; the pulse being at first strong and quick, and afterwards sinking into great weakness. The paroxysm showed itself four hours earlier than usual the next day. He tried it in smaller doses during several subsequent fits, but in every instance with great general mischief, and little or no local benefit.

In every instance in which narcotics are employed, they should be combined with diaphoretics. In this form they often produce a very beneficial effect; and one of the best preparations of this kind is *Dover's powder*, the use of which is sometimes followed by a breathing moisture over the whole surface of the body, and a corresponding abatement of the internal spasm. This state of gentle diaphoresis, however induced, is always favourable. Antispasmodics, as musk, castor, valerian, camphire, and the fetid gums, may perhaps be employed successfully, when the disease is chiefly dependent upon a morbid habit; and they will acquire additional efficacy from an union with diaphoretics, as the neutral salts, and small doses of ipecacuan, or antimonial powder.

The hyoscyamus has often succeeded as a narcotic where opium has failed; but, like the latter, it should not be trusted to by itself in any form of asthma.

Where the urine is small in quantity, and of a pale hue, and particularly where the disease is connected with a pituitous or phlegmatic habit, *diuretics* have been found unquestionably serviceable. It is apparently with reference to this variety of the disease, that Sir John Floyer asserts, that swelled legs and copious urine are beneficial changes in asthma. Dr. Percival, indeed, thought diuretics generally beneficial; but they can only be so on the same principle with diaphoretics, or other medicines that prove revellent by exciting increased action in the excretories of remote organs. Dr. Ferriar combined them with opium.

But as there is no discharge that promises such direct benefit as that from the excretories of the bronchial vessels themselves, so is there no one class of medicines on which we can place so much dependance as on *expectorants*, when judiciously selected and administered. In every kind of asthmatic affection these may be employed with advantage: for if there be vascular turgescence, they will have a tendency to emulge the vessels; if the bronchiæ themselves be obstructed with mucus, they will facilitate its evacuation; or if their lining membrane be dry and irritable, they will soften and lubricate it by restoring the natural secretion.

The *fetid gums*, which combine an expectorant with an antispasmodic power, have been much employed in the treatment of asthma. Ammoniacum has acquired the greatest popularity, but it seems on the whole to be inferior to assafœtida. Both these, however, are apt to be too heating, except in very flaccid and phlegmatic habits; and it will hence be often necessary to soften their pungency, by combining them with saline medicines. Squill and ipecacuan, combined in small and frequently repeated doses, will generally be found more efficacious than any other expectorant, and their efficacy will often be increased by the addition of a minute quantity of the blue pill, especially in cases where the abdominal secretions are in a disordered state.

There is a tribe of medicines which have been supposed by many to possess great virtues in asthma, namely, the *acids* both vegetable and mineral. Their mode of operation has been variously explained by different authors, but it will be as well to ascertain the fact of their efficacy a little more precisely, before we trouble ourselves with the explanation. Of this class of remedies, it has been conceived that the vegetable are more efficacious than the mineral acids; and that, of the vegetable acids, those obtained by fermentation are more useful than the native.

The acids, however, have seldom been trusted to alone; for it has been thought that by uniting them with diaphoretics, as small doses of ipecacuan, or with narcotics, the remedial power of each has been augmented; and that the latter are not only rendered more efficacious, but are borne with less mischief afterwards. Sir John Floyer was in the habit of uniting the acetic acid with squills, and hence, indeed, the popularity which the vinegar of squills has preserved to the present day. Dr. Bree has employed both the vegetable and the mineral acids, but always in combination with some other medicine. Thus in humoral asthma, after an emetic, he advises a draught composed of an ounce of distilled vinegar, and from one to three grains of ipecacuan in a sufficient quantity of pure water, to be taken every four hours, as a means of determining to the surface of the body, and of promoting absorption and exhalation. The same practice may be used in the dry nervous asthma.

Dr. Bree has also made use of the nitric acid in union with squills and extract of henbane; giving three grains of the henbane with six minims of the acid and ten of tincture of squills in the form of a draught, and repeating it every three or four hours during the paroxysm. "Many patients," he says, "who had taken the most powerful antispasmodics, have assured me that none had been so useful; and two gentlemen now under my direction inform me, that it is the only medicine that has ever given them relief in the paroxysms."

There are several other remedies, the modus operandi of which is by no means clear, but which seem, nevertheless, to have been useful in many instances, and are therefore not to be neglected. The smoking of *tobacco* has been long a popular remedy for asthma: where it is beneficial, it seems generally to have an expectorant effect. The chopped herb of the *strammonium*, or thorn apple, smoked in the same way as tobacco, has of late years enjoyed considerable reputation, and is unquestionably useful in some cases, while in others it fails entirely, or aggravates the dyspnœa: in most instances where it succeeds, it appears, like tobacco, to excite expectoration. The leaves of the *scandix odorata* were at one time much smoked by asthmatic patients, but seem now to be forgotten. Within the last few years a new anti-asthmatic remedy has sprung up in the *lobelia inflata*: in some cases it has doubtless afforded almost immediate relief, but it fails much more frequently than it succeeds. It is given in the form of a saturated tincture of the leaves, in doses of from ʒss. to ʒij.

It is unnecessay even to enumerate all the remedial agents which have at one time or other been employed in asthma. It may be mentioned, however, that the inhalation of oxygen gas was enthusiastically extolled by Dr. Beddoes, and that of hydrogen gas recommended by Dr. Ferriar, but that both have now fallen into entire neglect.

With respect to the treatment to be followed during the intervals of the paroxysms it is unnecessary to say much — not from any want of importance in the subject, but from the impossibility of laying down rules of general applicability. The practitioner must be guided by his own judgment in the individual case. Where a disposition to plethora prevails, it should be combated by a very light diet, and the frequent use of saline laxatives rather than by bloodletting, which is always to be avoided if possible in chronic diseases, because the oftener it is repeated the oftener it is required, and a debilitated and irritable state of the system is thus finally induced, which is peculiarly unfavourable in the disease now under consideration.

When the patient is debilitated, a light, but nutritious diet, a salubrious atmosphere, cold bathing, and, above all, a careful avoidance of all causes of exhaustion, will generally be of more avail than the use of tonic medicines: the lighter vegetable bitters will, however, be occasionally useful where the digestion is weak; the mineral tonics, for the most part, exert too stimulating an effect on the vascular system; the least objectionable in this respect is zinc, which is used medicinally in the formboth of

oxide and sulphate: the former has been particularly recommended by Dr. Withers in cases of asthma.

When asthma is connected with retrocedent gout, or suppressed discharges, the obvious indication is, if possible, to restore the original disease: where this cannot be done, the substitution of some artificial irritation on the surface of the body will often have a good effect. Even in cases which are not of this metastatic character, the use of issues and setons is often very advantageous; and a blister applied to the chest when a paroxysm is threatened, will sometimes avert it or diminish its violence.

It cannot be too strongly inculcated, that there is no disorder in which a careful regulation of the ordinary habits of the patient is of more avail than in asthma. An exact temperance in diet, an undeviating regularity in the hours of rising, taking food and exercise, and going to rest; and residence in a locality which is found by experience to be salubrious to the individual, have often produced a marked improvement, if not a complete cure, in cases on which half the materia medica had been exhausted.

A'STITES. (From *asto*, to stand near; so called because situated near the neck of the bladder.) The lobes of the prostate gland.

A'STOMUS. (Αστομος; from α, priv. and στομα, a mouth.) Without a mouth. Applied in zoology and botany, as by Duméril, to a family of dipterous insects, and by Bridel, to an order of mosses, the capsules of which have no aperture. The ancients believed that there existed in Asia a race of men without mouths.

ASTRA'GALUS. (*us, i.* m.) 1. In *Anatomy*, *Astragalus os*, the ankle-bone, the sling-bone, or first bone of the foot; a bone of the *tarsus*, upon which the tibia moves. Also called *Os ballistæ; os tesseræ; aristrios; talus; quatrio, quartio, astrion; tetroros; cavicula; cavilla; diabebos.* It is placed at the upper and back part of the tarsus, and its superior surface presents a large smooth head for articulation with the distal ends of the tibia and fibula. The ankle joint which is thus formed, is a complete *ginglymus*, or hinge joint. The learned are not agreed as to the origin of the name of the astragalus; but it is generally said to be so called from its resemblance to the αστραγαλος, or die, used in the games of the ancients.

2. In *Botany*, the name of a genus of plants in the Linnæan system, so called from the somewhat cubical or die-like shape of the seeds. Class, *Diadelphia*; Order, *Decandria.*

ASTRAGALUS E'SCAPUS. Stemless milkvetch. The root of this plant, *Astragalus acaulis excapus; leguminibus lunatis; foliis villosis*, of Linnæus, is said to cure confirmed syphilis, and to be especially efficacious against nodes and nocturnal pains.

ASTRAGALUS TRAGACA'NTHA. This species of astragalus was supposed to be the plant that afforded the gum called *tragacanth.* See *Astragalus verus.*

ASTRAGALUS VERUS. The systematic name of the plant called Goat's thorn, Milkvetch, *Spina hirci*, and *Astragalus aculeatus.* The gum tragacanth of commerce was formerly supposed to be the produce of the *Astragalus tragacantha* of Linnæus. It is now known to be derived principally from the *Astragalus verus*, but in part also from the *A. gummifera* and *A. creticus*; other species of the same genus probably yield it. The *Astragalus verus* grows in the north of Persia. Gum tragacanth, or gum dragant, or dragon, exudes spontaneously from the plant in summer, and in greater or less abundance according to the heat of the weather. It concretes into vermicular pieces or irregular lumps which are suffered to dry on the plant before they are collected. The greater part of the tragacanth sold in this country comes from Aleppo packed in cases. The best is white, semi-transparent, dry, yet somewhat soft to the touch.

Gum-tragacanth differs from all the other known gums, in giving a thick consistence to a much larger quantity of water; and in being much more difficult of solution or rather dissolving only imperfectly. Put into water, it slowly imbibes a great quantity of the liquid, swells to a large volume, and forms a soft but not fluid mucilage; if more water be added, a fluid solution may be obtained by agitation; but the liquid looks turbid and whey-like; and on standing, the mucilage subsides, the limpid water on the surface retaining little of the gum. Nor does the admixture of the preceding more soluble gums promote its union with the water, or render its solution more durable: when gum-tragacanth and gum-arabic are dissolved together in water, the tragacanth separates from the mixture more speedily than when dissolved by itself. Tragacanth is insoluble in alkohol and ether; water acidulated with any of the mineral acids dissolves a small proportion of it. The mucilage of tragacanth differs from that of gum-arabic in yielding a precipitate with the superacetate of lead and oxy-muriate of tin, and not with silicated potash or oxy-sulphate of iron. Tragacanth has been found to consist almost entirely of a substance to which Dr. John of Berlin has given the name of *Cerasin*, from its being found pure in the gum that exudes from the common cherry tree.

Tragacanth is usually preferred to the other gums for making up troches, and other like purposes, and is perhaps superior as a demulcent to gum-arabic. It is sometimes given in powder along with other demulcent substances; thus, one part of gum-tragacanth is added to one of gum-arabic, one of starch, and two of sugar, constituting the *Pulvis tragacanthæ compositus* of the London Pharmacopœia.

A'STRAL. (From *astrum*, a star.) Relating to the stars. Thus astronomy has been called the astral science. When astrology entered into the speculations of naturalists and physicians, the influences of the planets on mundane bodies were called astral influences.

ASTRA'NTIA. (*a, æ.* f.; from *astrum*, a star: so called from the star-like shape of its flowers.) 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Dygynia.*

Astrantia major. *Astrantia nigra, Astrantia vulgaris.* Black master wort. The root of this plant is acrid, and was formerly employed as a purgative. It is now fallen into disuse. The *Imperatoria ostruthium* has been called *astrantia.* See *Imperatoria ostruthium.*

Astricta alvus. Costiveness of the bowels.

Astricto'rius. Astringent; styptic.

Astringens. See *Astringent.*

ASTRI'NGENT. (*Astringens;* from *astringo*, to constringe.) An astringent medicine is one which, when applied to the body, renders the solids denser and firmer, by contracting their fibres. This effect is in some degree independent of any influence exerted on the vital power, since it takes place in dead as well as in living parts. It must not be supposed, however, that the operation of astringents on the living solid is entirely chemical or mechanical; for they in many instances induce considerable changes in the vital actions of organs, and must hence necessarily affect their vital properties. Astringents serve to diminish excessive discharges; and, by condensing relaxed parts, act indirectly as tonics where debility arises from relaxation. The substances of this class are derived from the mineral and vegetable kingdoms. To the former belong the mineral acids, alum, lime-water, chalk, and certain preparations of copper, zinc, iron, and lead. A great variety of vegetable substances possess astringent properties which they probably owe in all instances to the presence of *tannin*, a principle discovered by Seguin, and so named by him from its use in tanning hides. The gallic acid which is generally found in combination with tannin, was formerly mistaken for the astringent principle. The vegetable substances that have been chiefly used in medicine as astringents, are oak bark, galls, catechu, kino, dragon's blood, logwood, red sander's wood, the rosa gallica, alkanet, uva ursi, bistort, tormentil and mastiche. Several of these substances, however, are perfectly inert, as far at least as any astringent virtue is concerned. Catechu, kino, oak bark, and galls, are the only vegetable astringents much used in the practice of the present day.

A'strion. The bone called astragalus.

Astroboli'smus. (Αστροβολισμος, from αστροβολιζεσθαι, to be star struck.) This term was originally applied to the state of trees which were supposed to be blighted by the heat of the dog star. It was afterwards extended to any sudden disease falling on men or other animals, as apoplexy or sudden paralysis; it has also been applied to sphacelus.

Astrologia. See *Astrology.*

ASTRO'LOGY. (*Astrologia, æ.* f.; from αστρον, a star, and λογος, a discourse.) This term in its more extended sense is synonymous with *astronomy*, and means the doctrine of the heavenly bodies; it has been generally applied, however, to the pseudo-science, which professed to explain the phenomena of nature by astral influences, and to predict future events, by observing the relative position and aspects of the heavenly bodies: the latter department of the science being called *judicial astrology.* During the dark ages astrology formed no inconsiderable part of medicine. The temperament of an individual was supposed to be determined by the planet under which he was born; and the occult virtues of herbs and gems were attributed to the influence of their ruling planets. These conceits prevailed more or less till towards the close of the seventeenth century, but are now entirely excluded from the world of science, though they may still be entertained by a few dreaming enthusiasts.

Astrum duplicatum. A medicine composed of the tinctures of antimony and coral, essence of amber and musk. Great cordial virtues were attributed to it.

Asuoli. Soot. Ink.

Atac. Talc. Nitre.

ATA'XIA. (*a, æ.* f.; from α, neg. and ταττω, to order.) Want of regularity. Applied to the course or symptoms of a disease, or to the functions of the animal body. Sydenham uses the term *ataxia spirituum*, to signify commotion of the nervous system. It has been most generally used by recent writers to denote that state of the nervous system which accompanies nervous fever.

Ata'xic. *Ataxicus.* Ατακτος. Applied to that which is in a state of ataxia. *Ataxic fever*, means nervous fever.

Ataxmir. (Arabic.) A term used by Albucasis, to signify the treatment of a disease of the eye, arising from the presence of supernumerary eyelashes growing under the natural ones.

Atchar. A condiment used in India, consisting of various green fruits, garlic, ginger, mustard, and pimento, pickled in vinegar.

Atebras. A chemical subliming vessel.

Até'cma. (From α, priv. and τεκνον, a child.) A term used by Linnæus in the same sense as *anaphrodisia.*

ATE'CNIA. (*a, æ.* f.; from α, neg. and τεκνον, a child.) Defect of offspring, whether from impotence or abortion.

Ater succus. Black bile.

ATHAMA'NTA. (*a, æ.* f.; so named from the country of the Athamantes in Epirus.) The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Digynia.*

Athamanta cretensis. Candy carrot. The systematic name for the *Daucus creticus* of the pharmacopœias; called also *Myrrhus annua.* The seeds of this plant, *Athamanta — foliolis linearibus planis, hirsutis; petalis bipartitis; seminibus oblongis hirsutis,* of Linnæus, are brought from the Isle of Candy; they have an aromatic smell, and a slightly pungent flavour, and have been employed as carminatives and diuretics.

Athamanta meum. See *Æthusa.*

Athamanta oreoseli'num. Black mountain parsley. The systematic name for the officinal *oreoselinum.* The root and seed of this plant, *Athamanta — foliolis divaricatis* of Linnæus, as well as the whole herb, were formerly used medicinally. Though formerly in so high estimation as to obtain the epithet of *polycresta*, this plant is seldom used in the practice of the present day. An extract and tincture prepared from the root were said to

be attenuant, aperient, deobstruent, and lithontriptic. The oil obtained by distillation from the seed was esteemed as a remedy for the toothach.

Athama'nticum. See *Æthusa meum.*

ATHANA'SIA. (*a, æ.* f.; Αθανασια, immortality.) 1. A name given by the ancient physicians to several medicines.

2. A name given to tansy; because, when stuffed up the nose of a corpse, it is said to prevent putrefaction.

3. The name of a genus of plants in the Linnæan system. Class, *Syngenesia;* Order, *Polygamia æqualis.*

Athanor. A kind of furnace in use among the alchemists.

Athe'na. Αθηνα. A plaster in much repute among the ancients. It was composed of oxide of copper, verdigris, galls, myrrh, ammoniacum, galbanum, wax, pitch, colophony, and other ingredients. It was employed in wounds of the head, &c.

Athenato'rium. A kind of glass cover for a cucurbit, formerly used by chemists.

Athenio'nis catapo'tium. The name of a pill, composed of myrrh, pepper, castor, and opium. Celsus recommends it against a cough.

Athenı'ppum. *Diasmyrnes.* Ευώδες. A collyrium, described by Scribonius Largus. It was composed of pompholyx, oxide of copper, saffron, myrrh, spikenard, hæmatite, white pepper, opium, and Chian wine.

ATHERO'MA. (*a, atis.* n. Αθερωμα or αθηρωμα; from αθαρα, pulse or pap.) An encysted tumour that contains a substance of a pulpy consistence.

Athero'matous. The adjective derived from atheroma; thus we say an *atheromatous tumour.*

ATHLETIC. (*Athleticus;* from αθλητης, one accustomed to contend in the public games of the ancients, which again is from αθλος, a contest.) Individuals in whom the muscular system is highly developed, and who consequently possess what is called great personal strength, are said to be *athletic.*

Athonor. The same as *Athanor.*

ATHY'MIA. (*a, æ.* f.; from α, neg. and θυμος, courage.) Despondency or melancholy.

Atincar, or Atinkar. Borax.

A'TLAS. (*as, antis.* m.; from α, intensive, and τλαω, to sustain; so called because it supports the head as Atlas is fabled to have supported the sphere of the heavens upon his shoulders. Some say that the name of Atlas is derived, by transposition of the two first letters, from ταλας, miserable or oppressed, on account of the weight of his burden.) The name of the first vertebra. This vertebra differs very much from the others. See *Vertebræ.* It has a small arch instead of a body, and little or no spinous process, but a very large ring. In the fresh subject this is partially filled up so as to correspond with the rest of the spinal canal, by the odontoid process of the second vertebra, which is received by a smooth surface at the back part of the arch, which supplies the place of a body, and confined by a transverse, a perpendicular, and two lateral ligaments. The atlas is articulated above with the condyles of the occipital bone; and below, by the oblique processes, with the dentata. The nodding motions of the head are performed between the occipital bone and the atlas; the rotatory motions, between the atlas and dentata.

Atle. The Egyptian name of the tamarisk — *Prosper Alpinus.*

Atmidia'trice. (From ατμις, vapour, and ιατρικη, with τεχνη, understood, the medical art.) The art of curing diseases by exposure of the body or any part of it to the action of vapour, whether of water, or other fluids, simple, or medicated.

Atmidometer. See *Atmometer.*

Atmo'meter, or Atmido'meter. (From ατμος, or ατμις, a vapour, and μετρον, a measure.) The name of an instrument for measuring the quantity of vapour exhaled from a humid surface in a given time.

ATMOSPHERE. (*Atmosphera, æ.* f.; from ατμος vapour, and σφαιρα, a globe.) The permanently elastic invisible fluid which surrounds the earth; which is preserved at its surface by the force of gravity; and accompanies it in its revolution round the sun. We have no certain means of estimating the height to which the atmosphere extends. It seems probable, however, from calculations founded on the refraction of light and the expansion of gases, that it exists, with properties unimpaired by rarefaction, to the height of from forty to forty-five miles. Any attempt to trace its extent beyond that distance, involves a question which cannot be determined in the present state of science, namely, whether the atmosphere actually has any limits, or whether, in some form or other, it pervades all space, and is condensed round other orbs as well as our own by the force of their respective gravities. The following account of the chemical and physiological relations of the atmosphere, is taken, with a few alterations and additions, from Dr. Paris's Elements of Medical Chemistry.

The atmosphere necessarily contains all those substances which are capable of existing in the aeriform state, at the medium temperature of the globe, and which are disengaged with greater or less abundance at its surface. These bodies, however, are to be considered as merely adventitious; they rarely exist in any considerable proportion, are only occasionally produced, and are very quickly removed by various natural processes. In some cases, they are not even discernible by the nicest chemical tests, and their presence is only inferred from their effects upon animal life. It is to the permanently elastic fluid, which constitutes the great body of the atmosphere, that we assign the name of *atmospheric air,* and which chemistry has shown to possess an uniform composition, at whatever altitude it may have been collected, or in whatever quarter of the globe, whether in cities, or in the country at sea or on land.

To the physiologist, as well as the chemist, its *mechanical* properties are not less interesting than those which relate to its composition. Many of the functions of the living body are modified by their influence, and admit of elucidation from the doctrines of pneumatics. If

norant of the air's pressure and elasticity, we all be unable to comprehend the mechanism f respiration and the effects produced on it by anges of altitude; nor could the chemist unerstand the theory of those operations by which e is enabled to collect and transfer gases, without a knowledge of the mechanical properties of ir.

Atmospheric air, although invisible, is maerial, and partakes of all the common proerties of matter, for it occupies space, attracts nd is attracted, and, consequently, has weight. t likewise partakes of the nature of a fluid, for adapts itself to the form of the vessel in hich it is contained, and presses equally in all irections.

Since air has weight, and every thing upon e earth is surrounded and enveloped by it, it llows that all animated and inanimate bodies ust be subject to its pressure, which will be xerted not only upon them, but upon itself; nd since air is elastic, or capable of yielding to essure, so of course the lower part of the atosphere will be more dense, or in a greater ate of compression, than that which is above

To render this proposition more intelligible, t us suppose that the whole weight of the mosphere is divided into 100 parts, and that ch of these may weigh an ounce, then the rth and all things upon its surface will be essed with the whole 100 ounces; the lowest ratum will be pressed by the 99 ounces above ; the next by 98, and so on, until we arrive the 99th stratum from the bottom, which ill of course be subject to no more than one nce of pressure, or the weight of the last or ghest stratum. It is evident therefore that a body ascends the pressure will be dimished, while the air for the same reason will come more and more rare, until it passes into state of inconceivable tenuity. This will at ce explain all the feelings experienced by rsons who have ascended into the atmohere; while the relations which are known to ist between rarefaction and diminished temrature will account for the cold experienced lofty regions.

The pressure of the atmosphere at the level the ocean is adequate to sustain a column of ater having the altitude of 35 feet, or one mercury of the height of 30 inches, which about equal to 15 lbs. avoirdupoise, on every uare inch of surface, so that the body of man of ordinary size sustains a pressure of 4,000 lbs.; yet, since the spring of the air ntained within the body exactly balances, or nteracts the pressure from without, he is pertly insensible of the existence of any pressure all. The spring and pressure will thus in all ses balance each other, unless the communiion be cut off, and the natural equilibrium stroyed by some disturbing cause. This is ected by an instrument termed the *air pump*, which we avail ourselves for the demonstran of those views, which must otherwise have mained purely theoretical. By means of this chine the air may be taken from the interior vessels, when the effects of the external and disturbed air will immediately display themselves. A knowledge of the exact weight of atmospheric air is of great importance in many physical and chemical researches. This point has been investigated in the most careful manner by Dr. Prout, according to whose experiments 100 cubic inches of pure and dry atmospheric air, at a temperature of 60° F.; and the barometer being at 30, weigh 31·0117 grains, hence, the air is 815 times lighter than water. The specific gravity of atmospheric air is considered as unity, and made the standard with which the density of all other gases is compared.

The air of our atmosphere, besides small proportions of aqueous vapour, and carbonic acid, consists of two different gases, viz., *oxygen*, the supporter of animal life and combustion, and *nitrogen* or *azote*, which will support neither. See *Oxygen* and *Nitrogen*.

That the air consists of oxygen and azote, admits of synthetic as well as analytic proof; for if we mix these two gases in the proportion of four parts by measure of azotic gas to one of oxygen, we shall obtain a mixture resembling atmospheric air in all its obvious properties. It has been generally supposed by modern chemists, that the air consists of 21 volumes of oxygen to 79 of nitrogen in the 100. The recent experiments of Dr. Prout, however, which have been conducted with the utmost skill and caution have shaken this conclusion. Dr. Prout regards atmospheric air as consisting of four volumes by bulk of azote to one of oxygen; and reckoning the atom of oxygen as 10, and that of azote as 17·5, he makes atmospheric air to consist of one atom of oxygen and two of azote, or 22·22 per cent. of oxygen, and 77·77 of azote.

As the most accurate experiments have proved that no appreciable difference exists between the proportions of oxygen and azote in the atmosphere of different places, it is evident that the purity and salubrity of air must depend on some other circumstances than the proportion of these its chief ingredients. It is also evident that as the oxygen of the air is constantly consumed by combustion, respiration, and various other operations, there must be some processes in nature, by which a quantity of oxygen is produced equal to that consumed. One principal cause of this renovation appears to be in the process of vegetation; healthy plants exposed in the sunshine to air, containing small quantities of carbonic acid gas, destroy that elastic fluid and evolve oxygen gas; so that the two great classes of organised beings are thus dependent upon each other. Carbonic acid gas, which is formed in many processes of combustion, as well as in respiration, if not removed from the air, would, by its excess, be deleterious to animals, but it is the healthy food of vegetables; and vegetables produce oxygen which is necessary to the existence of animals, and thus the economy of nature is preserved by the very functions to which it is subservient.

It may seem extraordinary that the gases of which the atmosphere is composed should be found so uniformly intermixed. It might be supposed that they would separate, each according to its specific gravity. Such an effect,

however, is obviated by an universal law to which all gaseous bodies appear subservient. It has been shown by Mr. Dalton, and M. Berthollet, that different elastic fluids have a tendency to rapid equable mixture, even when at rest, and exposed to each other on small surfaces only; and the mixture of the parts of the atmosphere is constantly assisted by winds, by currents of air, and by all the motions taking place on the surface of the earth. This explanation will supersede the necessity of regarding atmospheric air as a chemical compound, and its constituents as held together by affinity, a theory which is encumbered with many difficulties.

In addition to the two principal ingredients of atmospheric air, *oxygen* and *azote*, there is another, existing in a very small proportion, but which from its constancy and uniformity cannot be regarded as adventitious. This is *carbonic acid*, which has not only been discovered in air at ordinary heights, but was ascertained by Saussure to exist in the atmosphere of Mont Blanc, nearly 16,000 feet above the level of the sea, and was found by Humboldt in air brought down by Garnerin, the celebrated aeronaut, from the height of several thousand feet. The proportion is estimated by Mr. Dalton not to exceed $\frac{1}{1000}$th, or $\frac{1}{1400}$th of its bulk, and the experiments of Saussure, junior, make it still less. It has been also discovered to be more abundant in summer than winter. Its presence in the atmosphere at all seasons and places is demonstrated by leaving a shallow vessel of lime-water exposed to the atmosphere, when its surface is soon covered with a solid pellicle, which, when removed, is succeeded by another, and so on, till the water is deprived of almost all the lime which it held in solution. From the precipitate thus formed, carbonic acid is disengaged by dilute acids.

There have been several substances proposed for ascertaining with facility the quantity of oxygen in air; they have been called *eudiometrical* substances; and the instruments in which they have been employed are named *eudiometers*. The value of such investigations must be obvious, when it is considered how important an influence the purity of the air we breathe exerts upon the animal economy. Every medical practitioner ought to possess a sufficient degree of chemical knowledge to conduct such inquiries. What an accession of valuable information might we have possessed, had the navy surgeon included in his reports, the state of the air in different parts of the ship, during the prevalence of various epidemics?

For the purpose of eudiometry various processes have been recommended. If, for instance, a stick of phosphorus be confined in a portion of atmospheric air, it will slowly absorb the oxygen present, without any visible combustion; and in six or eight hours its effect is completed. The residuary azotic gas has its bulk enlarged about $\frac{1}{40}$th, by absorbing a little phosphorus; and for this, allowance must be made in measuring the diminution. Seguin, with the same view, recommended the rapid combustion of phosphorus. For this purpose a small piece of phosphorus may be introduced into the bulb of a bent tube, containing a given measure of the air to be examined, confined over mercury, which, to prevent loss by expansion, should be suffered to occupy about half the tube. The phosphorus may then be inflamed in the tube; and when the combustion is over, and the tube cold, the residuary air may be transferred for measurement into a small cylindrical jar graduated into minute aliquot parts. In this instance about $\frac{1}{40}$th the volume of the residuary gas is to be deducted from the apparent quantity of azotic gas, because, in this case also, a small portion of phosphorus is dissolved by the latter, and occasions a trifling expansion. Volta had recourse to the accension of hydrogen gas as a test for the purity of atmospheric air. For this purpose, two measures of hydrogen are introduced into a graduated tube, with three of the air to be examined, and fired by the electric spark; the diminution of bulk observed after the vessel had returned to its original temperature, divided by three, gives the quantity of oxygen consumed. This eudiometric test has lately received great improvements from the discovery of the singular fact that precipitated platinum will, by virtue of an intermediate affinity, enable the oxygen and hydrogen gases to combine silently, and thereby to supersede the necessity of an electric spark; it moreover possesses a great advantage over any method which involves combustion, as it enables these gases to unite, however small the proportion of hydrogen may be, whereas the electric spark will not fire a mixture in which the oxygen is in considerable excess. In performing this experiment we have only to mix the hydrogen gas with the air to be examined, in the proportions above directed, and then to introduce into the jar a pellet composed of the *spongy platinum*, and allow them to remain in contact. Scheele in his eudiometrical researches, employed liquid *sulphuret of potash*, a substance which possesses the property of absorbing oxygen, but not azote. It therefore acts on atmospheric air only as long as any oxygen gas remains, and may be employed as the means of ascertaining the quantity of this gas in a portion of air. For applying this test, Dr. Hope of Edinburgh invented an instrument consisting of a small bottle, holding about three ounces, into which a graduated glass tube is carefully fitted by grinding. There is also a tubulure with a ground stopper in the side of the bottle near the bottom. To use it, the phial is filled with the solution, and the tube containing the air to be examined, fitted into its place. On inverting the instrument, the gas ascends into the bottle, where it is to be brought extensively into contact with the liquor by brisk agitation; an absorption ensues; and to supply its place, the stopper is opened under water, a quantity of which rushes into the bottle. The stopper is replaced under water, the agitation repeated; and these operations are renewed alternately, till no further diminution takes place. The tube is then withdrawn, the neck of the bottle being under water, and held inverted in water for a few minutes; at the close of which the diminution will be

parent, and its amount may be measured by a graduated scale engraved on the tube. To this form of apparatus, however, Dr. Henry has offered the following objections: — If the tube and the stopper are not both very accurately ground, the air is apt to make its way into the instrument to supply the partial vacuum occasioned by the absorption of oxygen gas. This absorption causes a diminished pressure within the bottle; and, consequently, towards the close of each agitation, the absorption goes on very slowly, especially as the eudiometric liquid is constantly becoming more dilute, by the admission of water. To obviate this inconvenience, Dr. Henry substitutes for the glass bottle, one of elastic gum, by which contrivance the occurrence of any vacuum is prevented.

The *nitrous gas*, or *nitric oxide gas*, has the property of combining with oxygen, and forming nitrous acid, which is immediately absorbed, if the mixture be made over water. In consequence of this effect, nitrous gas was originally applied by Dr. Priestley to the purposes of eudiometry. Many objections, however, have been urged against it, and it has been supposed that the sources of error in its employment are such as to forbid our relying implicitly on the results which it may afford. The researches of Mr. Dalton and Gay Lussac have, notwithstanding, revived our confidence in its efficacy, and it appears to be susceptible of perfect accuracy, provided certain precautions be observed. In mixing the gases a narrow tube should be avoided, and a wide vessel, such as a tumbler glass, be employed, and to 100 parts of atmospheric air, previously measured, we must add at once 100 measures of nitrous gas. A red fume will appear, which will soon be absorbed without agitation, and in half a minute, or at most a minute, the absorption will be complete. The residuum must be then passed into a graduated tube; and if the air has been pure, it will be found that 84 measures have disappeared. This number must be divided by 2, which will give us the quantity of oxygen condensed, viz. 21. Sir H. Davy has proposed the use of a solution of sulphate of iron, impregnated with nitric oxide gas, for the absorption of oxygen; in which case, the apparatus of Dr. Hope will afford a convenient mode of applying it.

The proportion of carbonic acid present in the atmosphere may be ascertained by agitating it in contact with a solution of potass, and noting the degree of absorption.

In our investigations into the quality of air, we should also ascertain its power of supporting combustion.

We come now to consider the nature of those adventitious bodies which are present, in variable proportions, in the atmosphere, and upon which its degree of salubrity most probably depends. Water, even during the driest weather, is always present in the atmosphere, although its proportion is constantly fluctuating. Various saline bodies, when exposed to the air, become moist, or *deliquesce*, which arises from their attracting the water present in the atmosphere. Saussure states the quantity of water in a cubic foot of air, charged with moisture at 65° Fahr. to be 11 grains. The quantity of water that may be extracted from 100 cubic inches of air, at 57° is 0·35 of a grain; but, according to Clement and Desormes, at 54° Fahr. only 0·236 of a grain can be detached by exposure to muriate of lime. The experiments, both of these chemists and of Mr. Dalton, concur in proving that, at the same temperature, equal bulks of all the different gases give up the same quantity of water to deliquescent salts. The portion of water which they thus abandon, has been called *hygrometric water*. Whether they contain a further quantity in a state of more intimate union, and not separable by deliquescent substances, is still undetermined.

There are many bodies, which can scarcely be considered as possessing any affinity for water, and yet greedily absorb it from the atmosphere. Such are almost all substances in the state of powder; porous paper; soils which have been artificially dried; parched oatmeal; and even the filings of metals. These bodies are said to be *hygrometric*.

Much yet remains to be discovered respecting the manner in which water is suspended in the atmosphere. An attempt has been made to estimate the degree of moisture of the air, by ascertaining what has been termed the *dew point*, that is, the temperature at which moisture is precipitated. Besides this method a variety of instruments have been also constructed for the same purpose. They are called *hygrometers*. The most common of these consist of some substance, which is elongated by a moist atmosphere, and shortened by a dry one, as human hair or a fine slip of whalebone. The extreme points are altered by placing it, first in air artificially dried, and afterwards in air rendered as humid as possible. The degree of expansion or contraction is rendered more sensible by connecting it with an axis, which moves a circular index, like the finger of a clock. Mr. Leslie and Mr. Daniel have proposed more refined instruments, founded upon the fact, that evaporation proceeds with a rapidity equal to the dryness of the air; and since the production of cold is proportional to the rate of evaporation, the thermometer may be thus made subservient to the purposes of hygrometry.

Many vegetable productions are calculated to afford the same indications; thus, the capsule of the geranium, and the beard of wild oats, if fixed upon a stand, serve the purpose of hygrometers, twisting themselves more or less according to the moisture of the air. The awn of barley is furnished with stiff points, which, like the teeth of a saw, are all turned towards one end of it; as this long awn lies upon the ground, it extends itself in the moist air of night, and pushes forward the barley corn, which it adheres to; in the day it shortens as it dries; and as these points prevent it from receding, it draws up its pointed end; and thus, creeping like a worm, will travel many feet from the parent stem. Upon this principle Mr. Edgeworth once made a wooden automaton; its back consisted of soft fir-wood, about an inch square, and four feet long, made of pieces cut the cross-way in re-

spect to the fibres of the wood, and glued together; it had two feet before, and two behind, which supported the back horizontally; but were placed with their extremities, which were armed with sharp points of iron, bending backwards. Hence, in moist weather the back lengthened, and the two foremost feet were pushed forward; in dry weather the hinder feet were drawn after, as the obliquity of the points of the feet prevented it from receding. And thus in a month or two, it walked across the room which it inhabited.

The human body is greatly influenced by the quantity of aqueous vapour present in the atmosphere, and few subjects connected with meteorology are more interesting to the medical philosopher. How far the origin of various epidemics may be connected with it, future observations may probably discover. Increased humidity is ever attended with the sensation of cold, because the air is thus rendered a better conductor of caloric; while, at the same time, it checks the perspiration, since the atmosphere, when in a state of saturation with water, is incapable of carrying off the insensible perspiration as it is formed. Under these circumstances the perspirable matter is condensed upon the surface, hence we appear upon these occasions to perspire greatly upon the slighest exercise, whereas the cuticular discharge is at such times absolutely less; and since it must cease to be a cooling process, we experience a sensation of heat greater than the state of the thermometer will explain. The extreme dryness of the atmosphere of Chili will furnish us with a number of facts in further proof of the justness of these views. Dr. Schmidtmeyer informs us that, in the climate alluded to, notwithstanding the very high temperature, the perspiration passes off so entirely in the insensible form, that, during the most violent exercise, it might be doubted whether there existed any perspiration at all. When the air is loaded with moisture, the watery exhalation from the lungs also is diminished, and various morbid effects may be thus produced. The subject has not hitherto received a share of attention commensurate with its importance. The investigation might not only lead to an explanation of many phenomena which are at present unintelligible, but to the adaptation of an artificial atmosphere for the cure of disease. It, moreover, deserves notice that a humid atmosphere becomes a more powerful solvent of vegetable and animal substances. Numerous examples might be adduced to show that volatile bodies are sooner converted into a gaseous state under such circumstances. It is well known to lime-burners that the limestone is burnt and reduced to quicklime much sooner in moist than in dry weather; and, indeed, in the latter case they not unfrequently place a pan of water in the ash-pit, the vapour of which materially assists in carrying off the carbonic acid. In like manner, camphor is found to volatilise with much greater celerity in damp situations. Every body has noticed how sensible the perfume of flowers becomes during the fall of the evening dew, or in the morning, when the dew evaporates and is dissipated by the rays of the rising sun. For the same reason the stench of putrid ditches, and common sewers, is conveyed to the organs of smell much more speedily in summer previous to rain, when the air becomes charged with moisture. We cannot therefore be surprised to find that heat and moisture have ever proved favourable to the origin and propagation of epidemic diseases. The most subtle of all poisons — *the matter of contagion* — is undoubtedly modified in activity by the degree of moisture in the atmosphere, influencing its solubility and volatility. On the other hand, it may be stated that the *Harmatton*, a wind experienced on the western coast of Africa, between the equator and 15° North Latitude, blowing from north-east towards the Atlantic, and which, in consequence of its passage over a very extensive space of arid land, is necessarily characterised by excessive dryness, puts an end to all epidemics, as the small pox, &c.; and it is even said that, at such a time, infection does not appear to be easily communicable by art.

Eudiometry, in its present state, is too imperfect to enable us to appreciate the presence of various animal and vegetable substances which are so generally present in the lower regions of our atmosphere; and by which the salubrity of the air appears to be materially affected. All living bodies, when crowded together, generate a peculiar matter which would seem to be highly destructive. No species of animal can congregate in ill-ventilated apartments with impunity. Under such circumstances, the horse becomes infected with the *glanders*, fowls with the *pip* or *pep*, and sheep with a disease peculiar to them if they be too closely folded. The same fact occurs in the vegetable kingdom, and nature would seem to have established this law, in order that the extent of her productions might be limited to those bounds, which were essential to the well being of the whole. The unhealthiness of crowded cities must arise from a similar cause, and, although the chemist is unable to detect the deleterious principle, it would be vain to deny its existence.

It has been stated that a certain portion of carbonic acid is present in the purest air; but in cities, and apartments in which persons have breathed, or combustible matter has been burnt, this proportion is exceeded, and its excess must be regarded as injurious. *Sulphurous acid* may also be occasionally present in an atmosphere which has been impregnated with the vapour of burning coal: the air of London contains it, and to its presence we may probably attribute the well known fact of iron oxidising with such rapidity. A quantity of carbon, in a state of extremely minute division, is also diffused through the air of our city, which cannot but prove injurious to the health of the inhabitants. The presence of such adventitious bodies is amply sufficient to explain the effects which are known to attend a constant residence in the metropolis, as well as to account for the feelings of relief which its inhabitants experience from occasional migration.

One of the principal uses of the atmosphere

is to supply animals with a medium for breathing. The physiology of this function is explained in the article *Respiration*. Plants also have their own kind of respiration which is noticed in the article *Vegetable*.

ATO'CIA. (From ατοκος, barren.) The same as *atecnia*.

ATO'CIUM. (Same etymon.) A name that has been given to the *Lychnis sylvestris;* because, as it is said, the flowers often bear no seed.

A'TOM. (*Atomus, i.* m. ατομος; from α, neg. and τεμνω, to cut or divide.) The smallest or ultimate particles of which material bodies are composed are called *atoms*. Leucippus was the first who maintained the doctrine of atoms, and attempted to explain all the phenomena of nature by *atoms* and a *vacuum*. In this he was followed by Democritus and Epicurus; and, as Galen has observed, the hypothesis of Asclepiades concerning *atoms* and *pores* came very nearly to the same thing. The ancients taught that atoms were the primordia of all things; that they were indivisible, not perceptible to the senses, but only to the understanding; and that they had no qualities, since the qualities of bodies which they compose, depend on the order, figure, and number of many atoms joined together. The term atom, however, in modern philosophy, is used in a different and more cautious acceptation. To speak of any portion of matter without qualities is absurd, because we can only form an idea of matter from its qualities or properties, knowing nothing whatever of its essence; again, when we speak of an atom, we do not mean that any particle of matter is in its nature indivisible, since it is a fundamental principle of physics that matter is infinitely divisible. By atoms we mean particles of matter so small as to elude our senses, of which larger portions of matter are composed, and between which the actions of attraction and repulsion, whereby the condition of bodies is changed, may be supposed to take place. This view of the constitution of bodies has given rise of late years to an hypothesis of great importance in chemistry, namely, the *atomic theory*. See *Combination, chemical*.

Atom, component. Those atoms which, being different in their nature, united, form a third or compound atom, are called *component atoms;* thus the atoms of sulphur and those of oxygen are the component atoms of sulphuric acid.

Atom, compound. See *Atom, component*.

Atom, elementary. The atom of a substance which has not been decomposed.

Atom, organic. The atoms of substances which are found only in organic bodies, are styled *organic atoms*.

Atom, primary. The same with elementary atoms.

Atomic theory. See *Combination, chemical*.

ATO'NIA PALPEBRA'RUM. Falling down of the upper eyelids. See *Ptosis*.

ATO'NIC. (*Atonicus*. From ατονια, weakness.) Deficient in tone; weak.

A'TONY. (*Atonia, æ.* f. ατονια; from α, neg. and τεινω, to extend.) Deficiency of tone; weakness; properly of muscular organs, to the healthy state of which a certain tone or tension of their fibres has been supposed necessary; but the term is now applied to debility of any kind.

A'TRA BI'LIS. (χολη μελαινα.) Black bile. A fluid imagined by the ancients, but which has no real existence. Some supposed that it was secreted by the pancreas; and others, by the supra-renal glands. A redundance of this fluid was believed to be the cause of a form of insanity thence denominated *melancholia*.

ATRABILIA'RIÆ ARTE'RIÆ. The arteries which supply the supra-renal glands.

ATRABILIARIÆ CAP'SULÆ. The supra-renal glands or capsules.

ATRABILIARIÆ VENÆ. The veins which supply the supra-renal glands.

ATRABI'LIARY. (*Atrabiliarius;* from *atra bilis.*) Appertaining to black bile.

ATRABILIARY TEMPERAMENT. The melancholic temperament. See *Temperament*.

ATRACHE'LUS. (From α, priv. and τραχηλος, the neck.) Short-necked.

ATRA'CTYLIS. (*is, is.* f.; from ατρακτος, a distaff.) The distaff thistle. The name of a genus of plants in the Linnæan system. Class, *Syngenesia;* Order, *Polygamia æqualis*.

ATRACTYLIS GUMMI'FERA. *Carlina gummifera. Carduus pinea. Ixine.* Gummy-rooted atractylis; pine thistle. The root abounds with a gummy matter, which exudes when it is wounded. It is at first milky, and concretes into white tenaceous masses, which resemble wax, and become blackish on being handled. It grows in Italy, Spain, and Barbary. The root and tops of the flower-stalks boiled and dressed with oil are used as food, and the gummy matter is said to be chewed for the purpose of strengthening the gums.

ATRAGE'NE. 1. A name of the *clematis vitalba*.

2. A genus of plants separated by some botanists from *clematis*.

ATRAME'NTUM. (*um, i.* n.) The Latin word for ink; applied also by the Romans to blacking, to copperas or vitriol, and to the black fluid secreted by the cuttle fish.

Atramentum sympatheticum. See *Ink, sympathetic*.

ATRAPHA'XIS. Ατραφαξις. The Greek name of the *atriplex*. See *Atriplex*.

ATRE'SIA. (From α, neg. and τιτρημι, to perforate.) *Imperforatio*. Imperforation. Absence of the natural opening of any canal or cavity, owing to congenital malformation or occlusion of the same from disease or injury.

ATRE'TUS. (Same etymon.) A term formerly applied to one who had an imperforate anus or genitals.

A'TRICES. *Attrices*. This name has been given to small tumours about the anus, as hæmorrhoids or condylomata.

A'TRICI. Small sinuses in the vicinity of the anus, which do not penetrate into the cavity of the rectum.

A'TRIPLEX. (*ex. icis.* f.; corrupted from the Greek ατραφαξις.) The name of a genus of plants in the Linnæan system. Class, *Polygamia;* Order, *Monœcia*. Orache.

Atriplex fœtida. See *Chenopodium vulvaria*.

Atriplex hallimus. See *Atriplex littoralis*.

Atriplex hortensis. See *Atriplex sativa*.

Atriplex littoralis. *Atriplex halimus. Atriplex marina.* Grass-leaved sea orache. The leaves and young shoots are pickled and eaten like samphire. The plant was formerly considered antiscorbutic.

Atriplex patula. The leaves of this are eaten like spinage.

Atriplex portulacoi'des. *Portulaca marina.* Sea purslane. Shrubby orache. The leaves and shoots are sometimes used for pickles, and the plant was formerly esteemed antiscorbutic; it is not now employed in medicine.

Atriplex sati'va. Orache: the systematic name of the *Atriplex hortensis* of the pharmacopœias. The herb and seed of this plant, *Atriplex — caule erecto herbaceo, foliis triangularibus,* of Linnæus, have been exhibited medicinally as antiscorbutics; but they are not used in the practice of the present day.

Atriple'xum. The same as Atriplex.

A'trium co'rdis de'xtrum. The right auricle of the heart.

A'trium co'rdis sini'strum. The left auricle of the heart.

A'TROPA. (*a, æ.* f.; from Ατροπος, the eldest of the *Parcæ* or Fates in the mythology of the ancients; so called from its deadly effects.) The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Monogynia.*

Atropa bellado'nna. Deadly nightshade or dwale. The systematic name of the *Belladonna* of the pharmacopœias; called also *Solanum melanocerasus,* and *Solanum lethale. Atropa — caule herbaceo; foliis ovatis integris,* of Linnæus. This plant has been long known as a strong poison of the narcotic kind, and many instances are recorded of the fatal effects of the berries upon children or others that have been tempted to eat them. The activity of this plant depends on a peculiar alkaline principle called *Atropia.* (See *Atropia.*) Water imbibes all the active matter of the plant. Belladonna is a powerful narcotic, and is alleged also to possess sudorific and diuretic properties. It has been recommended in schirrous and cancerous affections, in chronic rheumatism, gout, palsy, amaurosis, hooping-cough, and a variety of other affections. The dried leaves, in powder, may be given in the dose of a grain, gradually increased to 10 or 12 grains; or an infusion may be made with ʒj. of the dried leaves to ℥x. of boiling water, and administered in doses of ℥j. or ℥jss. gradually increased. Externally applied, belladonna has great efficacy in allaying local pain and spasm. In the form of poultice or fomentation, it has been found, like hemlock, to diminish the irritability of cancerous and other ill-conditioned sores. The powder or extract made into an ointment, with an equal weight of lard, and rubbed on the penis and perineum, relieves chordee more effectually than any other application. But the most familiar use of belladonna is that derived from its valuable property of dilating the pupil of the eye, so as to facilitate the examination of the deep-seated parts of this organ, and render the operation for cataract easier to the surgeon. For this purpose, the extract of belladonna, diluted with a sufficient quantity of water, is rubbed over the eyebrow and around the eye, and in less than an hour the pupil becomes widely dilated. The extract is the only officinal preparation of belladonna.

Atropa mandra'gora. Μανδραγορας. Ανθρωπομορφος. *Mandragora. Semihomo.* The mandrake. This plant is a native of Asia and the south of Europe, and is cultivated in our gardens. Its root is frequently bifurcated, having thus some resemblance to the legs of a man. In former times, mountebanks, aiding this resemblance by a little artificial preparation of the upper part, carried the roots about and sold them to the credulous as things possessed of marvellous virtues; especially as being incentives to love. Even in the days of the Greeks, the mandrake was in great reputation as an ingredient in philtres and love potions; and in the more modern superstitions of Europe, all sorts of extravagant things have been believed of it. Thus it was said to grow under gibbets, where the decomposing remains of the criminal fell upon it, giving it the form of a man or a woman, according to the sex of the suspended individual: it was also believed that the mandrake shrieked horribly when torn from the earth, and that the person who plucked it up went mad and died, &c. The mandrake possesses considerable narcotic power, and the root was formerly much used in medicine, but it is entirely discarded from the practice of the present day. Some botanists have detached *mandragora* from *atropa,* and made a separate genus of it.

Atrophia. See *Atrophy.*

Atrophia mesenterica. See *Tabes mesenterica.*

A'TROPHY. (*Atrophia, æ.* f.; from *a,* priv. and *τρεφω,* to nourish.) A wasting of the whole body, or any particular part of it. Since the natural state of nutrition in every part depends on a due balance between the functions of assimilation and absorption, it is evident that atrophy may depend on defect of the one or morbid activity of the other. Local atrophy may arise from congenital defect in the organisation of the part, as in the case of a limb which is small and imperfectly developed in comparison with the rest of the body; or it may arise from some cause impeding the natural supply of blood, as when the main artery of any organ is rendered impervious; or from a diminution of the nervous influence, as in the wasting of a paralytic limb; or from total suspension of the natural functions of an organ, as in the degeneration of muscles that are never used; or, lastly, from the effects of inflammation, as frequently exemplified in the testicle and other parts. Some organs undergo a natural atrophy, unconnected with any diseased action, when the functions to which they are subservient cease to be necessary: thus the thymus gland, the ductus arteriosus, and several other fœtal organs speedily waste away and become obliterated after birth; and, in old age, the generative organs fall into a state of atrophy. These phenomena, however, are foreign to the subject of atrophy considered as a disease. General atrophy or wasting of the body

is observed to arise from insufficient nourishment, from profuse evacuations, and from a diseased state of the apparatus of nutrition, consisting either in imperfect chylification or imperfect assimilation. Atrophy, as arising from the two former causes, need not occupy our attention here; since in the first instance it is not a disease at all; and in the second, it is consecutive on some obvious cause of exhaustion, and only remediable by the removal of that cause.

General atrophy, independent of deficient nourishment or exhausting discharges, is not of very frequent occurrence. It is more common in childhood and old age than in the intervening periods of life. Its pathology is in many cases very obscure.

Where atrophy is connected with disorder of the digestive organs, a little light is thrown on the nature of the disease, but not much. For indigestion does not necessarily produce atrophy, since it is no uncommon thing for dyspeptic patients to become corpulent; and again, the morbid state of these organs may be a secondary affection, dependent upon a general inactivity or other unsound condition of the secernent vessels which constitute the other end of the chain of assimilation, and hence exercising a stronger influence over them than over any intermediate organs, as the digestive organs themselves, if the disease should have originated in them, may exercise a like influence over the assimilating powers, and hence produce that general extenuation which, as we have just observed, is not a necessary consequence of dyspepsy. It is at least beyond a doubt, that more than one set of organs is involved in this affection.

Where atrophy takes place in infants at the breast or young children, its commencement is indicated by flaccidity of the flesh; paleness of the countenance, sometimes alternating with flushes; prominence of the belly; irregularity of the bowels; a pendulous state of the lower limbs; general debility, sluggishness, and a disinclination to exercise, with fretfulness in the day, and restleness at night.

There is at first no perceptible fever, cough, or dyspnœa; but if the disease continue, all these will appear as the result of general irritation, and the skin will become dry and heated, and be covered over with ecthyma, impetigo, or some other cachectic eruption. The breath is generally offensive; the urine varies in colour and quantity; and in infants at the breast, the stools are often ash-coloured or lienteric, or greenish, loose, and preceded by griping. The appetite varies; in some cases it is deficient, and in others insatiable.

Where these symptoms, or the greater part of them, occur in an infant at the breast, we should inquire particularly as to the manner in which it has been nursed, in respect to cleanliness, purity of air, temperature, exercise, and the quality of the nurse's milk; and if there has been mismanagement in any of these points, the error must immediately be rectified. We should also ascertain whether the child be labouring under the effects of dentition, or has worms, or is of the scrofulous constitution: if any of these evils be detected, we must endeavour to obviate them by the appropriate means which need not be detailed here. If we cannot trace the general disorder to any of the sources above alluded to, it may still be worth while to try a change of milk; since it is not easy to detect all the peculiarities in this fluid that may render it incapable of affording full nutrition; and there is reason to believe, that one infant may pine away on what proves a healthy breast to another.

In children past the age of infancy, who are confined to the close and unwholesome cells which too often form the habitation of a family among the poor in large cities, or who are subjected to the painful and monotonous drudgery of a factory, there is no difficulty in accounting for the prevalence of atrophy; and we frequently see these children becoming daily more emaciated even where the appetite does not fail, and they have a plentiful supply of wholesome food, thus affording a sufficient proof that air and exercise are of as much importance as food itself; that there are other organs than those of digestion, on disease of which the emaciation may depend; and that unless the supply furnished by the food to the blood-vessels be sufficiently oxygenised by ventilation, and the vessels themselves stimulated to healthy action by exercise, the function of nutrition cannot be duly performed.

In the atrophy of old age, the digestive or chyliferous organs seem to be more frequently in fault than those of assimilation. The functions of the stomach and liver often become greatly impaired, though this is by no means always the case, and the mesenteric glands are observed to dwindle very perceptibly: some celebrated anatomists have indeed maintained that they become altogether obliterated. Ruysch stoutly affirms that old people have no lacteals, and that he himself had none at the time he indited the opinion, which, however, is altogether extravagant.

The treatment of atrophy will, of course, involve a most scrupulous attention to the diet and habits of the patient. The bowels should be kept regular; mercurial alteratives may sometimes be required; and the vegetable and mineral tonics used in dyspepsia may be had recourse to according to the peculiarity of the case: cleanliness, fresh air, and moderate exercise are quite indispensable, and in many instances where the patient has suffered from the privation of these, their restoration will alone be sufficient for the cure. Cold bathing, where it is not contra-indicated, will be found a powerful auxiliary. The atrophy of old age is to be met by the most nutritious food, wine, and warmth.

ATRO'PIA. (*a*, *cc.* f.; so called because obtained from the *Atropa belladonna.*) *Atropine* a peculiar vegetable principle, discovered in the *Atropa belladonna*, by Brandes. This chemist obtained the substance in question by the following process: — He boiled two pounds of the dried leaves of *belladonna* in a sufficient quantity of water, pressed out the decoction, and boiled the remaining leaves again in water. The

decoctions were mixed, and some sulphuric acid was added, in order to throw down the albumen and similar bodies: the solution was thus rendered thinner, and passed more readily through the filter. The decoction was then supersaturated with potash, whereby a precipitate was obtained, which, when washed with pure water and dried, weighed 89 grains. It consisted of small crystals, from which, by solution in acids, and precipitation by alkalis, the atropia was obtained in a pure state.

The external appearance of atropia varies considerably, according to the method by which it is obtained. When precipitated from the decoction of the herb by a solution of potash, it appears in the form of very small short crystals, constituting a sandy powder. When thrown down by ammonia from a concentrated aqueous solution of its salts, it appears in flakes like wax; but if the solution be much diluted, it is gelatinous like precipitated alumina; when obtained by the cooling of a hot solution in alkohol, it crystallises in long, acicular, transparent, brilliant crystals, often exceeding an inch in length, which are sometimes feathery, sometimes stelliform, and sometimes single. Atropia, however, is obtained in such a crystalline state only when rendered perfectly pure by repeated solution in muriatic acid, and precipitation by ammonia. Atropia when pure has no taste. Cold water has hardly any effect upon it when dried, but dissolves a small quantity when recently precipitated; boiling water dissolves a larger proportion. Atropia is very sparingly soluble in cold alkohol, but is readily dissolved by the same fluid when boiling. Ether and oil of turpentine, even when boiling, have little effect on atropia.

Sulphate of atropia crystallises in rhomboidal tables and prisms with square bases. It is soluble in four or five parts of cold water. It seems to effloresce in the air, when freed as much as possible from adhering sulphuric acid, by pressure between the folds of blotting paper.

Muriate of atropia appears in beautiful, white, brilliant crystals, which are either cubes or square plates similar to the muriate of *daturia*. Nitric, acetic, and oxalic acids, dissolve atropia, and form acicular salts, all soluble in water and alkohol. The properties of atropia, and the composition of its salts, are as yet little known. M. Brandes was obliged to discontinue his experiments on this alkali from its bad effects on his health. Even the vapour of it occasioned violent headachs, nausea, pains in the back, and giddiness.

He once tasted a small quantity of sulphate of atropia, and found its taste to be merely saline; but he was soon affected with violent headach, shaking in the limbs, alternate sensations of heat and cold, oppression of the chest, difficulty in breathing, and feebleness of the circulation. The violence of these symptoms ceased in half an hour. Exposure to the vapour of a solution of the nitrate, phosphate, or sulphate of atropia produced giddiness; and if long continued, caused dilatation of the pupil. When M. Brandes tasted the salt of atropia, his pupils remained immoveably dilated for twelve hours.

Atropi'na. See *Atropia.*

Atropine. See *Atropia.*

Attancourt. A village in Champagne which has a chalybeate mineral spring; the water contains sulphate of lime, and is purgative when taken in large quantity.

Attar ghul. Otto of roses. See *Oleum rosæ.*

Attenöting. A place in Bavaria which has mineral waters, containing carbonic acid, carbonates of lime and soda, sulphates of lime and magnesia, muriate of soda, iron, and alumina. These waters are recommended in diseases of the skin, old ulcers, &c.

Attention. See *Mens.*

ATTE'NUANT. (*Attenuans;* from *attenuo*, to make thin.) By an attenuant medicine is meant one which has the power of rendering the consistence of the blood thinner, by diminishing the cohesion of its particles. The existence of any such power in medicine is hypothetical, except, indeed, in as far as all *diluents* must attenuate the blood by increasing the proportion of its fluid to that of its solid constituents.

Attenua'tus. Attenuated. Applied in botany to parts which diminish in bulk from one extremity to the other, especially to leaves which become very slender towards the apex.

Attingat. An alchemical name of verdigris.

Attitude. The different positions which the body is capable of assuming by the action of its muscles, are called attitudes. The attitude of the body in disease often affords important indications. See *Physiognomy.*

ATTO'LLENS. (From *attollo*, to lift up.) Lifting up: applied to some muscles, the office of which is to lift up the parts they are affixed to.

Attollens aurem. A muscle of the external ear: the *Attollens auriculæ* of Albinus and Douglas; *Superior auris* of Winslow; and *Attollens auriculam* of Cowper. It arises, thin, broad, and tendinous, from the tendon of the occipito-frontalis, from which it is almost inseparable, where it covers the aponeurosis of the temporal muscle; and is inserted into the upper part of the ear, opposite to the antihelix. Its use is to draw the ear upwards, and to make the parts into which it is inserted tense.

Attollens auriculæ. See *Attollens aurem.*

Attollens oculi. See *Rectus superior oculi.*

Atto'nitus. Properly *thunder-struck*, but also used by the Latins synonymously with amazed, or surprised, whence the English word *astonished.* The term *attonitus morbus* was applied by Celsus to apoplexy, from its sudden and overwhelming attack.

Attonitus morbus. See *Attonitus.*

ATTRACTION. (*Attractio, onis.* f.; from *attraho*, to attract.) The terms attraction and repulsion, in the language of modern philosophers, are employed merely as the expression of the general facts, that the masses or particles of matter have a tendency to approach and unite to, or to recede from one another, under certain circumstances. The term affinity has been used synonymously with attraction; but it is now commonly applied only to chemical attraction. There are several kinds of attraction which, whether they be ultimately the same or not,

give rise to different phenomena, and appear to operate according to different laws. They admit of a general division into those which influence masses of matter, and operate at sensible distances; and those which influence only the minute particles of matter, and operate only when bodies are brought into apparent contact with each other. To the former class belong the attraction of gravity, the magnetic, and the electric attractions; to the latter, the attraction of cohesion and chemical attraction or affinity. The attraction of gravitation is that which regulates the larger movements of the universe; it affects masses of matter of all sizes, and operates at all distances, from the smallest appreciable to the senses, to the vast intervals of space which can be measured only by the calculations of the astronomer. The attraction of gravitation operates according to an invariable law, first demonstrated by Newton; its force being directly as the mass or quantity of matter, and inversely as the square of the distance. The applications of this law belong to the province of natural philosophy, and need not, therefore, be entered upon here. The magnetic and electric attractions, as far at least as we can trace their agency, extend to much smaller distances than that of gravitation; they nevertheless operate, like gravitation, on masses of matter, at sensible, and often at considerable, distances. For an illustration of their laws, see the articles *Magnetism* and *Electricity*.

The attraction of cohesion or aggregation, and chemical attraction, or affinity, agree in operating only at insensible distances, or between bodies brought into apparent contact. They differ in this:—The attraction of cohesion unites, and keeps together when united, particles of matter of the same kind, and the result is merely an increase of the mass, without the smallest change of properties; thus, if two pieces of wax be beaten or kneaded together, the result will be merely a piece of wax weighing as much as the other two pieces put together: chemical attraction, on the other hand, is exerted between particles of matter of a different kind, and the result of its operation is the production of a substance differing more or less in its properties from those of which it is composed; thus if sulphuric acid be brought into contact with magnesia, the substance called sulphate of magnesia or Epsom salt will be produced, possessing properties entirely different from those of the acid or earth which have united in its formation. The attraction of aggregation tends to preserve bodies unchanged, while chemical affinity tends to disintegrate them, and to change their properties; hence they are in most instances antagonist forces. The subject of cohesive attraction belongs rather to general physics than to chemistry; and hence demands no particular notice in the present work. This force, however, gives rise to a particular train of phenomena which are of great interest to the chemist, and which are noticed under the head *Crystallisation*. We shall at present occupy ourselves solely with chemical attraction or affinity.

Chemical affinity is exerted between compound as well as simple bodies: a simple substance may unite with another simple substance, or with a compound, and compounds may also unite with other compounds. Some substances have so strong an affinity for each other, that they unite readily the moment they are brought in contact; others combine much more slowly; and others again will not combine at all. Berthollet advanced the opinion, that all bodies have in reality an affinity for each other; and that where they do not combine, it is because their tendency to do so is opposed by other circumstances: this view of the subject will be illustrated in the sequel of the present article. Some substances combine in all proportions, as water and acids; others combine in all proportions up to a certain mark, but no further; thus water will dissolve any quantity of muriate of soda up to one third of its weight; but if more than this be added, it will remain undissolved. Some substances combine in only one proportion: thus equal measures of chlorine and hydrogen gases combine to form muriatic acid, and they cannot be made to unite in any other proportion; for if either be in excess, the surplus will remain uncombined. Lastly, many substances combine in several proportions, but these proportions are fixed and definite: thus oxygen and nitrogen combine in no less than five different proportions; but invariably in some one of these five. When a solid combines with a liquid, and the resulting compound is liquid, the solid is said to be dissolved by the liquid, and the process is called *solution*. A liquid which holds in solution as much of any substance as it can dissolve, is said to be *saturated* with that substance. When a liquid is saturated with any substance, although it can dissolve no more of that substance, it may dissolve another: thus water saturated with salt will still readily dissolve sugar.

Chemical affinity, as exhibited under different circumstances, has been distinguished by different names, which it is here necessary to explain.

The affinity which retains the constituents of a compound in a state of union is called *quiescent affinity*; while an affinity which has a tendency to separate the constituents of a compound is called a *divellent affinity*.

When two bodies only enter into chemical union, they are said to unite by *simple* or *single affinity*; and again, when a body consisting of two component parts is decomposed by a third body which has a stronger affinity for those two component parts than they have for each other, this also is said to take place by simple or single affinity. When two bodies each consisting of two constituent parts are decomposed by each other, so that their constituents become reciprocally united, and produce two new compound bodies, this is said to take place by *double affinity* or *double elective attraction*.

The affinities exerted by a compound arising from the modified affinities of its constituents, are called by Berthollet *resulting affinities*, as distinguished from those of the constituents themselves, which he names *elementary affinities*. When two bodies which are incapable of uniting, are made to combine by the addition of a third body which has an affinity for

the compound resulting from the union of the two former, though it may have no apparent affinity for either of them separately, this third substance was formerly said to exert a *disposing affinity*, which was thus absurdly considered as an affinity for a substance not yet in existence. Such instances of chemical action admit, however, of a rational explanation on Berthollet's supposition that the affinities of a compound are merely the modified affinities of its elements. For example, water is a compound of oxygen and hydrogen. Iron has an affinity for oxygen, but not sufficiently strong to decompose water, otherwise at least than very slowly at ordinary temperatures; but if a little sulphuric acid be added, the water will be rapidly decomposed, the iron will be oxidated, and the acid will combine with the oxide. In this case, according to the doctrine of disposing affinities, the sulphuric acid having a strong affinity for oxide of iron, actually causes its formation; but according to the explanation of Berthollet, which is probably correct, the acid has an affinity both for oxygen and for iron; iron has also an affinity for oxygen, and by an union of these forces an effect is produced to which they would have been singly inadequate, namely, the separation of the oxygen from the hydrogen, and the decomposition of the water. Affinity thus exercised is sometimes called *intermediate affinity*.

For the following view of the phenomena of chemical affinity, embracing the latest inquiries on the subject, we are indebted to an excellent article in Dr. Ure's Dictionary of Chemistry.

From a great number of facts it is clearly ascertained, not as a probable hypothesis, but as simple matter of fact, that some bodies have a stronger tendency to unite than others; and that the union of any substance with another will exclude, or separate, a third substance, which might have been previously united with one of them, excepting only in those cases wherein the new compound has a tendency to unite with that third substance, and form a triple compound. This preference of uniting, or elective attraction, which a given substance is found to exhibit with regard to other bodies, is subject to a variety of cases, according to the number and the powers of the principles which are respectively presented to each other. The cases which have been most frequently observed by chemists, are those called simple elective attractions, and double elective attractions.

When, as before explained, a simple substance is presented to another substance compounded of two principles, and unites with one of these two principles, so as to separate or exclude the other, this effect is said to be produced by simple elective attraction.

It may be doubted, whether any of our operations have been carried to this degree of simplicity. All the chemical principles we are acquainted with are simple only with respect to our power of decomposing them; and the daily discoveries of our contemporaries tend to decompose those substances, which chemists a few years ago considered as simple. Without insisting, however, upon this difficulty, we may observe, that water is concerned in all the operations which are called *humid*, and beyond a doubt modifies all the effects of such bodies as are suspended in it; and the variations of temperature, whether arising from an actual igneous fluid, or from a mere modification of the parts of bodies, also tend greatly to disturb the effects of elective attraction. These causes render it difficult to point out an example of simple elective attraction, which may in strictness be reckoned as such.

Double elective attraction takes place when two bodies, each consisting of two principles, are presented to each other, and mutually exchange a principle of each; by which means two new bodies, or compounds, are produced, of a different nature from the original compounds.

Some eminent chemists are disposed to consider as effects of double affinities, those changes of principles only which would not have taken place without the assistance of a fourth principle. Thus, the mutual decomposition of sulphate of soda and nitrate of potash, in which the alkalis are changed, and sulphate of potash and nitrate of soda are produced, is not considered by them as an instance of double decomposition; because the nitre would have been decomposed by a simple elective attraction, upon the addition of the acid only.

There are various circumstances which modify the effects of elective attraction, and have from time to time misled chemists in their deductions. The chief of these is the temperature, which, acting differently upon the several parts of compound bodies, seldom fails to alter, and frequently reverses, the effects of the affinities. Thus, if alkohol be added to a solution of nitrate of potash, it unites with the water, and precipitates the salt at a common temperature. But if the temperature be raised, the alkohol rises on account of its volatility, and the salt is again dissolved. Thus, again, if sulphuric acid be added, in a common temperature, to a combination of phosphoric acid and lime, it will decompose the salt, and disengage the phosphoric acid; but if the same mixture of these principles be exposed to a considerable heat, the sulphuric acid will have its attraction to the lime so much diminished, that it will rise, and give place again to the phosphoric, which will combine with the lime. Again, mercury, kept in a degree of heat very nearly equal to volatilising it, will absorb oxygen, and become converted into the red oxide formerly called precipitate *per se*; but if the heat be augmented still more, the oxygen will assume the elastic state, and fly off, leaving the mercury in its original state. Numberless instances of the like nature continually present themselves to the observation of chemists which are sufficient to establish the conclusion, that the elective attractions are not constant unless the temperature be the same.

Many philosophers are of opinion, that the variations produced by change of temperature arise from the elective attraction of the matter of heat itself. But there are no decisive experiments either in confirmation or refutation of this hypothesis.

If we except the operation of heat, which really produces a change in the elective attractions, we shall find that most of the other difficulties attending this subject arise from the imperfect state of chemical science. If to a compound of two principles a third be added, the effect of this must necessarily be different, according to its quantity, and likewise according to the state of saturation of the two principles of the compounded body. If the third principle which is added be in excess, it may dissolve and suspend the compound which may be newly formed, and likewise that which might have been precipitated. The metallic solutions, decomposed by the addition of an alkali, afford no precipitate in various cases when the alkali is in excess; because this excess dissolves the precipitate, which would else have fallen down. If, on the other hand, one of the two principles of the compound body be in excess, the addition of a third substance may combine with that excess, and leave a neutral substance, exhibiting very different properties from the former. Thus, if cream of tartar, which is a salt of difficult solubility, consisting of potash united to an excess of the acid of tartar, be dissolved in water, and chalk be added, the excess unites with part of the lime of the chalk, and forms a scarcely soluble salt; and the neutral compound, which remains after the privation of this excess of acid, is a very soluble salt, greatly differing in taste and properties from the cream of tartar. The metals and the acids likewise afford various phenomena, according to their degree of oxidation. A determinate oxidation is in general necessary for the solution of metals in acids; and the acids themselves act very differently, according as they are more or less acidified. Thus, phosphorous acid gives place to acids which are weaker than the phosphoric: the sulphurous acid gives place to acids greatly inferior in attractive power or affinity to the sulphuric acid. The deception arising from effects of this nature is in a great measure produced by the want of discrimination on the part of chemical philosophers; it being evident, that the properties of any compound substance depend as much upon the proportion of its ingredients, as upon their respective nature.

The presence and quantity of water is probably of more consequence than is yet supposed. Thus, bismuth is dissolved in nitric acid, but falls when the water is much in quantity. The same is true of antimony, and it is probable that similar facts are more common than is suspected. Whether the attraction and strength, as to quantity in saturation, be not variable by the presence or absence of water, must be referred to experiment.

The power of double elective attractions, too, is disturbed by this circumstance: — If muriate of lime be added to a solution of carbonate of soda, they are both decomposed, and the results are muriate of soda and carbonate of lime. But if lime and muriate of soda be mixed with just water sufficient to make them into a paste, and this be exposed to the action of carbonic acid gas a saline efflorescence, consisting of carbonate of soda, will be formed on the surface, and the bottom of the vessel will be occupied by muriate of lime in a state of deliquescence.

M. Berthollet made a great number of experiments, from which he deduced the following law: — That in elective attractions the power exerted is not in the ratio of the affinity simply, but in a ratio compounded of the force of affinity and the quantity of the agent; so that quantity may compensate for weaker affinity. Thus, an acid which has a weaker affinity than another for a given base, if it be employed in a certain quantity, is capable of taking part of that base from the acid which has a stronger affinity for it; so that the base will be divided between them in the compound ratio of their affinity and quantity. This division of one substance between two others, for which it has different affinities, always takes place, according to him, when three such are present under circumstances in which they can mutually act on each other. And hence it is, that the force of affinity acts most powerfully when two substances first come into contact, and continues to decrease in power as either approaches the point of saturation. For the same reason it is so difficult to separate the last portions of any substance adhering to another. Hence, if the doctrine laid down by M. Berthollet be true to its utmost extent, it must be impossible ever to free a compound completely from any one of its constituent parts by the agency of elective attraction; so that all our best established analyses are more or less inaccurate.

The solubility or insolubility of principles, at any particular temperature has likewise tended to mislead chemists who have deduced consequences from the first effects of their experiments. It is evident, that many separations may ensue without precipitation; because this circumstance does not take place unless the separated principle be insoluble, or nearly so. The soda cannot be precipitated from a solution of sulphate of soda by the addition of potash, because of its great solubility; but, on the contrary, the new compound itself, or sulphate of potash, which is much less soluble, may fall down, if there be not enough water present to suspend it. No certain knowledge can therefore be derived from the appearance or the want of precipitation, unless the products be carefully examined. In some instances all the products remain suspended, and in others they all fall down, as may be instanced in the decomposition of sulphate of iron by lime. Here the acid unites with the lime, and forms sulphate of lime, which is scarcely at all soluble; and the still less soluble oxide of iron, which is disengaged, falls down along with it.

Many instances present themselves, in which decomposition does not take place, but a sort of equilibrium of affinity is observed. Thus, soda, added to the supertartrate of potash, forms a triple salt by combining with its excess of acid. So likewise ammonia combines with a portion of the acid of muriate of mercury, and forms the triple compound formerly distinguished by the barbarous name of sal alembroth.

When we reflect maturely upon all the circumstances just alluded to, we may form some idea of the extensive field of research which yet remains to be explored by chemists. If it were possible to procure simple substances, and combine two together, and to this combination of two to add one more of the other simple substances, the result of the experiment would in many cases determine, by the exclusion of one of the three, that its affinity to either of the remaining two was less than that between those two respectively. In this way it would be ascertained, in the progress of experimental inquiry, that the simple attractions of a series of substances were gradually increasing or diminishing in strength. Thus, ammonia separates alumina from sulphuric acid; magnesia, in like manner, separates the ammonia; lime predominates, in strength of affinity, over magnesia, as appears by its separating the latter earth; soda separates the lime, and itself gives place to potash; and, lastly, potash yields its acid to baryta. The simple elective attractions of these several substances for sulphuric acid are therefore in the inverted order of their effects: baryta is the strongest; and this is succeeded regularly by potash, soda, lime, magnesia, ammonia, and alumina. It is evident, that results of this nature being tabulated, as was first done by the celebrated Geoffroy, and afterward by Bergman, must afford a valuable mass of chemical knowledge. It is to be remarked, however, that these results merely indicate that the powers are greater or less than each other; but how much greater or less is not determined, either absolutely or relatively. Tables of this nature cannot therefore inform us of the effects which may take place in the way of double affinity, for want of the numerical relation between the attracting powers. Thus, when we are in possession of the order of the simple elective attractions between the sulphuric acid and a series of substances, and also between the nitric acid and the same substances; and when, in addition to this, the respective powers of each of the acids upon every one of the substances singly taken are known, so far as to determine which will displace the other; still we cannot thence foretell the result of applying two compounds to each other, each containing an acid united with one of the number of simple substances. Or, more concisely, a table of simple elective attractions can be of no use to determine the effects of double elective attraction, unless the absolute power of the attractions be expressed by number instead of their order merely.

It has been often remarked, that the action of a substance is diminished in proportion as it approaches to a state of saturation; and this diminution of power has been employed to explain several chemical phenomena. It is likewise known, that the resistance found in expelling a substance from the last portions of a combination, either by affinity or heat, is much greater than at the commencement of the decomposition, and sometimes such that an entire decomposition cannot be effected. Thus the black oxide of manganese, exposed to heat, will part with only a certain definite quantity of its oxygen. No degree of heat can expel the whole.

According to Berthollet, when two substances are in competition to combine with a third, each of them obtains a degree of saturation proportionate to its affinity multiplied by its quantity; a product which he denominates *mass*. The subject of the combination divides its action in proportion to the masses; and, by varying the latter, this celebrated chemist thinks that the results also will be varied. The following are the forces which he regards as exercising a great influence upon chemical combinations and phenomena, by concurring with or opposing the mutual affinity of the substances brought into action: — 1. The action of solvents, or the affinity which they exert according to their proportion. Thus, if into a very dilute solution of muriate of lime a solution of sulphate of soda be poured, no precipitate of sulphate of lime will happen, though the quantity of the solvent water be less than is necessary to dissolve the calcareous sulphate. If the same two saline solutions be mixed with less water, the sulphate of lime will fall in a few seconds, or a few minutes, according to the strength of the mingled solutions. 2. The force of cohesion, which is the effect of the mutual affinity of the particles of a substance or combination. Hence we can easily see why a solution of pure potash, which so readily dissolves pulverulent alumina, has no effect on alumina concreted and condensed in the Oriental gems. The lowest red heat kindles charcoal, or determines its combination with atmospherical oxygen; but a much higher temperature is requisite to burn the same carbonaceous matter, more densely aggregated in the diamond. 3. Elasticity, whether natural or produced by heat, which has by some been considered as the affinity of caloric. Of the influence of this power a fine illustration is afforded by muriate of lime and carbonate of ammonia. When a solution of the latter salt is poured into one of the former, a double decomposition instantly takes place: carbonate of lime falls to the bottom in powder, and muriate of ammonia floats above. Let this liquid mixture be boiled for some time; exhalation of ammoniacal gas will be perceived by the nostrils, and the carbonate of lime will be redissolved; as may be proved by the further addition of carbonate of ammonia. This will cause an earthy precipitate from the liquid, which prior to ebullition was merely muriate of ammonia. 4. Efflorescence, a power which acts only under very rare circumstances. It is exemplified in the natron lakes of Egypt; on the margin of which, according to Berthollet, carbonate of lime decomposes muriate of soda, in consequence of the efflorescing property of the resulting carbonate. 5. Gravity likewise exerts its influence, particularly when it produces the compression of elastic fluids; but it may always without any practical error be brought under the same category with the force of cohesion.

M. Berthollet thinks, that as the tables of affinity have all been constructed upon the supposition that substances possess different degrees of affinity, which produce the decompositions

and combinations that are formed, independently of the proportions and other conditions which contribute to the results, these tables are calculated to give but a false idea of the degrees of chemical action of the substances arranged in them. "The denomination of *elective* affinity," says he, "is in itself erroneous, since it supposes the union of one entire substance with another, in preference to a third, while there is only a division of action, subjected to other chemical conditions." The force of cohesion, which was formerly considered merely as an obstacle to solution, limits not only the quantities of substances which may be brought into action in a liquid, and consequently modifies the conditions of the saturation which follows; but it is the power which causes the precipitations and crystallisations that take place, and determines the proportions of such combinations as are made by quitting the liquid. It is this force which sometimes even produces the separation of a substance, without its forming any combination with another substance, as has been remarked in the precipitations of metals. Elasticity acts by producing effects opposite to those of cohesion, and which consist either in withdrawing some substances from the action of others in a liquid, or in diminishing the proportion which exists within the sphere of activity; but when all the substances are in the elastic state, their action is subjected to the same conditions. If tables were formed which would represent the disposition to insolubility or volatility in the different combinations, they would serve to explain a great number of combinations which take their origin from the mixture of different substances, and from the influence of heat. These considerations need not prevent us, says Berthollet, from using the term *affinity* to denote the whole chemical power of a body exerted in a given situation, even by its present constitution, its proportion, or even by the concurrence of other affinities; but we must avoid considering this power as a constant force, which produces compositions and decompositions. All substances, according to him, exert a mutual action during the time they are in the liquid state; so that in a solution, for example, of sulphate of potash and muriate of soda, these two salts are not distinct, while there is no cause to determine the separation from their combination; but there exists in this liquid, sulphuric acid, muriatic acid, soda, and potash. In like manner, when the proper quantity of carbonate of potash is added to muriate of soda, the mingled solution does not consist of carbonate of soda and muriate of potash, resulting from complex affinity, but contains simply muriatic and carbonic acids with potash and soda, in quadruple union and saturation. It is the crystallising property of the soda carbonate, which, after due evaporation, determines the definite decomposition, and not any power of elective attraction. Or generally, when one substance is separated from a combination by the introduction of another, it is not merely from being supplanted by the superior affinity of an antagonist, but because its intrinsic tendency to the solid or gaseous form educes it from its former associate. There is certainly much truth in this proposition of Berthollet.

But with regard to the indefinite partition of a base between two rival acids, and of an acid between two rival bases, a doctrine which that profound philosopher laboured to establish by a wide experimental induction, many facts of an irreconcileable nature occur. Sir H. Davy has remarked, with his usual good judgment, that were this proposition correct, it is evident that there could be scarcely any definite proportions: a salt crystallising in a strong alkaline solution would be strongly alkaline; in a weak one, less alkaline; while in an acid solution it would be acid. But this does not seem to be the case. In combinations of gaseous bodies, whose constitution gives their particles perfect freedom of motion, the proportions are definite and unchangeable, however we may change the proportions of the aeriform mixture. And in all solid compounds that have been accurately examined, in which there is no chance of mechanical mixture, the same law seems to prevail. Different bodies may indeed be dissolved in different menstrua in very various proportions, but the result may be regarded as a mixture of different solutions, rather than a combination. With regard to glasses and metallic alloys, adduced by Berthollet, it is sufficient to know that the points of fusion of alkali, glass, and oxides of lead and tin, are so near each other, that transparent *mixtures* of them may be formed. The attractive power of matter is undoubtedly general, but in the formation of aggregates certain definite arrangements take place. Bergman observed long ago, that when nitric acid was digested on sulphate of potash, a portion of nitre was formed, in apparent contradiction to the superior affinity which he had assigned to sulphuric acid for the potash. But he also gave what appears to be a satisfactory explanation of this seeming anomaly, which Berthollet has adduced in support of his views of indefinite and universal partition.

Sulphuric acid tends to combine in two distinct but definite proportions with potash, forming the neutral sulphate and the bisulphate. Nitric acid may, therefore, abstract from the neutral salt, that portion of potash which it should lose to pass into the acidulous salt; but it will not deprive it of any more. Hence this very example is decidedly adverse to the indefinite combinations and successive partitions taught by Berthollet. The above decomposition resolves itself evidently, therefore, into a case of double affinity. That a large quantity of pure potash can separate a little sulphuric acid from the sulphate of baryta, has been stated by Berthollet; but it is a circumstance difficult to demonstrate. If the operation be conducted with access of air, then carbonate of potash is readily formed, and a well known double affinity comes into play, viz. that of baryta for carbonic acid on one hand, and of sulphuric acid for potash on the other. Supposing the agency of carbonic acid to be excluded, then are we to believe that the potash having be-

come a soluble sulphate, exists in liquid union with pure baryta? See M. Dulong's experiments, further on.

When M. Berthollet separated a little potash from sulphuric acid by soda, he merely formed a little bisulphate of potash, while the free potash united to the water and alkohol, for which it has a strong affinity, and sulphate of soda was also formed. This, therefore, is a very intelligible case of compound attraction. According to M. Berthollet, whenever an earth is precipitated from a saline combination by an alkali, it should carry down with it a portion of its acid associate. But sulphate of magnesia acted on by potash yields an earthy precipitate, which, after proper washing, betrays the presence of no retained sulphuric acid. The neutral salts of soda and potash part with none of their acid to magnesia, by the longest digestion in their solutions. If on the tartrate of lime, or oxalate of lead, a portion of sulphuric acid adequate to saturate these respective bases be poured, entire decomposition will be effected without any partition whatever. Now, sulphate of lime, which is the result in the first case, being actually a much more soluble salt than the tartrate, we should expect a portion of the latter to resist decomposition by the aid of its cohesive force. A plate of iron plunged into a solution of sulphate of copper, separates the whole of the latter metal. An equally absolute decomposition is effected by zinc on the saline solutions of lead and tin. The sum-total of oxygen and acid is here transferred to the decomposing body, without any partition whatever.

We have already observed, that sulphate of baryta digested in a hot solution of carbonate of potash, gives birth to a portion of carbonate of baryta and sulphate of potash. But by M. Dulong's experiment the opposite decomposition is possible, viz. carbonate of baryta being digested in solution of sulphate of potash, we obtain sulphate of baryta and carbonate of potash. Are we hence to infer, that sulphate of baryta and carbonate of potash, having for some time amused the operator by the production of an alkaline sulphate and earthy carbonate, will change their mood, and, retracing their steps, restore things to their pristine condition, and thus in alternate oscillation for ever?

If chlorine gas be made to act on the oxides of mercury, tin, or antimony, it will unite with the metallic base, and displace every particle of the oxygen. Now, the resulting chlorides cannot owe their purity to any superiority of cohesive force which they possess over the oxides, which, on the contrary, are both denser and more fixed than the new compounds. Finally, if 25 parts of pure magnesia, mixed with 35 of dry lime be digested in 85 parts of nitric acid, sp. gr. 1·500, diluted with water, we shall find that the whole lime will be dissolved, but not a particle of the magnesia. On decanting the neutral calcareous nitrate, washing and drying the earthy residuum, we shall procure the 25 parts of magnesia unchanged.

We are, therefore, entitled to affirm, that affinity is elective, acting in the different chemical bodies with gradations of attractive force, liable, however, to be modified, as we have shown in the case of muriate of lime and carbonate of ammonia, by temperature, and other adventitious causes.

Decompositions which cannot be produced by single, may frequently be effected by double affinity; and this may be expected with the greater certainty, *a priori*, if one of the two compounds resulting from the double interchange naturally exist in the solid or aeriform state. And if the one resulting compound be solid and the other gaseous, then decomposition will be certain and complete. This applies with equal force to single affinities, or decompositions. Thus, when sulphuric acid and muriate of lime in due proportions are exposed to heat, a perfect decomposition is accomplished, and pure sulphate of lime and muriatic acid gas are produced. But when the various mixed ingredients remain in *solution*, it is then reasonable to think with Berthollet, that a reciprocal attraction pervades the whole, modifying its nature and properties. Thus solution of sulphate of copper is blue, that of muriate of copper is green. Now, if into a solution of the former salt we pour muriatic acid, we shall observe this robbing the sulphuric acid of a quantity of the cupreous oxide, proportional to its mass; for the more muriatic acid we add, the greener will the liquid become. But if, by concentration, the sulphate of copper be suffered to crystallise, the phenomena change; a new force, that of crystallisation, is superadded, which aids the affinity of the sulphuric acid, and decides the decomposition. The surplus of each of these acids is employed in counterbalancing the surplus of its antagonist, and need not be considered as combined with the copper. Here, however, we verge on the obscure and unproductive domain of chemical metaphysics; a region in which it is useless to expatiate.

M. Berthollet estimates the attractive forces or affinities of bodies of the same class, to be *inversely* as their saturating quantities. Thus, among acids, 50 parts of real sulphuric will saturate as much potash or soda as $67\frac{1}{2}$ of real nitric, and as $27\frac{1}{2}$ of carbonic. Thus, too, $21\frac{1}{4}$ of ammonia will saturate as much acid as 25 of magnesia, 35 of lime, and 60 of potash. Hence he infers, that the carbonic acid is endowed with a higher affinity than the sulphuric; and this, than the nitric. The same proposition applies to ammonia, magnesia, lime, and potash. But, in direct hostility to this doctrine, we have seen lime exercise a greater affinity for the acids than magnesia. And though M. Berthollet has ingeniously sought to explain away the difficulty about potash, ammonia, and carbonic acid, by referring to the solid or gaseous results of their action; yet it is hard to conceive of solidity operating in producing an effect before solidity exists, and of elasticity operating while the substance is solid or liquid. On this point a good syllogism has been offered by Sir H. Davy. "The action," says this profound chemist, "between

the constituents of a compound, must be mutual. Sulphuric acid, there is every reason to believe, has as much attraction for baryta, as baryta has for sulphuric acid; and baryta is the alkaline substance of which the largest quantity is required to saturate sulphuric acid; therefore, on M. Berthollet's view, it has the weakest affinity for that acid. But less sulphuric acid saturates this substance than any other earthy or alkaline body: therefore, according to M. Berthollet, sulphuric acid has a stronger affinity for baryta than for any other substance; which is contradictory."

Mr. Higgins, who broached the idea of an Atomic Theory, in his work called a Comparative View of the Phlogistic and Antiphlogistic Hypotheses, connected its exposition with general views of the relative forces of affinity among the combining particles, and illustrated these forces by diagrams. This joint consideration of combining *force*, and combining *quantity*, has been neglected by subsequent writers; whence, Mr. Higgins says, "The atomic doctrine has been applied by me in abstruse and difficult researches. Its application by Mr. Dalton has been in a general and popular way; and it is from these circumstances alone that it gained the name of Dalton's Theory."

Since the Chemical Statics appeared, perhaps no chemist has contributed so many important facts to the doctrines of affinity as M. Dulong. His admirable inquiries concerning the mutual decomposition of soluble and insoluble salts were presented to the National Institute, and afterwards published in the *Annales de Chimie*, tom. 82.; from which they were translated into the 35th and 36th volumes of Nicholson's Journal, and an abstract of them was given in the 41st vol. of the Phil. Magazine.

After the labours of Bergman and Berthollet, chemistry seemed to leave little further to be desired relative to the mutual decomposition of soluble salts. But the insoluble salts are likewise susceptible of exchanging their principles with a great number of the soluble salts. "This class of phenomena," says M. Dulong, "though almost as numerous as that which embraces the soluble salts, and capable of affording new resources to analysis, has not yet been examined in a general manner."

The action of the soluble carbonates on the insoluble salts, is the only one which had been at all studied. Thus carbonates of potash and soda in solution had been employed conveniently to decompose sulphate of baryta. M. Dulong had an opportunity, in some particular researches, to observe a considerable number of facts relating to the mutual decomposition of the soluble and insoluble salts, and endeavoured, he says, to determine the general cause of these phenomena, and the method of foreseeing their results, without being obliged to retain, by an effort of memory of which few persons would be capable, all the direct observations which would be requisite to ascertain them.

M. Dulong found by experiment, that all the insoluble salts are decomposable by the carbonate of potash or the carbonate of soda, and in some instances with curious phenomena. When sulphate of baryta, phosphate of baryta, or oxalate of lime, is boiled with solution of bicarbonate or carbonate of potash, a considerable part of the insoluble sulphate is constantly transformed into a carbonate of the same base; but on reaching a certain limit, the decomposition stopped, although there remained sometimes a very considerable quantity of the soluble carbonate not decomposed. M. Dulong convinced himself, that the different degrees of concentration of the alkaline solution, produced but very slight variations in the results of this decomposition. He took 10 grammes of dry subcarbonate of potash, and 7·66, being their equivalent proportion of dry subcarbonate of soda; quantities containing each 3·07 grammes of carbonic acid. They were separately dissolved in 250 grammes of water, and each solution was kept in ebullition for two hours, on eight grammes of the sulphate of baryta. On analising the two residues, it was found that the potash experiment yielded 2·185 grammes, and the soda only 1·833; or in the proportion of six to five. Is this difference to be ascribed to the difference in the attractive forces of the two alkalis; to the more sparing solubility, or greater attractive force of the sulphate of potash; or to both causes conjointly?

Since the alkaline carbonates lose their decomposing agency when a certain proportion of the alkaline sulphate is formed, M. Dulong tried to ascertain the limits by the following experiment: — Seven grammes of sulphate of potash, with six of subcarbonate, dissolved in 250 of water, were boiled with the sulphate of baryta for several hours, without the least trace of decomposition being evinced. The supernatant liquid, filtered, and boiled on carbonate of baryta, produced a considerable quantity of sulphate; but ceased acting before this sulphate of potash was exhausted. The same phenomena were obtained with carbonate and sulphate of soda. "Lastly, the sulphate of potash and the sulphate of soda, alone, and perfectly neutral, reacted likewise upon the carbonate of baryta, and produced on one part sulphate of baryta, but on the other the subcarbonate of potash or soda, which remained in solution, together with the portion of the sulphate which resisted the decomposition. Twenty grammes of crystallised sulphate of soda, and ten grammes of sulphate of potash, were separately dissolved in 260 of water. Each solution was boiled for two hours on twenty grains of carbonate of baryta. The sulphate of soda produced 10·17 gr. of sulphate of baryta, and the sulphate of potash 9·87." Had 108 of sulphate of potash been employed, which is the true equivalent of 200 of sulphate of soda in crytals, a somewhat larger product would have been obtained than 9·87. This experiment, however, is most satisfactory with regard to the amount of decomposition. The mutual action of the insoluble carbonates with the soluble salts, whose acids form, with the bases of these carbonates, insoluble salts, is

equally general with that of the soluble carbonates on the insoluble salts. The following is M. Dulong's table of results: —

Carbonate of Baryta.	Carbonate of Strontia.	Carbonate of Lime.	Carbonate of Lead.
Sulphate of Potash	Id.	0	Id.
——— Soda	Id.	0	Id.
——— Lime	Id.	0	Id.
——— Ammonia	Id.	Id.	Id.
——— Magnesia	Id.	—	Id.
Phosphate of Soda	Id.	Id.	Id.
——— Ammonia	Id.	Id.	Id.
Sulphite of Potash	Id.	Id.	Id.
Phosphite of Potash	Id.	Id.	Id.
——— Soda	Id.	Id.	Id.
——— Ammonia	Id.	Id.	Id.
Borate of Soda	Id.	—	Id.
Arseniate of Potash	Id.	Id.	Id.
——— Soda	Id.	Id.	Id.
Oxalate of Potash	Id.	Id.	Id.
——— Ammonia	Id.	Id.	Id.
Fluate of Soda	Id.	Id.	Id.
Chromate of Potash	Id.	Id.	Id.

All those salts which have ammonia for their base, are completely decomposed by the insoluble carbonates found in the same column. The new insoluble salt replaces the carbonate which is decomposed, and the carbonate of ammonia flies off. Hence, if a sufficient quantity of insoluble carbonate be present, the liquid will become pure water.

When the soluble salt has an insoluble base, the decomposition does not meet with any obstacle, but continues until the liquid becomes mere water. Thus, solution of sulphate of magnesia, boiled with carbonate of baryta, will be resolved into an insoluble carbonate and sulphate, provided enough carbonate of baryta be present: otherwise, a portion of the magnesian carbonate being dissolved in its own sulphate, gives alkaline properties to the solution.

If the base be metallic, it almost always forms a salt with excess of oxide, which, being insoluble, precipitates.

The general inferences of M. Dulong's inquiries are the following: — 1. That all the insoluble salts are decomposed by the subcarbonates of potash or soda, but that a mutual exchange of the principles of these salts cannot in any case be completely made; or, in other words, that the decomposition of the subcarbonates is only partial. 2. That all the soluble salts, of which the acid forms with the base of the insoluble carbonates an insoluble salt, are decomposed by these carbonates, until the decomposition has reached a certain limit which it cannot pass.

When a soluble subcarbonate acts on an insoluble salt, in proportion as the carbonic acid is precipitated on the base of the insoluble salts, it is replaced in the solution by a quantity of another acid capable of *completely* neutralising the alkali. Thus, during the whole course of the decomposition, fresh quantities of *neutral* salt replace the corresponding quantities of an imperfectly saturated alkaline compound; and if we view the excess of alkaline power in the undecomposed subcarbonate, or its unbalanced capacity of saturation as acting upon both acids, it is evident that in proportion as the decomposition advances, the liquid *approaches* more and more to the neutral state. In the inverse experiment, a contrary change supervenes. Each portion of the acid of the soluble salt (sulphate of soda, for example), which is precipitated on the base of the insoluble carbonate, is replaced by a quantity of carbonic acid, which forms, with the corresponding base, an alkaline subcarbonate: and the more of the first acid is precipitated upon the earthy base, the more subcarbonate the liquid contains, and the farther does its state *recede* from neutralisation. This consideration seems to lead directly to the following theory of these decompositions.

It is known, says M. Dulong, that all the salts, even those which possess the greatest cohesion, yield to caustic potash, or soda, a more or less considerable portion of their acid, according to circumstances. Now the alkaline subcarbonates may be considered as weak alkalis, which may take from all the insoluble salts a small quantity of their acids. This effect would soon be limited if the alkali were pure, in consequence of the resistance offered by the pure and soluble base. But the latter meeting in the liquid an acid with which it can form an insoluble salt, unites with it, and thus re-establishes the primitive conditions of the experiment. The same effects are produced successively on new portions of the bodies, till the degree of saturation of the liquid is in equilibrium with the cohesive force of the insoluble salt; so that the feebler this resistance may be, the more progress the decomposition will make. And again, when an insoluble carbonate is in contact with a neutral soluble salt, the base of the carbonate will tend to take part of the acid of the neutral salts; and if, from this union, an insoluble salt can result, the force of cohesion, peculiar to this compound, will determine the formation. The carbonic acid, released from the attraction of the earthy base by the fixed acid, instantly attaches itself to the surrounding alkali, forming a subcarbonate which replaces the decomposed neutral salt. The precipitation of the fixed acid on the insoluble carbonate, and the absorption of carbonic acid by the liquid, continues until the alkalinity thereby developed becomes so strong as to resist the precipitation of the acid; thus forming a counterpoise to the force by which that precipitation was accomplished. All action then ceases; so that the more cohesion the insoluble salt possesses, the greater will be the proportion of acid taken from the soluble salt.

When the carbonate of potash can no longer decompose the sulphate of baryta, the carbonic acid which remains in the solution is to the sulphuric acid nearly in the ratio of three to one; and when the sulphate of potash can no longer act upon the carbonate of baryta, these two acids are nearly in the ratio of three to two; whence it follows, that the first liquor is much more alkaline than the second.

It is easy to account for this difference by examining the conditions of the equilibrium

stablished in the two cases. When the sulphate of potash no longer decomposes the carbonate of baryta, it is because the excess of alkali, developed in the liquid, forms a counterpoise to the power which tends to produce sulphate of baryta in these circumstances. And when the subcarbonate of potash can no longer decompose the sulphate of baryta, it is because there is not such an excess of alkali in the liquid, as is capable of overcoming the cohesion and attraction between the elements of that salt. Now we know, that it requires a greater force to overcome an existing attractive power, than to maintain the quiescent condition. Therefore, the subcarbonate of potash ought to cease to decompose the sulphate of baryta, before the sulphuric and carbonic acids are in the same relation in which they are found when the equilibrium is established by the inverse experiment. Hence we see, that a mixture of sulphate and subcarbonate of potash, in which the proportions of their two acids shall be within the limits pointed out, will have no action either on the sulphate or carbonate of baryta. For the other insoluble salts, there will be other relations of quantity; but there is always a certain interval, more or less considerable, between their limits. The mutual action of sulphate of soda and carbonate of baryta is almost instantaneous. It is sufficient to pour a boiling hot solution of the sulphate on the carbonate placed on a filter, in order that more than three fourths of the sulphuric acid be precipitated, and replaced by a corresponding quantity of carbonic acid.

A'TTRAHENS. Drawing. *Attrahentia medicamenta* are medicaments which irritate the surface and attract the fluids to the parts to which they are applied, as blisters, sinapisms, &c. The term is synonymous with *epispastic*.

ATTRACTION, ELECTIVE. Chemical affinity. See *Attraction*.

ATTRI'TIO. (*o, onis.* f.) Attrition. In medical language this term has been applied, 1. To a graze, or abrasion of the cuticle. 2. To the crushing of a part by violence. 3. To a severe kind of cardialgia, or heartburn, accompanied with great pain and sense of suffocation.

A'TYPUS. (From α, priv. and τυπος, a type.) Without type. Applied to fevers the course of which is so irregular as to be reducible to no law.

AUA'NTE. (Αυαντη; from αυαινω, to dry.) The name given by Hippocrates to a disease attended with emaciation, and supposed by him to proceed from an acid ferment in the stomach, and a morbid state of the pancreatic juice.

AUA'PSE. Αυαψη,. The same.

AU'CTUS. Increased; multiplied: applied in *Botany* to a calyx which has the addition of another smaller one.

AUDINAC. A village in the department of Arriège, in France. It has mineral waters containing carbonic acid, a little sulphuretted hydrogen, sulphates of lime and magnesia, carbonates of lime and iron, and a bituminous substance. These waters are much esteemed in rheumatic and scrofulous cases, some cutaneous diseases, &c.

AU'DITORY. (*Auditorius*; from *audio*, to hear.) Appertaining to the sense of hearing.

Auditory nerve. See *Portio mollis.*

Auditory canal. See *Auris.*

Auditory passage. See *Auris.*

AUDI'TUS. (*us, us.* m.) The sense of hearing. See *Auris.*

Augmentation. See *Augmentum.*

AUGME'NTUM. (*um, i.* n.) *Incrementum.* The augment; augmentation; increase. This term is applied to the period of a fever between its commencement and its height.

AULI'SCOS. (From αυλος, a reed-pipe.) A catheter, or clyster-pipe.

AUMALE. A small town of Upper Normandy. It has acidulous chalybeate springs.

AU'RA. (*a, æ.* f.) A subtile vapour or exhalation.

AURA ELE'CTRICA. If electricity be received from a sharp point, a sensation is felt as if a cold wind were blowing on the part exposed to it. This is called the *aura electrica*. See *Electricity*.

AURA EPILE'PTICA. A sensation which is sometimes felt immediately before a fit of epilepsy. The patient feels as if a stream of cold air were ascending from some distant part of the body towards the head. See *Epilepsy*. A similar phenomenon is alleged sometimes to occur in hysteria, in which case it is called *aura hysterica*.

Aura hysterica. See *Aura epileptica.*

AURA SEMINA'LIS. *Aura seminis.* The most subtile and vivifying portion of the semen virile, which, according to some physiologists, ascends through the Fallopian tubes, to impregnate the ovum in the ovarium. The existence of this aura is entirely hypothetical.

AURA VITA'LIS. So Helmont calls the vital principle.

AURA'NTIA CURASSAVE'NTIA. Curassoa apples, or oranges. These are immature oranges, the growth of which has been checked from some accidental cause. When dried they are of a stony hardness, and have a pleasant aromatic and bitter flavour, without any acidity. Infused in wine or brandy they make a good stomachic. When reduced in size and rendered smooth by turning, they are used as issue peas.

AURANTIA'CEÆ. A natural family of plants, of which the orange is the type.

Aurantii baccæ. See *Citrus aurantium.*

Aurantii cortex. See *Citrus aurantium.*

AURA'NTIUM. (*um, i.* n.; so called, *ab aureo colore*, from its golden colour, or from *Arantia*, a city of Achaia.) The orange. See *Citrus aurantium.*

AU'RATE. (*Auras, atis.* m.) A salt formed by the combination of the auric acid with a base.

AURATE OF AMMONIA. Fulminating gold. See *Aurum.*

AU'REA ALEXANDRI'NA. A kind of opiate, so called after a physician named Alexander, or because it was first used at Alexandria.

AU'REUS A'RABUM. A weight equal to the seventh part of an ounce. It was the same with the *denarius* of the Romans.

Aureum olus. Orache. See *Atriplex.*

Auric acid. See *Aurum.*

Auricha'lcum. Brass.

AURI'CULA. (*a, æ.* f.; dim. of *auris*, the ear.) An auricle, or little ear. Applied, 1. In *Anatomy*, to the external ear, and to two cavities of the heart which have somewhat the appearance of little ears. See *Auris* and *Cor.*

2. In *Botany*, to certain plants, the leaves of other parts of which more or less resemble an ear.

Auri'cula i'nfima. The lobule of the ear.

Auri'cula Judæ. See *Peziza auricula.*

Auricula leporis. See *Bupleurum.*

Auricula muris. See *Hieracium* and *Myosotis.*

Auriculæ cordis. The auricles of the heart. See *Cor.*

Auricula'ris. (From *auris*, the ear.) Auricular. Pertaining to the ear, as *auricular muscles, auricular arteries*, &c.

Auricularis digitus. The little finger: so called because it is frequently introduced into the ear.

Auricula'tus. Auriculate. In *Botany*, a leaf is said to be auriculate when it is furnished at its base with a pair of leaflets, properly distinct, but occasionally liable to be joined to it, as in *Citrus aurantium.*

Auri'culo-ventri'cular orifices. The apertures by which the auricles and ventricles of the heart communicate are so called.

Auri'ga. A kind of bandage used by the ancients in wounds of the thorax.

Auri'go. (*o, onis.* f.; *ab aureo colore*, from its yellow colour.) The jaundice. See *Icterus.*

Aurillac. A town in the department of Cantal, in France, which has cold chalybeate springs.

Auripigme'ntum. (*um, i.* n.; from *aurum*, gold, and *pigmentum*, paint: so called from its colour and its use as a pigment.) Yellow orpiment. See *Arsenic.*

AU'RIS. (*is, is.* f.) The ear. An auditory apparatus of some kind is found in all vertebrated animals, and in some of the invertebral tribes. This apparatus varies in its structure according to the perfection of the animal and the medium in which it lives; the essential part of the apparatus, however, is the same in all animals which possess a distinct organ of hearing, the variety being merely in the accessory parts: this essential part, corresponding with the labyrinth of the perfect ear, consists of a membranous sac filled with fluid, on the internal surface of which a very soft nerve is expanded. In the cephalopodous mollusca the apparatus of hearing consists of two sacs, concealed in the annular cartilage at the base of the great tentacula; each sac is filled with a gelatinous transparent fluid, containing a calcareous substance, varying in consistence in the different animals of the tribe. The auditory nerve penetrates the sac, and ramifies on its interior surface: there is no external aperture, nor are the integuments covering these organs thinner than in other parts of the body. In the larger crustacea, the organ of hearing presents itself as a small sac, inclosed in a scaly cylinder at the base of each antenna; these sacs are penetrated by the auditory nerves, and covered externally by an elastic membrane, or membrana tympani. These are the simplest kinds of auditory apparatus which anatomists have been able to discover distinctly: there is little doubt that insects possess the sense of hearing, because some of them are capable of producing sounds, of which others appear to take cognisance; but the organs which minister to this sense have not yet been satisfactorily demonstrated. In fishes the labyrinth becomes more complex; the semicircular canals are developed, and connected with these are sacs containing a transparent viscid fluid and a cretaceous matter; these sacs correspond with the vestible and cochlea of the more perfect ear. Fishes have no tympanic cavity or membrane. In cartilaginous fishes there are two small external auditory foramina, each of which leads to a winding canal of an almost circular form, lying under the skin, and containing some chalky fluid; and from this a meatus auditorius externus, piercing the cranium, passes direct to the labyrinth: in osseous fishes there is no external meatus. In reptiles, the ear varies more than in any other class of animals; they have, for the most part, no external ear nor meatus externus; the tympanum and eustachian tube are present in some and absent in others, and the semicircular canals and cochlea are greatly diversified, the latter being often merely a vestige, and never fully developed. In birds there is no cartilaginous external ear; the internal ear has nearly the same parts as in quadrupeds and man, but the cochlea is less developed. In quadrupeds there is an external cartilaginous ear, varying much in shape and dimension, and the internal organ consists of the same parts as the human ear, of which we proceed to give a brief description. The organ of hearing in man may be divided into the *Auricle*, or external ear; the *Tympanum*, or middle ear; and the *Labyrinth*, or internal ear.

1. External ear. This includes the *Pinna*, or that part called in common language the ear, and the *Meatus auditorius externus*, or external auditory canal. The pinna is of an irregular, but somewhat oval, form. The greater part of it consists of fibro-cartilage, covered with the common integuments; but the soft lower portion contains no cartilage, and consists only of the cellular, adipose, and cutaneous textures. The upper cartilaginous part is called *Ala*, and sometimes *Pavilion*; the lower soft part is called *Lobus.* Anatomists have given particular names to the eminences and depressions seen on the surface of the pinna. The prominent margin which surrounds the greater part of the ear is called the *Helix*; another curved ridge within this, and which is composed of two ridges meeting below, is called the *Antihelix*; the little triangular flap that projects over the forepart of the auditory canal, is termed the *Tragus*; and the smaller eminence opposite to it, which forms the termination of the antihelix, is styled the *Antitragus.* In some subjects the margin of the

ragus is beset with hairs. The groove between the helix and antihelix is called *fossa innominata*; the shallow depression between the two ridges at the upper part of the antihelix is called the *fossa navicularis*, and the deep central hollow bounded by the antihelix, and leading to the meatus externus or auditory tube, is called the *concha*. The attachment of the pinna is rendered firmer by ligamentous bands, one of which passes from the tragus to the root of the zygoma, another from the back part of the concha to the mastoid process, and a third from the aponeurosis of the temporal muscle to the upper part of the concha. There are several muscles connected with the pinna, some of which are said by anatomists to be common to the head and external ear, viz. the *attollens aurem*, *anterior auris* and *retrahentes aurem*; others are called proper to the external ear, viz. the *major helicis*, *minor helicis*, *tragicus*, *antitragicus*, *transversus auriculæ*, *obliquus auris*, and *contractor meatus*. Descriptions of these muscles will be found under their respective heads. From the concha the meatus auditorius externus passes towards the tympanum in a direction obliquely forwards and inwards, inclining a little upwards in the first part of its course, and downwards towards its termination. The tube is rather more than an inch in length; it is somewhat wider at its outer than at its inner extremity, and is a little contracted at its middle. The meatus consists of an outer cartilaginous and an inner bony portion, the latter being rather the longer of the two; it is lined throughout its course by a prolongation of the common integument, which becomes thinner as it proceeds further inward, and, being reflected from the membrana tympani at the bottom of the meatus, constitutes a blind sac. In the outer half of the meatus, numerous small glands are found between the cutaneous lining and the cartilage; these secrete the *cerumen*, or wax of the ear, and are called *Glandulæ ceruminosæ*. At the bottom of the meatus externus, the *Membrana tympani* is stretched over the orifice of the tympanum, forming a partition between it and the meatus. It is a thin, firm, somewhat elastic, semitransparent membrane, of a circular or very slightly oval shape, and rather more than the third of an inch in diameter. It is formed of three laminæ: the external consists of skin reflected from the lining of the meatus externus; the middle is proper to the membrana tympani itself, and is of a fibrous texture; the internal is continuous with the mucous lining of the tympanum. The membrana tympani is placed somewhat obliquely, the upper part being turned outwards and the lower inwards; it is concave towards the meatus and convex towards the tympanum. The fibres which form the middle layer of the membrana tympani converge from the circumference to the centre, and appear to be inserted into the long and short process of a small bone of the tympanum called the malleus. Sir Everard Home was of opinion that these fibres are muscular, and serve to vary the degree of tension of the membrane, and adapt it accurately to receive the different vibrations of sound. Sir Everard supported his views by the comparative anatomy of the membrane in the elephant, but they have not been generally received by physiologists, because, as we shall presently find, the tension and relaxation of the membrana tympani is sufficiently provided for in a more obvious way.

2. Middle Ear. This is formed by the cavity called the *Tympanum*, or *Drum*. The tympanum is of an irregular form; it is situated in the petrous portion of the temporal bone, and is bounded externally by the membrana tympani, and internally by an osseous septum, which divides it from the labyrinth: anteriorly it communicates with the Eustachian tube, and posteriorly with the mastoid cells — parts which will presently be described.

The osseous septum, which divides the tympanum from the labyrinth, presents about its middle a rounded eminence called the *Promontory*, and above and behind this a small process, called from its shape the *Pyramid*, and which is hollow, with a foramen at its top. The tympanum, thus situated and bounded, has several openings in its bony parietes; these are as follows: — 1. The *Fenestra ovalis* is situated immediately above the promontory, and would communicate with the cavity called the vestibule, were it not closed in the fresh state by a thin membrane: the long diameter of this oval aperture is directed backwards and a little downwards. 2. The *Fenestra rotunda*, which is smaller than the last, is placed below the back part of the promontory, and would communicate with a part of the cochlea called scala tympani, were it not closed by a membrane: the real form of this aperture is triangular rather than round. 3. Behind and beneath the pyramid is a very small foramen, which gives entrance to the chorda tympani nerve. 4. At the upper and back part of the tympanum are three or four foramina leading into the mastoid cells, which are cavities hollowed out in the mastoid process of the temporal bone, communicating with each other, and lined by a prolongation of the mucous membrane of the tympanum. 5. In the floor of the tympanum, at its anterior part, is the *Glenoid fissure*, or *Fissura Glaserii*, which transmits the chorda tympani nerve and laxator tympani muscle, and lodges the slender process of the malleus. 6. At the inner and fore part of the cavity of the tympanum are two apertures, separated from each other by a small plate of bone called *Processus cochleariformis*; these lead to two canals, one of which transmits the tensor tympani muscle, and the other forms part of the Eustachian tube. The *Eustachian tube* forms an important accessory part of the auditory apparatus. It passes from the cavity of the tympanum obliquely forwards and inwards, and opens just above the arch of the palate at the outer edge of the posterior aperture of the nostril. The whole tube is from an inch and a half to two inches long; about a third part of it towards the ear is bony; the remainder is composed of cartilage and fibrous membrane: the osseous part widens towards its aperture in the tympanum, but the cartilaginous portion widens

towards its aperture at the posterior nostril, so that the tube is constricted in its middle portion but dilated towards each extremity; the orifice near the nostril is the larger. The whole tube is lined by a prolongation of the mucous membrane of the pharynx, which is also expanded through the tympanum and mastoid cells. Within the cavity of the tympanum are certain small bones called *Ossicula auditus*, which are articulated with one another so as to form a chain extending across the cavity from the membrana tympani to the fenestra ovalis. These bones are called the *Malleus*, *Incus*, *Stapes*, and *Os orbiculare*, which last is considered by some anatomists as merely a process of the incus. The *Malleus*, so named from its being shaped something like a hammer, is the most external of the ossicula; it consists of a round head, a neck, a handle, and a long and short process. The *handle*, or *manubrium*, is directed downwards and forwards, and adheres by a rounded extremity to the centre of the membrana tympani; the head is directed upwards and inwards, and articulates with the incus by two small cartilaginous surfaces; the *short process*, *processus brevis*, comes off at right angles from the upper part of the handle, and is in contact with the membrana tympani; the *long process*, or *slender process*, *processus gracilis*, projects from the neck of the malleus downwards and forwards, and terminates in a point which enters the glenoid fissure. The *Incus*, so called from a fancied resemblance to an anvil, comes next to the malleus. It consists of a body and two crura, or processes. The body is of a flattened form, and has, on its anterior border, a cavity which receives and is articulated with the head of the malleus. The shorter of these processes runs obliquely backwards, and terminates in a point at the opening of the mastoid cells; the longer, which is also the slenderer, is directed downwards and curved inwards at its extremity, to which is appended the *Os orbiculare*. The *Os orbiculare* is very minute, being smaller than a grain of mustard seed. Some consider it as a distinct bone, and others merely as a part of the long process of the incus. The os orbiculare is articulated with the head of the stapes.

The *Stapes* is so named from its resemblance to a stirrup, and is divided into a *head*, *crura*, and *base*. The stapes is placed horizontally, its head or apex being articulated with the os orbiculare, and its base attached to the fenestra ovalis, with which it corresponds in size and shape. The anterior crus is shorter than the posterior, and the interval between them is filled up with a membrane.

Connected with this chain of bones are certain minute muscles by which their movements are effected. These are four in number, viz. 1. The *Tensor tympani*, or *Internus mallei*, which arises from the cartilaginous extremity of the Eustachian tube, runs backwards in a bony canal parallel with the tube, enters the tympanum where it becomes tendinous, and is inserted into the short process of the malleus: its use is to render the membrana tympani tense by drawing the malleus inwards. 2. The *Laxator tympani*, or *Externus mallei*, which arises from the spinous process of the sphenoid bone, and soon becoming tendinous, passes through the glenoid fissure to be inserted into the long process of the malleus: its use is to relax the membrana tympani by drawing the malleus forwards and outwards. 3. The *Laxator tympani minor* is described as rising from the upper part of the bony extremity of the meatus auditorius externus, and inserted into the handle of the malleus: it is so small and indistinct that many anatomists deny its muscularity, and consider it merely as a ligament. 4. The *Stapedius*, which is lodged within the tube of the pyramid, and sends out a tendon to be inserted into the neck of the stapes: its use is to render the membrane of the fenestra ovalis tense by drawing the head of the stapes upwards and backwards.

3. Internal Ear, or Labyrinth. This, as before stated, is the essential part of the organ. As fully developed in the human subject it consists of three parts, viz. the *Vestibule*, *Cochlea*, and *Semicircular canals*.

The *Vestibule*, so named from its forming a kind of porch to the other cavities of the labyrinth, is a small cavity of an irregularly oval figure. Externally it is bounded by the partition between it and the tympanum already described; internally, by a cribriform plate of bone, which separates it from the meatus auditorius internus; anteriorly by the cochlea; and posteriorly by the semicircular canals.

The vestibule has several apertures, viz. 1. The fenestra ovalis, already described, by which it communicates with the tympanum. 2. Four or five small perforations in the plate which separates the vestibule from the meatus internus, through which the filaments of the auditory nerve enter. 3. A round hole at the fore and under part, leading to a canal termed *Scala cochliæ*, by which the vestibule communicates with the cochlea. 4. Five similar foramina behind, by which it opens into the semicircular canals: one of these foramina is common to two of the canals. 5. Near the common foramen last mentioned, is a small hole leading into the passage termed *Aquæductus vestibuli*.

The *Cochlea* is so named from its bearing some resemblance to a snail-shell. It is of a pyramidal form; it is placed obliquely at the forepart of the vestibule, with its base directed towards the meatus auditorius internus, and its apex outwards and a little downwards. The cochlea consists of an osseous tube, coiled spirally round a central pillar. The tube makes two turns and a half round this axis from the base of the cochlea to its summit, or *cupola*. The central pillar of the cochlea consists of two parts, the one called *Modiolus*, from its resemblance to the spindle of a winding staircase, the other *Infundibulum*, because it is funnel-shaped. The *Modiolus* is a hollow cone, containing that branch of the auditory nerve which is destined for the cochlea, and its sides, which consist of two plates, with intervening cells, are every where perforated with minute holes for the transmission of the nervous fibres. The *Infundibulum* is an imperfect bony funnel, connected, by its small end, with the top of the

modiolus: The first turn, or gyrus, of the cochlea, and half of the second, are described round the modiolus, the remaining half of the second gyrus winds round the small end of the infundibulum, and the upper extremities of the gyri, which communicate with each other, are inclosed by the cupola of the cochlea. The tube of the cochlea, which thus winds around the central pillar, is divided by a longitudinal partition into two canals, termed *Scalæ*, from their supposed resemblance to staircases; the septum which divides them is composed of a bony plate and a membranous portion, and is called *Lamina spiralis*. One of the scalæ commences in the vestibule at a foramen already described, makes its two turns and a half round the central axis, and ends in the cupola; this is called *Scala vestibuli*: the other scala begins at the cupola, makes its two turns and a half round the central axis, and ends in the fenestra rotunda, by the membrane covering which the scala is prevented from communicating with the cavity of the tympanum; this scala, which is the smaller of the two, is called *Scala tympani*. The cochlea, like all the rest of the labyrinth, is lined by a soft mucous membrane.

The *Semicircular canals* are three very small bony tubes, each of which forms a curve greater than half the circumference of a circle. They are situated behind the vestibule, in the substance of the petrous portion of the temporal bone. One of them is placed transversely, with its convex side upwards, and is called *superior*, or *vertical*; another is placed obliquely, with the convex side backwards, and is styled *posterior*, or *oblique*; the third, which is smaller than either of the others, is placed horizontally, and is termed *exterior*, or *horizontal*. These three canals communicate at both ends with the vestibule, but the upper extremity of the posterior canal joins with the internal extremity of the vertical canal, forming a common passage, so that the holes by which all the three canals open into the vestibule are only five in number. The canals are lined by a fine mucous membrane, inclosing the expansion of the auditory nerve, and each canal has, at one of its extremities, a small dilatation called *Ampulla*, or *Caritas elliptica*, corresponding with an enlargement of the contained nerve.

The whole of the labyrinth is lined with periosteum, which forms the membranes of the two *fenestræ*, and the membranous portion of the *lamina spiralis*. Besides the periosteum, the whole labyrinth is lined with a very soft mucous membrane. In the vestibule this membrane forms a sac, called *Sacculus vestibuli*, which sac is divided by a partition of the same texture with itself, and called by Meckel *Septum vestibuli nervoso-membranaceum*. In the semicircular canals the mucous membrane is not in contact with the periosteum, but forms distinct tubes, which contain the nervous matter, and have an ampulla at one end corresponding with the enlargement of the nerve and its canal. A watery fluid, much resembling the aqueous humour of the eye, and called *Aqua labyrinthi*, fills the vestibule and scalæ of the cochlea, and surrounds the membranous tubes of the semicircular canals.

Connected with the labyrinth are several canals for the transmission of nerves or veins; these are, 1. The *Meatus auditorius internus*, or internal auditory canal, which commences at a foramen on the back part of the petrous portion of the temporal bone; it runs outwards and forwards towards the vestibule; it is about three lines in length, and rather less in diameter. It transmits the auditory and the facial nerve with a small branch of the posterior cerebral artery. At its termination, the meatus is divided by a small bony ridge into two recesses of unequal size: the inferior, which is the larger, receives the auditory nerve; the superior and smaller, the facial nerve. These recesses at first appear to form a *cul de sac*; but the smaller pit is found to contain a foramen by which the facial nerve passes into the aqueduct of Fallopius; and the larger is found to transmit the fibres of the auditory nerve to the vestibule, by numerous foramina in the cribriform plate already described as forming a partition between the vestibule and the meatus. 2. The *Foramen innominatum*, or *Hiatus Fallopii*, which is a fissure leading obliquely backwards and outwards from the anterior surface of the pars petrosa, and giving passage to the vidian nerve into the aquæduct of Fallopius. 3. The *Aquæductus Fallopii*, which commences at the foramen already described at the bottom of the meatus internus, passes through the petrous portion of the temporal bone, and terminates externally at the stylo-mastoid foramen, giving transmission to the facial nerve. 4. Two small canals, called the *Aquæducts of Cotunnius*, because that anatomist supposed that their use was to carry off the superfluous water of the labyrinth. One of these canals, called *Aquæductus Cochleæ*, commences within the scala tympani near its termination, and opens on the posterior border of the pars petrosa, near the jugular fossa. These aquæducts of Cotunnius seem merely to give transmission to small veins; at least, if they have any other uses, it is not understood.

Having now described all the cavities of the ear, we have to consider the distribution of the nerves and bloodvessels, and the relation of the different parts of the apparatus to the sense of hearing. The nerves distributed to the internal ear are the *Seventh pair*, the *Vidian nerve*, and those derived from the *Otic ganglion*. The seventh pair of nerves consists of the *Portio mollis*, or *auditory nerve*, and the *Portio dura*, or *facial nerve*. The portio mollis and portio dura enter the meatus auditorius internus together: at the bottom of this canal they separate; the portio mollis passing through the cribriform plate to the labyrinth, and the portio dura into the aquæduct of Fallopius.

The *Auditory nerve* divides at the bottom of the meatus into two sets of filaments, which pass through the foramina of the cribriform plate. One set proceeds to the base of the cochlea, enters the hollow of the modiolus, and creeps through the numerous minute foramina in its sides to form an intricate network on

the scalæ and lamina spiralis; the other set is expanded on the lining membrane of the vestibule and semicircular canals.

The *Facial nerve*, separating from the auditory at the bottom of the meatus, passes into the aquæduct of Fallopius. During its course through this canal, it is joined by the Vidian nerve, which reaches it through the hiatus Fallopii, and afterwards separates from it to enter the tympanum: the facial nerve, while still in the aquæduct, gives a filament to the tensor tympani muscle and one to the stapedius; finally it passes out at the stylo-mastoid foramen to be distributed on the side of the head and face.

The *Vidian nerve* rises from the spheno-palatine ganglion, passes backward through the pterygoid foramen of the sphenoid bone, and having given twigs to the sphenoidal sinuses, nasal fossæ, pharynx, and Eustachian tube, divides into two filaments, one of which goes to join the carotic plexus in the carotic canal; the other, which is the portion in which we are at present interested, ascends through the foramen lacerum anterius, in the base of the cranium, and running along the groove on the ridge of the os petrosum, covered by the dura mater, enters the aquæduct of Fallopius by the hiatus already described. Here it accompanies the facial nerve for a short distance, and then, parting from it, enters the hollow of the pyramid, through which it passes into the tympanum, where it receives the name of *Chorda tympani*. It crosses the cavity from behind forwards, passing between the handle of the malleus and the long process of the incus; it then quits the tympanum by the glenoid fissure: its final destination is to the submaxillary gland, but its course beyond the glenoid fissure has no relation to our present object. The opinions of anatomists have been divided as to the connexions of this nerve in its passage through the internal ear. Some years ago, Jacobson described a plexus within the cavity of the tympanum, formed by filaments entering at opposite points from the vidian, glosso-pharyngeal, and sympathetic nerves. According to this anatomist the vidian, while in the hiatus Fallopii, and before it joins the facial, gives off two delicate filaments, which pass through minute canals into the tympanum; the filament from the sympathetic enters the tympanum by a small foramen from the carotic canal; lastly, the filament from the glosso-pharyngeal enters the same cavity by a small canal, leading from the fossa occupied by that nerve: all these filaments meet upon the promontory, and form a plexus. Kilian denied the accuracy of these statements, affirming that no filaments from the sympathetic penetrate the tympanum, that no filaments are given off from the vidian before it joins the facial; and that, although a twig from the glosso-pharyngeal sometimes enters the tympanum, it is more frequently lost in the bony structure before it reaches that cavity. The subsequent observations of Lobstein nearly coincide with those of Jacobson. Lobstein states that a small canal passes off from the carotic canal, and receives a twig of the sympathetic nerve. This twig, while enclosed in the bony structure, divides into two filaments, one of which enters the tympanum, and, proceeding to the promontory, joins with the descending branch of the vidian; the other, still enclosed in its osseous canal, passes to the posterior part of the tympanum, and there joins another branch from the vidian: again, the branch resulting from the latter union, passes out through a foramen which opens close to the fossa of the glosso-pharyngeal nerve, and forms a junction with that nerve.

The *Otic*, or *Auricular ganglion*, was first described by Dr. Arnold, of Heidelburg, in 1831. It is a small soft ganglion, of a reddish-gray colour, connected with the third branch of the fifth pair of nerves, and situated immediately below the foramen ovale of the sphenoid bone. It gives off several minute branches, two of which go to the internal ear, viz. one to the tensor tympani muscle, and another to the tympanic plexus above described. Dr. Arnold is of opinion that the automatic motions of the membrana tympani depend on the otic ganglion, and that this ganglion exists only in animals which possess a tensor tympani muscle. The existence of the ganglion cannot, however, be considered as yet firmly established, since several good anatomists have been unable to make it out.

The arteries of the tympanum and labyrinth are derived from the posterior auricular, internal maxillary, and basilary. 1. The posterior auricular sends a *stylo-mastoid* branch into the foramen of that name, which passes along the aquæduct of Fallopius to the tympanum, where it divides into minute branches, some of which pass to the mastoid cells, and others to the labyrinth. 2. The internal maxillary gives off a *tympanic* branch, which passes through the glenoid fissure, to be distributed on the lining of the tympanum, the laxator tympani muscle, and the membrana tympani. These two twigs, the *stylo-mastoid* and *tympanic*, form, in young subjects, a sort of coronary artery round the termination of the meatus auditorius externus, from which minute vessels pass inward upon the membrana tympani. 3. The basilary artery sends a branch called the *internal auditory* into the meatus auditorius internus, which, passing along with the nerves, enters the labyrinth through the cribriform plate, and is distributed over its lining membrane. The stylo-mastoid and tympanic arteries are accompanied by corresponding veins; but the blood supplied to the labyrinth by the internal auditory artery is returned by two small veins, which pass through the aquæducts of Cotunnius.

The minute attention given by anatomists to the structure of the ear, has unfortunately not led to any very accurate knowledge of the use of its several parts. The auditory nerve, and the cavity in which it is expanded, are, as before stated, the only essential parts of the apparatus; and it is by the effect of aëreal vibrations on this nerve, that an impression is produced which communicates to the mind the idea of sound. The other parts of the ear are supposed to conduce to the perfection of the sense

in the following manner. The outer cartilage of the ear collects the sonorous vibrations, and directs them into the meatus auditorius internus, which transmits them by the air it contains, as well as by its bony parietes, to the membrana tympani. The membrana tympani is thus thrown into a state of vibration, and its degree of tension seems to be adapted to the intensity of the vibration by the action of the tensor and laxator muscles, which affect the membrane through the medium of the malleus. The chorda tympani nerve is necessarily affected by the vibrations of the membrane, and probably carries some peculiar impression directly to the brain; but the nature of this is not understood. The vibration is continued from the membrana tympani through the air contained in the cavity of the tympanum, through the chain formed by the ossicula auditus, and through the bony walls of the cavity: the membrane of the fenestra ovalis, on which the base of the stapes rests, is more particularly affected through the medium of the bones, and the membrane of the fenestra rotunda through the medium of the air. The cavity of the tympanum is supplied with air through the Eustachian tube, which probably also gives egress to the air when too violent an impression is made by loud sounds on the membrana tympani: this tube appears also, under certain circumstances, to be useful in conveying the sonorous vibrations to the tympanum, since a person whose hearing is defective generally keeps his mouth a little open, and one who wishes to listen very attentively to any indistinct sound does the same. The mastoid cells are supposed to conduce to audition merely by extending the cavity of the tympanum, and thus increasing the sonorous vibrations. From the tympanum the vibrations are propagated to the labyrinth and auditory nerve, affecting the vestibule through the fenestra ovalis, the cochlea through the foramen rotundum which communicates with one of its scalæ, and the whole cavity of the labyrinth through its bony walls. In the labyrinth, water, instead of air, is the medium of communication; and the sentient extremities of the auditory nerve are immediately affected by the vibrations of the liquor Cotunnii. We can now explain no further: the impression made on the nerve is communicated to the brain, and the sensation of sound is excited in the mind.

AURISCA'LPIUM. (*um, i.* n.; from *auris*, the ear, and *scalpo*, to scrape.) An instrument for cleansing the ear.

AURO'RA CONSU'RGENS. A term applied by the alchemists to what they called the vegetation of gold. See *Vegetation*.

AURU'GO. The jaundice.

AU'RUM. (*um, i.* n.) Gold. A metal of a yellow colour and low degree of brilliancy. It occurs in nature only in the metallic state, sometimes pure, but more generally alloyed with a little silver or copper. Auriferous veins are found only in primary rocks, but gold exists in large quantity in some alluvial deposits, especially in the sand and beds of rivers. It occurs massive, ramose, crystallised in cubes or octoëdra, or granular: when in the form of small grains, it is called gold dust. There are few countries in the rivers of which gold has not been occasionally detected in larger or smaller quantity. South America produces gold in greater abundance than any other region. In Mexico it is extracted from the alluvial soil by washing, and varies from particles of dust to masses of five or six pounds' weight. In Mexico, also, as well as in Peru and Brazil, it occurs in rich veins in primitive rocks; and throughout these countries there is scarcely a silver mine which does not also contain gold. In Europe and Asia, Hungary and the Ural mountains contain rich deposits of gold. The sands of Africa abound in gold dust; and a particular portion of Guinea has long been known as the "Gold Coast." The following account of the chemical properties of gold and its compounds, and of their action on the animal economy, is derived from Brande's Manual of Chemistry and Magendie's Formulary.

Gold may be obtained pure by dissolving one part by weight of standard gold in three of nitro-muriatic acid, evaporating the solution to dryness, (which requires a gentle heat towards the end of the process,) redissolving the dry mass in distilled water, filtering, and adding to it a solution of protosulphate of iron; a black powder falls, which, after having been washed with dilute muriatic acid and distilled water, affords, on fusion, a button of pure gold. For the purpose of solution it may conveniently be kept in the pulverulent state.

Gold is of a deep and peculiar yellow colour. It melts at a bright-red heat, equivalent, according to Daniell, to 2016° of Fahrenheit's scale, and when in fusion appears of a brilliant greenish colour. Its specific gravity is 19·3.

Gold is so malleable, that it may be extended into leaves which do not exceed $\frac{1}{282000}$th of an inch in thickness, or a single grain may be extended over 56 cubic inches of surface. It is also so ductile that a grain may be drawn out into 500 feet of wire. It shows no tendency to unite with oxygen when exposed to its action in a state of fusion; but if an electric discharge be passed through a very fine wire of gold, a purple powder is produced, which has been considered as an oxide, though probably it is only finely divided gold.

There is considerable difficulty in determining the equivalent of gold in consequence of the indefinite character of its protocompounds: hence Gmelin adopts the number 66 as its equivalent; Thomson 100; and Turner 199·2. Following Dr. Turner in the view which he takes of the atomic constitution of the oxides and chlorides of gold, Mr. Brande, assumes 200 as its equivalent. The combinations of oxygen with gold are as yet imperfectly understood. Three oxides are generally treated of by chemical writers of the present day.

Protoxide of gold. This may be obtained by the action of potassa on *protochloride* of gold; the product must be washed with water, and dried at a temperature of 100°; if the heat exceed

this, a portion of the oxide is reduced, and it is converted into peroxide and metallic gold; it is of an olive colour. It consists of

				Berzelius.
Gold	1 ...	200 ...	96·25 ...	96·13
Oxygen	1 ...	8 ...	3·75 ...	3·87
	1	208	100.00	100·00

Deutoxide of gold. The existence of this step of oxidisement is very doubtful: it is stated to be the product of the combustion of gold by electricity, as when a powerful electric battery is discharged through a fine wire or leaf of gold: in these cases it is dissipated into a purple powder, which has been called the *purple oxide of gold*, but it is probably only the metal in a state of very minute division: at all events, we have no experimental evidence to prove that it is an oxide.

Peroxide of gold. According to Pelletier, the best process for obtaining peroxide of gold consists in the decomposition of the *perchloride* by magnesia, washing the precipitate with dilute nitric acid, to remove any excess of the precipitant, and drying it at a very low heat. Dr. Turner, upon the authority of Dr. Wagner of Pesth in Hungary, suggests the following as the most certain process for procuring peroxide of gold. Dissolve one part of gold in the usual way, render it neutral by evaporation, and redissolve in 12 parts of water; to the solution add 1 part of carbonate of potassa, dissolved in twice its weight of water, and digest at about 170°; carbonic acid gradually escapes, and the hydrated peroxide, of a brownish-red colour, subsides; after being well washed, it is dissolved in colourless nitric acid of the specific gravity 1·4, and the solution decomposed by admixture with water; the hydrated peroxide is thus obtained quite pure, and is rendered anhydrous by exposure to a temperature of 212°. In this anhydrous state it is nearly black; insoluble in water, and decomposed either by exposure to solar light or by heat. It is soluble in muriatic acid, forming the common solution of gold; and it dissolves in sulphuric and in nitric acid, but the affinity is here so weak that the solutions are decomposed by the action of water, and yield no saline compound when evaporated with the utmost caution. These properties led Pelletier to examine the action of alkalis upon this oxide, and he found that, digested in a solution of caustic potassa, it was dissolved; it also combines with baryta; and in these cases apparently plays the part of a weak acid; it may, therefore, be called *auric acid*. Boiled with chloride of potassium or sodium, a yellow solution results, which is alkaline, and contains chloride of gold and aurate of potassa or soda. The action of ammonia on chloride of gold will presently be noticed.

This oxide consists of

				Berzelius.
Gold	1 ...	200 ...	89·5 ...	89·23
Oxygen	3 ...	24 ...	10·5 ...	10·77
	1	224	100·0	100·00

Protochloride of gold. When perchloride of gold is placed in a sand-bath in a porcelain capsule, and exposed, under frequent stirring, to the temperature of melting tin till it no longer evolves chlorine, a white saline mass remains, which, unless, it contains undecomposed perchloride, is not soluble in water: it may be preserved unchanged whilst dry, but in contact with water it gradually changes into perchloride and metallic gold: this decomposition of the protochloride is instantaneous when boiling water is poured upon it, 2 parts of metallic gold being separated for 1 that is held in solution. Protochloride of gold consists of

				Berzelius.
Gold	1 ...	200 ...	84·74 ...	85
Chlorine	1 ...	36 ...	15·36 ...	15
	1	236	100·00	100

Perchloride of gold. When gold in a state of minute division is heated in chlorine, a compound of a deep yellow colour results. Gold leaf also dissolves easily in a strong aqueous solution of chlorine, and affords a similar compound on evaporation. The common solvent of gold, however, for the purpose of obtaining the chloride, is the nitromuriatic acid, composed of two parts of muriatic and one of nitric acid. By evaporation, the saturated solution affords prismatic crystals of a deep orange colour, very deliquescent, and readily decomposed by heat, yielding at first, the protochloride, and ultimately, pure gold. It is said, that when heated, a very minute portion of the metal also passes off with the chlorine and water. When concentrated sulphuric acid is poured into a strong solution of this compound, it causes a precipitation of *anhydrous choloride of gold*. The colour of its aqueous solution varies; if neutral and concentrated it is nearly red (*Leo ruber* of the alchemists), if dilute, or acid, it is yellow.

The aqueous solution of perchloride of gold, or *muriate of gold*, as it is usually called, is discoloured by steam in the same way, and apparently from the same cause, as nitrate of silver. It is decomposed by phosphorus and charcoal, and by sulphurous acid; a piece of paper, moistened with it and exposed to light, also becomes purple in consequence of its decomposition. According to Van Mons, it is decomposed by several vegetable acids, and when mixed with binoxalate of potassa, carbonic acid gas is evolved, and the gold gradually separated. When solution of protosulphate of iron is added to chloride of gold, the mixture instantly acquires a dingy green or brown tinge, and appears of a beautiful green if viewed by strong transmitted light: these appearances depend upon the presence of an infinite number of small particles of gold in the metallic state: they soon subside in the form of a brown powder, which may be collected upon a filter, and with a little borax fused into a button. This method of separating gold from its solution is often convenient in analytical operations. According to Dr. Turner, the mutual action of the protosulphate and perchloride is such, that 6 atoms of protosulphate of iron, and 1 of perchloride of gold, produce 2 atoms of persulphate of iron, 1 of perchloride of iron, and 1 of gold. Protochloride of tin, added to a dilute solution of

chloride of gold, occasions an instant change of colour to a reddish brown or dirty purple: if a piece of tin foil be immersed in a dilute solution of the chloride, the same purple powder is presently thrown down upon it; it is also formed when an alloy of 150 parts of silver, 35 of tin, and 20 of gold, is digested in nitric acid; nitrate of silver is dissolved, and the purple powder remains. This powder is used in enamel painting, and for tinging glass of a fine red colour, under the name of *purple powder of Cassius:* it is a compound of peroxide of tin and oxide of gold, the latter metal appearing to be in a very low state of oxidisement, and yet soluble in muriatic acid; it is also soluble in ammonia, forming a deep purple liquor. It would appear, from Proust's experiments, to consist of about three parts of oxide of tin, and one of protoxide of gold. Oberkampf found the composition and colour of the precipitates formed by protochloride of tin, in solutions of gold, liable to much variation. When the tin predominates, it is of a violet colour; but when the gold is in excess, it is more pink; and these colours are also communicated to enamel. Oberkampf and Macardieu assert, that the gold in the compound is in the metallic state; that the violet combination contains 60 oxide of tin, and 40 gold; and the pink about 20 and 80.

According to Berzelius, the purple of Cassius, when heated to redness, loses between 7 and 8 per cent. of water, and the residue is a mixture of metallic gold and peroxide of tin. According to Dr. Turner, the purple of Cassius is a hydrated double salt, composed of peroxide of tin, as the *acid*, united with protoxide of tin, and binoxide of gold, as *bases*, in such proportion that the oxygen of the gold exactly suffices to convert the protoxide into peroxide of tin.

When nitrate or sulphate of silver is added to chloride of gold, a precipitate falls, consisting of chloride of silver and oxide of gold; the latter may be removed by muriatic acid. The protosalts of mercury are rendered deep brown, or reddish brown, by chloride of gold; and many organic substances give it a purple tint.

If a solution of chloride of gold be mixed with sulphuric ether, it abstracts the chloride from the water, and an *ethereal solution of chloride of gold* is obtained. Polished steel dipped into this solution, acquires a coat of gold, and it has hence been employed for gilding delicate cutting instruments. It gradually deposits films of metallic gold, sometimes in ramose or arborescent crystals. Perchloride of gold consists of

				Berzelius.
Gold	1 ...	200 ...	65 ...	65·09
Chlorine	3 ...	108 ...	35 ...	34·91
	1	308	100	100·00

Fulminating gold; aurate of ammonia; ammoniuret of peroxide of gold. When liquid ammonia is added to a concentrated solution of chloride of gold diluted with about three parts of water, a yellowish brown precipitate is formed, which, if collected upon a filter, washed with a little water, and carefully dried at the temperature of 212°, is *fulminating gold.* Bergman first shewed that this compound consists of about five parts of peroxide of gold and one of ammonia: when heated to about 400°, it explodes violently, the gold is reduced, and nitrogen and water are evolved; hence it appears that the ammonia is decomposed; that its hydrogen, uniting with the oxygen of the oxide, forms water, and that the nitrogen is suddenly liberated. It explodes by friction with hard bodies, and by an electrical shock. If two or three grains be detonated upon a thin piece of platinum leaf, the metal is torn at the point of contact, as is the case with all these detonating compounds. This compound probably consists of 2 atoms of ammonia and 1 of peroxide of gold.

Auro-chlorides. Under this term are comprehended the compounds described by Bonsdorff (*Ann. de Chim. et Phys.*, xliv.) and others, in which the chloride of gold is combined with certain electro-positive chlorides, such as those of the alkaline bases: they consist of 1 atom of terchloride of gold, and 1 atom of the other chloride, and may be formed of their respective chlorides in such proportions; some of them have been long known; they mostly form prismatic crystals, and contain water of crystallisation. It is in consequence of the formation of these soluble double salts, that the solution of chloride of gold in muriatic acid yields no precipitates with the alkalis, even when added in excess.

Iodide of gold. The action of *iodine* on gold has been examined by M. Pelletier. (*Quarterly Journal*, x. 121.) When hydriodate of potassa is added to chloride of gold, it produces a very copious yellowish-brown precipitate, insoluble in cold water, and easily decomposed by heat, and by the liquid alkalis. When boiled in water, to deprive it of excess of iodine, it probably consists of

				Pelletier.
Gold	1 ...	200 ...	61·5 ...	66
Iodine	1 ...	125 ...	38·5 ...	34
	1	325	100·0	100

Bromide of gold. Bromine combines with gold, and forms a dark gray substance, soluble in water, and crystallising from its solution in deep brown crystals. This salt has so intense a colour, that it communicates a tinge to 5000 parts of water. (Balard, *Ann. de Chim. et Phys.* xxxii. 362.)

Sulphuret of gold is procured by passing sulphuretted hydrogen through an aqueous solution of chloride of gold. It falls in the form of a black powder, easily resolved by heat into metallic gold and sulphur. (Oberkampf, *Ann. de Chim.* lxxx.) It consists of

				Oberkamf.	Bucholz.
Gold.....	1 ...	200 ...	80·6 ...	80·39 ...	82
Sulphur...	3 ...	48 ...	19·4 ...	19·61 ...	18
	1	248	100·0	100·00	100

Phosphuret of gold is obtained by heating gold-leaf with phosphorus, in a tube deprived of air. It is a gray substance of a metallic lustre, and consists probably of one proportional of gold and one of phosphorus. It is decomposed when heated under exposure to air.

Cyanuret of gold is thrown down as an in-

soluble pale yellow compound, by adding cyanuret of potassium to chloride of gold; it forms, according to Ittner, double salts with the cyanurets of the alkaline bases.

Sulphocyanuret of gold is a flesh-coloured powder, which falls when solution of sulphocyanuret of potassium is mixed with chloride of gold; it is soluble in the precipitant and in ammonia. (Grotthuss.)

Alloys of gold. An interesting detail of an extended series of experiments upon the *alloys of gold* has been published in the *Phil. Trans.* for 1803, by Mr. Hatchett: his experiments were generally made with eleven parts of gold and one of alloy; or 38 grains of alloy to the ounce of gold. The alloys of gold with *potassium* and *sodium* have not been examined. With *manganese* it forms a gray brittle alloy. With *iron* the alloy is malleable and ductile, and harder than gold; its colour dull white, and its specific gravity 16·885. The metals expand by union, so that, supposing their bulk before combination to have been 1000, after combination it is 1014·7. With *zinc* the compound is brittle and brass coloured: specific gravity 16·937. The metals contract a little in uniting; the original bulk being 1000, that of the alloy is 997. The brittleness continued when the zinc was reduced to $\frac{1}{60}$ of the alloy. The fumes of zinc in a furnace containing fused gold, make it brittle. *Tin* formed a whitish alloy, brittle when thick, but flexible in thin pieces: specific gravity 17·307: bulk before fusion 1000: after fusion 981; so that there is considerable contraction. The old chemists called tin *diabolus metallorum*, from its property of rendering gold brittle; but Mr. Bingley's experiments quoted by Mr. Hatchett, show that $\frac{1}{60}$ of tin does not render gold brittle. The alloy of *lead* is very brittle when that metal only constitutes $\frac{1}{1020}$ of the alloy; even the fumes of lead destroy the ductility of gold: the specific gravity is 18·088; and 1000 parts become 1005. A very remarkable fact in respect to this alloy is, that its specific gravity diminishes to a certain extent, as the proportion of lead diminishes, and is at its maximum when the lead amounts only to $\frac{1}{96}$th part, the quantity of gold remaining the same, and the deficiency being made up with copper. Mr. Hatchett has given a table exhibiting this remarkable fact.

The alloy with *nickel* was of a brass colour and brittle. The specific gravity of the gold being 19·172, and of the nickel 7·8, that of the alloy was 17·068. An expansion had taken place, 1000 parts before fusion having become 1007. With *cobalt* the alloy was very brittle: specific gravity 17·112. 1000 parts became 1001 after fusion. With *bismuth* the alloy was of a brass colour, very brittle, and of a specific gravity = 18·038. 1000 parts became 988 after fusion, so that the condensation was considerable. When the bismuth amounted only to $\frac{1}{1920}$th part, the alloy was still brittle, though the colour was nearly that of gold.

The alloy with *copper* (*standard gold*) is perfectly ductile and malleable, but harder than pure gold, and resists wear better than any other alloy, except that with silver. Its specific gravity is 17·157. Gold coin is an alloy of eleven parts of gold and one of copper, previously to the year 1826 a proportion of silver was admitted; of this alloy, 20 troy pounds are coined into 934 sovereigns and one half-sovereign; one pound formerly was coined into 44½ guineas; it now produces $46\frac{29}{40}$ sovereigns. *Arsenic* and *antimony*, when alloyed in very small proportions with gold, destroy its colour and render it quite brittle. *Mercury* and gold combine with great ease, and produce a white amalgam, much used in gilding. For this purpose the amalgam is applied to the surface of the silver; the mercury is then driven off by heat, and the gold remains adhering to the silver, and is burnished. This process is called *water gilding*. In gilding porcelain, *gold powder* is generally employed, obtained by the decomposition of the chloride; it is applied with a pencil, and burnished after it has been exposed to the heat of the porcelain furnace.

Assay of gold. The analysis of most of the alloys of gold is performed by cupellation. The triple alloy of gold, silver, and copper, may be analysed by digesting it in nitric acid, which takes up the silver and copper, and leaves the gold in the form of a black powder, which may be fused into a button, and weighed. The silver may be thrown down in the state of chloride, by solution of common salt, and the copper precipitated by iron. The *assay of gold* is more complicated than that of silver, in consequence of the double operation which it has to undergo, namely, first, cupellation, and then the separation of the silver by the action of nitric acid. The real quantity of gold or silver taken for an assay is very small; whatever it may be, it is called the *assay pound*. The silver assay pound is divided into 12 ounces, and each ounce into pennyweights and half pennyweights. The gold assay pound is subdivided into 24 carats, and each carat into 4 carat grains, quarters, and eighths.

Characters of the salts of gold. It will be observed from the preceding account, that there are, strictly speaking, no oxysalts of gold, but that it forms haloid combinations, which are easily decomposed and reduced by heat: such of these as are soluble, are recognised by the peculiar precipitates which they afford with protochloride of tin and protosulphate of iron, and by a black precipitate with protonitrate of mercury. Gold is precipitated in the metallic state from its chloride, or muriatic solution, by the greater number of the metals: iron, copper, zinc, and tin, rapidly effect this reduction; lead, mercury, and antimony, more slowly; the tardiness of action is sometimes caused by the adhesion of a film of gold to the precipitating metal. When silver is used, the production of its chloride also impedes the effect: and the same happens with palladium. The gold is generally separated in the form of a brown powder; but copper, iron, zinc, and cadmium, occasion the appearance of a metallic film: and bismuth, antimony, arsenic, and palladium, become coated with a brilliant covering. Tin, after the separation of a part of the gold, forms the purple of Cassius.

Action of Gold on the Animal Economy.

This has been little studied till of late years. Paracelsus and his followers used gold in medicine, but apparently without any knowledge of its mode of action. Fallopius, however, in the fifteenth century, recommended it in the treatment of syphilitic affections.

About the year 1810, M. Chrestien, of Montpellier, called the attention of the medical world to the preparations of gold, and published in his *Methode Iatraleptique*, the formulæ of the salts he employed. Since that time several physicians have experimented with this remedy, and have not succeeded as M. Chrestien did; many, however, have met with equally fortunate results; so that the salts of gold may now be mentioned as efficacious remedies in syphilitic complaints.

In 1828 Dr. Legrand published a long series of observations, confirming the benefit to be derived in syphilitic and scrofulous disorders from auriferous salts.

Four preparations of gold are now principally employed in medicine; namely, the chloride of gold, the chloride of gold and sodium, the peroxide of gold, and the oxide formed by tin, or the *purple powder of Cassius*. Finely divided gold has also been employed.

According to Orfila, three-quarters of a grain of muriate of gold, dissolved in a gros of distilled water, and introduced into the jugular vein of a large strong dog, produced difficult and stertorous respiration, symptoms of suffocation, and slight vomiting, all which grew worse, until they ended in death. In another experiment, half a grain of the deuto-muriate, dissolved in two gros and a half of distilled water, was injected into the jugular vein of a small dog: the symptoms here supervened with frightful rapidity, and in four minutes the animal was dead. The third experiment was on a strong dog, and two grains of the salt were dissolved in a gros and a half of distilled water: in this instance the animal died in three minutes.

On opening the bodies of these animals the poison was found to have more particularly acted on the respiratory and circulating organs, and eminently on the blood itself. The lungs were livid, gorged with blood, did not crepitate, were wrinkled, of an unnatural colour, and scarcely floated on water. The heart was violet-coloured, the left cavities being filled with black blood, the right ventricle contracted. So rapid had been the action of the salt on the blood, that on opening the crural artery, a few moments after death, a reddish-brown blood, quickly becoming black, flowed from it. The mucous membrane of the alimentary canal was not affected.

M. Orfila has also introduced chloruret of gold directly into the stomach of several animals, in order to ascertain its immediate effects on that organ. By an opening made in the œsophagus three grains of chloruret were introduced into the stomach of a small dog; the animal languished for two days and perished on the third. Another dog was made to swallow a solution of ten grains of muriate of gold, in an ounce of distilled water; the animal vomited thrice, and foamed at the mouth: two days after he was able to eat; on the fourth day he refused food, and died on the night of the seventh. In the first animal the mucous membrane of the stomach was found inflamed, red, and ulcerated: in the second it was also ulcerated, and in a state of suppuration. In both animals the muriate had acted in a manner resembling that of corrosive substances.

M. Chrestien states, that the muriate of gold is much more active than corrosive sublimate, but does not irritate the gums to the same extent: given in the dose of a tenth of a grain per diem, it occasioned in one instance a smart fever. The frequency of the pulse is considerably increased, and a general excitation prevails. This excitation, which he deems essential to the success of the remedy, never involves any injurious disturbance of the functions if kept within due limits. The mouth, tongue, appetite, and stools continue to be natural: the urine and transpiration are generally increased. If the dose be pushed too far, however, there is risk of producing a general erethism, and inflammation of some organ. The fever caused by this is accompanied with an unusual and continued heat of the skin.

M. Cullerier has seen patients who were unable to bear the muriate of gold in any manner. In these instances he finds it produce gastric irritation, redness of the throat, dryness of the tongue, colic pains, and purging.

According to the same author, the general effects of hydrochlorate of gold and sodium are a sense of internal heat, headache, dryness of the mouth and throat, anxiety, gastric irritation, constipation, or diarrhœa, and quickening of the circulation. M. Magendie was once consulted by a patient, to whom muriate of gold had been injudiciously administered. Though he had only taken the tenth of a grain in a cup of milk for eight consecutive days, he was seized, at the end of that time, with a most intense gastritis, accompanied with numerous nervous symptoms, such as cramps and acute pains in the limbs, tremors, and sleeplessness. When this irritation was allayed, there still remained extreme heat of the skin, want of sleep, and fatiguing erections. Notwithstanding a most severe diet, this state of excitement still existed at the expiration of three years, and the patient was unable to take wine even when considerably diluted.

Cases for the Employment of the Preparations of Gold.

As before stated, the preparations of gold had been used by Fallopius, in venereal affections. But, besides disorders of that character, M. Chrestien says, that he has used the remedies in question with success in the majority of the diseases of the lymphatic system, in scrofula, goître, different herpetic disorders, scirrhus, and even tubercular phthisis. Lalouette, in his *Traité des Scrophules*, also strongly advises the employment of the salts of gold. Many physicians who have repeated M. Chrestien's experiments, have failed to obtain such successful results; though others, as Gozzi, Niel, Destouches, Risuens, &c. have found them effectual. M. Duportal has also related two cures effected by this means:

one of them an ulcer of the face resembling cancer, and which had resisted the ordinary remedies, was cicatrised under the use of the salts of gold. (*Ann. de Physique et de Chimie*, t. 78.)

M. Cullerier did not consider muriate of gold as a specific in syphilis, though he cured many cases with it. His nephew has administered the muriate of gold and soda to a certain number of the patients of the Hôpital des Vénériens: the age, sex, and constitution of these patients were various, as were also the symptoms treated, being those of a recent kind; as ulcers, buboes, pustules, excrescences; or of long standing, as ulcerated throat, palate, nose, &c., exostoses and periostoses, cutaneous pustules, and pains of the bones.

In the first cases of the former series the effects of the salts were equally rapid with those of mercury: in others the benefits were less palpable; and in some instances no advantage whatever was obtained, in which case mercury became necessary.

In the secondary disease, M. Cullerier obtained some favourable results; the symptoms were ameliorated in one or two cases, only one was entirely cured, and in others it was administered in vain.

Mode of Administration.

M. Chrestien has united the compounds of gold with soluble extracts of plants; with sugar, to form lozenges; with syrups and with cerates, to be rubbed into the soles of the feet. MM. Duportal and Pelletier disapprove of these mixtures, because the vegetable and animal matters, whenever dissolved or not, decompose the acid solution of gold and reduce it to the metallic state. So likewise M. Proust states that there are few vegetable juices, acids, gums, sugars, or extracts, which do not possess the property of deoxidising gold: these substances should therefore be avoided. The best mode of using the salts of gold is that of friction on the gums; and of the salts, the chloride of gold and sodium is to be preferred. The mode of procuring this salt, for which we are indebted to M. Figuer, is to dissolve four parts of gold in nitro-muriatic acid, evaporate the solution to dryness, pour on the product 32 parts of water with one of chloride of sodium, and concentrate the liquor to half its weight: on cooling, crystals of the double salt are obtained, consisting of chloride of gold 69·3, chloride of sodium 14·1, and water 16·6. An analogous chloride of gold and potassium has been prepared by M. Javal. The chloride of gold and sodium has been employed at the Hôpital des Vénériens in powder reduced by fifteen, twelve, ten, eight, and even four times its weight of some vehicle. Starch or lycopodium powder, washed with alkohol, appears to preserve the auriferous salts the best. With other powders, as liquorice, marshmallow, &c. their decomposition is certain to take place more or less readily.

Frictions with the Muriate of Gold and Soda.

M. Chrestien recommends the following formula: —

Crystallised muriate of gold and soda 1 grain.
Powder of iris root, washed with alkohol, to withdraw its soluble parts... 2 grains.

Lycopodium powder is generally preferable to that of iris.

Divide the first grain into 15 parts, then the second into 14, and so on gradually until an eighth is the strength of each powder. One of these powders is to be rubbed into the tongue or gums once a day. The powders containing only the fifteenth of a grain are to be first used, and, after a while, succeeded by those of greater strength. It is rarely necessary to employ more than 4 grains in all for the cure of primary venereal symptoms, as chancres, buboes, &c.: even three are often sufficient.

M. Girardot, of Warsaw, says that he cured a soldier without a single day's interruption of his service. He maintains, that from 30 to 40 grains of the salt is required in cold climates to produce benefit. On the other hand, in a very hot latitude, as that of the Mauritius, large doses are tolerated and are requisite. M. Chrestien observes, that in Poland and the Mauritius 30 grains do no more than 5 or 6 at Montpelier. In these large doses an eighth of a grain is the commencing dose, and is rapidly increased to half a grain at each friction. Such doses are more particularly requisite when syphilis is complicated with scrofula: in such case, even in France, they may be carried beyond 4 grains.

Pills of the Oxide of Gold.

Extract of the bark of mezereon root 2 gros.
Oxide of gold by potass..... 6 grains.

Mix carefully, and divide into 60 pills. The six grains of oxide may be replaced by one grain of the triple muriate.

M. Chrestien recommends these pills in scrofula and lymphatic congestions. He commences with one per diem and gradually rises to eight.

Should the state of the tongue and mouth prevent frictions on them, Dr. Niel advises another mode of application. A small blistered surface is established on the side of the throat, and is dressed morning and evening with an ointment, composed of a grain of lard and a grain of gold divided by mercury. At the same time, a grain of the oxide of gold is given internally in the course of the day. After a week, half a grain of the divided gold and of the oxide are added to the doses. In a fortnight the divided gold is replaced by an ointment, containing the tenth of a grain of muriate of gold and soda, which may be increased as far as the sixth of a grain. During this period the internal treatment with gold is still continued.

Should the irritation from friction with the muriate of gold on the tongue be excessive, the following cerate may be applied to blistered surfaces on each side of the neck: —

Gold divided with mercury ..... 1 gros.
Lard ..... 1 once.

And when the blisters are becoming dry, for this oxide may be substituted an ointment composed of 10 grains of muriate of gold and soda and half an once of lard. In the course of four months such treatment seldom fails to be eminently successful in secondary syphilis.

Dr. Simoneau, of Florence, attended a patient

who, at the same time that he had a seton in the back part of the neck, was afflicted with deep syphilitic ulcers of the mouth. Dr. S. immediately commenced to dress the seton with muriate of gold and soda, with the best effects upon the ulcerations.

Aurum folia'tum. Gold leaf. This used to be much employed by apothecaries for wrapping up pills, or gilding them, as it was termed.

Aurum fu'lminans. Fulminating gold. See *Aurum.*

Aurum horizont'ale. A preparation talked of by the alchemists, and defined to be the *mercurius auri*, or essential part of gold, fixed by the alkahest. Van Helmont says it is called *horizontale*, because the gold in this state is compared to the rising sun.

Aurum lepro'sum. Antimony.

Aurum musi'vum. Mosaic gold. A compound of tin and sulphur, which may be thus made: Melt twelve ounces of tin, and amalgamate it with three ounces of mercury; triturate this amalgam with seven ounces of sulphur, and three of muriate of ammonia. Put the powder into a matrass, bedded rather deep in sand, and keep it for several hours at a gentle heat, which is afterwards to be raised, and continued for several hours longer. If the heat has been moderate, and not too long continued, a golden-coloured scaly porous mass will be found at the bottom of the vessel: this is called *aurum musivum*. If the heat has been too strong, the *aurum musivum* appears as a black mass of a striated texture. It does not appear that a slight difference in the proportion of the ingredients has any influence on the result. The process is thus explained: as the heat increases, the tin abstracts the muriatic acid of the muriate of ammonia; while the alkali of that salt, combining with a portion of the sulphur, flies off in the form of a sulphuret. The muriate of tin sublimes, and is found adhering to the sides of the matrass. The mercury combines with part of the sulphur, and forms cinnabar, which also sublimes; and the remaining sulphur, with the remaining tin, forms the *aurum musivum*, which is a *bisulphuret of tin*, consisting of one equivalent of tin and two of sulphur. Its real composition was discovered by Dr. John Davy: it was supposed by Proust to be a hydrosulphuret of the peroxide of tin.

Mosaic gold has no taste, and is generally without odour: some specimens have a sulphureous smell. It is insoluble in water, acids, and alkaline solutions. It deflagrates with nitre. Bergman mentions a native *aurum musivum* from Siberia, containing tin, sulphur, and a small proportion of copper.

This substance is used as a pigment for giving a golden colour to small statues or plaster figures. It is said also to be mixed with melted glass to imitate *lapis lazuli*.

Aurum pota'bile. Potable gold. The old chemists had many modes of making potable gold. The most common was as follows: — Some volatile oil, as that of rosemary, was poured on a solution of nitro-muriate of gold; the oil, floating at the top, deoxydised the gold, and held it suspended in a state of minute subdivision: the oil containing the gold was separated from the rest of the liquor, and alkohol was added to it. The *aurum potabile* was in high esteem as a cordial medicine.

Aurum sophi'sticum. Brass.

Au'rus brazilie'nsis. An obsolete name of the *Calamus aromaticus.*

AUSCULTA'TION. (*Auscultatio, onis.* f.; from *auscultо*, to listen.) This term is applied to the several methods of detecting the nature and seat of disease by means of the sense of hearing. It is only of late years that this means of investigation has been extensively applied, but traces of it are to be found from the days of Hippocrates downwards. Thus Hippocrates was aware that the existence of fluids in the chest might sometimes be ascertained by the application of the ear; striking a distended abdomen, to learn, from the sound, whether or not the swelling be caused by air, has long been a familiar practice; and surgeons have always been in the habit of detecting a fracture by the *crepitus.* In 1761, Avenbrugger published a valuable work on the use of percussion in the diagnosis of thoracic diseases. In 1817, M. Double, in his work on *Semeiology*, recommended the application of the ear to all parts of the chest as an excellent means of diagnosis; and, two years afterwards, Laennec published his celebrated treatise on *Mediate Auscultation*, or that in which the ear is assisted by the intervention of an instrument called the *stethoscope*, which now is, or ought to be, in every body's hands. (For an account of the construction of this instrument, see *Stethoscope.*) Hence the sounds perceived in auscultation divide themselves into those produced spontaneously within the body by its healthy or diseased actions, and those which are excited artificially. The former, alone, are usually considered under the head of *auscultation;* the latter are referred to that of *percussion.* (See *Percussion.*) Again, auscultation is distinguished into *immediate*, or that effected by the direct application of the ear, and *mediate*, or that effected through the medium of an intervening body, namely, the stethoscope.

These two modes of auscultation should be used conjointly, and the ear should be accustomed to both, since, under different circumstances, sometimes one and sometimes the other will be found to convey the more accurate information. Auscultation may be used with more or less advantage in all cases where morbid sounds are produced; but its general applications, and the only ones on which it is necessary to dwell in this place, are,

1. The auscultation of respiration.
2. Auscultation of the voice.
3. Auscultation of the cough.
4. Auscultation of sounds foreign to the respiration, voice, or cough, but sometimes accompanying them.
5. Auscultation of the actions of the heart.
6. Obstetric auscultation.

We may here describe the natural sounds detected by each of these modes of auscultation, giving an enumeration merely of the morbid sounds, a further notice of which will be found under their respective heads.

1. *Auscultation of respiration.* The passage of the air into and out of the lungs, in the act of breathing, causes certain sounds, which vary according to the size of the cavities through which the air passes; these are called the *Vesicular*, the *Bronchial*, and the *Tracheal* sounds.

The *Vesicular respiration*, or pulmonic respiratory murmur, is heard pretty distinctly at all parts of the chest; but most so where the lungs are nearest the surface, as in the axilla, in the space between the clavicle and the trapezius muscle, and that between the clavicle and the mamma. It is a soft crepitating sound, and conveys the idea of air entering into a number of very minute cells. The respiratory murmur is, *ceteris paribus*, heard strongly in proportion to the *frequency*, not to the *depth* of the inspiration: hence, when we have any difficulty in distinguishing this sound, the patient should be desired to breathe quick, and it will immediately become obvious. The intensity of the respiratory murmur varies at different ages, and in different individuals. It is much more strongly marked before the age of puberty than after, and in infants is particularly noisy. The respiration of adults affords this sound in very different degrees of intensity in different individuals, although the lungs be perfectly healthy; in some it is so slight as hardly to be perceived in the ordinary state of the respiration, while in others it is so strong as to obtain the name of *puerile respiration*: the latter peculiarity (supposing a healthy state of the lungs) is only observed in women, and in men of a highly nervous temperament. Whenever the respiratory murmur has ceased, or is remarkably diminished over any portion of the surface of the thorax, we may conclude that the corresponding portion of the lungs has, from some cause, become impermeable to the air, in a greater or less degree.

The *Bronchial respiration* cannot generally be distinguished from the vesicular over the greater part of the thorax. It is usually heard only in the space below the clavicle, but in thin persons may also be frequently detected at the upper part of the sternum, in the axillæ, and in the interscapular region. The bronchial sound differs from that of vesicular respiration in the air seeming to pass through larger cavities. When any portion of the pulmonary texture, situated near a considerable bronchial tube, becomes impervious to air, the bronchial sound is heard more distinctly from the cessation of the vesicular, and may be detected at parts of the thorax where, in the healthy state of things, it is confounded with the vesicular sound. Whenever this change from the natural sounds of respiration occurs, we may be sure that the surrounding texture of the lung is morbidly condensed, as by hepatization, tubercle, effusion, &c.

The *Tracheal respiration* is heard only in the course of the trachea, and the sound is of the same kind as the bronchial, only louder and more blowing, from the greater size of the tube through which the air passes.

The sounds of morbid respiration are,

a. Cavernous respiration.

b. Blowing respiration.

2. *Auscultation of the voice.* If we apply the hand or the ear to the chest of a healthy person, while they are speaking or singing, we perceive a distinct vibration, and a similar impression is communicated to the ear through the stethoscope. The strength of this vibration will vary greatly according to the natural power of the voice, the fatness or leanness of the individual, &c. Over those parts of the lungs distant from any large bronchial tube it is comparatively feeble. If we apply the stethoscope between the scapulæ, over the large bronchial tubes at the root of the lungs, the resonance of the voice is very strong, and the words of the speaker may sometimes be heard, but they always seem to hang, as it were, at the end of the instrument furthest from the ear, and not to traverse its tube: the sound of the voice thus heard proceeding from a bronchial tube is called *Bronchophony*. Again, if the stethoscope be applied over the larynx, or trachea, the sound is still stronger, the words are distinctly heard, and they appear to pass right through the tube of the instrument to the ear of the listener; the sound of the voice thus heard is called *Laryngophony*. The sounds of the voice indicative of disease are

a. Bronchophony, in situations where it does not exist in health.

b. Ægophony.

c. Pectoriloquy.

3. *Auscultation of the cough.* If the lungs be healthy, no particular sound is developed by the act of coughing: the shock is perceived in all parts of the chest, and, as in the case of the voice, the sound is heard very distinctly from the larger bronchial tubes, and seems to pass directly through the stethoscope to the ear from the trachea and larynx. The auscultation of the cough is chiefly useful because it sometimes develops other sounds, as the crepitous, or cavernous rattle, which, under certain circumstances, may not be detected in the ordinary states of respiration. Two sounds indicative of disease are connected with the cough: —

a. The *Tubal cough.*

b. The *Cavernous cough.*

4. *Auscultation of sounds foreign to the respiration, voice, or cough, but sometimes accompanying them.* These sounds are all morbid, and consist of those arising from diseased states of the bronchial tubes, and those arising from diseased states of parts within the thorax, but exterior to the lungs. The first class includes the several kinds of *Rattle*, *Ronchus*, or, as it is called by the adoption of the French term, *Râle*.

Laennec describes five species of ronchus:

a. The *Crepitous.*

b. The *Mucous.*

c. The *Sonorous.*

d. The *Sibilous.*

e. The *Crackling.*

The second class, or sounds arising from diseased states of parts within the thorax, but exterior to the lungs, includes

a. The *Metallic tinkling*, of which the *Amphoric resonance* is a modification.

b. The *Sound of friction.*

5. *Auscultation of the heart.* The action of the heart gives rise to sounds which are

ceived very distinctly in the cardiac region, and more obscurely over an extent of the thorax, varying in different individuals. The stethoscope, applied over the lower third of the sternum, indicates the state of the *right* cavities of the heart; over the cartilages of the ribs, from the fourth to the seventh, it indicates the state of the *left* cavities. Three leading circumstances are to be attended to in the auscultation of the heart, namely the *impulse*, the *sound*, and the *rhythm*.

The *Impulse*. This is perceived both by means of the stethoscope and by the application of the hand, and in a healthy individual is confined to the cardiac region, or extends only a little beyond it. The impulse is, *cæteris paribus*, stronger in proportion as the walls of the heart are thicker; hence it is much increased in hypertrophy, while in passive dilatation of the heart it can hardly be perceived, even though the action of the heart be violent. The impulse communicated by the heart to the parietes of the thorax, was till lately supposed to arise from the apex of the heart being tilted forwards by the reaction of the column of blood, suddenly impelled, by the contraction of the heart, into the curved aorta. This explanation is now generally relinquished, and the most prevalent opinion is, that the impulse is occasioned simply by the muscular action of the heart itself: Dr. Hope, however, believes that, in consequence of the retraction of the ventricles upon their base, and upon the auricles which are in a state of extreme distension, the apex of the heart is tilted against the ribs, and produces the impulse. The strength of the impulse is influenced by a variety of circumstances; thus all causes which produce great debility, as large evacuations of blood, diarrhœa, extreme abstinence, &c. diminish the impulse so much that it may be feeble even where hypertrophy exists: the same effect is produced by severe dyspnœa, whether arising from asthma, pulmonary congestion, or any other cause; here the diminished impulse arises from the action of the heart being impeded by the accumulation of blood in its cavities. On the other hand, violent exercise, nervous excitement, fever, and other causes, frequently render the impulse very forcible where there is no hypertrophy.

Sound and rhythm of the heart's action. If the ear be applied, with or without the intervention of the stethoscope, to the cardiac region of a healthy person, two successive sounds will be heard, then a brief interval of silence, then a repetition of the two sounds, then another interval: and so on in a series, continued with perfect regularity, and susceptible of being represented by musical notation. This peculiar and constant succession of sounds is called the rhythm. The sound of the heart's action in the healthy state are very distinct in the cardiac region, but faint at any considerable distance from it; a quick ear will, however, detect them in most parts of the chest. The two sounds heard at each pulsation of the heart differ both in kind and in duration. The *first* sound is grave, prolonged, rather louder at its commencement than at its termination, and seems to be suddenly broken in upon by the *second*, which is short, acute, and compared to the clap of the valve of a pair of bellows. The relative duration of the two sounds, and the pause which succeeds them, is thus estimated by Laennec: the whole time being divided into four parts, two of these are occupied by the first sound, one by the second, and one by the pause which succeeds it. The first sound is synchronous with the impulse of the heart, and, in the healthy state, with the arterial pulse; but the latter is subject to variation in disease. It was supposed by Laennec that the first sound was caused by the contraction of the ventricles, and the second by that of the auricles; and this was for some time the received opinion. It was first called in question by Mr. Turner; and the observations of Drs. Corrigan, Stokes, and Hope have conduced to a different view of the subject. The experiments of Dr. Hope appear, indeed, to have placed it beyond a doubt that the auricle has no part in the production of the second sound. Dr. Hope conceives that the first sound is occasioned by the systole of the ventricle, and the second by its diastole: whether the second sound be caused precisely by the *diastole* of the ventricle or not, may still be uncertain; but it is now pretty generally admitted that it is caused by *some action* of the ventricle.

It has already been observed of the *impulse*, that it is strong in proportion as the walls of the ventricles are thick: the reverse is true with respect to the *sound* of the heart, which is found to be loud in proportion as the walls of the ventricle are thin; hence, in passive dilatation of the heart, the sound is louder than natural, and is heard distinctly at parts of the chest where, in the healthy state, it is very obscure, or altogether inaudible; while in hypertrophy the sound is indistinct, and very circumscribed in its extent. Besides these sounds occasioned by the action of the ventricles, which exist in health, and which, as above explained, afford by their deviations diagnostics of disease, there are other sounds of the heart which are always indicative of disease. The auscultatory signs connected with morbid states of the heart are,

a. *Increased impulse.*
b. *Diminished impulse.*
c. *Increased sound.*
d. *Diminished sound.*
e. The *Bellows sound.*
f. The *Rasp sound.*
g. The *Purring tremor*, which, although perceived by the touch rather than the hearing, is placed here, since it accompanies the rasp sound, and arises from the same causes
h. The *New Leather sound.*

6. *Obstetric Auscultation.* The use of auscultation, as a means of detecting pregnancy, was first made known in 1818 by M. Mayer, of Geneva, who stated that the pulsations of the fœtal heart might be distinctly perceived by the application of the ear to the abdomen of the mother. His observations have been confirmed and extended by M. Kergaradec and others, and two auscultatory signs are now recognised which, when they unequivocally exist, may be considered as conclusive evidence of pregnancy,

at the same time that their non-existence, in any particular case, must not be admitted as sufficient ground for denying that a woman is gravid. These two signs are the sounds of the fœtal heart and the placental sound.

a. The sound of the Fœtal heart. The stethoscope, applied to the abdomen of a pregnant woman, detects a series of sounds following exactly the same rhythm as those of the adult heart, but differing from them in being much quicker and much feebler. The pulsations of the fœtal heart vary from 120 to 160 in a minute, and are different at different times in the same subject. Changes in the rapidity or force of the circulation of the mother do not influence the heart of the fœtus, and *vice versâ* any agitation of the fœtal circulation has no effect on that of the mother. The sounds of the fœtal heart can seldom be detected with any degree of certainty before the sixth month of pregnancy. The facility with which they are heard depends upon the position of the fœtus, the quantity of liquor amnii, and other circumstances. They are heard most distinctly when the anterior part of the chest of the fœtus is near that part of the parietes of the uterus over which the stethoscope is applied. They sometimes cease to be discoverable for hours, or even days together; and hence a single auscultation is not always sufficient. The situation in which the pulsations are most distinctly heard varies according to the position of the fœtus; but as they may be heard more or less over the whole uterine region, they may easily be traced to their source.

b. The Placental sound. This sound was first detected by M. Kergaradec. It is heard principally over that part of the uterus where the placenta is attached; and hence, although the situation in which it is most audible varies in different cases of pregnancy, it must remain unchanged throughout the same pregnancy. It very nearly resembles the bellows sound of the adult heart, and is isochronous with the pulse of the mother. It generally becomes perceptible about the fourth month, and is then more distinct than at a later period of gestation. Several opinions have been held as to the cause of this sound, but there is little doubt that it proceeds from the enlarged vessels of the uterus which are connected with the placenta; for, on the one hand, it remains audible for a short time after the placenta is detached, and, on the other, this sound, or one very similar to it, seems to be occasionally heard in parts of the uterine parietes distant from that at which the placenta is attached.

The sound of the fœtal heart and the placental sound can generally be detected by the ear, without the assistance of the stethoscope.

Authe'meros. (From αυτος, the same, and ἡμερα, a day.) Appertaining to the same day. An epithet given by Hippocrates and Galen to a medicine which produces its effect the same day that it is administered — *αυθημερον φαρμακον.*

AUTOCRATEI'A. (From αυτος, itself, and κρατος, strength.) A name given to the vital principle from the idea that it is self-acting. This idea, however, is hypothetical, and probably erroneous: all that we know of vitality is, that it is something which has an inherent power of reaction on the application of stimuli.

Automa'tic. (*Automaticus*; αυτοματος, from αυτοματιζω, to act of one's own accord.) In physiology, those functions which are performed instinctively, and without the exercise of the will, are called *automatic.*

Autophie. A French term used by some writers synonymously with *autopsie.* See *Autopsia.*

Autopho'sphorus. The same with *phosphorus.*

Auto'psia. (*a*, æ. f.; from αυτος, oneself and οψις, vision.) Inspection of a thing with one's own eyes: personal observation. Recent French writers have applied the term *autopsie* very unmeaningly to the dissection of a dead body; and some English writers have from them adopted the word *autopsy* in the same sense.

Auto'psy. See *Autopsia.*

Auto'pyros. (*Autopyrus*, *i.* m.; from αυτος itself, and πυρος, wheat.) Bread made with wheaten flour, from which the bran has not been separated. — *Galen.*

Auxiliary. Assistant. Auxiliary muscles are those which concur with others, and aid them in their action. An auxiliary medicine is one which is given along with another to increase its efficacy.

AVELLA'NA. (*a*, æ. f.; from *Avella*, a town in Campania, where the nuts were fine and abundant.) The hazel nut. See *Corylus avellana.*

Avellana catha'rtica. A purgative seed or nut, the produce of the *Jatropha curcas.* See *Jatropha curcas.*

Avellana i'ndica. The ben nut. See *Balanus myrepsica.*

Avellana mexica'na. The seed of the cacao tree. See *Theobroma cacao.*

Avellana purga'trix. Garden spurge.

AVE'NA. (*a*, æ. f.; derived, according to some authors, from *aveo*, to covet, because cattle are so fond of it.) The oat. 1. The name of a genus of plants in the Linnæan system. Class, *Triandria*; Order, *Digynia.*

2. The pharmacopœial name of the oat.

Avena sati'va. The oat. The plant which produces the grain well known under the name of oats. There are two kinds of oats: the black and the white. They have similar virtues, but the black are chiefly sown for horses. They are less farinaceous, and less nourishing than rice or wheat; yet afford a sufficient nourishment, of easy digestion, to such as feed constantly on them. In Scotland, and some of the northern counties of England, oats form the chief bread of the inhabitants. They are much used in Germany; but in Norway oat bread is a luxury among the common people. Gruel made with the flour, or meal, called oatmeal, is in common use as an article of diet for the sick. Externally oatmeal is used as the base of several poultices.

Avenheim. A village not far from Strasbourg. It has mineral waters, which contain

itumen, carbonate of soda, &c. They are perient and absorbent.

Ave'nius. Veinless. Without a vein. A rm applied by botanists to a leaf which is ithout what they call a vein; as in *Clusia lba.*

Avens. See *Geum.*

Ave'rsio. (*o, onis.* f.; from *averto*, to turn way.) Aversion. In therapeutics this term as been used in the same sense as *derivation*, r *revulsion.*

Avertin. A name given in France to the ertiginous disease of sheep, which is more enerally called *tournis.* The term *avertin* is so applied, in common language, to craziness r sullenness in human beings; according to avoisien, it is a disease of the mind, which nders the patient obstinate or furious.

Aves. See *Animal Kingdom.*

AVICE'NNIA. (*a, æ.* f.; named after the lebrated Arabian physician of that name.) he name of a genus of plants in the Linnæan stem. Class, *Didynamia;* Order, *Angiospermia.*

Avicennia tomento'sa. The white mangrove of Brazil. *Avicennia — foliis cordatoovatis, subtus tomentosis,* of Linnæus. It is a rge tree, growing in Brazil, Cochin-China, d the Antilles. The fruit, boiled in water, eaten, and the leaves are used in emollient taplasms. In the article *Anacardium orientle*, this species of Avicennia has been inadrtently referred to as affording the Malacca an, with which its fruit is very often confounded; the Malacca bean is, however, the oduce of the *Anacardium indicum*, which see the *Supplement.*

Avi'culæ hermeticæ. This name is given Michael Sendivogius to a pretended universal t, found in the earth.

Aviga'to pear. See *Laurus persea.*

Avis medica. The peacock. See *Pavo.*

AVOIRDUPOIS. *Averdupois.* A kind of ight very generally used in England, the pound ereof contains sixteen ounces. See *Weights d Measures.*

Avranches. A town of Lower Normandy, hich has acidulous chalybeate waters.

Awl-shaped. See *Subulatus.*

Awn. See *Arista.*

Awned. See *Aristatus.*

Awnless. Without an awn or arista.

Ax. A small town in the department of riège. It abounds in sulphureous waters.

A'xea comissu'ra. See *Trochoides.*

Axia. A shrub of Cochin-China, which s not yet been classified. It is said to be ric and diaphoretic.

AXI'LLA. (*a, æ.* f. A Latin word, of hich the derivation is unknown, unless it be m the Hebrew *Atsil.*) The arm-pit. Applied, In *Anatomy*, to the cavity under the upper t of the arm, called the arm-pit.

2. In *Botany*, to the angle formed by the nch and stem of a plant, or by the leaf with ich.

AXILLA'RIS. (From *axilla*, the arm-pit.) illary. 1. In *Anatomy*, of or belonging to *axilla*, or arm-pit.

2. In *Botany*, leaves, &c. are said to be axillary which proceed from the angle formed by the stem and branch.

Axillaris arteria. The axillary artery is a continuation of the subclavian, and gives off in the axilla four mammary arteries, the subscapular, and the posterior and anterior circumflex arteries, which ramify about the joint.

Axillaris gemma. Axillary gem. A gem or bud which proceeds from the axilla of a plant.

Axillaris vena. The axillary vein, which is a continuation of the basilic vein, and receives the blood from the cephalic, and the veins corresponding to the branches of the axillary artery. When the axillary vein passes under the clavicle, it becomes the subclavian.

Axillary. See *Axillaris.*

Axi'llary plexus. *Plexus axillaris.* The axillary or brachial plexus of nerves is formed by the three last cervical nerves and the first dorsal. It surrounds the axillary artery; and having given off the external thoracic nerves, and some muscular branches, the plexus divides into the large nerves which supply the upper extremity. See *Nervous system.*

Axilla'tus. Disposed round an axis. See *Axis.*

AXIS. Αξων. 1. This term is applied, in the general language of science, to a right line passing through the centre of a body. An axis may be real or ideal: thus we speak of the axis of the eye, the axis of the pelvis, &c. which are merely imaginary lines passing through the centre of these parts; and again, the slender central stem around which many radiated animals, flowers, fruits, &c. are disposed, is called an axis.

2. The second cervical vertebra is so called, because the atlas rotates on its tooth-like process as on an axis. See *Dentata.*

AXU'NGIA. (*a, æ.* f.; from *axis*, an axle-tree, and *ungo*, to anoint, because it was used to grease the axle-trees of carriages.) The lard or fat of an animal.

Axungia cura'ta. Purified hogs' lard.

Axungia lunæ. A name formerly given to a species of white bole.

Axungia de mu'mia. *Mumia de medullis.* The marrow of bones. — *Ruland.*

Axungia porci'na. Hogs' lard.

Axungia solis. A yellow kind of bole was so called.

Ayally. The name of a grass used in St. Domingo as a laxative.

Azagor. Verdigris.

AZA'LEA. (*a, æ.* f.; from αξαλεος, dry, from its growing in a dry soil.) The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Monogynia.*

Azalea pon'tica. The Pontic azalea. This plant is generally believed to be the *Ægolethron* of the ancients. A nectareous juice exudes from it, which has intoxicating and poisonous properties.

Azamar. Vermilion; also minium.

Azotane. The chloride of azote.

A'zote. (*Azotum, i.* n.; from α, priv. and ζωη, life, because it is unfit for respiration.) See *Nitrogen.*

Azote, chloride of. See *Nitrogen.*

Azote, deutoxide of. See *Nitrogen.*

Azote, gaseous oxide of. See *Nitrogen.*

Azote, iodide of. See *Nitrogen.*

Azote, protoxide of. See *Nitrogen.*

Azo'tic acid. The nitric acid has been so called.

Azotic gas. See *Nitrogen.*

Azoth. *Azoch. Azock.* A barbarous term used by Paracelsus and his followers, and applied to several things: among others, to a celebrated panacea which Paracelsus used to carry in the hilt of his sword, and which was made, according to some, from mercury, gold, and silver: also to the *mercurius philosophorum.*

Azub. Alum.

Azuc. *Azug.* An alchemical name of red coral.

Azu'lmic acid. During the spontaneous decomposition of hydrocyanic acid, a black matter is deposited, very similar to the ulmic acid. This has been named by M. Boullay *Azulmic acid.*

Azu'lmine. The azulmic acid.

Azurestone. See *Lapis lazuli.*

Azu'rium. A compound made of quicksilver, sulphur, and sal ammoniac. It was used by the alchemists.

A'zyges. The same as *azygos.* This epithet has been applied to the sphenoid bone, because it has no fellow.

A'ZYGOS. (From α, priv. and ζυγος, a yoke; because it has no fellow.) Several single muscles, veins, bones, &c. are so called.

Azygos processus. A process of the os sphenoides.

Azygos u'vulæ. *Palato-uvularis.* A muscle of the uvula. *Palato-staphalinus* of Douglas. *Staphalinus*, or *Epistaphalinus* of Winslow. It arises from the posterior extremity of the suture, which joins the palate bones, and runs down the whole length of the velum and uvula, covered by the mucous membrane, and adhering in its passage to the tendons of the circumflexi muscles. It is inserted into the tip of the uvula. Its use is to raise the uvula upwards and forwards, and to shorten it.

Azygos vena. *Vena sine pari.* Azygos vein. This vein is formed by the union of the lower intercostal veins of the left side, and ascends on the fore part of the spine at the right side of the aorta; it passes through the diaphragm into the chest, either by the same opening as the aorta, or by a separate opening in the right crus of the diaphragm; about opposite to the fourth dorsal vertebra it crosses the aorta, generally behind, but sometimes before, to the right side of the chest, and terminates in the vena cava superior, just before it enters the pericardium. In this course it receives blood from the renal and lumbar veins, the right intercostals, the œsophageal veins, and the right bronchial vein. On the left side of the spine is a large vein called *Semi-azygos.* See *Semiazygos.*

Azymar. Vermilion.

B.

Babuzica'rius. (Βαβυζικαριος; from βαβαζω, to speak inarticulately: so called, because, in this disease, the person is apt to make an inarticulate or confused noise.) The incubus, or nightmare. See *Ephialtes.*

BA'CCA. (*a*, *æ*. f.; a berry.) A pulpy pericarp, or seed-vessel, enclosing several naked seeds, connected by a slender membrane, and dispersed through the pulp. It is distinguished by its figure into,

1. *Rotund*, round; as in *Ribes rubrum*, the currant, and *Grossularia*, the gooseberry.

2. *Oblong*; as in *Berberis vulgaris*, common barberry.

3. *Dicoccous*, double; as in *Jasminum.*

4. *Recutite*, circumcised; like the prominent glans penis, without the prepuce; as in *Taxus baccata.*

From the nature of its substance into,

1. *Succose*, juicy; as in *Ribes rubrum.*

2. *Corticose*, covered with a hard bark; as in *Garcinia mangostana.*

3. *Exsicca*, dry; as in *Hedera helix.*

From the number of *loculaments* into,

1. *Unilocular*, with one; as in *Actæa* and *Cactus.*

2. *Bilocular*, with two; as in *Lonicera.*

3. *Trilocular*, with three; as in *Asparagus* and *Ruscus.*

4. *Quadrilocular*, with four; as in *Paris quadrifolia.*

5. *Quinquelocular*, with five; as in *Melastoma.*

6. *Multilocular*, with many; as in *Nymphæa.*

From the number of *seeds* into,

1. *Monosperm*, with only one; as in *Daphne*, *Viscum*, and *Viburnum.*

2. *Disperm*, with two; as in *Berberis vulgaris* and *Coffea arabica.*

3. *Trisperm*, with three; as in *Sambucus* and *Juniperus.*

4. *Quadrisperm*, with four; as in *Ligustrum* and *Ilex.*

5. *Polysperm*, with many seeds; as in *Arbutus unedo*, *Ribes*, and *Gardenia.*

The *Bacca* is also distinguished into *simple* and *compound*, according as it is single, or composed of several berries, or *acini*, as in *Rubus fruticosus.*

Bacca bermudensis. See *Sapindus.*

Bacca norlandica. See *Rubus arcticus.*

Bacca piscatoria. See *Menispermum.*

Ba'ccar, *Bacchar*, *Baccharis*.. Βακκαρις. Βακχαρις. A fragrant herb used by the ancients in their garlands, and supposed by them to be powerful against enchantments. Some think it was the same with the *asarum*.

BA'CCHARIS. A genus of plants. Class, *Syngenesia*; Order, *Polygamia superflua*. Several species of this genus possess stimulating and tonic virtues.

Baccharis braziliana. The bruised leaves of this are used by the Brazilians against opthalmia.

Baccharis ivæfolia. The leaves of this species are used in infusion as a stomachic by the inhabitants of Peru.

BA'CCHIA. (*a*, *æ*. f.; from *Bacchus*.) A name given by Linnæus to the pimpled face which frequently results from hard drinking.

Ba'cchica. *Dionysia*. Ivy; so called because it was sacred to Bacchus.

BACCI'FEROUS. (*Bacciferus*; from *bacca*, a berry, and *fero*, to bear.) Berry-bearing. Plants are so called which have that species of fructification styled a berry. Ray divides the bacciferous plants into four kinds: 1. Such as bear a calyculate berry, the flower and calyx both falling off together, and leaving the berry bare; as the *sassafras* tree, &c.

2. Such as have a naked monopyrenous fruit, that is, a fruit containing only one seed; as the *Arbutus*, the *Ocubinthus*, *Lentiscus*, &c.

3. Such as have the fruit naked, but polypyrenous, that is, containing two or more kernels or seeds; as the *Jasminum*, *Ligustrum*, &c.

4. Such as have their fruit composed of many acini, or round soft balls, set close together, as the *Rubus idæus*, &c.

Baccifo'rmis. *Bacciform*. Having the form of a berry.

Bacci'nia. *Baccinium*. The same as *Vaccinium*; which see.

Bacher's pills. *Pilulæ tonicæ Bacheri*. These consist of extract of black hellebore, ʒj; myrrh ʒj; carduus benedictus ʒiij, made into a mass and divided into pills of one grain each. From two to six pills are given three times a day.

Baci'llum. (*um*, *i*. n.; from *bacculum*, a stick.) 1. A troche of a cylindrical shape.

2. A pastille.

3. A surgical instrument. — *Hildanus*.

4. Several iron implements were so called by the old chemists.

Bacopa. A genus of plants. Class *Pentandria*, order *Monogynia*. The *Bacopa aquatica* is used in Cayenne as a remedy for burns.

Baden. A town of Austria. It has mineral springs containing carbonates of lime and magnesia; sulphates of lime, magnesia, and soda; and muriates of soda and alumina.

Badia'ga. A marine plant of the order *Algæ*. It is used in Russia to take away the livid marks of bruises; and the powder of it applied to the part is said to have this effect in the course of a single night.

Badian. See *Illicium anisatum*.

Badukka. See *Capparis baducca*.

Badulam. A small tree of Ceylon. It is the *Ardisia humilis*. Its fruit, made into rob or syrup, is given to allay heat and thirst in ardent fevers.

Bagnères-adour. A small town in the department of the Hautes Pyrénées which has numerous mineral springs, the greater part of which are warm and sulphureous; but some warm and saline, and others cold and chalybeate.

Bagnères-de-luchon. A small town in the department of the Haute Garonne, which abounds in hot sulphureous springs.

Bagnigge wells. A saline mineral spring, near Clerkenwell, in London, the water of which resembles that of Epsom. In most constitutions, a pint and a half is considered a full dose for purging.

Bagnoles. A village in the department of the Orne. Its water is like that of Bagneres de Luchon.

Bagnols. A village in the department of Lozère. It has sulphureous waters.

Bahel. See *Columnea longifolia*.

Baiac. An alchemical name of white lead.

Bailey's itch ointment. This consists of nitre, alum, white vitriol, cinnabar, olive oil, lard, oils of aniseed, origanum, and lavender, coloured with alkanet root.

Bains. 1. A city in the department of Vosges. It has thermal saline waters.

2. A village near Arles. It has hot sulphureous waters.

Baker's Itch. See *Psoriasis*.

Balanéum. See *Balneum*.

Bala'nda. (From βαλανος, an acorn, which its fruit resembles.) *Valandia*. The beech tree.

Balæna Macrocephala. See *Physeter macrocephalus*.

Balanoca'stanum. (*um*, *i*. n.; from βαλανος, an acorn, and καστανον, a chesnut: so called from its tuberous root.) See *Bunium bulbocastanum*.

BA'LANUS (*us*, *i*. m.; from βαλανος an acorn.) 1. Several kinds of nuts were so called, as the *ben nut*.

2. Suppositories and pessaries have been so called from their shape.

3. This name has also been given to the *glans penis*, and to the *glans clitoridis*.

Balanus myrepsica. The ben nut. See *Moringa aptera*.

Balaruc. A town in the department of Herault in France. It has warm mineral springs, the waters of which contain carbonic acid, carbonates of lime and magnesia, muriates of lime, soda, and magnesia, sulphate of lime, and a little iron. Their temperature is about 118° Fahr.

Balasius lapis. (*Ballasius lapis*.) The rose-coloured ruby or Balais ruby. It had many virtues attributed to it by the ancients, as that of restraining the amorous passions, curing diseases of the liver, &c.

Balau'stium. (βαλαυστιον; probably from βλαστανω to germinate.) The flower of the Pomegranate; Dioscorides applies the name only to that of the wild pomegranate; but Pliny to that of the cultivated plant. The *flores balaustiorum* or *balaustines* of the old pharmacopœas were the flowers of the wild pomegranate.

Balbis. *βαλβις.* An oblong cavity. Hippocrates applies the epithet *βαλβιτωδης* to the cavity of the humerus which receives the coronoid process of the ulna.

Balbu'ties. (From *balbutio*, to stammer.) A defect of articulation; stammering.

BALDNESS. *Calvities.* The falling off of the hair, which is natural in old age, may be prematurely induced by a variety of causes. It is common after severe fevers; and consumptive patients, and those labouring under cachectic diseases, frequently lose their hair. In these cases it probably arises from debility of the cutaneous vessels and insufficient nutrition of the bulbs of the hair. Some persons, who are in all respects healthy, lose their hair very early in life without any obvious cause. Where the disposition to baldness is only slight, the use of animal fat, as bears' grease, &c., will often suffice to obviate it; but when the hair falls off in any quantity, the only effectual remedy is to shave the head.

Baldwin's phosphorus. This is formed by evaporating to dryness an aqueous solution of nitrate of lime in water; continuing the heat till the nitrate is fused; keeping it in that state for a few minutes, and then pouring it into an iron pot previously heated. The substance thus obtained being broken in pieces, and kept in a well stopped phial, emits a beautiful white light in the dark, after exposure for some time to the sun's rays. This substance is called Baldwin's Phosphorus.

Baline'um. See *Balneum.*

Ball and socket joint. See *Enarthrosis.*

Balli'smus. (Βαλλισμος; from *βαλλιζω*, to dance.) A name of St. Vitus's Dance.

Balitistera. Red earth. — *Ruland.*

Balli'sta. *Balista. Os Balistæ.* (*βαλλιστης, βαλιστης.* Derivation doubtful.) The astragalus, a bone of the tarsus.

BALLOON. (*Ballon*, French.) 1. A large glass receiver in the form of a hollow globe. For certain chemical operations balloons are made with two necks, placed opposite to each other; one to receive the neck of a retort, and the other to enter the neck of a second balloon: this apparatus is called *enfiladed balloons.* Their use is to increase the capacity of the whole receiver, and any number of them may be thus adjusted to each other. The only vessel of this kind in general use, is a small balloon of a lengthened shape with two necks, which is luted to the retort, and to the receiver, or great balloon; it thus serves to remove the receiver from the body of the furnace, and to prevent it from being too much heated.

2. A spherical bag made of some light material, and filled with a gas of small specific gravity, or with heated air, by the buoyancy of which it is raised in the atmosphere.

BALLO'TA. *Ballote. βαλλωτη.* The name of a genus of plants. Class *Didynamia*; Order, *Gymnospermia.*

Ballota nigra. *Ballota fœtida. Marrubium nigrum.* Black, or stinking horehound. A common plant to which detersive and other virtues have been ascribed.

Ballottement. A French term for which we have no synonyme. It means the motion communicated to the fœtus in utero, by striking the cervix uteri with the finger of one hand introduced into the vagina, while the other hand is placed on the abdomen to fix the uterus. The fœtus is thus made to ascend and descend floating in the liquor amnii. This *ballottement* is one of the least equivocal signs of pregnancy.

Ballston spa. A village in Saratoga county, New York. It has acidulous chalybeate springs, which are much frequented. It has also a sulphureous spring.

Balm. See *Melissa.*

Balm of Gilead. See *Dracocephalum.*

Balm of Mecca. See *Amyris gileadensis.*

Balm, Turkey. See *Dracocephalum.*

BA'LNEUM. (*um, i.* n. *βαλανειον.*) A bath.

I. A convenient receptacle of water, for the purpose of washing the body, either as a means of cleanliness or for the cure of disease. In an extended acceptation, the term bath is used to designate the application of water, vapour, air, or any other fluid, either simple or medicated, to the surface of the body, whether generally or partially. Baths are divided, according to their temperature into *cold, tepid,* and *hot.* Baths are either *natural* or *artificial*; the sea, rivers, lakes, &c., afford natural cold baths, and there are in various places natural warm springs, varying in temperature from tepid to boiling. Baths are also distinguished, according to the medium employed, into the *water bath,* the *vapour bath,* the *air bath,* &c.: according as the water or other medium is applied to the whole body or only to a part, into *general* and *partial*: according to the part which is bathed, into *pediluvium,* or the foot bath; *coxæluvium,* or *semicupium,* the hip bath; *manuluvium,* or the hand bath, &c.: according to the manner in which the medium is applied, into the *shower bath*; the *douche bath*; and *affusion.* When the medium is not applied in its simple state, but impregnated with some medicinal substance, the bath is said to be *medicated.* We shall hence, in the present article, consider the subject of bathing under the following heads: —

1. The cold bath.
2. The tepid bath.
3. The hot bath.
4. The vapour bath.
5. The air bath.
6. Partial bathing.
7. The shower bath.
8. The douche.
9. Affusion.
10. Medicated baths.

1. *The Cold Bath.* The temperature of this is from 42° to 85° Fahr. When a healthy individual immerses his body in cold water, he at first experiences a sensation of cold and a certain *shock* to the whole system; these very soon subside, and, unless the immersion be long continued, the water communicates a pleasant sensation, and feels warm rather than cold: when he leaves the water a very marked *reaction* of the arterial system takes place; the pulse becomes very full and strong; there is a glow on the surface from the increased action of the ca-

pillary vessels; the muscles are braced, and the general sensations are those of elasticity and vigour. It is by the production of this reaction that the cold bath proves so salubrious, and it is therefore beneficial or otherwise, according as the system is sufficiently vigorous to establish this reaction or not. Cold bathing is not only conducive to the preservation of health, but is a very powerful therapeutical agent. The general circumstances of disorder for which cold bathing appears to be of service, are languor and weakness of circulation, accompanied with profuse sweating and fatigue on very moderate exertion; tremors in the limbs, and many of those symptoms usually called nervous; weakness of the moving powers, and a listless and indolent state of the mind; provided that these symptoms are unconnected with any permanent disease of the viscera. Such a state of body is often the consequence of a long and debilitating sickness, or of too sedentary a life. In all these cases the great object to be fulfilled, is to produce a considerable reaction, from the shock of cold water, at the expense of as little heat as possible; and when cold bathing does harm, it is precisely where the powers of the body are too languid to bring on reaction, and the chilling effects remain unopposed. When the patient feels the shock of immersion very severely, and therefore dreads its repetition; when he feels no genial glow succeed the shock, but on coming out of the bath remains cold, shivering, sick at the stomach, oppressed with headache, languid, drowsy, listless, and averse to food and exercise during the remainder of the day, we may be sure that the bath has been too cold, the shock too severe, and the reaction insufficient.

The water of the sea is more stimulating than fresh water, in consequence of the saline matter it holds in solution; hence it produces greater reaction, and sea bathing is often beneficial to those who would be unable to bear the cold fresh water bath. In all cases the sea is the most desirable cold bath. On our shores its temperature varies during the summer and autumn from 55° to 70° Fahr.; and it is at these seasons that the sea-side is most frequented.

2. *The Tepid Bath.* The range of temperature of this is from 85° to 97° Fahr.; but water at about 90° is generally used for what is called a tepid bath. Tepid bathing is chiefly serviceable by relaxing the skin, and promoting insensible perspiration. It is hence used with advantage in most cases where the skin is arid, and transpiration deficient; and in many chronic cutaneous diseases its use is indispensable to cleanse the pores of the skin from the vitiated secretions which are continually obstructing them. The tepid bath is frequently used as a preparation for the cold in the case of weakly patients, who would at first be unable to sustain the shock of the latter.

3. *The Hot Bath.* The temperature of this is from 95° to 100° Fahr., but about 96° is the best for ordinary purposes. Immersion in water of this degree of heat has a remarkably tranquillising effect on the nervous system; it renders the skin soft and perspirable; it allays irritation, and produces a strong tendency to quietude and sleep. At a temperature of 98° the hot bath usually renders the pulse somewhat quicker and fuller. At 100° and upwards it strongly stimulates the arterial system, and produces a general unpleasant sensation of excitement and turgescence, which is presently relieved by perspiration; if the immersion be long continued it causes extreme lassitude, debility, and somnolency. The bath at 96° operates as a powerful antispasmodic, and relieves visceral inflammation by determining the blood to the surface of the body; it hence affords the greatest relief in cases where an inflammatory and a spasmodic state are combined, as in enteritis, cystitis, gall stones, &c. It is employed by surgeons to favour the reduction of strangulated hernia by the relaxation it occasions. It is much used in convulsive affections, especially those of young children, and in cutaneous diseases accompanied with a very rough and imperspirable state of the cuticle, its utility is obvious. A very hot bath, though more rarely applicable, is in some cases a valuable remedial agent, as in the cold stage of malignant fevers, and other cases in which the heart is almost overpowered, and the blood accumulating in the larger vessels leaves the surface cold and palid: here the stimulus which the hot bath communicates to the heart and arteries often produces a salutary reaction and rescues the patient from impending death. In such cases the temperature of the bath should be as high as can conveniently be borne: the limit will generally not exceed 104° Fahr.

4. *The Vapour Bath.* In Russia and the eastern countries there are public vapour baths, in which a number of persons confine themselves in a chamber full of vapour, the temperature of which varies from 112° to 190° and more: the ordinary temperature, however, is from 120° to 140°. In this country the vapour bath is an apparatus adapted to the use of only one individual. It is a simple contrivance, the description of which may here be dispensed with, and is modified according as the head of the patient is to be included in the bath or not. The temperature varies from 112° to 130. The vapour bath produces nearly similar effects, and is applicable nearly to the same cases, as the hot water bath: it differs, however, in exciting the circulation less, and producing more immediate and copious diaphoresis. The heating power of the vapour bath is much increased if the head be included, so that the patient may receive the vapour into the lungs; for the extent of surface to which the heat is applied is thus increased, and the cooling process of pulmonary evaporation is put a stop to.

5. *The Air Bath.* The exposure of the naked body to the atmosphere of a cool chamber, is often very useful in allaying the restlessness arising from slight degrees of febrile excitement; and this may be called a cold air bath. The air bath, however, which is generally used as a therapeutical agent, is the *warm air bath*, in which the body of the patient is placed in an apparatus adapted to the purpose, and exposed to the action of air heated to a temperature of from 90° to 130°. The warm air bath is more stimulating than the vapour bath, and produces copious perspiration in a still shorter

time; it is hence a powerful remedy in highly congestive forms of fever, and in the cold stage of the malignant cholera. It is also used with advantage in stiffness of the joints from chronic rheumatism, and other cases.

6. *Partial Bathing.* The beneficial effects of the topical application of water are known to every one. Thus *cold* water applied to the head is a common means of diminishing cerebral excitement; the topical use of the same agent to restrain hæmorrhage in abortion and other cases, is equally familiar; nor less so is the immersion of a scalded part in cold water as the most effectual means of allaying pain and preventing vesication. The immersion of the feet and legs in *warm* water is a popular and useful means of determining the blood from internal parts, and producing moisture on the skin; the inflammation caused by sprains and bruises, is much relieved by bathing with warm water, and the suppuration of external abscesses is promoted by the same means. Many other examples might be adduced, but the above may suffice.

7. *The Shower Bath.* In this kind of bath water is made to fall from a height through numerous apertures upon the head and body of the patient. Its effects are similar to those of the ordinary cold bath, except that it produces a more transient shock, and is, therefore, better adapted to individuals whose power of reaction is feeble.

8. *The Douche.* This consists in the projection of a stream of cold water from a tube upon any part of the body. It is a most powerful means of refrigeration, and diminishes remarkably all the vital actions of the part to which it is applied. Its effect varies according to the temperature of the water, the diameter of the stream, and the force with which it is projected. When applied to the head it speedily diminishes every action of the system, and will often, in a short time, reduce a full inflammatory pulse to a thread. It is used principally in inflammatory affections of the brain, and is a remedy of extraordinary efficacy in such cases: the douche should here be used with due caution, for its depressing power is so great, that if too long or too severely applied it may have fatal effects.

9. *Affusion.* The affusion of cold water has been much extolled as a means of cutting short fever. It has already been treated of in the article *Affusion*, which see. Sponging the body with cold water, or *cold ablution*, is highly conducive to the preservation of health: it should be practised regularly immediately on getting out of bed in the morning.

10. *Medicated Baths.* These are such as consist of particular liquids or vapours different from the ordinary media used for bathing, or of the common media impregnated with foreign substances, with a view of giving them some peculiar efficacy. Thus we have wine baths; milk baths; sulphureous baths; acid baths; aromatic baths; baths prepared with sulphate of iron; with quick-lime; with alum; with sal-ammoniac, &c. Generally speaking, much more importance seems to have been attached to medicated baths, than their real efficacy warrants. The sulphureous and acid baths, however, form an exception to this remark. The *sulphureous vapour bath* is applied by placing the patient in a box, not including his head, and introducing the fumes arising from sulphur placed upon a piece of hot iron. This bath is used in various cutaneous diseases, and often with success, especially in the different forms of scabies and impetigo. It has also been extolled for its efficacy in rheumatism, gout, paralysis, disorders of the digestive organs, &c., in which cases its efficacy is much more doubtful.

The *nitro-muriatic acid bath* was invented by Dr. Scott of Calcutta, and used by him in many morbid conditions of the liver, especially a torpid state of that viscus. The bath consists of a very dilute nitro-muriatic acid. For nearly forty years Dr. Scott was in the habit of using this preparation, and has tried it in almost every variety of strength, and almost every proportion which the two acids may be made to bear to each other. He commenced his experiments in India, where, on account of the greater degree of torpitude with which the liver is apt to be affected than in more temperate climates, he was in the habit of forming his bath stronger, and making it deeper than he has found it proper to do in this country, and where he plunged the Duke of Wellington into one up to his chin, for a severe hepatic affection he was then labouring under, and thus restored him to health in a short time. In England, it is not found necessary to raise the bath much above the knees, and a mere foot bath, or common wash-hand basin is occasionally sufficient; in which case the attendants sponge the parts above the knee, or the arms, with the acid water.

Three parts, by measure, of muriatic, and two of nitric acid, are to be carefully mixed, and added to five parts of distilled water. The bath is to consist of three ounces of this dilute acid to every gallon of water. If the acids be of adequate strength, the mixture further diluted for bathing, will, to the taste, have the sourness of weak vinegar, and, perhaps, prick the skin slightly, if very delicate, but not otherwise, after it has been applied to the surface for half an hour; but as these acids vary very much in their degree of concentration, as distilled by different chemists, there will be some variety in their effects. The strength of the bath, however, should not be much greater at any time than the proportion here laid down; for otherwise it may excite a troublesome rash, and give a yellow hue to the nails and skin

A narrow tub for a knee bath, just wide enough to hold the feet and reach the knees, should contain three gallons of the prepared bath liquor, and consequently about nine ounces by measure of the dilute nitro-muriatic acid. For a foot bath, half a gallon may be sufficient, and a common wash-hand basin may be employed as a vessel for the purpose.

The feet should remain in the bath for twenty minutes or half an hour; and the legs, thighs, and abdomen be, in the mean time, frequently sponged with the liquid. In winter,

the bath may be used warm; but this is not necessary in summer.

The bath may be employed at first daily, for a fortnight or three weeks, and afterwards every other day, or only twice a week.

Dr. Scott affirms, that he has employed this process with decided advantage in almost all cases dependent on a morbid secretion of bile; whether the secretion be superabundant, defective, or depraved. He found it often, within a few hours after the first bathing, increase the flow of bile and ameliorate its character, causing the expulsion of dark-coloured fæces, bright-coloured bile, or bile of a brown, green, or black colour, like tar mixed with oil. In the paroxysm of pain from a gall-stone passing the bile ducts, or from common spasm, he also found it act like a charm, and produce almost immediate ease.

Dr. Scott was of opinion, from the rapidity with which it acts in some cases, that it operates on the nerves, and not by the absorbents; and he infers from various experiments that it is the chlorine of the muriatic acid alone that is the beneficial ingredient of the bath.

The ancients seem to have considered the frequent use of baths as among the necessaries of life, and grand public structures were erected to afford this means of health and cleanliness to the whole population. It were much to be wished that the moderns would follow their example. As allusion is often made by the ancient writers on medicine to the different apartments of these buildings, some account of them is here necessary.

We have no exact description of the Greek baths, but it is probable that they were nearly similar to the Roman. In the times of the Roman republic, the baths were very simple, but under the empire they attained an almost extravagant degree of magnificence; and Ammianus Marcellinus mentions no less than sixteen in the city of Rome. The principal were those of Agrippa, Nero, Titus, Domitian, Caracalla, and Diocletian. These structures were called Thermæ. Setting aside libraries, galleries, rooms for exercise and conversation, &c. the essential parts of a well appointed Roman bath appear to have been,

1. The *Apodyterium*, or chamber where the bathers stripped themselves.

2. The *Elæothesium* or *Unctuarium*, where the bathers were anointed.

3. The *Sphæristerium*; a large well lighted apartment where they performed various exercises, especially that of *playing at ball*.

4. The *Caldarium*, which consisted of a sweating room, *Concamerata sudatio*, with the hot bath, *Calida Lavatio*, at the one end and the *Laconicum* at the other. To what the name of *Laconicum* was properly applied has been much disputed; it would appear, however, that it originally meant a small cupola rising from the floor at the one end of the caldarium, having an aperture communicating with the sweating room and covered by a moveable *clypeus* or shield of bronze, by which means hot air seems to have been admitted to the sweating room, its quantity being regulated by the moveable clypeus: in later times the cupola was done away with, from other means being used for heating the sweating room, and the term *laconicum* was applied to that end of the caldarium in which the cupola had formerly stood.

5. The *Tepidarium*; a warm room containing the tepid bath.

6. The *Frigidarium*, or room containing the cold bath.

The terms *Caldarium*, *Tepidarium*, and *Frigidarium*, were applied not only to the compartments of the building containing the hot, the tepid, and the cold baths; but also to the coppers from which these baths were respectively supplied with water.

7. The *Piscina* or reservoir, from which all the baths were supplied with water.

8. The *Hypocaustum*, or place containing the furnace by which the baths were heated.

The most common process of bathing seems to have been as follows. The bathers went first into the apodyterium to undress; then into the elæothesium where they were anointed with a coarse kind of oil; then into the sphæristerium to exercise themselves; then into the hot bath, where they scraped themselves with an instrument called a *strigil*; on quitting the hot bath and being dried, they were anointed with perfumed oils brought by slaves from the elæothesium; they then put on their clothes and staid a while successively in the tepidarium and frigidarium before they quitted the place of bathing, in order that the transition from the hot bath to the open air might not be too abrupt. The hot bath seems to have been always frequented; the cold was sometimes in vogue and sometimes not; when it was used the bathers generally began with the hot bath and passed through the tepid to the cold: the custom of sweating after the hot bath was also observed only occasionally.

II. A term in *Chemistry*. When the vessels in which bodies are exposed to the action of heat are not placed in immediate contact with the fire, but receive the necessary heat through some medium in which they are immersed, such apparatus is termed a bath. These have been variously named, as dry, vapour, &c. Modern chemists distinguish three kinds:

1. *Balneum arenæ*, or the sand bath. This consists merely of an open iron pot, the bottom of which is usually convex, containing finely sifted sea-sand. The vessel containing the substance to be heated is immersed in the sand, and the pot is exposed to the furnace.

2. *Balneum mariæ*, or the water bath. This is very simple, and requires no particular apparatus. The vessel containing the substance to be heated, is placed in another containing water, and capable of bearing the action of fire. By this means a gentle heat is very gradually applied.

3. *The vapour bath*. When any substance is heated by the vapour of boiling water, it is said to be done by means of a vapour bath.

Balneum animale. An animal bath. A practice formerly obtained of wrapping the skin, or the whole carcass of an animal just killed round the body of a patient, or any part of it. This was called an *animal bath*.

Balneum arenæ. A sand bath.

Balneum calidum. A hot bath.

Balneum frigidum. A cold bath.

Balneum mariæ. The water bath used by chemists.

Balneum medicatum. A medicated bath. A bath impregnated with some substance to give it a peculiar activity or virtue.

Balneum roris. A bath of dew. An old name for the vapour bath of the chemists.

Balneum siccum. A dry bath. The immersion of the body in any dry material, as ashes, salt, sand, &c. is called a *dry bath*. The ancients had several ways of exciting sweat, by means of a dry heat; as by the *sudatorium*, or sweating room, by immersing the body in hot sand; and by *insolation*, in which the body was exposed to the sun for some time, in order to draw forth the superfluous moisture from the inward parts. To this day it is a practice among some nations, to cover the body over with horse-dung; and in New England, they make a kind of stove with turf, wherein the sick are shut up to sweat. The noted empyric, Dr. Graham, was in the habit of burying people up to their chins in the earth; and this practice, which he called *earth bathing*, consigned some of his patients to a permanent mansion under ground. The name of *dry bath*, is sometimes also given to a procedure in which the patient is exposed to the fumes of kindled coals, or burning spirit of wine in a convenient apparatus inclosing all but the head. This bath induces plentiful perspiration, and has been said to be very effectual in removing obstinate pains in the limbs.

Balneum sulphureum. A bath, containing some preparation of sulphur.

Balneum tepidum. A tepid bath.

Balneum vaporis. A vapour bath.

BALSAM. (*Balsamum*, *i.* n. βαλσαμον; from *baal samen*, the Hebrew for the prince of oils.) This term was formerly applied to any strong scented natural vegetable resin of about the fluidity of treacle, inflammable, not miscible with water without addition, and supposed to be possessed of medicinal virtues. Many medicines compounded of various resins or oils, and brought to a semifluid consistence, also obtained the name of balsam. Latterly, however, chemists have restricted this term to vegetable juices, either liquid, or which spontaneously become concrete, consisting of a substance of a resinous nature, combined with benzoic acid, or which are capable of affording benzoic acid, by being heated alone, or with water. They are insoluble in water, but readily dissolve in alkohol and ether. Balsams are *solid*, as benzoin and storax, or *fluid*, as the Peruvian balsam and balsam of Tolu. Balsams are called *native* or *natural* when they exude from the plants which produce them, and *artificial* or *factitious* when they are compounded by art.

Balsam apple, male. See *Momordica balsamina.*

Balsam, artificial. Compound medicines are thus termed which are made of a balsamic consistence and fragrance. See *Balsam.*

Balsam of Canada. See *Pinus balsamea.*

Balsam, Canary. See *Dracocephalum.*

Balsam of Copaiba. See *Copaifera officinalis.*

Balsam of honey, Hill's. See *Hill's balsam of honey.*

Balsam of honey. The preparation sold under this name is generally either tincture of benzoin or tincture of tolu.

Balsam of horehound, Ford's. See *Ford's balsam of horehound.*

Balsam, natural. A balsam which exudes from a plant is thus called, as opposed to a balsamic compound formed by art. See *Balsam.*

Balsam, Peruvian. See *Myroxylon peruiferum.*

Balsam of sulphur. See *Balsamum sulphuris.*

Balsam of Tolu. See *Toluifera balsamum.*

Balsam, Turkey. See *Dracocephalum.*

Balsama'tio. (From *balsamum*, a balsam.) The embalming of dead bodies.

Balsameus. See *Balsamic.*

Balsamelæ'on. (From βαλσαμον, balsam, and ελαιον, oil.) Balm of Gilead. See *Amyris gileadensis.*

Ba'lsami oleum. Balm of Gilead. See *Amyris gileadensis.*

BALSA'MIC. *Balsamicus; balsameus;* from *balsamum*, balsam.) Relating to a balsam; or possessed of the properties of a balsam. Hoffman applies this name to medicines which are hot and acrid, and also to the natural balsams, stimulating gums, &c. by which the vital heat is increased. Dr. Cullen speaks of them under the joint title of *balsamica* et *resinosa*, considering turpentine as the basis of all balsams.

BALSAMI'FERA. (From *balsamum*, balsam, and *fero*, to bear.) Balsam-bearing.

Balsamifera braziliensis. See *Copaifera officinalis.*

Balsamifera indicana. See *Myroxylon peruiferum.*

Balsamina. See *Impatiens.*

Balsamina fœmina. See *Impatiens.*

Balsamita fœminea. See *Achillea ageratum.*

Balsamita lutea. See *Polygonum.*

Balsamita major. See *Tanacetum balsamita.*

Balsamita mas. See *Tanacetum balsamita.*

Balsamita minor. See *Achillea ageratum.*

Balsamum. See *Balsam.*

Balsamum acusticum. Acoustic balsam. This has been composed according to a variety of formulæ, but always consists of a mixture of antispasmodic tinctures, essential oils and the like. One recommended by Baumé consists of tinctures of assafœtida, ambergris, and castor, balsamum tranquillitatis, terebinthinate balsam of sulphur, and oil of rue. The acoustic balsam is dropped into the ear, or a piece of cotton moistened with it introduced in cases of atonic deafness.

Balsamum Ægyptiacum. See *Amyris gileadensis.*

Balsamum alpini. See *Alpini balsamum.*

Balsamum americanum. See *Myroxylon peruiferum.*

Balsamum anodynum Bateï. See *Bates's anodyne balsam.*

Balsamum anodynum guidonis. *Balsamu*

guidonis. A vulnerary balsam prescribed by Guy of Caliac. It consisted of hepatic aloes, ammoniacum, bdellium, caranna, castor, galbanum, labdanum, myrrh, Peruvian balsam, olibanum, amber, tacamahaca, storax, and Venice turpentine.

Balsamum apoplecticum. This was prepared with musk, amber, civet, Peruvian balsam, volatile oils, &c. It was applied externally to the head and nostrils of apoplectic patients, and was believed to be of great efficacy in that disease.

Balsamum arcæi. A digestive ointment formerly in great repute; it was the same with the *unguentum elemi compositum* of the present pharmacopœias.

Balsamum asiaticum. See *Amyris.*

Balsamum braziliense. See *Copaifera officinalis.*

Balsamum canadense. See *Pinus balsamea.*

Balsamum carpathicum. The essential oil distilled very carefully from the fresh cones of the trees which yield the common turpentine.

Balsamum cephalicum saxonicum. A distillation from various essential oils, as those of lavender, amber, penny-royal, marjoram, sage, rue, nutmeg, &c. It is not now in use.

Balsamum commendatoris. Friar's balsam. See *Tinctura benzoini composita.*

Balsamum copaibæ. See *Copaifera officinalis.*

Balsamum embryonum. *Aqua embryonum.* A preparation made by mixing a vinous infusion of different aromatics, misletoe, &c. with several kinds of distilled waters; digesting and then distilling. It was used internally and externally with a view of preventing abortion by strengthening the fœtus and the womb; whence its name.

Balsamum genuinum antiquorum. See *Amyris gileadensis.*

Balsamum gileadense. See *Amyris gileadensis.*

Balsamum guaiaci'num. An old preparation made by dissolving a pound of guiac, and three drachms of Peruvian balsam in two pints and a half of rectified spirits of wine.

Balsamum guidonis. See *Balsamum anodynum guidonis.*

Balsamum hungaricum. A resin which exudes from the extremities of the branches of the *Pinus pumilio*, and is also expressed from the cones of the same tree.

Balsamum judaicum. See *Amyris gileadensis.*

Balsamum locatelli. *Balsamum Lucatelli.* A preparation made of olive oil, Venice turpentine, yellow wax, and red saunders. It was formerly exhibited in pthisis, coughs of long standing, &c. but is now disused.

Balsamum mas. See *Tanacetum balsamita.*

Balsamum e mecca. See *Amyris gileadensis.*

Balsamum mexicanum. See *Myroxylon peruiferum.*

Balsamum persicum. Friar's balsam. See *Tinctura benzoini composita.*

Balsamum peruvianum. See *Myroxylon peruiferum.*

Balsamum rackasi'ri. *Balsamum racacira. Balsamum rhadasiri.* A balsamic substance which is inodorous when cold, but when heated has a smell somewhat resembling the balsam of Tolu. It is slightly bitter to the taste, and adheres to the teeth when chewed. It is brought from India in gourd shells. It is not known whether this be a natural or a factitious balsam. It has been extolled as possessing the same virtues as copaiva in a higher degree; but it is hardly ever prescribed in this country.

Balsamum saponaceum. Opodeldoc. See *Linimentum saponis compositum.*

Balsamum saturni. The remedy so named is prepared by dissolving acetate of lead in oil of turpentine. It is a good application for cleansing foul ulcers.

Balsamum styracis benzoini. See *Styrax benzoin.*

Balsamum succini. Oil of amber.

Balsamum sulphuris. *Oleum sulphuratum. Balsamum sulphuris simplex. Balsamum sulphuris crassum.* A solution of sulphur in olive oil in the proportion of one part of the former to eight of the latter; their union being effected by a gentle heat. This preparation was formerly given in catarrh, asthma, and other pectoral affections in doses of from ♏v. to ʒss. in water. It is never administered internally at present, but is sometimes used as an application to foul ulcers.

Balsamum sulphuris ani'satum. A solution of sulphur in oil of aniseed, with or without the addition of oil of turpentine.

Balsamum sulphuris barbadense. *Petroleum sulphuratum.* Sulphur boiled with Barbadoes tar.

Balsamum sulphuris crassum. See *Balsamum sulphuris.*

Balsamum sulphuris simplex. See *Balsamum sulphuris.*

Balsamum sulphuris terebinthinatum. This is made by digesting sulphur with oil of turpentine; its use is now confined to veterinary medicine.

Balsamum syriacum. See *Amyris gileadensis.*

Balsamum tolutanum. See *Toluifera balsamum.*

Balsamum traumaticum. Vulnerary balsam. A simplification of the Friar's balsam. See *Tinctura benzoini composita.*

Balsamum universale. The ceratum plumbi compositum has been so called.

Balsamum verum. See *Amyris gileadensis.*

Balsamum viride. Green balsam. 1. A preparation formerly much used by surgeons as a detergent. It was made of verdigris, linseed oil, and elemi; or of verdigris, linseed oil, and oil of turpentine, or of verdigris and linseed oil without any other ingredient. There is a perparation still used in France called *Baume vert de Metz, Balsamum viride Metense*, which consists of subcarbonate of copper, sulphate of zinc, turpentine, aloes, and several fixed and volatile oils.

2. A natural balsam brought from Peru. It is the produce of the *Chloroxylon verticillatum.*

Balsamum vitæ. Several artificial balsams have been so called; as *Balsamum Vitæ Hoffmanni, Balsamum Vitæ Teichmeyerianum*, &c. That of Hoffman was the most celebrated. It

was composed of ambergris, balsam of Peru, and a variety of essential oils dissolved in highly rectified spirit of wine. It was used both externally as a corroborant, and internally as a cordial, &c. The number of its ingredients is now much diminished, and it is scarcely used.

Balzoi'num. Benzoin.

BAMBA'LIO. (*o, onis.* m.; from *βαμβαινω*, to speak inarticulately.) One who stammers or lisps.

BAMBU'SA *Bamboo.* A genus of plants of the class *Triandria*, and order *Digynia*. It is well known in both the Indies under the name of *Bamboo*, whence its present systematic name is formed. The bamboos are magnificent, arborescent grasses, approaching the palms in magnitude and beauty. *Bambusa arundinacea*, the common bamboo, is applied to a variety of economical purposes. Various pickles and condiments are prepared from the young shoots, and the substance called *tabasheen* which concretes in the cavities of the bamboo, is much esteemed by the natives as a deobstruent.

Bamia. *Bammia.* The *Hibiscus esculentus.* See *Hibiscus esculentus.*

Bammia moscha'ta. The *Hibiscus abelmoschus.* See *Hibiscus abelmoschus.*

Ban or Bon. An Egyptian name of the coffee plant. See *Coffea arabica.*

Ban or Calaf. An Egyptian name of the *Salix Egyptiaca*, which see.

Bana'na. The Indian name of several plants of the genus *Musa.* See *Musa.*

BANDAGE. *Deligatio. Fascia.* An apparatus consisting of one or several pieces of linen, flannel, or other material, used by surgeons to give support to parts, to exert pressure on them, or to retain dressings, &c. in their proper position. Bandages are either simple or compound. The chief of the simple are the circular, the spiral, the uniting, the retaining, the expellant, and the creeping. The compound bandages are the T bandage, the suspensory one, the capistrum, the eighteen-tail bandage, and others, which are described in surgical treatises.

Bandu'ra. The name given by the Hindoos to the *Nepenthes indica.* See *Nepenthes.*

Bandy leg. A leg which has the bones curved outwards, or in any other direction.

Bangue. See *Cannabis indica.*

Banilla. See *Epidendrum vanilla.*

Baobab. See *Adansonia digitata.*

Baptica coccus. The kermes berry. See *Kermes.*

Barac. *Barach panis.* Nitre.

Baras. An Arabic name of the Alphos or white leprosy.

BA'RBA. *a, æ.* f. A beard.

1. In *Anatomy*, the hair which grows on the chin and adjacent parts of the face in man, and some other animals. In the human species the beard is confined to the male. It begins to appear at the age of puberty, but does not acquire much strength till that of manhood. The beard is, generally speaking, one of the characteristics of virility, and does not exist in those who have been castrated in early life; it is not, however, essentially so, for the South American tribes called *Guaranis* and *Coroados* are entirely destitute of a beard; and among other nations we sometimes observe men who have very little beard, without being at all less virile than others.

The existence of a beard in woman has sometimes occurred as an anomaly; in such cases, the individual generally appears deficient in the ordinary characteristics of the female.

2. In *Botany*, the hairy tufts which are found on various parts of plants, as on the leaves of the *Mesembryanthemum barbatum.*

Barba aronis. See *Arum maculatum.*

Barba capræ. See *Spirea ulmaria.*

Barba hirci. See *Tragopogon.*

Barba jovis. Jupiter's beard.

1. This name has been given to several plants, as to the *Anthyllis barba jovis*, and *Sempervivum tectorum*; the *Anthyllis hermaniæ*, also, has been called *Barba jovis cretica.*

2. When a mixture of tin in powder and corrosive sublimate (in the proportion of one part of the former to three of the latter) is distilled, a colourless volatile liquid, emitting dense white fumes on exposure to the atmosphere passes over. This is a bichloride of tin, and was formerly called the *fuming liquor of Libavius.* A portion of the bichloride concretes in the neck of the retort, during the distillation, in the form of flowers, and the substance thus deposited, was called by the old chemists *Barba jovis.*

Barbadoes cherry. See *Malpighia glabra.*

BARBADOES LEG. A disease so called from its being endemic in the island of Barbadoes; it is not, however, confined to that island, for it is very frequent on the south west coast of Ceylon, the coast of Malabar, in some parts of Japan, in Egypt, and in Abyssinia: it is also common in the West Indies, in the Polynesian islands, and in many parts of South America; it seems, indeed, to be pretty frequent in most hot climates, and occurs sporadically in all parts of Europe, and probably all over the world. It was first described by the Arabian physician Rhazes under the name of *dal fil*, which signifies *elephant disease*, and has allusion to the unwieldy bulk of the legs. This term was unfortunately rendered *elephantiasis* by the Latin translators of the Arabians; but the name elephantiasis had been already appropriated by the Greeks to a tubercular disease of quite a different character, and hence till lately great confusion existed among writers. In order to distinguish the two diseases, one has been called *Elephantiasis Arabum*, and the other *Elephantiasis Grecorum.* We have here adopted the familiar name of *Barbadoes leg* for the disease of which we are now treating, and refer the reader to the article *Elephantiasis* for a description of the tubercular affection.

In this disease, when in an advanced stage, the limb is tumid, hard, livid, and enormously misshapen, the skin at first is glabrous, afterwards thick, scaly, and warted, bulging in some parts, and indented in others. These appearances are occasioned by an effusion of albuminous matter into the cellular tissue under the skin of the affected part, in consequence, it is presumed, of inflammation of the lymphatics

of the limb. The bloodvessels, and particularly those of the surface, are here also greatly relaxed; and hence the skin very soon becomes suffused with a deep red or purple hue; while the saburral fluid that exudes from the cutaneous exhalents concretes into rough and sordid scales, and the skin itself becomes enormously thickened and coriaceous. The effusion is usually preceded by an attack of febrile symptoms, and an inflammatory affection of the part much resembling erysipelas; and these feverish symptoms have a tendency to recur, though often at irregular periods, so as to resemble somewhat an erratic intermittent. Every fresh attack adds considerably to the effusion, and, consequently, to the morbid size of the limb, so that in cases of long standing the deformed bulk of the part is altogether monstrous. Although the leg be the most common seat of this disease no part of the body is exempt from its attacks. It may invade any of the limbs or any of the internal viscera, and during the febrile state, the morbid action frequently undergoes a sudden metastasis to the brain, or some viscus of the thorax, or abdomen, either proving fatal or again flying back with the same rapidity to the external part from which it receded. The local pain which accompanies each successive attack diminishes in proportion as the skin becomes callous, and at length ceases entirely. The general health is from the first little disturbed, except during the accessions of fever, and the patient often lives to an advanced age. This disease is common to all ages, but it chiefly affects the young. It seizes equally on both sexes, and the liability to it does not seem to be influenced by any particular mode of life. The natives of tropical climates appear to be much more obnoxious to it than foreigners. In Barbadoes, it is said to have been confined to the black population till about the year 1704, when it began to attack the white people also, and by the middle of last century it was common among them. Europeans seem to be little liable to it, till after they have resided a considerable time in the island. In the East Indies it may be said to be confined to the natives, or if any exceptions occur they are rare; it is, however, unlikely that Europeans should be entirely exempt in India, where the the disease is so prevalent, since scattered instances occur in every part of Europe.

In the treatment of this disease our object should be to diminish febrile and inflammatory action, and if possible to prevent effusion at the first attack. With this view general and local bleeding, purgatives, and the antiphlogistic regimen are to be prescribed according to circumstances; the exhibition of mercury so as to affect the mouth is rationally indicated, and appears to have been practised with success, both as relates to the prevention of metastasis and the limitation of effusion. Leeches and warm fomentations and poultices are the best local means that can be used; scarifications, similar to those recommended by Mr. Copland Hutchison in erysipelas, are also resorted to with advantage. In the chronic stage, when the limb is greatly enlarged and indurated, very little can be done. In cases where the febrile paroxysms have altogether ceased for a long time, and the local affection is productive of extreme inconvenience, it has been proposed to amputate the limb, and the operation has in a few instances been practised with success.

Barbadoes nut. See *Jatropha.*

Barbadoes tar. See *Petroleum barbadense.*

Barbarea. See *Erysimum barbarea.*

Barba'ria. *Barbaricum.* An obsolete name of rhubarb. See *Rhubarbarum.*

Barbarossæ pilulæ. Barbarossa's pills. These were composed of quicksilver, rhubarb, diagridium, musk, amber, &c. It was one of the earliest mercurial medicines which came into general estimation.

Ba'rbarum. The name of an agglutinant plaster mentioned by Scribonius Largus.

Barbate. See *Barbatus.*

BARBA'TUS. (From *barba*, a beard.) Bearded: applied, in botany, to leaves or other parts of plants which have a hair-like appendage; as the *Mesembryanthemum barbatum*, and *Spananthe paniculata*; and, in zoology, to animals which have a beard or an appendage resembling one.

Barbel. See *Cyprinus barbus.*

Barberry. See *Berberis.*

Barbiers. See *Beriberi.*

Barbo. See *Cyprinus barbus.*

Barbo'ta. The barbut. A small river fish. See *Cyprinus barbus.*

Barbus. See *Cyprinus.*

Barclay's antibilious pills. These consist of colocynth ʒij., extract of jalap ʒj., almond soap ʒiss., guiac. ʒiij., emetic tartar gr. viij., essential oils of juniper, carraway, and rosemary, of each gtt. iv., made into a mass with a sufficient quantity of syrup of buckthorn, and divided into sixty-four pills.

Barda'na. (*a*, *æ*. f.; from *bardus*, foolish: because silly people are apt to throw the burs upon the garments of passengers.) Burdock. See *Arctium lappa.*

BARE'GES. The small village of Baréges, celebrated for its thermal waters, is situated on the French side of the Pyrenees, about half way between the Mediterranean and the Bay of Biscay. There are several thermal springs containing sulphuretted hydrogen, carbonic acid, muriates of magnesia and soda, sulphates of magnesia and lime, a little silica, &c. The several springs differ somewhat in their temperature, and in the quantity of sulphur they contain, the hottest being most strongly impregnated with this active ingredient. The coolest of these waters raises Fahrenheit's thermometer to 73°; the hottest to 120°. The Baréges waters are remarkable for producing a very smooth soapy sensation on the skin which renders it very soft and pliable. They are used as a bath in cutaneous and scrofulous affections, gouty and rheumatic cases, rigidity of the joints, &c. Taken internally they give considerable relief in disorders of the stomach, especially those attended with acidity and heartburn, in obstinate colics, jaundice, and in gravel, and other affections of the urinary organs.

Bariglia. See *Barilla.*

BARI'LLA. (*a*, *æ*. f.) This name is given in commerce to the impure soda imported from Spain and the Levant. Barilla is procured by burning to ashes different plants that grow on the sea shore, chiefly of the genus *salsola*, and is brought to us in hard porous masses, of a speckled brown colour. Kelp, which is made in this country by burning sea-weeds, and is called *British barilla*, is much more impure.

BA'RIUM. *um*, *i*. n. The metallic basis of the earth baryta, so named by Sir Humphrey Davy, who discovered it by a process suggested by Berzelius and Pontin.

The process is as follows: — Make pure baryta or its carbonate into a paste with water, and put this on a plate of platina. Make a small cavity in the surface of the mass, and place in it a globule of mercury. Touch the globule with the negative wire, and the platinum with the positive wire, of a voltaic battery of about 100 double plates. In a short time an amalgam will be formed, consisting of mercury and barium. Introduce this amalgam into a small bent tube of glass, free from lead, sealed at one end, which being filled with the vapour of naphtha, is then to be hermetically sealed at the other end. Apply heat to the recurved end of the tube, where the amalgam lies. The mercury will distil over, while the barium will remain.

This metal is of a dark gray colour, with a lustre inferior to that of cast iron. It is fusible at a red heat. Its density is much greater than that of sulphuric acid, in which it sinks immediately. When exposed to the air, it instantly becomes covered with a crust of baryta; and when gently heated burns with a deep red light. It effervesces violently in water, converting this liquid into a solution of baryta. Barium has hitherto been obtained only in very small quantities, and its properties are not yet fully ascertained. It combines with *oxygen* in two proportions. The oxide constitutes the earth called Baryta. (See *Baryta*.) The peroxide may be formed by exposing pure baryta at a red heat, in a porcelain tube to a stream of dry oxygen gas: or it may be obtained by an easier process lately proposed by Wöhler and Liebig, which consists in subjecting pure baryta to a low red heat in a platina crucible, and then adding gradually about a fourth part of chlorate of potash; the chloric acid gives oxygen to the baryta, and peroxide of barium and chloride of potassium result. The chloride is removed by washing with cold water, and the peroxide of barium remains as a hydrate.

Barium combines with *chlorine* in equal proportions. The chloride is formed by passing chlorine gas over baryta at a red heat; the chlorine displaces the oxygen. The same compound may be formed, by subjecting crystallised muriate of baryta to a red heat. The chloride of barium is soluble in five times its weight of cold water, and is much more soluble in boiling water. It is fusible at a strong red heat.

Barium also combines with *bromine* in equal proportions. It is prepared by boiling protobromide of iron with an excess of moist carbonate of baryta, evaporating the filtered solution, and heating the residue to redness. The bromide of barium is crystallisable in white rhombic prisms which have a bitter taste, are soluble in water and alkohol, and slightly deliquescent.

Sulphuret of barium may be formed by passing sulphuretted hydrogen gas over red hot baryta, in a porcelain tube; or by fusing a mixture of sulphur and baryta in a crucible; or by igniting a mixture of sulphate of baryta and charcoal, both reduced to fine powder. The sulphuret of barium is readily soluble in hot water, and separates on cooling in white scaly crystals. Its taste is acrid. It absorbs oxygen rapidly from the atmosphere, and is converted into sulphate of baryta. A combination of barium with iodine may be formed by heating hydriodate of iron, with an excess of carbonate of baryta, evaporating to dryness, and dissolving in water, from which the ioduret is deposited in silky acicular crystals. It has been lately used in France in some scrofulous cases, in the form of an ointment made with four grains of the ioduret to one *once* of lard.

BARK. *Cortex*. 1. The common integument of vegetables. It consists of, 1. A *cuticle* or *epidermis*. 2. A cellular substance, which generally contains the colouring matter, and has been called *Enveloppe cellulaire* by Du Hamel, and *Tissu herbacé* by Mirbel. 3. The true bark, the innermost layer of which is called *liber*.

2. The Peruvian bark is called *bark* by way of eminence. See *Cinchona*.

Bark, Caribæan. See *Cinchona caribæa*.

Bark, essential salt of. See *Essential salt of bark*.

Bark, Jamaica. See *Cinchona caribæa*.

Bark, Peruvian. See *Cinchona*.

Bark, red. See *Cinchona oblongifolia*.

Bark, yellow. See *Cinchona cordifolia*.

Barley. See *Hordeum*.

Barley, caustic. See *Cevadilla*.

Barley, pearl. See *Hordeum*.

BARNET. A town near London, where there is a purging mineral water of a similar quality to that of Epsom, and about half its strength.

BARO'METER. (From *βαρος*, weight, and *μετρον*, a measure.) An instrument for determining the weight of the atmosphere; it is commonly called a weather glass. The barometer was discovered by Torricelli. It is made thus: take a glass tube more than thirty inches long, seal it hermetically at one end, fill it with mercury, and invert it in a basin of the same fluid; the mercury in the tube will fall to a point, at which it is exactly balanced by the pressure of the atmosphere on the surface of the mercury in the basin, leaving a vacuum in the upper part of the tube. The ascent and descent of the mercury in the tube indicates the variations in the weight of the atmosphere. The whole is supported by a convenient apparatus, to which a scale is adapted for measuring the height of the mercury.

BARO'NES. Small worms.

BARRAS. The resinous juice which exudes from the *Pinus maritima*, and concretes on the bark in yellow masses. It is also called galipot.

BARREN. In *Botany*, a barren flower,

flos abortivus, is such as produces no perfect seeds. The barren flowers are generally such as have stamens, but no pistils: these are also called male flowers. Flowers which have only pistils, are sometimes barren, owing to the absence of other flowers which bear the stamens. In the umbelliferous flowers, it is not uncommon to have several of the florets barren, though they are furnished both with stamens and pistils, perhaps owing to some imperfection in the pistils.

Barrenness. See *Sterility.*

Bartholinianæ glandulæ. See *Sublingual glands.*

Baryecoi'a (βαρυηκοια; from βαρυς, dull, and ακουω, to hear.) Dulness of hearing. Deafness.

Baryoco/ccalon. (From βαρυς, heavy, and κοκκαλος, a nut; because it induces heavy sleep.) See *Datura stramonium.*

Barypho'nia. (*a*, *æ*. f.; from βαρυς, dull, and φωνη, the voice.) A difficulty of speaking.

Barypi'cron. (From βαρυς, heavy, and πικρος, bitter.) The *Absinthium latifolium*; so called on account of its intense bitterness.

BARY'TA (*a*. *æ*. f.; from βαρυς, heavy: so called because it is very ponderous.) The earth called baryta or barytes is a protoxide of barium. It occurs abundantly in nature in the form of sulphate and carbonate which constitute the several varieties of the mineral, well known under the name of *heavy spar* or *terra ponderosa.*

Baryta may be obtained by subjecting the nitrate of baryta to a red heat, which drives off the acid, or by exposing the carbonate to an intense white heat in a black lead crucible.

The *salts of baryta* are white, and more or less transparent. All the soluble sulphates cause in the soluble salts of barytes, a precipitate insoluble in nitric acid. They are all poisonous except the sulphate; and hence the proper counter-poison is dilute sulphuric acid for the carbonate, and sulphate of soda for the soluble salts.

The muriate of baryta is a very acrid and poisonous preparation. It has been used medicinally, and in small doses it is said to be sudorific, diuretic, deobstruent, and alterative; in an overdose it is emetic, and violently purgative. The late Dr. Crawford found it very serviceable in all diseases connected with scrofula; and the Germans have employed it with alleged success in some diseases of the skin and viscera, and obstinate ulcers. The dose of the saturated solution in distilled water is from five to fifteen drops for children, and from fifteen to twenty for adults.

Baryta is of a whitish-gray colour: it is more caustic than strontia, and at least as much so as lime. It renders the syrup of violets green, and the infusion of turmeric red. When swallowed it acts as a violent poison. It is destitute of smell.

Basani'tes. (*es*, *æ*. m.; from βασανιζω, to try or put to the test.) *Basanus.* A stone which was used by the ancients to try the purity of gold and silver. Apothecaries' mortars were also made of it. It appears to have been a kind of basalt.

Base. See *Basis.*

Base, acidifiable. See *Acid.*

Base, acidifying. See *Acid.*

Basia'tor. (From *basio*, to kiss.) The orbicularis oris muscle.

Basil. See *Ocimum basilicum.*

BASILA'RIS. (From *basis*, a base.) Basilary. Appertaining to the base. A term used in anatomy: thus a process of the occipital bone is called the basilary process, because it is situated at the base of the skull.

Basilaris apophysis. See *Occipital bone.*

Basilaris arteria. Basilary artery. An artery of the brain; so called, because it lies upon the basilary process of the occipital bone. It is formed by the junction of the two vertebral arteries within the skull, and runs forwards to the sella turcica along the pons varolii, which, as well as the adjacent parts, it supplies with blood.

Basilaris processus. See *Occipital bone.*

Basilary. See *Basilaris.*

Basilica mediana. See *Basilica vena.*

Basilica nux. The walnut.

Basilica vena. The large vein that runs on the inner side of the arm, and evacuates its blood into the axillary vein. The branch which crosses, at the bend of the arm, from the long median vein to join the basilic, is called the *median basilic.* Either of them may be opened in the operation of blood-letting.

Basilicon. See *Basilicum unguentum.*

Basi'licum. (From βασιλικος, royal; so called from its great virtues.) See *Ocimum basilicum.*

Basilicum unguentum. See *Unguentum basilicum.*

BASI'LICUS. (From βασιλευς, a king.) This term has been applied in *anatomy*, to parts supposed to be very important in their functions, and in *pharmacy* to compositions highly esteemed for their efficacy.

Basilicus pulvis. See *Pulvis basilicus.*

Basili'dion. An ointment for the itch used by Galen.

Ba'silis. The name of a collyrium mentioned by Galen.

BASILI'SCUS. (*us*, *i*. m.; from βασιλευς, a king.) The basilisk. 1. A highly poisonous serpent; so called, according to Pliny, from a white spot upon its head, which resembles a crown. Many extravagancies were believed by the ancients concerning the deadly powers of this serpent. It blasted every thing by its breath, and all other serpents fled from its hiss. The moderns added more wonders, and made out that the basilisk was a monster which sprung from a cock's egg! whence it was also called cockatrice, from two Saxon words, signifying *cock* and *egg*: it was also said to be generated between a cock and a toad. The eye of the basilisk was believed to possess the most formidable powers of fascination.

2. The philosopher's stone.

3. Corrosive sublimate.

Ba'sio-ce'rato-glo'ssus. The *Hyoglossus* muscle has been so named from its attachment to the basilary process of the occipital bone, the corner of the os hyoides, and the tongue.

Basio-glossus. That portion of the *hyoglossus* muscle which is inserted into the base of the os hyoides has been so called.

Basio-pharyngeus. See *Constrictor pharyngis medius*.

BA'SIS. (*is, is.* f.; βασις, from βαινω, to go: originally the step or walk of any animal, or the sole of the foot on which the body is supported in walking; and hence analogically, that part of any body which supports all the rest, namely, the lowest part. The Base. 1. In *Anatomy*, this word is frequently applied to a part from which other parts appear, as it were, to proceed, or by which they are supported.

2. In *Pharmacy*, the principal ingredient in a compound is called the basis.

3. In *Chemistry*, this term is usually applied to alkalis, earths, and metallic oxides, in their relations to the acids and salts. It is sometimes also applied to the particular constituents of an acid or oxide, on the supposition that the substance combined with oxygen, &c. is the basis of the compound to which it owes its particular qualities.

Bassi colica. The name of a medicine invented by Julius Bassus, and compounded of aromatics and honey. — *Scribonius Largus.*

Bassora gum. *Gum Kuteera. Gummi vermiculatum.* A substance which distils from the *Sterculia urens.* It is in wrinkled drops, destitute of taste and smell, consisting principally of the substance called *bassorine*, which is not properly a gum, but a peculiar vegetable principle. See *Bassorine.*

BA'SSORINE. So called because it was discovered by Vauquelin in the Bassora gum. A substance extracted from the gum resins, by treating them successively with water, alkohol, and ether. Bassorine, being insoluble in these liquids, remains mixed merely with the woody particles, from which it is easily separated by repeated washings and decantations. This substance swells up in cold as well as in boiling water, without any of its parts dissolving, but it is almost completely soluble by the aid of heat, in water sharpened with nitric or muriatic acid. If, after concentrating the nitric solution with a gentle heat, we add highly rectified alkohol, a copious white flocculent precipitate is thrown down, which, when washed with an excess of alkohol and dried, forms less than a tenth of the quantity of bassorine employed, and which presents all the properties of gum arabic.

BASTARD. A term employed in medicine and botany, to designate a disease or plant, which resembles another, but is not really the same: thus *bastard peripneumony, bastard pellitory*, &c.

Bastard pellitory. See *Achillea ptarmica.*

Bastard peripneumony. See *Peripneumonia notha.*

Bastard pleurisy. See *Peripneumonia notha.*

Bata'tas. The natives of Peru give this name to the root of a species of convolvulus, and also to the potatoe, which is a native of that country. See *Solanum tuberosum*, and *Convolvulus batatas.*

Batatas peregrina. See *Ipomœa quamoclit.*

Bateman's pectoral drops. These consist chiefly, according to Dr. Paris, of tincture of castor, with proportions of camphor and opium, flavoured with aniseed and coloured with cochineal.

Bate's anodyne balsam. A preparation corresponding with the linimentum saponis compositum of the present pharmacopœias.

BATH. 1. A place for bathing, or the medium in which the body is bathed. See *Balneum.*

2. The name of a city in Gloucestershire that has long been celebrated for its numerous hot springs, called *Bathoniæ aquæ, Solis aquæ, Badiguæ aquæ*, which are of a higher temperature than any in this kingdom (from 112° to 116°), and are, indeed, the only natural waters we possess, that are at all hot to the touch, all the other thermal waters being of a heat below that of the human body. There are three principal springs in the city of Bath, namely, those which supply the *King's Bath*, the *Cross Bath*, and the *Hot Bath*; all within a short distance of each other, and emptying themselves into the river Avon, after having passed through the several baths. These sources are so copious, that all the large reservoirs used for bathing are filled every evening with fresh water, from their respective fountains. The springs do not differ materially in their physical or medicinal qualities. According to Dr. Falconer the water, when newly drawn, appears clear and colourless, and remains perfectly inactive, without any signs of effervescence. After being exposed to the open air for some hours, it becomes rather turbid, by the separation of a pale yellow, ochery precipitate, which gradually subsides. No odour is perceptible from a glass of the fresh water, but a large mass of it, when fresh drawn, communicates a slight sensation of pungency to the taste. When hot from the pump it affects the mouth with a strong chalybeate impression without being of a saline or pungent taste; but on growing cold, the chalybeate taste is entirely lost, leaving only a very slight sensation on the tongue, by which it can scarcely be distinguished from common hard spring water. The temperature of the King's Bath water, which is usually preferred for drinking, is, when fresh drawn in the glass, above 116°; that of the Cross Bath, 112°. After flowing into the spacious bathing vessels, it is generally from 100° to 106° in the hotter baths, and from 92° to 94° in the Cross Bath: a temperature which remains nearly stationary, and is greater than that of any other natural spring in Britain. A small quantity of gas is also disengaged from these waters, which Dr. Priestley first discovered to contain no more than one twentieth part of its bulk of fixed air, or carbonic acid. The Bath waters, according to the most accurate analysers, Doctors Lucas, Falconer, and Gibbs, contain so small a proportion of iron, as to amount only to one twentieth or one thirty-eighth of a grain in the pint; and according to Dr. Gibbs, fifteen grains and a quarter of siliceous earth in the

gallon. Dr. Saunders estimates a gallon of the King's Bath water to contain about eight cubic inches of carbonic acid, and a similar quantity of air, nearly azotic, about eighty grains of solid ingredients, one half of which probably consists of sulphate and muriate of soda, fifteen grains and a half of siliceous earth, and the remainder of selinite, carbonate of lime, and so small a portion of oxide of iron as to be scarcely calculable. Hence he concludes, that the King's Bath water is the strongest chalybeate; next in order, the Hot Bath Water; and, lastly, that of the Cross Bath, which contains the smallest proportions of chalybeate, gaseous, and saline, but considerably more of the earthy particles; while its water, in the pump, is also two degrees lower in temperature than that of the others. It is now likewise ascertained, that these springs do not exhibit the slightest traces of sulphur, though it was formerly believed, and erroneously supported on the authority of Dr. Charleton, that the Bath waters contained a subtile sulphureous principle.

With regard to the effect of the Bath waters on the human system, independent of their specific properties as a medicine, not to be imitated completely by any chemical process, Dr. Saunders attributes much of their salubrious influence to the natural warmth peculiar to these springs, which for ages have preserved a remarkable uniformity of temperature. He thinks, too, that their external application is one of their most important uses, yet supposes that, in their effects, they differ little from common water, when heated to the same temperature, and applied under similar circumstances.

According to Dr. Falconer, the Bath water, when drunk fresh from the spring, generally accelerates the pulse, increases the heat, and promotes the different secretions. These symptoms, in most cases, become perceptible soon after drinking it, and will sometimes continue for a considerable time. It is, however, remarkable, that they are only produced in invalids.

One of the most salutary effects of the Bath water, is its action on the urinary organs, even when taken in moderate doses. Its operation on the bowels varies in different individuals, like that of all other waters which do not contain any cathartic salt; but, in general, it produces costiveness: an effect which probably results rather from the determination it occasions to the skin, than from any astringent quality; for if perspiration be suddenly checked during the use of it, a diarrhœa is sometimes the consequence. It would seem that the stimulant powers of the Bath waters are primarily and more particularly exerted on the stomach, where it produces a variety of symptoms, sometimes light and transient, but occasionally, so considerable and permanent, as to require a discontinuance of its use. In those individuals with whom they are likely to agree and prove beneficial, the Bath waters excite, at first, an agreeable glowing sensation in the stomach, which is speedily followed by an increase both of appetite and spirits, as well as a quick secretion of urine. In others, the use of them is attended with headach, thirst, constant dryness of the tongue, heaviness, and sickness; in which cases it may be justly inferred that they are prejudicial, and ought to be discontinued: the same conclusion may be drawn when they are not duly evacuated by urine or perspiration.

The diseases for which these celebrated waters are resorted to, are very numerous, and are some of the most important and difficult of cure of all that come under medical treatment. In most of them, the use of the bath is combined with the internal administration of the water. Generally speaking, the cases in which the use of these waters is indicated, are those where a gentle, gradual, and permanent stimulus is required. Bath water may certainly be considered as a chalybeate, in which the iron is in very small quantity, but in a highly active form; and its stimulating power is probably increased by its high temperature. These circumstances point out the necessity of certain cautions, which, from a simple view of the chemical constitution of the water, might be thought superfluous. The employment of the Bath waters is hazardous, and might often do considerable mischief, in various cases of active inflammation, and in irritable habits, where there exists a strong tendency to hectic fever; and, in general, wherever a quick pulse and dry tongue indicate febrile disturbance of the system. The cases to which this water is peculiarly suited, are principally of the chronic kind; and by a steady perseverance in the remedy, very obstinate disorders have given way. Dr. Saunders, in his Treatise on Mineral Waters, considers the following as the cases in which the Bath waters are chiefly applicable. 1. Chlorosis, a disease which, at all times, is much relieved by steel, and will bear it even where there is a considerable degree of feverish irritation, receives particular benefit from the Bath water: and its use, as a warm bath, conributes greatly to remove that languor of circulation, and obstruction of the natural evacuations, which constitute the leading features of this common and troublesome disorder. 2. The complicated diseases, which are often brought on by a long residence in hot climates, affecting the functions of the stomach and alimentary canal, and which generally produce more or less organic derangement of the hepatic system, often receive much benefit from the Bath water, if used at a time when suppurative inflammation is not actually present. 3. Another and less active disease of the biliary organs, the jaundice, which arises from a simple obstruction of the gall-ducts, is still oftener removed by both the internal and external use of these waters. 4. In rheumatic complaints, the power of this water, as Dr. Charleton well observes, is chiefly confined to that species of rheumatism which is unattended with inflammation, or in which the patient's pains are not increased by the warmth of his bed. A great number of the patients that resort to Bath, especially those that are admitted into the hospital, are affected with rheumatism in all its stages; and it appears, from the most respect-

able testimony, that a large proportion of them are permanently cured. 5. In gout, the greatest benefit is derived from this water, in those cases where the gouty disposition manifests itself by anomalous affections of the head, stomach, and bowels; and it is here principally beneficial by establishing that active local inflammation in any limb, which relieves all the other troublesome and dangerous symptoms. Hence it is that Bath water is commonly said to produce the gout; by which it is only meant that, where persons have a gouty affection, shifting from place to place, and thereby much disordering the system, the internal and external use of the Bath water will soon bring on a general increase of action, indicated by a flushing in the face, fulness in the circulating vessels, and relief of the dyspeptic symptoms: and the whole disorder will terminate in a regular fit of the gout in the extremities, which is the crisis always to be wished for. 6. The colica pictonum, and the paralysis, or loss of nervous power in particular limbs, which is one of its most serious consequences, is found to be peculiarly relieved by the use of the Bath waters, more especially when applied externally, either generally, or upon the part affected.

The quantity of water taken daily, during a full course, and by adults, is recommended by Dr. Falconer, not to exceed a pint and a half, or two pints; and in chlorosis, with an irritable habit, not more than one pint is employed; and when the bath is made use of, it is generally two or three times a week, in the morning. The Bath waters require to be persevered in a considerable time before a full and fair trial can be made. Chronic rheumatism, habitual gout, dyspepsia from a long course of high and intemperate living, and the like, are disorders not to be removed by a short course of any mineral water; and many of those who have once received benefit at the fountains, find it necessary to make an annual visit to them, to repair the waste in health during the preceding year.

Bath, acid. See *Balneum.*

Bath, cold. See *Balneum.*

Bath, hot. See *Balneum.*

Bath, tepid. See *Balneum.*

Bath, vapour. See *Balneum.*

Bathing. See *Balneum.*

Bastennes. A place in Gascony where there are mineral waters said to be similar to those of Barèges.

Ba'thmis. (Βαθμις, a base.) The cavity of a bone which receives the articular extremity of another bone; as the fossa at the lower part of the humerus which admits the olecranon. *Hippocrates. Galen.*

Ba'thron. βαθρον. *Scamnum Hippocrates.* An instrument for reducing luxations in general, but especially those of the vertebra. *Galen Oribasius.*

Bathyfi'cron. (From βαθυς, deep, and πικρος, bitter.) A name given by Dioscorides to the *absinthium.*

Batisse. A place three leagues from Clermont. Its mineral waters contain subcarbonate of soda, sulphates of soda, iron, and lime, muriate of magnesia, and carbonate of lime.

Batitu'ra. A scale of any metal struck with a hammer at the forge.

Batra'chia. Animals of the frog kind. See *Animal Kingdom.*

Batra'chium. (*um, i.* n.; from βατραχος, a frog; because it is found in marshy situations, or because frogs are wont to lurk under its shade.) The herb crow's foot. See *Ranunculus.*

Batrachi'tes. See *Bufonites.*

Ba'trachus. (*us. i.* m.; βατραχος, a frog.) A tumor under the tongue, otherwise called *ranula.* What it has to do with a frog is by no means obvious. See *Ranula.*

Battari'smus. (From βατταριζω, to stammer, which again is derived from *Battos*, a king of Cyrene, who had that infirmity.) Stammering. See *Psellismus.*

Batta'ta peregrina. The cathartic potatoe. See *Ipomœa quamoclit.*

Battata virginiana. See *Solanum tuberosum.*

Battley's solution. See *Liquor opii sedatuus.*

Baul. A barbarous word for urine.

Baukin. A village in the department of the Somme. It has mineral springs which are strongly chalybeate.

Bay-cherry. See *Prunus lauro-cerasus.*

Bay-laurel. See *Prunus lauro-cerasus.*

Bay-leaves. See *Prunus lauro-cerasus.*

Bay-leaved passion-flower. See *Passiflora laurifolia.*

Bay salt. Common salt obtained by evaporating sea water in shallow ponds by the heat of the sun. It is of a dark grey colour and contains iodine. It is brought from France, Spain, and Portugal.

Bayda. A vessel used by the old chemists in distillations.

Bdellium. (*um, i.* n.; βδελλιον.)

A gum resin, called also *Adrobolon, Madelon, Bolchon, Balchus*, and, by the Arabians, *Mokel.* It has somewhat the appearance of very impure myrrh. The best bdellium is of a yellowish-brown, or dark-brown colour, according to its age; unctuous to the touch, brittle, but soon softening, and growing tough between the fingers; in some degree transparent; not unlike myrrh; of a bitterish taste, and a moderately strong smell. It does not easily inflame, and, when set on fire, soon goes out. In burning it crepitates a little, owing to its aqueous humidity. Its sp. grav. is 1·371. Alkohol dissolves about three fifths of bdellium, leaving a mixture of gum and cerasin. Its constituents, according to Pelletier, are 59 resin, 9·2 gum, 30·6 cerasin, 1·2 volatile oil and loss. It is one of the weakest of the deobstruent gums. It was sometimes used as a pectoral and as an emmenagogue. Applied externally, it is stimulant, and promotes suppuration. It is never met with in the shops of this country.

Bdello'meter. (From βδελλα, a leech, and μετρον, a measure.) An instrument proposed as a substitute for the leech; it consists of a cupping-glass, to which are attached a scarificator, and exhausting syringe. The term is an absurd one, since it would imply that the leech not the blood, was measured.

Bean. See *Vicia faba.*

Bean, French. See *Phaseolus vulgaris.*

Bean, kidney. See *Phaseolus vulgaris.*

Bean, Malacca. See *Anacardium Indicum.* n the supplement.

Bean of Carthagena. See *Laurus pichurim* nd *Ocotea puchury.*

Bean, St. Ignatius'. See *Strychnos Sancti gnatii.*

Bear's Berry. See *Arbutus uva ursi.*

Bear's bilberry. See *Arbutus uva ursi.*

Bear's breech. See *Acanthus.*

Bear's foot. See *Hellebrous fœtidus.*

Bear's whortleberry. See *Arbutus uva ursi.*

Bear's whorts. See *Arbutus uva ursi.*

Beard. See *Barba.*

Beauvais. The chief town of the depart- ient of Oise; it has chalybeate springs.

Beccabunga. (*a, æ.* f.; from *bach bungen,* ater herb, German, because it grows in rivu- ts). See *Veronica beccabunga.*

Be'chicus. (From βηξ, a cough.) Remedial f a cough. An epithet given to many medi- ines, as *Trochiscus bechicus,* &c.

Be'chion. (From βηξ, a cough; so called om its supposed virtues in relieving coughs.) he colt's foot. See *Tussilago farfara.*

Be'cion. A corruption of bechion.

Beconguilles. A root which is brought om South America. It has emetic properties nalogous to those of ipecacuanha.

Becui'ba nux. A nut produced by a Bra- ilian tree, from which a balsam is drawn that s held in estimation in rheumatism.

Bedegar or Bedeguar. *Spongia cynosbati.* n excrescence found on different species of ild roses, and produced by the puncture of small insect, *Cynips rosæ.* It was formerly eld in great esteem as a remedy for the bite f poisonous animals, as a lithontriptic, and s a vermifuge; but it has now fallen into isuse.

Bedstraw. See *Galium aparine.*

Bee. See *Apis mellifica.*

Beech. See *Fagus sylvatica.*

Beer. See *Cerevisa.*

Bees' wax. See *Cera.*

Beet. See *Beta vulgaris.*

Beet, red. See *Beta.*

Beet, white. See *Beta alba.*

Begma. Βηγμα (From βησσω, to cough). he matter expectorated by coughing. — *Hip- ocrates.*

Bego'nia. A genus of plants. Class, *Mo- œcia;* order, *Polyandria.* The roots of *B. randiflora,* and *B. tomentosa* are used in Peru gainst hæmorrhages, diseases of the chest, curvy, &c.

Beguan. A bezoar or concretion found in he intestines of the iguana lizard.

Behen album. See *Centaurea, behen.*

Behen officinarum. See *Cucubalus behen.*

Behen rubrum. See *Statice limonium.*

Beidelsar. *Beid el ossar.* A plant used n Africa as a remedy for fever and the bites f serpents. It is supposed to be the *Asclepias procera.* Cataplasms made of its leaves are pplied to indolent swellings, and its caustic nilky juice is used to discuss venereal nodes. The Egyptians use the down of its seed as tinder.

Beju'io. *Habilla de Carthagenâ.* Bean of Carthagena. A kind of bean, famed in South America for being an effectual antidote against the poison of all serpents, if a small quantity be eaten immediately.

Bela-aye. (An Indian word.) See *Nerium antidysentericum.*

Beledamboc. A kind of convolvulus which grows in Malabar. It contains an acrid juice, which is made with oil and ginger into a liniment, and used against the bite of a mad dog.

Belamodagam. A Malabar plant of the genus *Scævola.* Its leaves are said to be diuretic and emmenagogue.

Belenoi'des. (From βελος, a dart, and ειδος, form.) Belenoid. A term that has been applied to the styloid processes in general.

Bellado'nna. (*a, æ.* f.; *bella donna* a fair lady, said to be so called because the Italian women use the juice of its berries as a cosmetic.) The deadly nightshade. See *Atropa belladonna.*

Belleris. See *Myrobalanus bellirica.*

Bellesme. A town near Montagne, in the neighbourhood of which is a cold chalybeate spring.

BELLIS. The name of a genus of plants in the Linnæan system. Class, *Syngenesia;* Order, *Polygamia superflua.* The daisy.

Bellis major. See *Chrysanthemum leucanthemum.*

Bellis minor. See *Bellis perennis.*

Bellis perennis. The systematic name of common daisy, or bruisewort; called also *Bellis minor. Bellis perennis — scapo nudo,* of Linnæus. The leaves and flowers are rather acrid. They were formerly applied to wounds, but are now disused.

Bell metal. An alloy of copper, zinc, tin, and a small quantity of antimony. It is used for making bells and apothecaries' mortars.

Belloculus. *Beli Oculus.* A gem which the Assyrians held sacred to the god Bel. The appearance of an eye was alleged to be visible in it; whence its name. It was believed to be efficacious in diseases of the eye.

Bellotas. The Spanish name of the acorn of the *Ilex major.* These have been recommended by some Spanish physicians in diseases of the chest, accompanied with profuse expectoration and hæmoptysis.

Belu'lcum. (From βελος, a dart and ελκω, to draw out.) This name was formerly given to any surgical instrument for extracting arrows or darts from wounds. Many instruments of this kind are described by the old surgeons.

Belzoinum. *Benzoin.* See *Styrax benzoin.*

Bel moschus. *Abelmosch.* See *Hibiscus abelmoschus.*

Ben. See *Guilandina moringa.*

Ben moenja. A tree of Malabar. The decoction of its roots is thought by the natives to be of great efficacy in malignant fevers. Its bark given in decoction with sweet flag and rice, is said immediately to stop the vomiting caused by the bite of serpents.

Ben nut. See *Moringa aptera.*

Benedicta herba. The Geum urbanum.

Benedicta laxativa. The lenitive electuary. See *Confectio sennæ.*

Benedictum laxativum. A name formerly given to rhubarb, and also to the lenitive electuary.

Bengal quince. See *Erateva marmelos.*

Benga'læ radix. (From *Bengal*, its native place.) See *Cassumuniar.*

Benign. See *Benignus.*

Benignus. *Benign.* A term applied to the mild form of a disease as opposed to the malignant. A medicine which is gentle in its operation was likewise so called by the older writers.

Benivivum. Benzoin.

Benjamin. See *Styrax benzoin.*

Benjamin flowers. See *Benzoic acid.*

Bennet herb. See *Geum urbanum.*

Bent grass. See *Agrostis.*

Benzoas. A salt formed by the union of the benzoic acid with a base.

BENZOIC ACID. (*Acidum benzoicum;* so called because it is procured from *benzoin.*) This acid is easily obtained by subliming gum benjamin, as well as by more complicated chemical means. "The usual method of obtaining it affords a very elegant and pleasing example of the chemical process of sublimation. For this purpose a thin stratum of powdered benzoin is spread over the bottom of a glazed earthen pot, to which a tall conical paper covering is fitted: gentle heat is then to be applied to the bottom of the pot, which fuses the benzoin, and fills the apartment with a fragrant smell, arising from a portion of essential oil and acid of benzoin, which are dissipated into the air, at the same time the acid itself rises very suddenly in the paper head, which may be occasionally inspected at the top, though with some little care, because the fumes will excite coughing. This saline sublimate is condensed in the form of long needles, or straight filaments of a white colour, crossing each other in all directions. When the acid ceases to rise, the cover may be changed, a new one applied, and the heat raised: more flowers of a yellowish colour will then rise, which require a second sublimation to deprive them of the empyreumatic oil they contain.

The sublimation of the acid of benzoin may be conveniently performed by substituting an inverted earthen pan instead of the paper cone. In this case the two pans should be made to fit, by grinding on a stone with sand, and they must be luted together with paper dipped in paste. This method seems preferable to the other, where the presence of the operator is required elsewhere; but the paper head can be more easily inspected and changed. The heat applied must be gentle, and the vessels ought not to be separated till they have become cool.

The quantity of acid obtained in these methods differs according to the management, and probably also from difference of purity, and in other respects, of the resin itself. It usually amounts to no more than about one eighth part of the whole weight. Indeed, Scheele says, not more than a tenth or twelfth. The whole acid of benzoin is obtained with greater certainty in the humid process of Scheele: this consists in boiling the powdered balsam with lime water, and afterwards separating the lime by the addition of muriatic acid. Twelve ounces of water are to be poured upon four ounces of slaked lime; and after the ebullition is over, eight pounds, or ninety-six ounces, more of water are to be added: a pound of finely powdered benzoin being then put into a tin vessel, six ounces of the lime-water are to be added, and mixed well with the powder; and afterwards the rest of the lime-water in the same gradual manner, because the benzoin would coagulate into a mass, if the whole were added at once. This mixture must be gently boiled for half an hour with constant agitation, and afterwards suffered to cool and subside during an hour. The supernatant liquor must be decanted, and the residuum boiled with eight pounds more of lime-water; after which the same process is to be once more repeated: the remaining powder must be edulcorated on the filter by affusions of hot water. Lastly, all the decoctions, being mixed together, must be evaporated to two pounds, and strained into a glass vessel. This fluid consists of the acid of benzoin combined with lime. After it is become cold, a quantity of muriatic acid must be added, with constant stirring, until the fluid tastes a little sourish. During this time the last-mentioned acid unites with the lime, and forms a soluble salt, which remains suspended, while the less soluble acid of benzoin, being disengaged, falls to the bottom in powder. By repeated affusions of cold water upon the filter, it may be deprived of the muriate of lime and muriatic acid with which it may happen to be mixed. If it be required to have a shining appearance, it may be dissolved in a small quantity of boiling water, from which it will separate in silky filaments by cooling. By this process, the benzoic acid may be procured from other substances, in which it exists.

Mr. Hatchett has shown, that, by digesting benzoin in hot sulphuric acid, very beautiful crystals are sublimed. This is perhaps the best process for extracting the acid. If we concentrate the urine of horses or cows, and pour muriatic acid into it, a copious precipitate of benzoic acid takes place. This is the cheapest source of it. Benzoic acid has been found by M. Vogel in the *Axonthanthum odoratum*, and *holcus oderatus*, two grasses on which the peculiar fragrance of hay depends." — *Ure.*

Pure benzoic acid is in the form of a light powder, evidently crystallised in fine needles, the figure of which is difficult to be determined from their smallness. It has a white and shining appearance; but when contaminated by a portion of volatile oil, is yellow or brownish. It is somewhat elastic and ductile, and when rubbed in a mortar is reduced to a pasty consistence. Its taste is acrid, hot, acidulous and bitter. It has a peculiar aromatic smell which is not strong unless it be heated: this however, appears not to belong to the acid

for Mr. Giese informs us, that on dissolving the benzoic acid in as little alkohol as possible, filtering the solution, and precipitating by water, the acid will be obtained pure and void of smell, the odorous oil remaining dissolved in the spirit. It reddens infusion of litmus, but not syrup of violets. It is very inflammable, and burns with a clear yellow flame. It is fusible at about 230°. Its specific gravity is 0·667. It is not perceptibly altered by the air, and has been kept in an open vessel twenty years without losing any of its weight. None of the combustible substances have any effect on it; but it may be refined by mixing it with charcoal powder and subliming, being thus rendered much whiter and better crystallised. It is very sparingly soluble in cold water. It is soluble in 25 or 30 parts of boiling water; but the greater part of the acid is deposited on cooling. It is composed, according to Berzelius, of 75·36 parts of carbon, 4·92 of hydrogen, and 19·72 of oxygen.

The benzoic acid unites with the earthy and alkaline bases, and with metalic oxides forming compounds called *benzoates*. All these salts are decomposed by a strong heat; and those of them which are soluble, are also decomposed by the more powerful acids.

Benzoic acid is very seldom used in medicine, but now and then it is ordered as a stimulant in spasmodic coughs and dyspnœa. The dose is from one grain to five.

Berberia. See *Beriberia.*

BE'RBERIS. (*is, is.* f.; from the Arabic *Berberi*, wild.) 1. The name of a genus of plants in the Linnæan system. Class, *Hexandria*; Order, *Monogynia*. The barberry or pepperidge bush.

2. The pharmacopœial name of the barberry. See *Berberis vulgaris.*

Berberis vulgaris. The systematic name of the barberry of the pharmacopœias; called also, *Oxyacantha Galeni, Spina acida*, and *Crespinus*. This shrub, *Berberis — pedunculis racemosis, spinis triplicibus* of Linnæus, is common in most parts of Europe. The berries, which are gratefully acid, and moderately astringent, were formerly believed to be of great use in biliary fluxes, and in all cases where heat, acrimony, and putridity of the humours prevail. The filaments of this shrub possess a remarkable degree of irritability; for, on being touched near the base with any sharp pointed body, a sudden contraction is produced, which may be repeated several times.

Bergamot. See *Citrus medica.*

Beriberia. See *Beriberi.*

BERI'BERI. (From *beri*, a Singhalese word signifying weakness.) Two perfectly distinct diseases have been confounded under this name; the one a peculiar form of *acute dropsy*, the other a chronic disease of which *paralysis* is the most prominent feature. The mistake originated with Bontius, who described these affections in his treatise *De Medicina Indorum*, and his error has been adopted by numerous writers, among whom is Dr. Mason Good. The acute disease is the true *beriberi*, the chronic is properly called *barbiers*.

1. *Beriberi.* This disease is nearly confined to India, and is especially prevalent in Malabar and Ceylon. It chiefly infests the sea coast, not extending more than sixty miles inland; but it is occasionally found in all situations. It is most prevalent at the change of the monsoons, when the weather is damp and cold, and the vicissitudes of temperature are very sudden. It seems to occur, however, under every diversity of season, weather, locality, and circumstance; and hence no probable conjecture can be formed as to its remote causes. It appears in some instances to have prevailed as an epidemy.

The attack of this disease is sometimes sudden and violent, but generally more gradual. The patient complains for several days of weakness and lassitude; the lower extremities then become affected with a painful numbness, stiffness, and œdema; dyspnœa and oppression of the præcordia supervene; the œdema extends over the whole body; the face becomes bloated and the lips livid; and the numbness and muscular debility of the lower extremities increases, sometimes even to paralysis. The pulse is at first either little affected, or quick, small, and hard; but in the advanced stage of the disease, it becomes irregular or intermittent. The symptoms become more aggravated, the patient is affected with severe palpitations, anxiety, fainting, and orthopnœa: the stomach is highly irritable, and vomiting is sometimes incessant; the bowels are constipated, and the urine scanty and high-coloured, sometimes nearly suppressed. The muscles of the trunk are seized with spasm, the pulse becomes more and more feeble, and when the event is fatal, the patient dies nearly in a state of asphyxia. The disease is very various in duration, extending from a few hours or days to three weeks or a month; sometimes it lasts much longer, and consists of a succession of slight attacks; and it is not uncommon for a patient to be suddenly carried off when he appears to be convalescent. The appearances found on dissection in fatal cases of beriberi are, extensive infiltration of the subcutaneous cellular membrane, and paleness of the muscles; serous effusion, always in the chest, and generally in the abdomen and the head; increased vascularity and venous congestion in the membranes of the brain and spinal cord; great congestion in the lungs, which are gorged with dark-coloured blood, and more or less œdematous; an enlarged and flabby state of the heart, often with serous effusion into the pericardium; congestion in the liver and spleen which are full of dark blood and enlarged, the latter also generally softened: in short, the morbid anatomy, as far as it has been explored, indicates universal venous congestion, and dropsical effusion.

Very opposite modes of treatment have been adopted in this disease; some practitioners trusting chiefly to mercury, diuretics, tonics, and stimulants, and others approving of large venesection, with the free use of purgatives and diuretics. Blisters to the chest, and the use of the warm or vapour bath, are generally admitted to be serviceable. Neither of the plans of treat-

ment referred to appear to have been attended with very flattering success, and further experience is needful to enable practitioners to decide upon their respective merits.

2. *Barbiers.* This also is a disease of India, and very frequent on the Malabar coast. It is most prevalent in the three first months of the year; and has been observed to attack those chiefly who imprudently sleep in the open air, exposed to the land winds which blow from the mountains about sunrise. Barbiers is a peculiar species of palsy. Mr. Marshall in his *Notes on the Medical Topography of Ceylon*, has given the following account of this disease: — "For the most part it commences with pain in the muscles of the thighs and legs, particularly of the bellies of the gastrocnemii. The uneasiness is usually attended by a general numbness of the extremities, and an imperfect command of the powers of locomotion. Sometimes the patients describe their sensations to be as if hot water or sand was running over the affected parts: at other times they complain of a sense of formication, accompanied with a pricking kind of pain. In some cases the hands and fore arms become similarly affected. I never saw a case where the disease was confined to one extremity. In general there was but little difference in the degree of the affection of the extremity of one side from that of another. In one case the muscles situated on the back part of the neck became affected, and eventually the powers of articulation were much impaired. This last symptom admitted of partial alleviations. The appetite for food is seldom much impaired during the early stage of the disease. When the disease has made considerable progress, the patient is unable to walk steadily. Standing or walking in general greatly aggravates the uneasiness of the limbs. The patients have an infirm tottering gait, and those whose hands are affected, lose the power of feeding themselves. They seldom enjoy sound sleep, although they seem to labour under a sluggish inactivity, and an unwillingness to exert themselves. The progress of the disease is sometimes protracted to a period of several months. As the complaint advances, the patients express their sensations of the affected parts to be as if they were dry or dead, and almost entirely without feeling. Loss of appetite, indigestion, and emaciation soon follow; the extremities lose the natural temperature; the extensor muscles become paralytic, while the flexor muscles appear to have some force, by which means the joints (particularly the joints of the fingers) become contracted. The pulse is frequent, thready, and fluttering; the vital functions greatly impaired; and eventually death supervenes." Such is the progress of the disease in its severer forms; frequently, however, it is milder and admits of cure. The remote causes of this malady are, exposure to cold and moisture, and especially during the night; exposure to the intense heat of the sun; intoxication and intemperance of all kinds; long fasting; and probably all other causes which debilitate the system. Little or nothing is known of the morbid anatomy of this affection. The treatment is very much the same as that of any other chronic case of paralysis, — with this difference, that barbiers seems to be remarkably influenced by a change of climate: indeed, a removal to a healthy locality, or a sea voyage, are stated to be among the principal means of cure.

Bermuda berry. See *Sapindus saponaria.*

Bernavi. An electuary of unknown composition used by the Egyptians. It was highly intoxicating, and produced extraordinary symptoms. —*Prosper Alpinus.*

Berry. See *Bacca.*

Bers. An exhilarating electuary, formerly in use among the Egyptians. According to Prosper Alpinus, it was composed of white pepper, the seeds of white henbane, opium, spikenard, euphorbium, pyrethrum, saffron, and honey.

Beru. A place in Champagne. It has mineral waters which are slightly chalybeate.

Bery'tion. (Βηρυτιον; from *Berytius*, its inventor.) The name of a collyrium described by Galen; also of a pastile which, according to the same author, was of great efficacy in dysentery.

Bes or Bessis. An eight-ounce measure.

Beta. 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Digynia*. The Beet.

2. The pharmacopœial name of the common beet. See *Beta vulgaris.*

Beta alba. The white beet, a variety only of the *Beta rubra* of Linnæus. The leaves are eaten like spinach, and the root yields sugar. The juice and powder of the root are said to be a good errhine.

Beta hy'brida. The plant which affords the root of scarcity — *Mangel wurzel* of the Germans. The root is very large, and in times of scarcity forms a valuable substitute for bread. In some parts of England the plant is cultivated to supply green and good food to cattle, especially milch cows: it contains much of the saccharine principle, and is very nourishing. Applied externally, it is useful in cleaning foul ulcers, and some prefer it for this purpose to the carrot.

Beta rubra. The systematic name of the red beet, the root of which is used indifferently with that of the *beta vulgaris.* The French are said to improve the colour of their claret with it.

Beta vulgaris. The systematic name of the common beet root, well known as a agreeable and wholesome article of diet. *Beta — floribus congestis*, of Linnæus. It is considered as antiscorbutic, and forms a very elegant pickle with vinegar. The root and leaves were formerly employed as emollients, and are still in common use in France as a dressing for blisters. A considerable quantity of sugar is obtained from beet root. It is likewise said that if beet roots be dried in the same manner as malt, after the greater part of their juice is pressed out, very good beer may be made from them.

Betel. *Piper betel.* A species of pepper cultivated in several parts of India. The natives are in the habit of chewing a preparati

made with the leaves of this plant, lime, and areca; this mixture is called *Betel*. It is considered tonic and astringent.

BETONICA. (*Vettonica*; from the *Vettones*, an ancient people of Spain, among whom whom it was in esteem.) Betony. 1. The name of a genus of plants in the Linnæan system. Class, *Didynamia*; Order, *Gymnospermia*.

2. The pharmacopœial name of the wood betony. See *Betonica officinalis*.

Betonica aquatica. See *Scrophularia aquatica*.

Betonica officinalis. The wood betony of the pharmacopœias: called also *Betonica purpurea*, *Betonica vulgaris*, *Cestrum*, and *Vetonica cordi*.

Betonica — spica interrupta, corollarum labii laciniâ intermediâ emarginatâ of Linnæus. The leaves and tops of this plant have an agreeable but weak smell; and rather a warm taste, with some degree of astringency and bitterness. The powder of the leaves of betony, snuffed up the nose, provokes sneezing; and hence it is sometimes made an ingredient in sternutatory powders. Its leaves are sometimes smoked like tobacco. The roots differ greatly in their quality from the other parts; their taste is very bitter and nauseous; and they are strongly emetic and cathartic. The decoction of the flowers and leaves was in high esteem among the ancients as a remedy in gout, sciatica, headach, and other diseases. Antonius Musa, physician to the Emperor Augustus, filled a whole volume with enumerating the virtues of this plant, asserting it to be a remedy for no less than forty-seven disorders; and hence in Italy the proverbial compliment, *You have more virtues than betony*. It is not used in the practice of the present day.

Betony. See *Betonica*.

Betony, water. See *Scrophularia aquatica*.

BETULA. (*a*, *æ*. f.) 1. The name of a genus of plants in the Linnæan system. Class, *Monœcia*; Order, *Tetrandria*. Alder and birch.

2. The pharmacopœial name of the white birch. See *Betula alba*.

Betula alba. The systematic name of the *betula* of the pharmacopœias, or white birch. *Betula — foliis ovatis, acuminatis, serratis*, of Linnæus. The leaves have been esteemed as diuretic, vermifuge, antisceptic, detergent, &c. and the bark is somewhat astringent and tonic. If the tree be bored early in the spring, there issues, by degrees, a large quantity of limpid, watery, sweetish juice: it is said that one tree will afford from one to two gallons a day. This juice was formerly used as an antiscorbutic, deobstruent, and diuretic. When well fermented, and with a proper addition of raisins, it yields a rich and strong vinous liquor, which is called *Birch wine*: it keeps better than many of the other made wines, often for a number of years, and was formerly supposed to possess many medicinal virtues; but it has now fallen into neglect.

Betula alnus. The systematic name of the *Alnus* of the pharmacopœias. The common alder. This, like the birch and other trees of the same genus, affords a large quantity of saccharine juice. A wine is made from it called *Alder wine*.

Betuli'na. *Betuline*. A substance discovered by Lowitz in the bark of the Betula alba. It is of a white colour, very light, crystallised in the form of long needles; soluble in concentrated sulphuric acid, ether, alkohol, and the fixed and volatile oils; insoluble in water and alkaline solutions; fusible, volatile, and inflammable.

Betulla. See *Betula*.

Beulah Spa. A saline mineral spring near Norwood in Surry. The water contains sulphate of magnesia, muriate of soda, muriate of magnesia, carbonate of lime, and carbonate of soda. This well has been a good deal resorted to within the last few years.

Beuvigny. A place near Bayeux in Normandy. It has waters which are said to be chalybeate.

Bexaguillo. A name given to the white Ipecacuanha, which the Spaniards bring from Peru.

Bexugo. A purgative root formerly imported from Peru. It is supposed by some to have been a species of Hippocratea.

Beya. An alchemical name of the *Acetum philosophicum*, or *Mercurius philosophorum*. See *Acetum philosophicum*.

Bezetta cærulea. See *Croton tinctorium*.

BE'ZOAR. (Indeclinable; from *pazahar*, Persian, a destroyer of poison.) *Lapis bezoardicus*. Bezoard. A preternatural concretion formed in the intestines of land-animals. Some of these substances were formerly celebrated for their medicinal virtues, and distinguished by the names of the countries from which they came, or the animal in which they were found. There are eight kinds, according to Fourcroy, Vauquelin, and Berthollet.

1. Those consisting of *superphosphate of lime*, which forms concretions in the intestines of many mammalia.

2. Those consisting of *phosphate of magnesia*, semitransparent and yellowish, and of sp. grav. 2·160.

3. Those consisting of *phosphate of ammonia* and *magnesia*. Concretions of a grey or brown colour, composed of radiations from a centre. They are found in the intestines of herbivorous animals, as the elephant, horse, &c.

4. *Biliary*, colour reddish brown, found frequently in the intestines and gall-bladder of oxen, and used by painters for an orange-yellow pigment. It is inspissated bile.

5. *Resinous*. The oriental bezoars, procured from unknown animals, belong to this class of concretions. They consist of concentric layers, are fusible, combustible, smooth, soft, and finely polished. They are composed of bile and resin.

6. *Fungous*, consisting of pieces of the *boletus igniarius* swallowed by the animal.

7. *Hairy*. See *Ægagropilus*.

8. *Ligniform*. Three bezoars sent to Bonaparte by the king of Persia, were found by Berthollet to be nothing but woody fibre agglomerated.

Bezoars were formerly considered as very powerful alexipharmics, so much so, indeed, that other medicines, possessed, or supposed to be possessed, of alexipharmic powers, were called *bezoardics*. They were deemed highly efficacious not only when taken as medicine, but even when merely carried about the person, so that credulous individuals would hire them for particular occasions at a ducat a day. They bore a very high price, and a single oriental bezoar has been known to sell for six thousand livres. The bezoars have now lost all reputation and are never used. A composition of bezoar with absorbent powders, has been much in repute, as a popular remedy for the disorders of children, by the name of Gascoigne's powder and Gascoigne's ball; but the real bezoar is rarely, if ever, used for these, its price offering such a temptation to counterfeit it. Factitious bezoars have been made of various materials; but Newmann supposed that those most nearly resembling the real were made of gypsum, chalk, or some other earth, to which the proper colour was imparted by some vegetable juice. It is said, however, that tobacco-pipe clay, tinged with ox-gall, is commonly employed, at least for the Gascoigne's powder, since it gives a yellow tint to paper rubbed with chalk, and a green to paper rubbed over with quick-lime; which are considered as proofs of genuine bezoar, and which a vegetable juice would not effect.

Bezoar bovinum. Bezoar of the ox.

Bezoar germanicum. The bezoar from the alpine goat.

Bezoar hominis. It is not accurately ascertained that a bezoar has ever been found in the human stomach. Assertions to this effect, however, are to be met with in foreign journals and miscellanies; on the authority of which Dr. Good has admitted a species of his genus *Enterolithus*, by the trivial name of *bezoardus*.

Bezoar hy'stricis. The bezoar of the Indian porcupine; called also *Lapis porcinus*, *Lapis malaccensis*, *Pietra del porco*: said to be found in the gall bladder of the Indian porcupine, particularly in the province of Malacca. This concretion has an intensely bitter taste; and, on being steeped in water for a very little time, impregnates the fluid with its bitterness, and with aperient, stomachic, and, as it is supposed, with alexipharmic virtues. How far it differs in virtue from the similar concretions found in the gall bladder of the ox, and other animals, does not appear.

Bezoar microco'smicum. The calculus found in the human bladder.

Bezoar occidentale. Occidental bezoar. This concretion is said to be found in the fourth stomach of the wild goat or chamois of Peru, &c. It is of a larger size than the oriental bezoar, and sometimes as large as a hen's egg: its surface is rough, and its colour green, greyish, or brown.

Bezoar orientale. *Lapis bezoar orientalis*. Oriental bezoar. This concretion is said to be found in the fourth stomach of Capra ægagrus, which inhabits the mountains of Persia. It is generally about the size of a kidney-bean, of a roundish or oblong figure, smooth, and of a shining olive or dark greenish colour.

Bezoar porcinum. See *Bezoar hystricis*.

Bezoar simiæ. The bezoar from the monkey.

BEZOA'RDICUS. *Bezoardic*. Of or belonging to the bezoar.

Bezoardica radix. See *Dorstenia contrayerva*.

Bezoardicum joviale. An old preparation made by fusing regulus of antimony with tin in a crucible; reducing them to powder when cold, mixing them intimately with corrosive sublimate, keeping the mixture for some days, distilling it and mixing the liquor that comes over with a large quantity of water, whereby a white powder is precipitated, washing the precipitate repeatedly with water, drying it and detonating with nitre; lastly, washing the product carefully and again drying. This preparation was a very powerful diaphoretic and was given in doses of from gr. x. to ℈ j.

Bezoardicum lunare. This name was given to two very different preparations. 1. To a medicine prepared by distilling butter of antimony with a solution of nitrate of silver. It was deemed of great efficacy in epilepsy, and various affections of the head; the dose was from gr. 6 to gr. 12.

2. To the *Pulvis Viennensis Albus Virgineus*; which, see.

Bezoardicum martiale. An old preparation which was made in the same manner as the *Bezoardicum Joviale*, but with the substitution of iron for tin. It was used as a tonic and diaphoretic in the does of from gr. xv. to gr. xxv.

Bezoardicum minerale. A preparation of antimony, made by detonating the powder of algaroth with nitre, and washing the product. The result is a deutoxide of antimony.

Bezoardicum saturni. An old preparation made by distilling protoxide of lead, and butter of antimony, with nitric of acid; it was given in doses of gr. vi. in diseases of the spleen.

Bezoardicus lapis. See *Bezoar*.

Bezoardicus pulvis. See *Pulvis bezoardicus*.

Biarchetunsim. An alchemical name of cerusse.

Bibenella. See *Pimpinella*.

Bibito'rius. (From *bibo*, to drink; because, by drawing the eye inwards towards the nose, it causes those who drink to look into the cup.) See *Rectus internus oculi*.

Bibulous. *Bibulus*. Attracting moisture: *charta bibula*, blotting paper.

BICAPSULA'RIS. Bicapsular: having two capsules. Applied in botany to seed-vessels.

Bicarbonas potassæ. See *Potassæ bicarbonas*.

Bicauda'lis. (From *bis*, twice, and *cauda*, a tail.) See *Posterior auris*.

Bicephalium. (From *bis*, twice, and κεφαλη a head.) This name has been given to a large sarcoma, growing on the head, so as to give the patient the appearance of having two heads. The term, though adopted by Sauvage from Borelli, is ill derived and superfluous.

BI'CEPS. (From *bis*, twice, and *caput*, a head.) Two-headed: applied to muscles which have two distinct origins or heads.

Biceps brachii. See *Biceps flexor cubiti.*

Biceps cruris. See *Biceps flexor cruris.*

Biceps cubiti. See *Biceps flexor cubiti.*

Biceps externus. See *Triceps extensor cubiti.*

Biceps flexor cruris. *Biceps cruris of* Albinus, *Biceps* of Winslow, Douglas, and Cowper. A muscle of the leg, situated on the hind part of the thigh. It arises by two distinct heads: the first, called *longus* arises in common with the semitendinosus, from the upper and posterior part of the tuberosity of the os ischium. The second, called *brevis*, arises from the linea aspera, a little below the termination of the glutæus maximus, by a fleshy acute beginning, which soon grows broader as it descends to join with the first head, a little above the external condyle of the os femoris. It is inserted, by a strong tendon, into the upper part of the head of the fibula. Its use is to bend the leg. This muscle forms what is called the outer ham-string; and between it and the inner, the popliteal artery, vein, and nerve are situated.

Biceps flexor cubiti. *Biceps brachii* of Albinus. *Coraco-radialis, seu biceps* of Winslow. *Biceps internus* of Douglas. *Biceps internus humeri* of Cowper. A muscle of the fore-arm, situated on the fore-part of the *os humeri*. It arises by two heads. The first and outermost, called *longus*, begins tendinous from the upper edge of the glenoid cavity of the scapula, passes over the head of the os humeri within the shoulder joint, and is afterwards inclosed in its descent in a groove near the head of the os humeri, by a membranous ligament that proceeds from the capsular ligament and adjacent tendons. The second, or innermost head, called *brevis* arises, tendinous and fleshy, from the coracoid process of the scapula, in common with the coraco-brachialis muscle. A little below the middle of the fore-part of the os humeri, these heads unite. The muscle is inserted by a strong roundish tendon into the inner tubercle at the upper end of the radius. Its use is to turn the hand supine, and to bend the fore-arm. At the bending of the elbow, where it begins to grow tendinous, it sends off an aponeurosis, which covers all the muscles on the inside of the fore-arm, and joins with another tendinous expansion, which is sent off from the triceps extensor cubiti, and covers all the muscles on the outside of the fore-arm, and a number of the fibres, from opposite sides, decussate each other. It serves to strengthen the muscles, by keeping them from swelling too much outwardly when in action, and a number of their fleshy fibres take their origin from it.

Biceps internus. See *Biceps flexor cubiti.*

Biceps manus. See *Biceps flexor cubiti.*

Bicipital. Relating to the biceps muscle; thus the groove in the os humeri which lodges the tendon of the long head of the biceps, is called the bicipital groove.

Bichichiæ. Pectoral troches consisting of liquorice juice, sugar, starch, tragacanth, almonds, and mucilage of quince-seed. They were prescribed by Rhazes.

Bicho di culo. The Spanish name of a disease which is endemic in Brazil. It consists in great relaxation of the anus, and is said to arise from bad food, the use of pimento, &c.

Bico'ngius. A measure containing two *congii*, or twelve *sextarii*.

Bicornes plantæ. The name of an order of plants in the natural methods of Linnæus and Gerard.

Biconjuga'tus. (From *bis*, twice, and *conjugo*, to yoke together.) Biconjugate. Applied to a leaf, in which the common petiole divides into two branches, each of which bears two leaflets, as in *mimosa unguiscati*.

Bico'rnis. *Two horned.* A term applied, 1. By the older anatomists, to the os hyoides, *os bicorne*, and to muscles which have two terminations. 2. By botanists, to parts of plants so called from their shape, as the anthers of the *Erica vulgaris*, the capsules of the *Martynia proboscidea*, &c.

Bicorne os. See *Bicornis.*

Bicornes. Some botanists have given this name to the family of the heaths, because the anthers of many of them have two horns.

Bicuspida'tus or Bicu'spis. (*Bis*, twice, and *cuspis*, a point.) Bicuspidate. Applied, 1. To teeth. See *Dentes.* 2. To leaves: *folium bicuspidum*, or *bicuspudatum*, a leaf that terminates in two points.

BI'DENS. (*ens, entis*, f.; from *bis*, twice, and *dens*, a tooth: so called from its being deeply indented.) The name of a genus of plants in the Linnæan system. Class, *Syngenesia;* Order, *Polygamia æqualis.*

Bidens tripartita. The systematic name of the hemp agrimony, formerly esteemed as a diuretic, sudorific, vulnerary, &c., but now disused.

Bidi'giti-penna'tus. Applied in botany to a bidigitate leaf, the leaflets of which are pinnate; as in *Mimosa purpurea*.

Bidentatus. *Bidentate.* Furnished with two teeth. Applied by botanists to parts of plants; as the *calyx* of some of the *labiatæ*.

Bidigita'tus. (From *bis*, twice, and *digitus*, a finger.) Bidigitate. Applied in botany to a leaf the common petiole of which bears two leaflets at its extremity; as in *Zygophyllum fabago*.

BIE'NNIS. Biennial. Applied to plants which live for two years. These plants being raised one year from the seed, generally attain their full growth the same year, and perfect their seeds the following spring or summer, after which they perish.

Bi'fer. (From *bis*, twice, and *fero*, to bear.) *Biferus.* Applied to a plant which bears fruit twice in the year, in spring and autumn, which is the case with many tropical plants.

Bife'moro-calca'neus. *Bifemoro-calcanien* The name given by Chaussier to the gastrocnemius muscle.

BI'FIDUS. Bifid; forked; divided into two. Applied chiefly in botany; as to the seed-vessel of *Adoxa moschatellina*, and the petal of *Silene nocturna* and *Alyssum incanum*.

BIFLO'RUS. Applied in botany to a pedicle; bearing two flowers.

Bifo'lium. The herb *Tway-blade*. See *Ophrys ovata*.

Bi'forus. *Biforatus*. (*Bis*, twice, and *foris*, a door.) Having two apertures; *antheræ biforæ* are anthers which have two pores.

BIFURCA'TIO. (From *bis*, twice, and *furca*, a fork.) Bifurcation. The division of a trunk into two branches, as that of the aorta, the trachea, or the stem of a plant.

Bifurca'tus. Bifurcate. Divided into two branches.

Biga'ster. (From *bis*, twice, and γαστηρ, a belly.) A hybrid term improperly substituted for *Biventer* or *Digastricus*, which see.

BIGEMINA'TUS. (From *bis* and *gemini*, twins.) Bigeminate; twice paired. A leaf is so called when near the apex of the common petiole there is a single pair of secondary petioles, supporting a pair of opposite leaflets; as in *Mimosa unguis cati*.

BIGNO'NIA. A genus of plants of the class *Didynamia*, and order *Angiospermia*, so named by Tournefort, in honour of Bignon, a person of literary celebrity. The leaves of the *Bignonia indica* are used by the natives of India as an emollient application to ulcers, and the flowers of the *B. Chelonoides* are used in Malabar as a perfume.

Bignonia'ceæ. A natural family of plants, of which the genus *Bignonia* is the type.

BI'JUGUS. (From *bis*, twice, and *jugum*, a pair.) Twice paired. Applied in botany to a leaf composed of two pairs of opposite leaflets on the common petiole, as that of *Melicocca bijuga*.

BILABIA'TUS. (From *bis*, twice, and *labium*, a lip.) Bilabiate; two-lipped. Often used in botany; as *corolla bilabiata*, *calyx bilabiatus*, &c.

BILACINIA'TUS. Doubly laciniate; applied to a leaf, as *folium bilaciniatum*, when the margin is cut into two segments.

Biladen. An alchemical name of steel.

BILAMELLA'TUS. (*Bilamellatus*, from *bis*, and *lamella*, a little plate.) Bilamellate, having two layers. Applied to parts of plants.

Bilatera'lis. Bilateral. A botanical term used by Mirbel. It differs from opposite, in that the leaves or other parts to which the term may be applied spring from different points as well as lean to opposite sides.

Bilberry bean. See *Arbutus uva ursi*.

Bilazay. A town in the department of Deux Sèvres, not far from which is a thermal sulphureous spring.

Biliary. *Biliarius*. Appertaining or relating to bile; as *Biliary ducts*, *Biliary concretions*.

Biliary calculus. See *Calculus*.

Biliary ducts. See *Hepar*.

Bilimbi. An Indian tree which yields a juice used by the natives for the cure of itch and other cutaneous disorders; it is said, that for this purpose they wear linen dipped in the juice.

Bilious. Abounding in bile.

Bilious fever. See *Febris*.

Bilious temperament. See *Temperament*.

BI'LIS. (*is*, *is*. f.; *Fel*.) Bile. A bitter fluid, secreted by the liver; in part flowing into the intestines, and in part regurgitating into the gall-bladder. This fluid is secreted in the minute lobules of the liver from the blood contained in the extreme branches of the portal vein, and is brought by minute canals called biliary ducts, into the *ductus hepaticus*, which conveys it into the *ductus communis choledochus*. The minute anatomy of the parts concerned in the secretion of bile has lately received important illustration from the researches of Mr. Kiernan. See *Hepar*. A part of the bile flows through the ductus communis choledochus into the duodenum and another part of it regurgitates through the cystic duct into the gall-bladder; for hepatic bile, except during digestion, cannot flow into the duodenum, which contracts when empty. It has been much disputed among physiologists whether the blood conveyed by the hepatic artery, merely nourishes the liver; or whether, at the same time, it contributes to the formation of bile. Kr. Kiernan has proved very satisfactorily that although the florid blood of the hepatic artery has no share in the secretion of bile, this same blood, after having nourished the liver, supplied the excreting ducts with mucus, and thus become venous, enters the branches of the portal vein; and that it is from the mixed blood that the bile is secreted. (See *Hepar*.) It has been supposed, by some physiologists, that cystic bile is secreted by the arterial vessels of the gall-bladder; but the fallacy of this opinion is proved by making a ligature on the cystic duct of a living animal. From what has been said, it appears that there are, as it were, two kinds of bile in the human body: —

1. *Hepatic bile*, which flows from the liver into the duodenum: this is thin, of a faint yellow colour, inodorous, and but slightly bitter.

2. *Cystic bile*, which regurgitates from the hepatic duct into the gall-bladder, where, the aqueous part being absorbed the fluid becomes thicker and more acrid from concentration. Healthy bile taken from the gall-bladder is of a yellow or greenish yellow colour; of a consistence like that of thin oil, and when strongly agitated, froths like soap and water: its smell is peculiar and very nauseous, and its taste intensely bitter.

Bile does not undergo putrefaction readily, and its odour while in this state is not very disagreeable, but resembles in some degree that of musk.

Water and alkohol combine in all proportions with bile.

When a very little acid is poured into bile, it becomes slightly turbid, and reddens litmus; when more is added, the precipitate augments, particularly if sulphuric acid be employed. It is formed of a yellow animal matter, with very little resin.

Potash and soda render bile more liquid and transparent.

Acetate of lead precipitates the yellow matter, and the sulphuric and phosphoric acids of the bile. The solution of the acetate precipitates not only these bodies, but also the picromel and the muriatic acid, all combined with the oxide of lead. The acetic acid remains in the liquid united with the soda.

The greater number of fatty substances are capable of being dissolved by bile. This property, is owing to the soda, and to the triple compound of soda, resin, and picromel. Scourers sometimes prefer the gall of oxen, calves, sheep, &c. to soap for cleansing woollen.

Human bile has some peculiarities. It varies in colour, being sometimes green, but more frequently yellowish-brown, and occasionally almost colourless. Its taste is not very bitter. In the gall-bladder it is seldom limpid, often containing, like that of the ox, a certain quantity of yellow matter in suspension. At times this is in such quantity, as to render the bile somewhat grumous. Human bile when filtered and boiled, becomes very turbid, and diffuses an albuminous odour. When evaporated to dryness, it affords a brown extract, equal in weight to 1-11th of the bile. By calcination we obtain uncombined soda, phosphate of lime, and oxide of iron.

Bile has been carefully analysed by Thénard, Berzelius, Tiedemann, and Gmelin, who are not, however, at all agreed as to its real composition. According to Thénard, 800 parts of ox bile, are composed of

700 parts of water,
15 ..... resinous matter,
69 ..... picromel,
4 ..... yellow colouring matter,
4 ..... soda,
2 ..... phosphate of soda,
3·5 ..... muriates of soda and potash,
0·8 ..... sulphate of soda,
1·2 ..... phosphate of lime,
a trace of oxide of iron.

According to the same able chemist 1100 parts of human bile consist of

1000 water,
2 to 10 yellow insoluble matter,
42 albumen,
41 resin,
5·6 soda, and
45 phosphates of soda of lime, sulphate of soda, muriate of soda, and oxide of iron.

Berzelius denies that bile contains any resin, and regards the yellow matter, the resin, and the picromel, described by Thénard, as one and the same substance, which he denominates *biliary matter*.

According to him, 1000 parts of bile consist of 908·4 water,
80 picromel,
3 albumen,
4·1 soda,
0·1 phosphate of lime,
3·4 common salt, and
1 phosphate of soda, with some phosphate of lime.

Tiedemann and Gmelin, however, agree with Thénard as to the existence of picromel and resin in the bile. According to them, ox bile consists of water in the proportion of 91·5 per cent.; a volatile odorous principle; cholesterine; resin; asparagin; picromel; yellow colouring matter; a peculiar azotised substance soluble in water and alkohol; a substance supposed to be gluten; osmazome; a substance which gives out an urinous odour when heated; albuminous or caseous matter; and mucus.

Besides these constituents, bile like other animal fluids contains salts: these appear to be combinations of soda with the margaric, oleic, acetic, carbonic, phosphoric, and sulphuric acids —a salt, formed of soda and the *cholic* acid, which acid is regarded by Gmelin as peculiar to bile — and a little phosphate of lime. According to Gmelin ox gall contains a peculiar principle which is named by that chemist *Taurin* or *Gallen-asparigin*. It is very likely, as remarked by Mr. Brande, that many of the supposed proximate principles of bile, may in reality be products arising from the processes to which it has been submitted, and that the analysis of Berzelius as it is the simplest may also be the most accurate.

The most obvious use of the bile in the animal economy is to separate the chyle from the chyme. It appears also to aid in exciting the peristaltic action of the intestines; hence in case of jaundice, in which disease the bile does not take its natural course into the intestines, the bowels are in general extremely torpid. The natural colour of the fæces seems to be owing to the presence of bile, since when this fluid is deficient they are pale like pipe clay, and when it is vitiated owing to deranged action of the liver, they are dark or otherwise discoloured.

The bile or gall of various animals was formerly used in medicine. All bile was supposed to be calefacient; drying; detergent; discutient; vermifuge; it was believed also to facilitate parturition. Each kind of gall, however, was thought to have its own peculiar virtues. The kinds of gall most generally used were those of the ox, bear, goat, sheep, hog, partridge, hen, and eel.

Bilberry. See *Vaccinium.*

BI'LOBUS. Bilobed; having two lobes. Applied in botany to leaves, petals, seed-vessels, &c. which are divided into two rounded portions or lobes, as the petals of the *Geranium pyrenaicum*, and capsules of the *Veronica biloba.*

BILOCULA'RIS. (From *bis*, twice, and *loculus*, a little cell.) Bilocular: two-celled; applied to a capsule which has two cells.

BILOCULARES. The name of a natural order of plants.

BI'MANUS. Two-handed. A term applied by zoologists to *man*, who has hands on the thoracic extremities only, whereas other animals possessed of hands have them on all the four extremities. See *Animal Kingdom.*

BIME'STRIS. (From *bis*, twice, and *mensis*, a month.) Two months old.

BINARY. *Binarius.* In the language of chemistry, a binary compound is that resulting from the union of two elements.

BINA'TUS. Binate; in pairs; applied to a leaf which is divided into two parts almost throughout its length; as in *Drosera binata*; or to a compound leaf, which consists of only two leaflets on a common petiole, as in *Hardwickia binata.*

Bindweed. See *Convolvulus sepium.*

BINERVA'TUS. *Binervius.* Two-nerved. Ap-

plied by botanists to leaves, &c. which have two longitudinal ribs or nerves. See *Nerve*.

Bino'culus. *Diophthalmos.* (From *bis*, twice, and *oculus*, the eye.) The name of a bandage adapted to be applied over both eyes.

Binoxalate. See *Superoxalate.*

Bi'nsica. A Rabbinical term for a disorder of the mind: according to Van Helmont, it meant properly an atrophy of the organ of fancy.

BI'NUS. (From *bis*, twice.) Double. In a pair. Applied to leaves when there are only two upon a plant, *folia bina*; as in *Galanthus nivalis*, the snow-drop.

BIO'LOGY. (*Biologia*, *æ.* f.; from βιος, life, and λογος, a discourse.) The doctrine or science of life.

Biolу'chnium. (From βιος, life, and λυχνιον, a lamp.) 1. The vital heat.

2. A mysterious lamp mentioned by superstitious writers. It was alleged to be prepared by a secret process from human blood, and according as it burned brightly, or dimly, or was extinguished, it indicated the good or bad health, or the death of the individual to whom the blood belonged.

Biotha'natus. (From βιος, life, and θανατος, death.) One who dies a violent or sudden death, as though there were no interval between health and death.

Bipari'etal. That diameter of the cranium which passes from one parietal protuberance to the other, is called by some the biparietal diameter.

Bipарti'tus. Bipartite: deeply divided almost to the basis: applied to many parts of plants, as *calyx bipartitus*; *folium bipartitum*; *perianthium bipartitum*, *petala bipartita.*

Bipenella. See *Pimpinella.*

BIPED. (From *bipes.*) An animal with only two legs.

Bipes. (From *bis*, twice, and *pes*, a foot.) Two-legged.

BIPINNATI'FIDUS. Doubly pinnatifid: applied to a pinnatifid leaf, the segments of which are themselves pinnatifid, as in *Papaver argemone.*

BIPINNA'TUS. Bipinnate, or doubly pinnate. A compound leaf is so termed when the secondary petioles are arranged in pairs on the common petiole, and each secondary petiole bears leaflets of its own.

Birch. See *Betula alba.*

Birdlime. *Viscus aucupum.* So called because from its great viscidity it is used to entangle birds. A vegetable substance, generally prepared from the middle bark of the holly.

It may likewise be obtained from the mistletoe, the *Viburnum lantana*, young shoots of elder, and other vegetable substances.

It is sometimes adulterated with turpentine, oil, vinegar, and other matters.

Good birdlime is of a very tenacious consistence; of a greenish colour; an acid taste; and a smell resembling that of linseed oil. By exposure to the air it becomes dry and brittle, so that it may be powdered; but its viscidity is restored by wetting it. It reddens tincture of litmus. Exposed to a gentle heat it liquefies slightly, swells in bubbles, emits a smell resembling that of animal oils, and grows brown; but recovers its properties on cooling, if not heated too much. When heated more strongly it burns with a brisk flame and much smoke. The residuum contains sulphate and muriate of potash, carbonate of lime, and alumina, with a small portion of iron.

Bird's eye. The Adonis Verna. See *Adonis.*

Bird's tongue. The seeds of the *Fraxinus excelsior*, or ash, so called from their resemblance.

BIRO'STRIS. *Birostratus.* Birostrate. Having two beaks. A term applied in botany and other branches of natural history to various objects, from their shape.

Birthwort. See *Aristolochia.*

Birthwort, climbing. See *Aristolochia clematitis.*

Birthwort, long-rooted. See *Aristolochia longa.*

Birthwort, snake-killing. See *Aristolochia anguicida.*

Birthwort, three lobed. See *Aristolochia trilobata.*

Bishop's Weed. See *Ammi.*

Bisli'ngua. (*Bislingua*, *æ.* f. from *bis*, twice and *lingua*, a tongue; double tongued; so called from its having on each of its leaves a smaller leaf. The Alexandrian laurel. See *Ruscus Hypoglossum.*

Bismalva. The marsh mallow. See *Althæa.*

BISMUTH. (*Bismuthum*, *i.* n.; from *Bismut*, German.) A metal which is found in the earth, both native and combined with other substances, as oxygen, sulphur, and arsenic. The metal used in the arts is derived chiefly from the mineral called *native bismuth*, in which there are generally small proportions of sulphur, iron, and copper. It may be obtained pure for chemical purposes by subjecting the subnitrate of bismuth to a red heat along with charcoal.

Metallic bismuth is of a yellowish or reddish white colour, somewhat harder than lead, and possessed of very little ductility, being easily broken, and even pulverized by the hammer. The fracture is lamellated, exhibiting large shining plates variously disposed. It undergoes little change by exposure to the atmosphere at ordinary temperatures. At about 480° Fahrenheit, it melts, and its surface becomes covered with a greenish-grey or brown oxide. If gradually cooled, it crystallises in octohedrons. At a strong heat it burns with a pale blue flame, and sublimes in the form of the yellow-coloured oxide, known by the name of *flowers of bismuth.* Bismuth unites tardily with the sulphuric or muriatic acid, but very readily with the nitric. The sulphate and muriate are of no particular interest. The nitrate may be formed by subjecting metallic bismuth to the action of nitric acid diluted with half its quantity of water. The action is rapid, and attended with a copious evolution of nitric oxide gas. The nitrate crystallises in four-sided prisms, containing combined water. If characters be written on paper with nitrate of bismuth, they remain invisible while dry, but become white and legible by immersion in water; they are rendered black or brown by a solution of sulphuretted hydrogen. When nitrate of bismuth is thrown into water, a white powder is precipitated; this is the sub-

stance well known as *magistery of bismuth*, or *pearl white*: it is frequently called the *oxide of bismuth*, but is in reality a hydrated *subnitrate*. It is used as a cosmetic. Bismuth forms many salts with the different acids, but these are little known. The same may be said of the compounds of bismuth with *iodine*, *bromine*, and *fluorine*. Its combination with *cyanogen* has not been effected.

When bismuth is exposed to *chlorine* gas it takes fire, and is converted into a chloride, which was formerly prepared by heating the metal with corrosive sublimate, and was called *butter of bismuth*. It consists of one equivalent of bismuth, and one of chlorine. It is of a grey colour; it melts at 480°, and deliquesces on exposure to the air.

Bismuth combines with sulphur in the proportion of one equivalent of each. The sulphuret is of a lead grey colour and metallic lustre. It may be formed by fusing bismuth with sulphur. It occurs in nature, but is a very rare mineral. Bismuth unites with most metallic substances, and renders them in general more fusible.

Eight parts of bismuth, five of lead, and three of tin, constitute the fusible metal, sometimes called Newton's, from its discoverer, which melts at the heat of boiling water, and may be fused over a candle in a piece of stiff paper without burning the paper. One part of bismuth, with five of lead, and three of tin, forms plumbers' solder.

The only preparation of bismuth used in medicine is the subnitrate. It is given in doses of from four to eight grains three times a day, in cases of gastrodynia, and other painful affections of the stomach, obstinate vomiting, &c. In some cases its good effects appear evident; but it is an uncertain medicine, and fails at least as often as it succeeds. The dose has sometimes been carried as far as 20 grains.

Bistort. See *Bistorta.*

BISTO'RTA. (*a*, *æ*. f.; from *bis*, twice, and *torqueo*, to twist: so called from the contortion of its root. See *Polygonum bistorta.*

BI'STOURY. (*Bistouri*, French.) Any small knife for surgical purposes. Bistouries are *straight*, *convex*, *concave*, sharp pointed, probe pointed, &c.

Bistouri caché. A bistoury the blade of which is concealed in a sheath from which it is made to protrude by pressing on a spring. It was used by the old French surgeons in the operation for hernia, for stone in the bladder, &c. It is now laid aside.

BISULPHAS. Bisulphate. A supersalt, in which the oxygen of the sulphuric acid is a multiple by two of that of the base.

Bisulphas potassæ. See *Potassæ bisulphas.*

Bisulphis. Bisulphite. A supersalt in which the oxygen of the sulphurous acid is a multiple by two of that of the base.

BIT NOBEN. (Indian.) Salt of bitumen. A white saline substance imported from India, which is not a natural production, but a preparation made by the Hindoos. It is called in the country *padanoon*, *soucherloon*, and popularly *bhala mimuc*, or black salt. This salt has been used in India from times of high antiquity, and is applied to an infinite variety of purposes. The Hindoos use it to improve their appetite and digestion. They consider it as a specific for obstructions of the liver and spleen; and it is in high estimation with them in paralytic disorders, particularly those that affect the organs of speech; in cutaneous affections; worms; old rheumatisms; and indeed all chronic disorders of man and beast.

Biternate. See *Biternatus.*

BITERNA'TUS. (From *bis*, twice, and *ternus*, three.) Biternate: twice ternate; doubly threefold: applied to compound leaves, when the common footstalk supports three secondary petioles on its apex, and each of these support three leaflets; as in *Imperatoria ostruthium.*

Bithnima'lca. A name given by Dolœus to an imaginary principle seated in the stomach and presiding over chylification. He called it also *Gasteranax*. It was another name for the Archeus of Van Helmont.

Bi'thynos. Βιθυνος. The name of a plaster recommended by Galen as efficacious against dropsy; and also of a troch mentioned by the same author.

Bitter. See *Amarus.*

Bitter-Apple. See *Cucumis colocynthis.*

BITTER PRINCIPLE. This name was formerly applied to a substance supposed to be common to bitter plants, and to be the cause of their peculiar taste. The recent discoveries in vegetable chemistry, however, have shown that it can no longer be regarded as an uniform unvarying principle. The bitterness of the nux vomica, for example, is owing to strychnia; that of opium to morphia; that of cinchona bark to cinchonia and quina. The bitter taste in the root of the squill arises from a different cause from that in the hop or in gentian. The term bitter principle as applied to any one principle common to bitter plants, conveys an erroneous idea, and ought therefore to be abandoned. — *Turner.*

BI'TTERN. The mother water which remains after the crystallisation of common salt from sea-water. It abounds with sulphate and muriate of magnesia, to which its bitterness is owing.

BITU'MEN. (*en*, *inis*. n.) This term includes a considerable range of inflammable mineral substances, burning with flame in the open air. They are of different consistence, from a thin fluid to a solid; but the solids, are for the most part liquefiable at a moderate heat. The *fluid* are naphtha, petroleum, mineral tar, mineral pitch. The *solid* are, asphaltum, elastic bitumen or mineral caoutchouc, mineral adipocire, retinasphaltum, pit coal, jet mellilite or honeystone, and amber. Of these substances *asphaltum* and *amber* have been used in medicine. See *Asphaltum*, and *Succinum.*

Bitumen barbadense. See *Petroleum barbadense.*

Bitumen judaicum. See *Asphaltum.*

Bitumen liquidum. See *Petroleum.*

Bitumenisation. The transformation of organic matters into bitumen. Thus wood is

converted by natural processes into several varieties of coal, and the substance called peat consists of the remains of vegetables which have undergone a similar change.

Bituminised. Changed into bitumen. Thus *bituminised wood*, &c.

Bituminous. Partaking of the nature of bitumen.

BIVA'LVIS. Bivalve: two-valved. Applied in botany and other branches of natural history. *Capsula bivalvis*, a seed-vessel with two valves.

BIVE'NTER. (From *bis*, twice, and *venter*, a belly.) Digastric. A muscle is so termed which has two bellies.

Biventer cervicis. The complexus muscle. See *Complexus*.

Biventer maxillæ inferioris. The digastric muscle. See *Digastricus*.

BI'XA. (*a*, *æ*. f.) The name of a genus of plants. Class, *Polyandria*; Order, *Monogynia*.

Bixa orellana. *Bixa orleana*. The systematic name of the plant which affords the *terra orleana* or *annotto* of the shops. The substance so called is obtained from the pellicles of the seeds. In Jamaica and other warm climates, it is considered as a useful remedy in dysentery, possessing astringent and stomachic qualities; but in Europe it is only used in dying, and to give a colour to chocolate and some other articles.

The annotto is imported in three forms, viz. flag annotto, *orleana in foliis*; egg annotto, *orleana in ovulis*; and roll annotto, *orleana in rotulis*, or *orleana in baculis*. They have all the same essential properties, and differ merely in the manner of their preparation.

Bixa orleana. See *Bixa orellana*.

Blachmal. A substance formed by pouring a mixture of several fused metals upon sulphur was so called by the alchemists. — *Johnson*.

Black death. See *Pestis nigra*.

Black jaundice. See *Icterus*.

Black leprosy. See *Lepra*.

Black pestilence. See *Pestis nigra*.

Black plague. See *Pestis nigra*.

Black vomit. See *Yellow fever*.

Black wash. See *Lotio calcis composita*.

Black water. The water-brash. See *Cardialgia*.

Blackberry. See *Rubus fruticosus*.

Blactara. A barbarous name of white lead.

Bladder-wrack. See *Fucus vesiculosus*.

Blade-bone. See *Scapula*.

Blæsitas. (*as*, *atis*. f.; from *blæsus*.) Stammering.

Blæsus. Βλαισος. A term applied to one who has the legs or feet distorted outwards; to one who has the spine bent forwards or backwards; to a paralytic; or to one who stammers.

Blain. A small watery vesicle of the skin.

Bla'nca. 1. The name of an old medicine, so called because it was supposed to purge the body of the white phlegmatic humours. It consisted of turpentine, various fœtid gums, euphorbium, colocynth, antimony, aromatics, &c. It is described in the *Antidotary of Nicolaus*.

2. White lead. — *Ruland*.

Blanca milli'rum. The disease of women, commonly called the *Whites*. See *Leucorrhœa*.

Blas. A term forged by Van Helmont, who applied it to the motions and influences of the stars, and to the activities of animal bodies. He distinguishes in the stars a *Blas motivum* and a *Blas alterativum*; and in the bodies of men and animals a *Blas naturale* or *astrale*, and a *Blas voluntarium*. The human body has a blas of its own, called *Blas humanum*, and particular parts have their blas, as the *Blas cordis*, *Blas ventris*, &c. For the meaning of all this jargon, we beg to refer the reader to Van Helmont's treatises, entitled *Blas Humanum* and *Blas Meteoron*.

BLAST. *Afflatus*. Erysipelas has been so called when it appears on the face, in consequence of exposure to cold wind or a blast.

Blaste'ma. (Βλαστημα, Βλαστησις; from βλαστανω, to germinate.) A term by which Hippocrates appears to have understood the eruption of any morbific humour on the surface of the body, causing pustules, crusts, or other cutaneous maladies.

Bla'tta byza'ntia. *Unguis odoratus*. A marine substance formerly used in medicine. It was of a reddish brown colour, a pleasant odour, and somewhat of the shape of a finger nail, whence its name of *unguis*. It was the operculum of some shell fish. It was esteemed as a remedy for epilepsy, hysteria, &c.

Blatta'ria. (So called, according to some, because it attracts *blattæ* or moth worms, and according to others, because it kills these insects.) The Mothmullein. See *Verbascum blattaria*.

Blattaria lutea. See *Verbascum blattaria*.

Bleaching liquid. See *Aqua alkalina oxymuriatica*.

Blear-eye. A weak and weeping eye, with a chronic inflammation of the eye-lids. See *Lippitudo*.

BLE'CHNUM. (*um*. *i*. n.; Βλεχνον.) The name of a genus of plants in the Linnæan system. Class, *Cryptogamia*; Order, *Filices*.

Blechnum linguifolium. See *Scolopendrium vulgare*.

Blechnum squamosum. See *Ceterach officinalis*.

Blechro'pyrus. (From βληχρος, slow, and πυρ, a fever.) A name given by some writers to the slow nervous fever.

BLEEDING. 1. A discharge of blood from the animal body from whatever cause. See *Hæmorrhage*.

2. The operation of blood-letting, for the cure or prevention of disease. See *Blood-letting*.

BLENNORRHA'GIA. (From βλεννα, mucus, and ρηγνυμι, to burst forth.) A discharge of mucus.

Blennorrha'gic. Relating to blennorrhagia.

BLENNORRHŒ'A. (From βλεννα, mucus, and ρεω, to flow.) A flow of mucus. The term is applicable to an increased discharge from any of the mucous surfaces, but is usually restricted to that from the urethra and vagina. Blennorrhœa may be divided into three species:

1. The *Blennorrhœa simplex*, which is a simple increased secretion of mucus from the urethra, and proceeds generally from mere local irri-

tation, unconnected with contagion or virulence of any kind, and is chiefly found in persons in whom the affected organ is in a state of debility; the occasional causes of irritation being excess of venery, too large an indulgence in spirituous liquors, cold, violent exercise, rheumatism and gout, &c. The discharge is mild, like pure mucus, ropy, produces no excoriation, pain in micturition, or other disquiet. It is cured by rest, mild aperients, cold to the parts, sea-bathing, and tonic medicines.

2. *Blennorrhœa chronica* is usually denominated gleet. It is a slimy discharge from the mucous glands of the urethra, without any specific venom or infection, and continues a long time. It is the common sequel of a clap or venereal blennorrhœa, which has either been badly treated, or has lasted long and produced great local weakness; but it occurs also independently of any clap or venereal infection, and is occasioned by excess in venery, and most other causes of weakness. The discharge is yellowish, slimy, and stiffens the linen. It varies greatly in quantity in different cases. Gleet is seldom accompanied by any other irritation of the part. Another cause of gleet, besides those already mentioned, is stricture of the urethra. In common cases gleet yields to terebinthinate medicines, which seem to act by imparting a stimulating material to the urine: the copaiba and Chian turpentine are most esteemed. Warm stimulants are also serviceable; as cubebs, and other peppers. When these are ineffectual in stopping the discharge, tonics and cold bathing should be resorted to, more especially when the disease appears to be connected with a leucophlegmatic habit and general weakness. Passing a bougie occasionally, often so stimulates the relaxed urethra as to remove the disease. When the result of rheumatism or gout, the proper medicines for those disorders should be given. Weak astringent injections seldom fail of stopping the discharge. Solutions of acetate of lead, sulphate of zinc, or acetate of zinc, are generally the best adapted for this purpose.

3. *Blennorrhœa venerea.* Gonorrhœa, or clap. See *Urethritis.*

Blepharadeni'tis. (From βλεφαρον, the eyelid, and αδην, a gland.) Inflammation of the Meibomian glands.

Blephari'tis. (From βλεφαρον, the eyelid.) An inflammation of the eyelid.

BLEPHARO'NCUS. (From βλεφαρον, the eyelid, and αγκος, a tumour.) A tumour on the eyelid. The term *Blepharoncosis* has been improperly substituted for this; ογκοσις means a general augmentation of the bulk of any thing.

BLEPHAROPHTHA'LMIA. (*a*, *æ.* f.; from βλεφαρον, the eyelid, and οφθαλμια, inflammation of the eye.) An inflammation of the eyelid.

BLEPHAROPLE'GIA. (From βλεφαρον, the eyelid, and πληγη, a stroke; the latter word being applied by the Greek physicians to paralysis.) Falling down of the upper eyelid from paralysis of the levator muscle. See *Blepharoptosis.*

BLEPHAROPTO'SIS. (*is*, *is.* f.; from βλεφαρον, the eyelid, and πτωσις, from πιπτω, to fall.) A prolapse, or falling down of the upper eyelid. It may arise from a relaxed state of the common integuments of the eyelids, or from paralysis of the levator muscle; in the latter case it is often connected with disease of the brain: some writers consider spasm of the orbicular muscle as an occasional cause.

Blepharoxy'stum. (Βλεφαροξυστον; fr m βλεφαρον, the eyelid, ξυω, to scrape.) An instrument used by the Greek surgeons to remove callosities from the inner surface of the eyelid.

Blessed Thistle. See *Centaurea benedicta.*

Blestri'smus. (Βλησταρισμος; from βλητριζω, to toss.) Jactitation; restless tossing of the body. A common symptom in many severe diseases.

Ble'ville. A village in the department of the Lower Seine. It possesses an acidulous chalybeate spring.

Blincta. Red earth.—*Ruland.*

Blindness, nocturnal. See *Hemeralopia.*

BLISTER. 1. An elevation of the cuticle, arising from the deposition of a serous fluid underneath it. A blister may be raised artificially by topical applications, or it may be caused by a burn, by hard friction of the cuticle, or by disease.

2. A topical application, which raises the cuticle in the form of a vesicle, filled with a serous fluid. See *Vesicatorium.*

Blister-fly. See *Cantharis.*

Blistered leaf. See *Bullatus.*

BLI'TUM. (*um*, *i.* n.; βλιτον.) 1. The name of a genus of plants in the Linnæan system. Class, *Monandria*; Order, *Digynia.* The *Blitum capitatum* has been employed as an emollient.

2. A pot-herb called blite. See *Amaranthus blitum.*

Blitum fœtidum. See *Chenopodium vulvaria.*

Blood. See *Sanguis.*

Blood, dragon's. See *Calamus rotang.*

Blood, spitting of. See *Hæmoptysis.*

Blood, vomiting of. See *Hæmatemesis.*

BLOOD-LETTING. Under this term is comprehended every artificial discharge of blood made with a view to the cure or prevention of disease. Blood-letting is divided into *general* and *topical.* The former includes *venæsection* and *arteriotomy*; and the latter, the *application* of *leeches, cupping-glasses,* and *scarification.*

Blood-stone. Two minerals have been called by this name — *Hæmatite* and *Heliotrope*: the former was once used in medicine. See *Hæmatite.*

Bloody flux. See *Dysenteria.*

Blossom. See *Corolla.*

BLOWPIPE. An instrument used by anatomists and chemists. The anatomical blowpipe is a silver or brass tube, by means of which, parts are inflated in order to develope their structure more distinctly. It should be provided with a stop-cock about its middle, by turning which, when the operator ceases to blow, the disagreeable effluvium from parts in a state of putrefaction is avoided.

The chemical blowpipe is made of brass. It is about one eighth of an inch in diameter at one extremity, and tapers to a much smaller

size at the other. The smaller end is bent to one side and has a minute aperture through which the stream of air issues. The blast of air is supplied from the lungs of the operator, or by bellows or bladders adapted to the purpose. By means of a little artifice easily acquired by habit, a strong and continued stream of air may be obtained by simply blowing through the tube, and this method has greatly the advantage of any other which requires a more complex and less portable apparatus. By means of the blowpipe the flame of a candle or lamp is directed on the object intended to be acted on. The flame assumes a conical shape, and the greatest heat is at the point of the cone. By this simple contrivance a heat equal to the strongest heat of a furnace may be instantaneously obtained. By substituting for common air a stream of *oxygen gas* a much higher temperature is produced and a mixture of *oxygen* and *hydrogen* gases propelled through the tube by a convenient apparatus, causes a degree of heat nearly equal to that of the arc of flame in the voltaic circuit. This constitutes what is called the *Oxy-hydrogen blowpipe.*

The blowpipe is an invaluable instrument to the chemist, and affords the mineralogist a principal means of determining the nature of mineral substances.

Blue disease. See *Cyanosis.*

Blue eye-water. See *Aqua cupri ammoniati.*

Blue, Prussian. See *Ferro-cyanic acid.*

Blue ointment. The mercurial ointment. See *Unguentum hydrargyri.*

Blue pill. See *Pilula hydrargyri.*

Blue-stone. Sulphate of copper.

Blue vitriol. Sulphate of copper.

BO'A. (*a, æ.* f.) 1. The Latin name of a papular eruption.

2. The *Lues venerea* at its first appearance in Europe was named *Boa* by some writers.

3. The name of a genus of serpents.

Boar. See *Sus scrofa.*

Boche'tum. An old name for a decoction of the woods prepared by a second boiling with fresh water.

Bo'chia. A glass subliming vessel.

Bochium. See *Bocium.*

Bo'cium. *Bochium. Boetum.* Bronchocele has been so called. See *Bronchocele.*

BODY. In the language of science this term is sometimes used in the same sense as *matter*, that is, it designates a substance which has length, breadth, and thickness, is divisible, impenetrable, and moveable; but it is more frequently used to designate those circumscribed forms of matter which are the objects of sight and touch; as animals, vegetables, stones, &c.

A. In *Natural Philosophy, Chemistry,* and *Physiology.*

Bodies are divided into *Ponderable* and *Imponderable.*

The first are those which may act upon several of our senses, and of which the material entity is sufficiently established; of this kind are solids, fluids, and gases. The second are only hypothetically called bodies, since although they give rise to phenomena which impress our senses, these phenomena may arise merely from particular states or affections of ordinary matter, such are caloric, light, electricity, and magnetism.

All ponderable bodies possess the common properties of matter, that is, they have extent, divisibility, impenetrability, and mobility; they likewise possess secondary or particular properties which are variable, as, hardness, porosity, elasticity, density, &c. The condition or state of bodies is determined by the presence or absence of some of these secondary properties, and it is by gaining or losing some of these that bodies change their state: for instance, water may appear under the form of a solid, of a fluid, or a vapour, although it is always the same body. To present itself successively under these three forms, nothing more is necessary than the addition or abstraction of some of its secondary qualities. According to the variety of their secondary qualities bodies are soft, hardy, solid, fluid, gaseous, combustible, incombustible, transparent, opake, &c.

Bodies are *simple*, or *compound.*

1. By *simple* bodies we mean bodies which have never yet been decomposed; but many of these are very likely compound, and may, in the progress of chemistry, be reduced to their constituent principles. The simple bodies hitherto recognized, fifty-four in number, are the following:

Aluminum, antimony, arsenic, barium, bismuth, boron, bromine, cadmium, calcium, carbon, cerium, chlorine, chromium, cobalt, columbium, copper, fluorine, glucinum, gold, hydrogen, iodine, iridium, iron, lead, lithium, magnesium, manganese, mercury, molybdenum, nickel, nitrogen, osmium, oxygen, palladium, phosphorus, platinum, potassium, rhodium, selenium, silicium, silver, sodium, strontium, sulphur, tellurium, thorium, tin, titanium, tungsten, vanadium, uranium, yttrium, zinc, and zirconium.

2. *Compound* bodies occur every where; they form the mass of the globe, and that of all the objects which are found on its surface. Compound bodies are either *organic* or *inorganic.* Animals and plants belonging to the former division, and all other bodies to the latter. Inorganic bodies are also called *brute* or *inert*, but brute is a vague term, and no body with which we are acquainted is actually inert though matter be so in the abstract; these terms, therefore, ought to be laid aside.

On comparing organic and inorganic bodies, we find certain circumstances in which organic bodies whether animal or vegetable agree with each other, and differ from inorganic bodies; and again, we find certain circumstances in which animals and vegetables differ from each other.

The chief circumstances in which organic differ from inorganic bodies, are *form, size, chemical composition, duration, generation,* and the *laws by which they are regulated.*

Form.—Organic bodies have a determinate form, which is more or less rounded or defined by curves; and they are composed of parts more or less symmetrical: inorganic bodies have no determinate form or symmetry, unless

indeed when crystallised, and their shape is for the most part defined by angles.

Size.—Organic bodies never exceed certain dimensions, which are very small compared with the masses of inorganic matter; thus no animal is known larger than the whale, and no vegetable is more than about two hundred feet high: inorganic bodies are of indeterminate and often vast dimensions; the largest animal or tree is a minute object compared with a mountain of granite.

Chemical Composition.—Organic bodies are never simple; they consist of at least four elements, and often of eight or ten; their composition varies, in different individuals of the same species, and in the same individual at different times; they are capable of decomposition, but incapable of being recomposed by any natural or artificial process: inorganic bodies are sometimes simple, and seldom consist of more than three elements; their composition is constant, and they are capable of being both decomposed and recomposed.

Duration.—All organised bodies have a limited duration; no animal, or plant, however favourably situated for the continuance of its existence, lives beyond a certain time: inorganic bodies have no particular term of existence, and if preserved from the destructive agency of other bodies, may exist for any length of time.

Generation.—Organised bodies possess the power of generating other bodies similar to themselves: inorganic bodies have no such power; a new inorganic mass can only be formed, by the mechanical aggregation or chemical combination of particles which have belonged to other masses.

Laws by which they are regulated.—Organic bodies are partly subject to the common laws of matter, that is, to the different kinds of attraction and repulsion; but they have also laws of their own, apparently different, and in some instances opposed, to those of ordinary matter: inorganic bodies are subject solely to the different kinds of attraction and repulsion.

The following are the most remarkable points of distinction between animals and vegetables.

Animals for the most part are endowed with locomotion, whereas vegetables are fixed.

Animal bodies are composed of eight or ten elements, and have azote for the base of their composition: vegetables consist of only four or five elements, and have carbon for the base of their composition.

Animals can derive nutrition only from aliment which has undergone a process of digestion, and this process takes place in a canal contained within the body of the animal: vegetables are nourished by aliments already prepared for them, and which they absorb by tubes opening externally.

Many other points of difference between organic and inorganic substances, and between animals and vegetables, have been remarked by physiologists; but to these it is deemed unnecessary to advert, since it would be by no means easy to maintain even those above mentioned, though among the least disputable, against the attacks of a moderately subtle logician.

B. In *Anatomy.*

The human body is divided by anatomists into the head, trunk, and extremities.

The head is distinguished into the hairy scalp and the face. The former has five regions, viz. the crown of the head or *vertex*, the fore-part of the head or *sinciput*, the hind-part or *occiput*, and the sides, *partes laterales capitis*. In the latter are distinguished, the region of the forehead, *frons*; the temples, *tempora*; the nose, *nasus*; the eyes, *oculi*; the mouth, *os*; the cheeks, *buccæ*; the chin, *mentum*; and the ears, *aures*.

The trunk is distinguished into three principal parts; the neck, thorax, and abdomen. The neck is divided into the anterior region or *pars antica*, on which, in the male, is an eminence called *pomum Adami*; the posterior region is called *nucha*; and the lateral regions, *partes laterales colli*.

The thorax is distinguished into the anterior region, in which are the *sternum* and *mammæ*, and at the inferior part of which is a pit or hollow, called *scrobiculus cordis*; a posterior region, called *dorsum*; and the sides, or *latera thoracis*.

The abdomen is distinguished into an anterior region, properly the *abdomen*; a posterior region, called the loins, or *lumbi*; and lateral regions or flanks, called *latera abdominis*. The anterior region of the abdomen is subdivided into the *epigastric*, *umbilical*, and *hypogastric* regions, and these are subdivided into others, as described in the article *Abdomen*. Immediately below the abdomen is the *mons veneris*, and at its sides the groins or *inguina*. The space between the organs of generation and the *anus*, or fundament, is called the *perinæum*.

The superior extremity is distinguished into the shoulder, *summitas humeri*, under which is the arm-pit, called *axilla* or *fovea axillaris*; the *brachium*, or arm; the *anti-brachium*, or fore-arm, in which anteriorly is the bend of the arm, where the veins are generally opened, called *flexura antibrachii*; and posteriorly the elbow, called *angulus cubiti*; and the hand, in which are the *carpus* or wrist, the back or *dorsum manus*, and the palm or *vola*.

The inferior extremity is divided into, 1. The region of the femur, in which is distinguished the *coxa* or *regio ischiadica*, forming the outer and superior part; 2. the leg, in which are the knee or *genu*, the bend or *cavum poplitis*, and the calf or *sura*; 3. the foot, in which are the outer and inner ankle, or *malleolus externus* and *internus*, the back or *dorsum*, and the sole or *planta*.

Boetum. See *Bocium.*

Bog-bean. See *Menyanthes trifoliata.*

Bogia gummi. Gamboge.

Bohea. See *Thea.*

Boil. See *Furunculus.*

Boiling point. See *Caloric.*

Bolar earth. Bole. See *Bole.*

BOLE. (*Bolus, i.* m.; βωλος, a mass.) An argillaceous mineral, having a conchoidal fracture, a glimmering internal lustre, and a shining streak. Its colours are various, from white, through different shades of yellow and brown, to black. It is translucent or opake.

It is soft, and easily cut, sp. grav. 1·4 to 2. It may be polished. It has a greasy feel, and adheres to the tongue. If it be immersed in water after it is dried, it falls asunder with a crackling noise. Many kinds of bole were formerly used in medicine, and in old Pharmacopœias mention is made of red boles from Armenia, Lemnos, Portugal, Tuscany, and Livonia; yellow boles from Armenia, Tockay, Silesia, Bohemia, and Blois; white boles from Armenia, Lemnos, Nocera, Eretria, Samos, Chio, Malta, Tuscany, and Goltberg. These earths were commonly made into little cakes or flat masses, and stamped with certain impressions; from which circumstance they received the name of *terræ sigillatæ*, or sealed earths.

Bole, armenian. *Bolus Armeniæ.* The Armenian bole, now commonly found in shops, is an argillaceous earth of a pale but bright red colour, which it owes to an impregnation of iron. It is occasionally mixed with honey, and applied to the aphthæ which affect the mouths of children; it is also used as a tooth-powder, when mixed with some aromatic.

BOLE'TIC. (*Boleticus;* from *Boletus*, the name of a fungus.) Appertaining to the boletus.

Boletic acid. (*Acidum boleticum.*) An acid discovered by Braconnot, in the juice of the *Boletus pseudo-igniarius.* The expressed juice concentrated to a syrup by a very gentle heat, was digested by strong alkohol, and the residue dissolved in water. Nitrate of lead was dropped into this solution, and a white precipitate fell, which, after being well washed and diffused through water, was decomposed by a current of sulphuretted hydrogen gas. The liquor was then filtered and evaporated, by which the boletic acid was obtained in prismatic crystals, and purified by dissolving in alkohol and re-crystallising. At the temperature of 68° this acid is soluble in 180 times its weight in water, and 45 of alkohol. It sublimes when heated, and is condensed in a white powder.

BOLE'TUS (*us, i.* m.; βωλιτης.) 1. A kind of fungus referred by Linnæus to the genus *Lycoperdon.*

2. The name of a genus of plants in the Linnæan system. Class, *Cryptogamia;* Order, *Fungi.* The leathern, corky, or woody species of this genus, also those which have a collar on their footstalk, or which have a pepper-like acrid taste, or which become blue or green when cut, are all either poisonous, or at least suspicious. They differ from the agarics, in having tubes under their caps instead of gills.

Boletus cervi. The deer ball. This is said to be aphrodisiac.

Boletus igniarius. Agaric of the oak; touchwood boletus; female agaric. The systematic name for the *Agaricus* of the pharmacopœias: called also, *Agaricus chirurgorum, Agaricus quercus, Fungus igniarius.* This fungus *Boletus — acaulis, pulvinatus, levis, poris tenuissimis* of Linnæus, has been much used by surgeons as an external styptic, when softened by beating. The Laplanders burn it about their habitations to keep off a species of gad-fly, which is fatal to their young rein-deer. This plant has been generally said to afford the substance called *amadou* or German tinder, the greater part of which, however, appears to be made from the *B. fomentarius;* but both species are employed for this purpose. See *Amadou.*

Boletus laricis. See *Agaricus albus.*

Boletus suave'olens. *Fungus salicis.* The systematic name for the *Fungus salicis* of the pharmacopœias. This species of fungus, *Boletus — acaulis, superne lævis, salicibus,* of Linnæus, and the *Boletus albus* of Hudson, when fresh, has a suburinous smell, and at first an acid taste, followed by a bitter. It is seldom used at present, but was formerly given in phthisical complaints.

Boletus sulphureus. On drying, this evolves needle-like crystals of oxalic acid nearly pure.

Bolismus. See *Bulimia.*

BOLOGNIAN STONE. A pyrophorus much in vogue about the middle of the 17th century. One Vincenzio Casciarolo a shoemaker of Bologna, having found a piece of sulphate of baryta, and imagining from its weight and lustre that it contained silver, subjected it to heat, and thus accidentally discovered that this substance, after having been exposed to heat, acquires the property of shining in the dark after exposure to the sun's rays. This gave rise to the preparation called *Bolognian phosphorus* or *Bolognian stone.* A family named Lagoni, were particularly successful in making it, and acquired wealth by selling it to the curious throughout Europe. Their exact process is not known; but a substance very distinctly luminous in the dark after exposure to the sun's rays, may be obtained by making powdered sulphate of baryta *into cakes* with mucilage of gum tragacanth, calcining them carefully in the open fire, and allowing them to cool slowly.

BO'LUS. (*Bolus, i.* m.; βωλος, a mass.) 1. Any medicine, rolled into the shape of a ball larger than an ordinary sized pill, and yet not too large to be swallowed. 2. A kind of argillaceous earth. See *Bole.*

Bolus Armeniæ. See *Bole, Armenian.*

Bolus armeniæ albus. The white Armenian bole. See *Bole.*

Bolus blessensis. Bole of Blois. See *Bole.*

Bolus gallicus. French bole. A pale red-coloured bolar earth, variegated with irregular specks and veins of white and yellow. It was formerly esteemed as an absorbent and antacid.

BO'MBAX. (*ax, acis.* f.) The name of a genus of plants in the Linnæan system. Class, *Monadelphia;* Order, *Polyandria.* The cotton-tree. See *Gossypium.*

Bo'mbiate. *Bombias.* A salt formed by the union of the bombic acid with salifiable bases.

Bombic acid. *Acidum bombicum.* (Βομβυξ, a silk-worm.) Acid of the silk-worm. Silk worms contain, especially when in the state of chrysalis, an acid liquor in a reservoir placed near the anus. From this, Chaussier obtained an acid which he deemed peculiar, and named the bombic acid. Little is known concerning it.

BO'MBUS. (*us, i.* m.; βομβος, the buzzing of bees.) In medical language, this word has been used to denote, 1. The sensation of ringing in the ears. See *Tinnitus aurium.*

2. The noise caused by the movement of gas the intestines, otherwise called *Borborygmus.* e *Borborygmus.*

Bon. *Ban.* The Egyptian name of the cof- e-tree.

Bonduch Indorum. See *Guilandina.*

Bone. See *Os.*

Bone-binder. See *Osteocolla.*

Bononiensis lapis. See *Bolognian stone.*

Bonus Henricus. See *Chenopodium bonus enricus.*

BORA'CIC ACID. (*Acidum boracicum, cidum boracis,* so called because obtained from rax.) This acid was once named the *sedative lt of Homberg;* that chemist first obtained it distilling a mixture of borax and sulphate of n. Boracic acid is most readily obtained by ssolving the borate of soda, commonly called rax, in hot water, filtering the solution; add- g sulphuric acid by little and little, till the uid has a sensibly acid taste, and setting it de to cool: the boracic acid will be deposited small white shining scaly crystals. It should washed with cold water, to separate some lphuric acid and sulphate which adheres to it, d then dissolved in boiling water and recrys- lised. It still, however, retains a minute rtion of sulphuric acid; and if it be wanted solutely pure, it should be fused in a platinum ucible, and again dissolved in hot water and ystallised. Boracic acid in this state is a hy- ate containing about 40 per cent. of water. s specific gravity is about 1·48. It is soluble about 30 parts of cold water. Three parts boiling water dissolve it, but the greater por- n is deposited on cooling. It is readily soluble alkohol, and the solution burns with a beau- ul green flame; a phenomenon which affords e surest test of the presence of this acid. At white heat it sublimes slowly when exposed the atmosphere. Its taste is but slightly acid; reddens vegetable blues, and changes turmeric own like an alkali. By exposure to a gra- ally increasing heat in a platinum crucible, racic acid may be rendered anhydrous. The hydrous acid is very fusible, and forms fusible mpounds with many of the metallic oxides, ence it is often used as a flux.

Boracic acid occurs native in the volcanic rmations of the Lippari islands, and is dis- ved in hot springs in those islands, and also Sasso, in Tuscany, whence its mineralogical me of *Sassolite.* It is combined with soda in *tive borax,* with magnesia in *boracite,* and with ne, silica, &c. in *datolite.*

Of the salts formed by boracic acid, which e called *borates,* the borate of soda, or *borax,* is e only one of much importance. (See *Sodæ oras.*) The borates in general are decomposed the stronger acids. The boracic acid forms th ammonia a *borate* and *bi-borate.* The bo- e of potash is but little known. Borate of ryta, when fused, cut, and polished, has a lliant lustre, and much resembles in appear- ce the Saxon topaz. Boracic acid, when ed with silver, unites with it, forming a vi- ous compound.

Borage. See *Borago.*

BORAGI'NEÆ. A tribe of dicotyledon- ous plants, of which the genus borago is the type.

BORA'GO. (*o, inis,* f.; formerly written *Corago,*— from *cor,* the heart, and *ago,* to impel, — because it was supposed to strengthen the heart.) Borage.

1. The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Monogynia.*

2. The pharmacopœial name of the officinal borage. See *Borago officinalis.*

Borago officinalis. Borage. The sys- tematic name for the *borago* of the shops; called also *Corago, Buglossum verum, Buglos- sum latifolium,* and *Borago hortensis. Borago —foliis omnibus alternis, calycibus patentibus* of Linnæus. This plant contains a consider- able quantity of nitrate of potash. It used to be in high esteem as a cordial. It is still used on the Continent in pulmonary diseases, in rheu- matism, and in cutaneous affections. It is only used in this country, as an ingredient in the grateful summer beverage, known by the name of cool tankard.

BO'RAS. (*as, atis.* f.) A borate. A salt formed by the union of the boracic acid with a salifiable base.

Boras sodæ. See *Sodæ biboras.*

Borate. See *Boras.*

BORAX. (*Boras, acis.* m.; from *Bourach,* an Arabic word.) A compound of boracic acid and soda. See *Sodæ biboras.*

BORBORY'GMUS. (*us, i,* m. Βορβορυγ- μος.) The rumbling noise occasioned by flatus in the intestines.

Bordeaux. A well known city in the south- west of France. There is in its vicinity a mi- neral spring, the waters of which contain oxide of iron, carbonate and sulphate of iron, muriates of soda and lime, subcarbonate of soda, sulphate of magnesia, and some gaseous matter which is inflammable.

BORDER. In botany, the upper spread- ing part of some corollæ; as that of *Primula* and *Auricula.* See *Lamina.*

Boric acid. See *Boracic acid.*

Boritis. The philosopher's stone.

Borometz. See *Barometz.*

BORON. *Borium. Boracium.* The basis of boracic acid.

The easiest and most economical method of preparing boron, is to decompose an alkaline borofluate by potassium. For this purpose, borofluate of potash is formed by mixing fluate of potash with a solution of borate of potash. The borofluate falls in a gelatinous precipitate, which by desiccation assumes the form of a fine mealy-white coloured powder. Its taste is weakly bitter, but not at all acid, nor does it redden litmus paper. It is anhydrous. 100 parts of water dissolve only 1·42 of this salt; but boiling water dissolves it in considerably larger quantity. It is slightly soluble also in boiling alkohol. When ignited it fuses, and gives off fluoboric acid gas; but for complete decomposition it requires a much longer con- tinued, and more violent heat, than the corre- sponding salt of silica (fluosilicate of potash). The borofluate is soluble in boiling hot solutions

of the alkalis and their carbonates, and as the liquid cools it crystallises again unaltered. As boracic acid, even by protracted fusion, cannot be completely deprived of water, and as it absorbs an additional quantity during pulverisation, a rather violent detonation is thereby caused during the reduction of boracic acid by potassium; so that a portion of the mixture is in general projected from the crucible. On the contrary, when the borofluate of potash has been sufficiently dried, the sound at the instant of reduction is scarcely audible, and for every atom of potassium expended, we obtain the corresponding quantity of boron. The boron must be well washed with a solution of sal ammoniac, and finally with alkohol; because when pure water is employed for this purpose, a considerable quantity passes in the dissolved state through the filter.

Sulphuret of boron.—Boron is capable of forming a sulphuret, but, contrary to what has been hitherto supposed, no combination takes place between the two substances, except in a temperature greatly exceeding the boiling point of sulphur. It takes fire and burns when strongly ignited in the vapour of sulphur. The sulphuret is a white opake mass. When put into water, it is rapidly converted into sulphuretted hydrogen gas and boracic acid; the liquid becomes at the same time more or less milky, in consequence of the precipitation of sulphur. Berzelius is led to think, that boron is capable of combining in several distinct proportions with sulphur.

Chloride of boron.—Sir H. Davy ascertained, that boron, even without the application of heat, takes fire spontaneously in chlorine gas, and undergoes brilliant combustion. If it be, however, very pure, and previously ignited *in vacuo*, no combination takes place with chlorine till heat be applied. The product of the combustion is a *new gas*, which, in contact with the atmospheric air, smokes as strongly as fluoboric acid gas. It must be collected over mercury, which absorbs the excess of chlorine. This gas is colourless, and in consequence of the formation of muriatic acid at the expense of the atmospheric humidity, it has a strong suffocating odour. It is rapidly, but not instantaneously, absorbed by water; and when the proportion of the water is small, a quantity of boracic acid is deposited upon its surface. Alkohol also dissolves it, and acquires the same odour of ether as when it has absorbed muriatic acid gas. Chloride of boron, when mixed with ammoniacal gas, condenses, and forms a salt, which may be sublimed unaltered, but which is less volatile than sal ammoniac. If the salt be moistened previously to sublimation, there remains a quantity of boracic acid. 1 volume of the gas condenses $1\frac{1}{2}$ volume of ammoniacal gas. Chloride of boron is composed of

Chlorine	- -	90·743
Boron	- -	9·257

M. Woehler says, that chloride of boron may be obtained by passing chlorine over calcined borax heated to redness.

Fluoric acid, unless aided by nitric acid, neither oxidates nor dissolves boron.

When boron is ignited with an alkaline carbonate, it denotes at the expense of the carbonic acid; and when it is ignited with the hydrate of a fixed alkali, hydrogen gas is disengaged with effervescence, and boracic acid is formed.

In the properties now brought under review, boron possesses so close a resemblance to silicium, that the two substances may be associated with one another, in the same manner as arsenic has been associated with phosphorus, and selenium with sulphur. The affinities of boron are, however, stronger, and, in the lower temperatures, more active than those of silicium. Thus it detonates with nitre, in a low red heat, with such energy, that the explosion may be compared almost to that of gunpowder.

M. Dumas states, that a mixture of borax and charcoal being put into contact with dry chlorine at a red heat, yields abundance of the chloride of boron. He took advantage of it in the analysis of boracic acid; for when it decomposes water, it gives muriatic and boracic acids. But its most important property is that of forming a solid hydrate, susceptible of being reduced by hydrogen and the heat of a spirit lamp: it becomes muriatic acid and *boron*, and in this way the latter substance may be obtained in large quantities.—*Ure.*

Borozail, or zail. (Ethiopic.) A disease which is endemic on the shores of the river Senegal. It attacks the genital organs of both sexes, but is different from syphilis. According to Blancard, it is called *Asab* in men, and *Assabatus* in women. It is probably identical with *Frambœsia*, or the Yaws.

Boruret. A combination of boron with a simple body.

Borrago. See *Borago.*

Borri. *Borri-borri. Boberri.* The Indian name for turmeric; also an ointment used in India, the chief ingredient of which is the root of turmeric.

BOS. (*os, ovis*, m.) The ox. A well-known genus of ruminant animals. The flesh of the ox, commonly called beef, is a highly nutritious and digestible meat; the flesh of the young animal, or veal, abounds with nutritious matter, but is perhaps, on the whole, the least digestible of the meats in common use. The milk of the cow, from its abundance and wholesomeness, is more universally used than that of any other animal.

Bosa. An inebriating preparation used by the Egyptians; it was made of the meal of darnel, hemp-seed, and water. — *Prosper Alpinus.*

Bo'smoros. (From *βοσκω*, to eat, and *μορος*, a part; because it is divided for food by the mill, or from *βους*, an ox, and *μορος*, a part; because it is separated from the chaff by the treading of oxen.) *Bosporos.* A species of corn.

BOSWE'LLIA. A genus of plants of the Class *Decandria*, and Order *Monogynia.*

Boswellia serrata. This species is supposed to afford the olibanum of commerce. See *Olibanum.*

Bota'li foramen. The foramen ovale of the fœtal heart was formerly so called after

Leonard Botal, an anatomist of the sixteenth century, to whom its discovery was erroneously attributed.

Botamum. Plumbum lotum. — *Ruland.*

BOTANICA. (*a. æ.* f.) Botany. See *Botany.*

Bota'nicon. (From *βοτανη*, an herb.) An epithet of a plaster made of herbs, described by Paulus Ægineta.

BO'TANIST. (*Botanicus, i.* m.; from *βοτανη*, an herb.) One who cultivates the science of botany.

Botano'logy. (From *βοτανη*, an herb; and *λογος*, a treatise.) The same as botany.

BO'TANY. (*βοτανικη, Botanica;* from *βοτανη*, an herb or grass, which is derived from *βοω*, or *βοσκω*, to feed, because grass is the chief food of the animals which are most useful to man.) That branch of natural history which relates to the vegetable kingdom. Botany is not confined to the description and classification of plants, as many who take a partial view of the subject erroneously suppose, but involves the whole philosophy of one great department of nature. There is no study which better illustrates the connection of the natural sciences than botany; if philosophically viewed, it will be found inseparable from physiology, chemistry, geology, physical geography, medicine, and various other sciences. Its relations to medicine are immediate and important; the anatomy and physiology of plants forms an indispensable part of the general science of life, and a large proportion of the substances which form the materia medica are derived from the vegetable kingdom. The study of botany may be considered as taking cognisance of, —

1. The *terminology*, or nomenclature of the several parts of plants which are externally visible; as stems, leaves, flowers, seed-vessels, &c. This is a very important part of the subject. The identification of genera and species rests entirely upon it, and many students turn from the pursuit of botany as one beset with insuperable difficulties, merely because they have not acquired a sufficient acquaintance with the terminology, which would render the path quite smooth.

2. The *classification* or arrangement. A knowledge of the different parts of a plant must necessarily be gained before it is described; but amid the multiplicity of objects which the vegetable kingdom presents, it is impossible to distinguish individuals from each other, by characters which the memory can retain, without having recourse to such general similarities and differences as are common to a number of individuals. By tracing these general resemblances and diversities through a number of gradations, we are enabled to found on them primary and subordinate divisions, either ascending from particulars to generals, or descending from generals to particulars. The former is the method by which science of every kind is slowly formed and extended; the latter that by which it is most easily taught. Such divisions and distributions in the science before us constitute the various systems, arrangements, or classifications of botanists; and these, according to the kind of characters on which they are founded, are called *natural* or *artificial.* A view of the principal classifications of plants will be given in the article *Vegetable Kingdom.*

3. The *synonyms* of plants, or the various scientific and vernacular names by which they have at different times been distinguished.

4. The *physical properties* of plants, or the different manner in which they severally affect the organs of sight, smell, taste, and touch.

5. *Vegetable chemistry*, or the chemical examination of the substances which enter into the composition of plants, or are formed by their vital actions.

6. The *anatomy of plants*, or description of the different visible parts of which their substance is composed. The anatomy of vegetables admits of precisely the same divisions as that of animals, into general, descriptive, physiological, pathological, &c., for they have textures as well as organs, and are susceptible of morbid as well as healthy actions.

7. The *physiology of plants.* A plant, like an animal, is an organised and living being, in which various operations, both chemical and mechanical, are continually going on, under the influence of vitality, from its first production to its final dissolution. It is developed from a seed endowed with a reproductive energy by a parent plant; it takes in foreign substances by its inhaling and absorbent vessels; it elaborates and assimilates to its own substance those parts of them which are nutritious, and throws off the rest; it secretes a variety of fluids by means of glands, and other secerning organs; it gives that motion to its sap on which the continuance of its life depends; and finally it produces fertile seed, from which succeeding plants are generated.

8. The *uses* to which different plants are applied, either in diet, medicine, or the arts, the soil and situation which are most favourable to the growth of plants, the time of year in which they open their flowers, and ripen their fruit, with many other incidental particulars, are properly within the province of the botanist. As a botanist, however, he is concerned with nothing more than the simple facts: the best methods of cultivating such vegetables, as are raised in considerable quantities for the special use or pleasure of man, the theory of their nutritious or medicinal properties, and the manner in which they are to be prepared, so as to effect the intended purposes, are the province either of the gardener, farmer, physician, chemist, or artist.

Botany-bay gum. See *Xanthorhœa hastilis.*

Botargo. A salted preparation made in Italy and the South of France, from the row of the grey mullet. It is used as a seasoning to other food.

Bothor. An Arabic term which has been variously applied. 1. To pustules, wherever situated.

2. To aphthæ.

3. To an abscess in the nostrils.

4. To all tumours, especially such as are ulcerated.

5. To the small-pox and measles.

Bo'THRION. (From *βοθριον*, a little pit.) *Bothrium.* 1. The socket of a tooth. — *Galen.*

2. A small deep ulcer of the cornea. — *Galen. Paulus.*

BOTHRIOCE'PHALUS. (*us, i.* m.; from *βοθριον*, a little pit; and *κεφαλη*, a head: so called because there are several depressions at the head. The tape-worm. See *Entozoa.*

Bothriocephalus latus. See *Entozoa.*

Bo'TIUM. A bronchocele.

BO'TRYS. (*Βοτρυς*, a cluster of grapes: so called because its seeds have been imagined to resemble a bunch of grapes.) 1. A plant mentioned by Pliny and Dioscorides, called also by the ancients *αμβροσια*. It is supposed to be the *Chenopodium botrys* of Linnæus.

2. The name of a genus of plants in the system of Bauhin.

Botrys mexicana. See *Chenopodium ambrosioides.*

Botrys vulgaris. See *Chenopodium botrys.*

BOUGI'E. (French for a wax candle.) Called also *Candela, Candela cerea, Candelula, Virga cerea, Cerea, Cereola, Cereus, Cereolus.* A long, slender instrument, that is introduced into the urethra, œsophagus, or rectum, to overcome strictures of those canals. Bougies for the urethra, are made of various materials, as elastic gum, wax, catgut, and metal, and of various sizes, according to the degree of stricture. Each kind of bougie has its advantages for particular purposes; but the elastic gum is the one most generally used, and to be preferred in common cases of stricture of the urethra. When the bougie has some escharotic substance attached to the end of it, it is called a *medicated* or *armed* bougie. Armed bougies are sometimes used in inveterate cases of stricture, but they are now seldom used in this country, and hardly ever in France. A common bougie, with a piece of nitrate of silver fitted into the end of it, is the contrivance generally used by such surgeons as approve of the use of armed bougies. Bougies for the œsophagus are usually made of elastic gum, and are sometimes armed with caustic, like those for the urethra. Bougies for the rectum are generally made of elastic gum or of crystal glass.

Boulogne. A well-known sea-port town of France. It has mineral waters which are acidulous and chalybeate.

Bourbon-lancy. A small town of France in the department of Saône et Loire. It has thermal saline springs, containing carbonic acid, muriates of soda and lime, sulphate of soda, carbonate of lime, iron, and silica. Their temperature is from 106° to 137° Fahr.

Bovi'llæ. (From *bos*, an ox, because cattle were supposed subject to it.) An old name of the measles.

Bovi'na fames. See *Bulimia.*

Bovi'stus. See *Lycoperdon.*

Box-tree. See *Buxus.*

Boyle's fuming liquor. The hydroguretted sulphuret of ammonia.

Brache'rium. (Low Latin.) A term used by old surgical writers for a truss, or bandage for hernia.

BRACHIÆ'US. (From *brachium*, the arm.) Appertaining to the arm.

Brachiæus externus. See *Triceps extensor cubiti.*

Brachiæus internus. See *Brachialis internus.*

Brachiæus musculus. See *Brachialis internus.*

BRA'CHIAL. (*Brachialis*, from *brachium*, the arm.) Appertaining to the arm.

Brachial artery. *Arteria brachialis. Arteria humeralis.* The brachial or humeral artery is the continuation of the axillary, which, as it passes behind the tendon of the pectoralis major, receives the name of *brachial.* It runs down on the inside of the arm, behind the inner edge of the coraco-brachialis and biceps muscles. It gives off the *profunda humeri superior*, the *profunda inferior*, and the *ramus anastamoticus magnus.* At about an inch below the bend of the arm it divides into the *radial* and *ulnar.* Sometimes, though rarely, the *brachial artery* is divided from its origin into two large branches, which run down on the arm, and afterwards on the fore-arm, where they form respectively the radial and ulnar arteries.

Brachial plexus. The lower cervical nerves and the first dorsal form a plexus round the axillary artery, which is called the *brachial plexus.* From this all the great nerves of the upper extremity are derived. It also gives off the external thoracic nerves and twigs to the muscles in its vicinity.

Brachia'le. The word means a bracelet but the old anatomical writers apply it to the carpus, the part on which the bracelet is worn.

Brachialis externus. See *Triceps extensor cubiti.*

Brachialis internus. *Brachiæus* of Winslow. *Brachiæus internus* of Cowper. A muscle of the fore-arm, situated on the fore-part of the os humeri. It arises fleshy from the middle of the os humeri, at each side of the insertion of the deltoid muscle, covering all the inferior and fore-part of this bone; runs over the joint, and adheres firmly to the ligament; is inserted, by a strong short tendon, into the coronoid process of the ulna. Its use is to bend the fore-arm, and to prevent the capsular ligament of the joint from being pinched during that action.

BRACHIA'TUS. Brachiate. Applied to branches, panicles, &c. spread in four directions, crossing each other alternately in pairs: the common mode of growth in the branches of shrubs that have opposite leaves, as the lilac, syringa, &c.

Brachii os. See *Humeri os.*

Brachio-cephalic artery. The arteria innominata is so called by M. Chaussier.

Brachio-cubital ligament. See *Ligamentum brachio-cubitale.*

BRACHIO'PODA. (From *βραχιων*, an arm, and *πους*, a foot.) An order of mollusc animals, so called because their feet resemble arms. See *Animal Kingdom.*

Brachio-radial ligament. See *Ligamentum brachio-radiale.*

BRA'CHIUM. (*um, i.* n.; *βραχιων*, the arm.) The arm, or more properly that part of it extending from the shoulder to the elbow.

Brachium morens quartus. See *Latissimus dorsi.*

Brachu'na. A species of satyriasis, or fur uterinus. — *Avicenna.*

Brachychro'nus. (From *βραχυς*, sho

and χρονος, time.) A term applied by Galen to a disease which continues but a short time.

Brachypnœ'a. (From βραχυς, short, and πνεω, to breathe.) That state of the breathing in which the inspirations are short, with long intervals between them.

Bracium. Copper. — *Ruland.*

BRAC'TEA. (*a, æ.* f.; a thin leaf or plate of metal.) A floral leaf. One of the seven *fulcra* or props of plants, according to Linnæus. A bractea is a little leaf-like appendage to some flowers, lying under or interspersed in the flower, but generally different in colour from the true leaves of the plant. It is *green* in some, as in *Ocymum basilicum majus; coloured* in others, as in *Salvia horminum*, &c. In some it is *caducous*, falling off before the flowers; in others it is *persistent*, that is, it remains; as in *Tilia europæa.*

Bracteæ'tæ. (From *bractea*, here meaning a corolla.) The name of a class in Boerhaave's method of plants, consisting of herbaceous vegetables, which have petals, and the seeds of which are furnished with a single lobe or cotyledon.

BRACTEA'TUS. (From *bractea*, a floral leaf.) Bracteate: having a floral leaf. When a flower-stem terminates in a number of very large bracteæ, resembling a bush of hair, this arrangement is called *coma bracteata.*

Bracteifo'rmis. Resembling a bractea or floral leaf.

Bradype'psia. (From βραδυς, slow, and πεπτω, to concoct.) Weak digestion.

Bra'dyspermati'smus. (From βραδυς, slow, and σπερμα, seed.) Too slow an emission of the semen. See *Sterility.*

Braggat. A name formerly applied to a ptisan of honey and water.

Brain. See *Cerebrum.*

Brain, little. See *Cerebellum.*

BRAINE. A small town three leagues from Soissons. It has mineral waters similar to those of Passy.

Bran. *Furfur.* The husks of wheat, which remain in the boulting machine. Bran contains a portion of the farinaceous matter, and is said to have a laxative quality. Decoctions of bran, sweetened with sugar, are used as a popular remedy for coughs, hoarseness, &c.

BRA'NCA. (*a, æ.* f.; from the Italian *branca*, a paw.) A term applied to some herbs, which are supposed to resemble the paw of a particular animal: as *branca leonis*, lion's foot; *branca ursina*, bear's foot.

Branca leonina. See *Alchemilla.*

Branca leonis. See *Alchemilla.*

Branca ursina. See *Acanthus* and *Heracleum.*

Branchi. *Branchæ.* Low Latin words signifying swelling of the tonsils.

BRA'NCHIA. (*a, æ.* f.; from βραγχια, the gills of a fish.) A gill. The respiratory organs of those animals that breathe water instead of air are called *branchiæ*, or gills. They vary greatly in their structure and position in different animals. See *Animal Kingdom.*

BRANCHIO'PODA. (From βραγχια, gills, and πους, a foot.) An order of crustaceous animals, so called because their branchiæ are situated on the feet.

Branchus. Βραγχος. Hoarseness.

BRANDY. *Spiritus Gallicus.* A well-known alkoholic liquor, obtained by distillation from wine. It consists of water, ardent spirit, and a small portion of oil, which renders it milky at first, and, after a certain time, gives it a deep colour. Its peculiar flavour depends on the nature of the essential oil, which comes over along with it in the distillation, and likewise, in some measure, upon the management of the fire, the wood of the cask in which it is kept, &c. It is said, that our rectifiers imitate the flavour of brandy, by adding a small proportion of nitrous ether to the spirit of malt or molasses. In France the finest kind of brandy is called *Cogniac*, and the commoner kind *eau de vie.* (See *Aqua vitæ.*) In its action on the animal economy, brandy agrees generally with the other ardent spirits; it has, however, a more stomachic quality, which renders it preferable as a stimulant in typhus and other asthenic diseases. Brandy, largely diluted with water, will often be found a good ordinary drink at dinner, in cases of dyspepsia unattended with an inflammatory state of the stomach.

Brank-ursine. See *Acanthus mollis.*

Brase'gur. A place in the diocese of Rhodez, where there are mineral waters which have both cathartic and astringent properties.

Brasi'lia. Brazil wood.

Brasiliense lignum. See *Cæsalpinia.*

Brasiliensis radix. The ipecacuanha root is sometimes so called.

Bra'sium. Malt, or germinated barley.

Brass. See *Æs.*

Brassade'lla. *Brassatella.* See *Ophioglossum spicatum.*

BRA'SSICA. *a, æ.* f. Κραμβη. 1. Cabbage or colewort.

2. The name of a genus of plants in the Linnæan system. Class, *Tetradynamia*; Order, *Siliquosa.*

Brassica acidulata. The culinary preparation called sour crout. See *Brassica oleracea.*

Brassica alba. The white cabbage.

Brassica apiana. Jagged or crimpled colewort.

Brassica canina. See *Mercurialis perennis.*

Brassica capitata. See *Brassica oleracea.*

Brassica cuma'na. The red colewort.

Brassica eru'ca. *Brassica erucastrum. Eruca sylvestris.* Garden rocket. Roman rocket. Rocket gentle. The systematic name of the plant which affords the *semen erucæ. Brassica — foliis lyratis, caule hirsuto, siliquis glabris*, of Linnæus. The seeds of this plant, and of the wild rocket, have an acrid taste, and are eaten by the Italians in their pickles, &c. They are said to be good aperients and antiscorbutics, but are chiefly esteemed by the above-mentioned people for their supposed aphrodisiac qualities. The rocket was esteemed aphrodisiac by the ancient Romans.

Brassica erucastrum. See *Brassica eruca.*

Brassica florida. The cauliflower.

Brassica lacuturria. The savoy plant.

Brassica marina. See *Convolvulus soldanella.*

Brassica napus. Wild navew, or rape. The systematic name for the plant from which

the *semen napi* is obtained. *Napus sylvestris. Bunias.* The seeds yield, upon expression, a large quantity of oil, called rape oil, which is sometimes ordered in stimulating liniments.

Brassica oleracea. The sea cabbage. This plant, which is indigenous on our coasts, is the parent of all our garden cabbages, however various their appearance, as common cabbage, red cabbage, cauliflower, brocoli, &c. Cabbages in general are somewhat hard of digestion, and are apt to produce flatulency in weak stomachs. Cabbage, however, is a sufficiently wholesome article of diet for those who have a good digestion. Few vegetables run into a state of putrefaction so quickly as cabbages: they ought, therefore, always to be used immediately after cutting. In Holland and Germany there is a method of preserving them, by cutting them into pieces, and sprinkling salt and some aromatic herbs among them; this mass is put into a tub, where it is pressed close, and left to ferment, when it is called *sauer kraut sour crout*. These, and all pickles of cabbage, are considered as wholesome and antiscorbutic, from the vinegar and spices they contain.

Brassica rapa. The systematic name for the plant, the root of which is called turnip. Called also *Rapum*, *Rapus*, *Napus*, and *Napus dulcis*. The turnip is accounted a wholesome food, demulcent, detergent, somewhat laxative and diuretic, but liable, in weak stomachs, to produce flatulencies, and prove difficult of digestion. The liquor pressed out of it, after boiling, is sometimes taken medicinally in coughs and disorders of the breast. The seeds are occasionally given as diuretics; they have no smell, but a slightly acrid taste.

Brassica rubra. Red cabbage. This makes a good pickle. The infusion of its leaves, which is of a very rich blue colour, affords an excellent test both for acids and alkalies, turning green with alkalies, and red with acids.

Brassica sabauda. The savoy plant.

Brassica sativa. The common garden cabbage.

Brazil wood. See *Cæsalpinia.*

BREATH. The air expelled from the chest at each expiration. (See *Respiration.*) Fœtor of the breath arises from a variety of causes, and constitutes the disagreeable infirmity, commonly called a bad breath. It may arise from decayed teeth, diseases of the nostrils or fauces, &c.; but it is most frequently connected with a disordered state of the digestive organs. In some persons, however, who enjoy perfect health, fœtor of the breath is constitutional and incurable.

BRE'GMA. (*a*, *tis.* n.; from βρεχω, to moisten: formerly so called, because, in infants, it is tender and moist.) The top of the head, formed by the junction of the parietal bones.

Brenning. Brenning, and burning, are old English names of gonorrhœa.

Briar. See *Rosa.*

Bricks. Bricks and brick-earth were formerly articles of the materia medica; indeed, the oil of bricks is sometimes used in the present day. See *Oleum laterinum.* The powder of bricks, made into an ointment with lard, has been used as an application to herpetic and other cutaneous diseases.

Bricks, oil of. See *Oleum laterinum.*

Brimstone. See *Sulphur.*

BRISTOL, hot-well. *Bristoliensis aqua.* A thermal and slightly acidulous mineral spring, situated about a mile below Bristol. The fresh water is inodorous, perfectly limpid, and sparkling, and sends forth numerous air-bubbles when poured into a glass. It is very agreeable to the palate, but without having any very decided taste. Its specific gravity is only 1·00077, which approaches so near to that of distilled water, that this circumstance alone would show that it contained but a very small admixture of foreign ingredients. The temperature of these waters, taking the average of the most accurate observations, may be reckoned at 74° Fahr.; and this does not very sensibly vary during winter or summer. Bristol water contains both solid and gaseous matter, and the distinction between the two requires to be attended to, as it is owing to the very small quantity of solid matter that it deserves the character of a very fine natural spring; and to an excess in gaseous contents that it seems to be principally indebted for its medicinal properties, whatever they may be, independent of those of mere water, with an increase of temperature. From the different investigations of chemists, it appears that the principal component parts of the Bristol water, are a large proportion of carbonic acid gas, and a certain portion of magnesia and lime, in various combinations with the muriatic, sulphuric, and carbonic acids. The general inference is, that it is very pure for a natural fountain, as it contains no other solid matter than is found in almost all common spring water, and in less quantity.

The Bristol water has acquired reputation in cases of suppressed discharges, as in amenorrhœa; in a weak and torpid state of the bowels; and in diabetes, in which it was fancifully supposed to be beneficial from the purity of its aqueous part, rendering the urinary organs more fitted to receive benefit from those medicines which are subsequently prescribed.

But this spring has been chiefly celebrated for the cure of pulmonary consumption. To suppose that any water can cure tubercular phthisis is ridiculous; it is believed by many, however, that the Bristol water greatly relieves the hectic symptoms attendant on this distressing malady. How far any good which may be derived, is attributable to the temperate climate of Bristol, rather than to the water, and also how far phthisical patients are benefited by going to Bristol, rather than by staying at home, we cannot pretend to determine.

The sensible effects of this water, when drunk warm and fresh from the spring, are a gentle glow in the stomach, succeeded sometimes by a slight and transient degree of headach and giddiness. By a continued use, it is in most cases diuretic, keeps the skin moist and perspirable, and improves the appetite and general health. Its effects on the bowels are variable. On the whole, a tendency to costiveness seems to be the more general consequence of its use

inued use, and mild aperients are therefore necessary. The above mentioned effects, however, are observable only in invalids; for healthy persons, who taste the water at the fountain, seldom discover any thing in it but a degree of warmth, which distinguishes it from the common element.

The season for the Hot-Well is generally from the middle of May to October; but as the medicinal properties of the water continue the same throughout the year, the summer months are preferred merely on account of the concomitant benefits of air and exercise.

There is another spring, nearly resembling the above, at Clifton, which is situated on the summit of the same hill, from the bottom of which the Bristol water issues. The water of Sion-spring, as it is called, is one or two degrees colder than the Hot-Well; but in other respects it sufficiently resembles it to be employed for all similar purposes.

Brita'nnica herba. A plant celebrated among the Romans as an antiscorbutic. Its name Britannica does not mean British, as might be supposed, but is probably derived from the Frisian language, and signifies "fixing loose teeth," in allusion to its effect on the gums of scorbutic patients. This virtue of the herb was experienced by the Roman army in the country of the Frisii. (See *Blancard. Lexic. Med.*) The herba britannica of the ancients is supposed by many to have been the water-dock, *Rumex hydrolapathum*. The name has been applied at different times to various plants, as bistort, horseradish, burdock, &c. The britannica of Gesner, Dalechamps, and others, is the *Inula britannica* of Linnæus.

BRITISH GUM. When starch is exposed to a temperature between 600° and 700°, it swells, exhales a peculiar smell, becomes of a brown colour, and is converted into a species of gum. It is soluble in water, both cold and hot; and forms a dingy purple instead of a blue compound, with iodine. Vauquelin found it to differ from gum in affording oxalic instead of mucic acid, when treated with nitric acid. British gum is used as a substitute for gum Arabic in calico printing and other processes.

British Oil. See *Oleum petræ vulgare.*

Bro'chus. Βροχος. *Laqueus.* A noose; a particular kind of bandage. See *Laqueus.*

Bro'chus. A Latin word signifying a person with lips of ordinate thickness, or one whose teeth project forwards.

Brocoli. See *Brassica.*

Bro'dium. A term in pharmacy, signifying the same with *jusculum*, broth, or the liquor in which any thing is boiled. It has also been used to designate any liquid vehicle of a medicine. *Brodium salis* means a decoction of salt.

Bromate. *Bromas.* A salt formed by the combination of the bromic acid with a base.

BROMATO'LOGY. (*Bromatologia, æ*, f.; from βρωμα, food, and λογος, a discourse. A discourse or treatise on aliments.

BROME'LIA. (*a, æ.* f.; so named in honour of Olaus Bromel.) The name of a genus of plants. Class, *Hexandria*; Order, *Monogynia*. The pine-apple was formerly placed in the genus Bromelia, under the name of *Bromelia Ananas*, but is now referred to the new genus *Ananassa*. (See *Ananassa*, in the Supplement.) The other species of the genus Bromelia are of no particular interest.

Bromelia'ceæ. A natural family of plants, of which the genus *Bromelia* is the type.

Bromic Acid. See *Bromine.*

BROMIDE. A compound formed by the union of bromine with a base.

Bromide of Iron. See *Bromine.*

Bromide of Potassium. See *Bromine.*

BROMINE. (*Bromium*, from βρωμος, *fætor*; so called from its peculiarly offensive smell.) Brome. A new elementary body discovered by M. Balard, of Montpellier, and first described in the *Annales de Chim. et Physique*, for August, 1826.

Bromine is usually obtained from the uncrystallizable residue of sea-water commonly called *bittern*; a current of chlorine is passed through this liquid, which immediately gives it an orange tint, in consequence of the evolution of bromine from its combinations; a portion of sulphuric ether is then shaken up with it, which, as it separates from the surface, is found to have abstracted the bromine, and acquired a reddish-brown tint. The ethereal solution is agitated with solution of potassa, by which bromate of potassa and bromide of potassium are formed, and the whole being evaporated to dryness, and exposed to a dull-red heat, leaves *bromide of potassium*. The solution of this salt is decomposed by passing chlorine into it, or by mixing it with a strong solution of chlorine, chloride of potassium is formed, and the bromine, being volatile, may be separated by distillation, and condensed in a receiver cooled by ice.

Bromine probably exists in sea-water in the state of hydrobromate of magnesia, but its relative proportion must be exceedingly minute. One hundred pounds of sea-water taken up at Trieste, afforded, by M. Balard's process, 5 grains of bromide of sodium = 3·3 grains of bromine. It would appear, that in the sea-water at Trieste the bromine is unaccompanied by any iodine; and the same is the case, according to M. Hermbstadt, with the waters of the Dead Sea. In the water of the Mediterranean, on the contrary, iodine is always found with bromine. It is most readily recognised by evaporating the water, so as to separate all its more ordinary crystallizable contents, reducing the remainder to a very small bulk, and dropping in a concentrated solution of chlorine. In the absence of iodine, which may be detected by starch, the appearance of a yellow tint announces bromine. It has thus been discovered, not only in the waters of the ocean, but in certain salt springs, in the ashes of marine plants, and in those of some marine animals.

At common temperatures and pressures bromine is a deep reddish-brown liquid, of a peculiarly suffocating and disagreeable odour. Its specific gravity is about 3. It emits a brownish-red vapour at common temperatures, and boils rapidly at 116°. At a temperature somewhat below 0° it congeals into a brittle solid. It

is a non-conductor of electricity, and appears in the Voltaic circuit at the positive pole. It suffers no change by transmission through red-hot tubes, and cannot, by any known process, be resolved into simpler forms of matter. It dissolves sparingly in water, and forms under certain circumstances a definite *hydrate*, which, according to Löwig, is obtained by exposing bromine with a small quantity of water to a temperature of 32°; red octoëdral crystals of the *hydrate of bromine* are then deposited, which continue permanent at the temperature of 50°. At a higher temperature they decompose into liquid bromine and aqueous solution of it. The hydrate is also obtained by passing the vapour of bromine through a moistened tube cooled nearly to the freezing point. Bromine dissolves in alkohol; and more abundantly in ether. It destroys vegetable colours. When a burning taper is immersed into its vapour it is speedily extinguished, the flame previously assuming a green and red tint. Phosphorus spontaneously inflames in its vapour; tin and antimony also burn in it; and it combines with potassium with explosive violence. Its action on alkaline solutions will be found analogous to that of chlorine and iodine. It stains the skin of a yellow colour; acts with energy upon most vegetable and animal substances; and is fatal to animal life; a single drop placed upon the beak of a bird immediately killed it. The specific gravity of its vapour has not been correctly determined, but its equivalent number appears, from Berzelius's analysis of bromide of silver, to be about 78, which ought also to express its specific gravity in vapour compared with hydrogen. The density of its vapour compared to air, will, therefore, be about 5·4, and 100 cubic inches should weigh about 168 grains. The alkoholic solution of bromine, and the bromide of sodium are occasionally used in medicine: and, from its powerful action, there can be no doubt that it must contribute to the medicinal virtues of the mineral waters in which it exists.

One compound only of bromine and oxygen has as yet been discovered, namely, the *bromic acid*. Bromic acid is obtained by the decomposition of a solution of *bromate of baryta* by sulphuric acid: sulphate of baryta is precipitated, and a solution of bromic acid obtained, which may be concentrated by slow evaporation; at a high temperature it is partly decomposed, so that it cannot be obtained anhydrous. It is sour, inodorous, and first reddens, and then destroys, the blue of litmus. It is partially decomposed by concentrated sulphuric acid, but not by nitric acid. It is decomposed by sulphurous acid, by sulphuretted hydrogen, and by hydriodic and hydrochloric acids. From the analysis of bromate of potassa there can be not doubt that the bromic acid is analogous in composition to the chloric and iodic acids, and that it consists of

Bromine . .	1 . .	78 . .	66·1
Oxygen . .	5 . .	40 . .	33·9
	1	118	100.0

By passing chlorine through bromine, and condensing the vapours at a low temperature, a reddish-yellow fluid is obtained, having a penetrating odour and disagreeable taste. This is the *chloride of bromine*. It is very fluid and volatile: emitting yellow vapours; it dissolves in water, and the solution destroys vegetable colours: it would appear, therefore, not to decompose water. Chlorine decomposes most of the compounds of bromine, and hence is useful as a test of its presence. When dropped, for instance, into a weak solution of bromide of potassium, or of sodium, the evolution of bromine is manifested by the deep yellow colour that is produced, and by the odour of the vapour of bromine.

Iodine and bromine probably combine in two proportions, but the compounds have not been analysed. In certain proportions, probably one proportional of iodine and one of bromine, a solid body is obtained, which yields reddish-brown vapours when heated, and these readily condense into arborescent crystals. A further addition of bromine dissolves these, forming a dark-coloured liquid, soluble in water, possessed of bleaching qualities, and yielding bromides and iodides with the alkalis. — *Brande*.

Bromine has been lately introduced into medicine. M. Magendie regards its properties as somewhat analogous to those of iodine, but more active; he has employed it in scrofula, amenorrhœa, and hypertrophy of the heart. The *bromide of potassium*, which when dissolved in water becomes the *hydrobromate of potash*, may be given in distilled water or any other simple vehicle, in the dose of from three to five grains twice a day.

Bromide of sodium seems to be a preparation very similar to the bromide of potassium.

The bromide of potassium and sodium, has been applied externally by M. Magendie, in the form of ointment, to scrofulous swellings. 34 grains of the bromide may be blended with an ounce of lard, and half a drachm or a drachm of this ointment rubbed into the part at each application.

The bromide of iron has been administered internally by M. Magendie: he divides ten grains of the bromide, beat up with conserve of roses and gum Arabic into 20 pills, and gives two of the pills night and morning.

Bro'mion. Βρομιον. An epithet of one of those external medicines called by the Greeks *acopa*.—*Paulus. Aëtius.*

Bromogra'phia. (*a*, *æ*. f.; from βρωμα, food, and γραφω, to describe.) Bromography. A treatise on food.

Bro'muret. A compound formed by the union of bromine with a base. See *Bromine*.

BRO'MUS. 1. The Greek name of the oat. — βρομος or βρωμος.

2. The name of a genus of plants in the Linnæan system. Class, *Triandria*; Order *Digynia*. Brome-grass.

Bromus dioscoridis. Most probably the wild oat, a species of *Avena*.

Bromus sterilis. (From βρωσκω, to eat.) The wild oat.

BRO'NCHIA. *Bronchi*. (From βρογχος, the throat.) The tubes into which the trachea divides. See *Trachea*.

BRONCHIAL. *Bronchialis*. Appertain

ng to the bronchia, as *bronchial arteries, ronchial veins*, &c.

Bronchial arteries. See *Trachea.*

Bronchial cells. See *Pulmo.*

Bronchial glands. See *Trachea.*

Bronchial plexus. See *Trachea.*

Bronchial respiration. See *Auscultation.*

Bronchial tubes, dilatation of. See *Bronchitis.*

Bronchial veins. See *Trachea.*

BRONCHI'TIS. Inflammation of the mu-ous lining of the bronchi. This disease has been accurately investigated only of late years, although one form of it had long been familiar to practitioners under the name of *peripneumonia notha.* Bronchitis is of very frequent occurrence, both as an idiopathic affection, and as an accompaniment of measles, small-pox, scarlatina, hooping cough, and other febrile diseases of children: it is also a common complication of continued fever at all ages, especially fever of an asthenic type, in which it is often a very immediate source of danger; though it may run its course so insidiously as to be little suspected by inattentive observers.

Bronchitis may be considered under two forms, the *acute* and the *chronic*, the description of which will render the intermediate forms in which it presents itself sufficiently intelligible.

1. *Acute Bronchitis.*—This sometimes commences in the bronchial tubes themselves, and sometimes extends to them from the trachea. In the majority of cases the disease arises from exposure to cold; and it is then usually accompanied with coryza and a general inflammatory state of the mucous membrane of the nose, frontal sinuses, and windpipe. Acute bronchitis, in its slighter and more common form, is not a serious affection, and amounts, in fact, to nothing more than what is called "a cold on the chest," the symptoms of which it is scarcely necessary to describe particularly, since in our climate there can be few who have not had abundant experience of them in their own person. At first there is hoarseness, dry cough, and a slight degree of fever; in a short time there is expectoration of a thin mucus, with increase of cough and some sense of oppression in the chest; lastly, the expectoration becomes much thicker in consistence and more copious, and this change is attended with an amelioration of all the symptoms, and convalescence speedily ensues, or the affection passes into a chronic form, and gradually wears itself out. Sometimes, however, acute bronchitis presents itself as a very formidable affection. The difference between the more severe and the slighter forms of bronchitis depends partly on the degree of inflammatory action, and the extent of membranous surface affected; but principally on the *site* of the disease, which in the slighter cases is confined to the large tubes, and in the severer extends to the minute ramifications: in the former, the turgescent state of the membrane and the increased mucous secretion, offer no serious impediment to respiration; while, in the latter, the same things occurring in the small tubes prevent the due oxygenation of the blood in the cells of the lungs, to such a degree, that the patient often dies from suffocation. In the severer forms of acute bronchitis the fever is sharp, and at first usually of the inflammatory kind, the pulse being hard and quick, and the urine scanty and high coloured. The oppression on the chest is very great, and generally accompanied with pain, which is of a much more obtuse kind than that attendant on pleurisy; the cough is severe, frequent, and distressing; the expectoration is at first scanty, and afterwards becomes copious, frothy or viscid, and sometimes streaked with blood; the increased secretion affords no relief to the symptoms, and the dyspnœa and cough are aggravated by it. All the symptoms enumerated are worse towards night, at which time there is an exacerbation of fever. This state of things having continued for some days, the patient generally begins to recover, or becomes very rapidly worse. The first symptom of amelioration is a greater freedom of breathing, with a change in the expectoration, the sputa becoming thicker, whiter, and less abundant; when this happens, the expectoration evidently relieves the dyspnœa and cough. In those cases where the disease takes an unfavourable turn, a state of extreme debility and collapse supervenes very suddenly to that of excitement. The pulse becomes very quick and feeble, and often intermitting; the countenance is livid and anxious, and the surface of the body covered with a cold sweat; the mucus accumulates rapidly in the bronchial tubes, and the cough, which is now feeble and suffocative, is insufficient for its ejection: lastly, increased lividity of the countenance, with delirium and stupor, indicate the effect of unarterialised blood circulating in the brain, and the patient dies in a state of asphyxia. Where the event is to be favourable, acute bronchitis often runs on for a week or more before a change for the better occurs; but in the fatal cases, the stage of collapse generally commences within four or five days, and in some instances the disease is exceedingly rapid in its progress, death taking place within forty-eight hours from the first attack.

There is a variety of the disease above described, to which old persons are especially subject. This is the *Peripneumonia notha* of medical writers. In this case, dyspnœa is one of the earliest symptoms. The fever is less acute; the pulse is quick, but the heat of the skin is little increased except towards evening; there is, however, much thirst; the tongue is loaded, and the appetite bad. The expectoration is scanty at first, but afterwards becomes very profuse. These cases terminate in a similar manner to the acute bronchitis above described, except that they have a greater tendency to pass into a chronic form.

In young children, acute bronchitis sometimes runs its course very insidiously. There may perhaps be no pain, little fever, and little general indication of serious disease of any kind; nor is cough always present: attentive observation, however, easily detects the mischief that is going on: the respiration is quick, with a disposition to wheezing; on applying the ear, a mucous rattle is heard in every part of the chest; while the countenance, which is pale, anxious,

and slightly livid, indicates the insufficient aëration of the blood. This state of things, unless speedily obviated, is soon followed by a sudden accession of extreme dyspnœa, accompanied with great rapidity of the pulse; these symptoms abate for a while, leaving the child during the interval in a drowsy state; but they return with increased severity, and death takes place from asphyxia.

The diagnosis of bronchitis is easy; there is little likelihood of its being confounded with any other affection. The only fear is, that in its more insidious forms it may escape attention altogether, until the mischief is irremediable; but this cannot happen unless auscultation be neglected: the sibilant and sonorous ronchi in the early stage, and the mucous ronchus when the secretion becomes increased, sufficiently indicate both the nature and the extent of the disease.

The necroscopic examination of the thorax in fatal cases of bronchitis, exhibits the bronchial membrane inflamed throughout the whole or in certain portions of its extent, its colour varying in different cases from a bright crimson to a dusky red. Sometimes the increased vascularity is in patches, the intervening portions of the membrane being of the natural colour. The bronchial tubes are obstructed by a frothy fluid, and hence the lungs do not generally collapse when the thorax is opened. The fluid is often tinged with blood, which, in those cases where it has not appeared in the expectorated matter, must have exuded at the moment of death, or soon after. In cases which have been fatal in a few days, purulent matter is occasionally found, but rarely in any great quantity. The mucous membrane is sometimes thickened, but seldom softened.

The slight form of acute bronchitis seldom comes under the care of the medical practitioner. When it does so, an antiphlogistic diet, confinement to the house, laxatives, gentle diaphoretics, and small doses of ipecacuan will in general materially shorten its course: a cough frequently remains a long while after the other symptoms have subsided, especially if the weather be inclement; a blister on the chest, however, will generally suffice to remove it. When the cough and expectoration linger after the entire disappearance of febrile and inflammatory symptoms, the patient should return to his ordinary diet, since a perseverance in an opposite course seems rather to protract recovery than otherwise; exercise in the open air, if the weather be not particularly bad, is also desirable.

In the severer forms of acute bronchitis, blood-letting is generally required, but the extent to which it should be carried varies extremely in different cases. Some think that bronchitis is a disease which will never bear large bleeding; but this is an erroneous opinion: it is true, indeed, that bleeding ought not to be carried so far in bronchitis as in pleuritis or inflammation of serous membranes in general, and it is equally true that bleeding has not nearly so great an influence in subduing the inflammatory action in the former case as in the latter; nevertheless, in acute cases of bronchitis occurring in young and robust subjects, and marked by symptoms of high arterial excitement, blood may be drawn freely at the commencement of the disease, and the evacuation repeated if the pulse indicates it. In most cases, however, moderate bleeding is all that is either necessary or beneficial; and it is of the utmost importance that this remedy be neither carried too far nor applied at an improper time, since the symptoms of high excitement often pass into those of extreme debility and collapse by a wonderfully rapid transition. Bronchitis is one of those cases in which local may often be advantageously substituted for general blood-letting; and cupping is usually preferable to the application of leeches, as the bleeding is more under control.

In that form of bronchitis called peripneumonia notha, and other cases which resemble it in the asthenic character of the symptoms, bleeding is never admissible to a large extent, and often not at all. In epidemic bronchitis, also, this remedy must be used with the utmost caution, even though symptoms of strong excitement should accompany the onset of the disease. After blood-letting, where this is deemed necessary, a smart purgative should be given — as a dose of calomel and jalap; and the bowels should of course be kept sufficiently free throughout the disease. The utility of purgatives is most conspicuous in the bronchial affections of children, for these are often connected with an extremely disordered state of the abdominal secretions, which is no sooner corrected by a calomel purgative than the bronchial symptoms disappear or are remarkably alleviated. Emetics are much recommended by some authors at the commencement of acute bronchitis: in the case of young children they are almost always serviceable, by exciting expectoration, which infants do not perform as a voluntary act; in adults their beneficial effect is much less marked, and they are, on the whole, little to be depended upon.

The application of blisters is objected to by some, on the ground that, before they rise, they increase by their irritation the febrile state of the system, and thus augment the bronchial inflammation. This may be true in some cases, but it is by no means universally so; blisters, however, are applied both more safely and more advantageously, when the symptoms of febrile excitement have considerably abated, and the disease is assuming somewhat a chronic form.

Small and repeated doses of ipecacuan are useful in acute bronchitis: this, however, in most cases is not by virtue of their expectorant effect, for the expectoration is already profuse, but by the peculiar sedative influence of this medicine on the bronchial membrane, and by the nausea it excites, which depresses the actions of the arterial system. Expectorants are quite unnecessary, when the excretion of mucus is abundant; indeed, they are probably rather injurious than otherwise. Diaphoretics, and especially those of the antimonial kind, are highly serviceable, by determining the blood to the surface of the body.

Those practitioners who advocate the use of large doses of tartar emetic, recommend it to be

administered in acute bronchitis in the same manner as in pneumonia. The inhalation of vapours is sometimes beneficial in acute bronchitis. The vapour of warm water, or water impregnated with marsh-mallow, linseed, &c., occasionally gives relief in the early stage, especially in slight cases; and when the acute is passing into the chronic form, slightly stimulating vapours, as that of water impregnated with vinegar or camphorated vinegar may be useful: but, generally speaking, inhalation is a remedy not at all worthy of confidence in acute bronchitis, and very often does more harm than good.

In the stage of collapse and extreme debility, all antiphlogistic measures must be entirely laid aside. At the same time, as inflammation is still going on, we must not have recourse to any alkoholic or other stimulants, which increase the actions of the vascular system. Stimulants of some kind are nevertheless essential to rouse the brain from the torpor occasioned by the circulation of dark-coloured blood, and to make the patient expectorate the mucus which is continually accumulating in the lungs, and threatening him with suffocation. The medicine which best answers these intentions is the carbonate of ammonia, which may be given in full doses; camphor in large doses is also a valuable stimulant in such cases; and with these may be combined the more stimulating expectorant gum resins, as ammoniacum, galbanum, &c. Dr. Copland strongly recommends the external use of turpentine. "In some cases of this description," says the distinguished physician referred to, "I have seen much advantage derived from applying over the epigastrium and lower part of the chest a flannel wrung out of hot water, and immediately afterwards soaked with the spir. terebinth., and allowing it to remain until severe burning heat of the skin is produced by it. If suffocation be threatened, either by the proximity of the secretion, by its difficult expectoration, or by exhaustion of the vital energy; and if we be, as we then unfortunately are, at a loss for any probable means of success; this will sometimes have a remarkable effect, and save the life of the patient, particularly when assisted by the internal use of camphor, ammonia, &c." Dr. Copland has also frequently obtained similar beneficial effects from the internal use of turpentine. The use of narcotics has perhaps been too indiscriminately recommended in acute bronchitis. When great irritability of the air-passages remains after the febrile excitement is considerably diminished, opium combined with ipecacuan, antimony, or nitre, is often administered with excellent effect; hyoscyamus and conium are also useful under these circumstances: but with respect to the stage of collapse, in which the expectoration is scanty, the respiratory function greatly impeded, and the energy of the brain so much impaired as to render asphyxia a probable result, we may be allowed to question the propriety of administering medicines, the most striking operation of which is to diminish the activity of the sensorium; — at all events, such medicines should be used with a very vigilant attention to their effects.

When acute bronchitis, instead of terminating in recovery or death, passes gradually into the chronic form, the treatment must of necessity vary accordingly. Light tonics are often serviceable when this transition seems about to take place.

2. *Chronic Bronchitis.*—The term chronic bronchitis is necessarily somewhat vague, and there are many cases which we should hesitate whether to refer to the acute or the chronic form; nevertheless, the distinctly chronic disease is so different from the acute, that it demands a particular denomination and separate description. Chronic bronchitis differs from the acute in the greater mildness and longer continuance of its symptoms, the duration of which varies from a few weeks to many years. The expectorated matter is also of an entirely different character; being, in the chronic disease, of a thicker consistence, opake, and of a greenish or yellowish white colour: it is often muco-purulent; and, in inveterate cases, distinctly purulent, and sometimes streaked with blood. Chronic bronchitis may supervene on an acute attack; but it is more frequently a primary disease, and, as such, affects elderly rather than young persons; but it occurs at all ages. In its milder forms it is often almost dormant during the fine weather of summer; but in winter, or when there is a continuance of inclement weather, the patient is harassed with severe cough and copious viscid expectoration, especially in the morning. There are generally slight dyspnœa, and acceleration of pulse if the patient use any personal exertion; but otherwise the health may be good, and continue so for many years. The greater number of old persons, indeed, are subject to a slight degree of chronic bronchitis; and many labour under it to a more considerable extent, without serious derangement of the health, or abridgment of the ordinary term of life.

In its severer forms, chronic bronchitis is a most distressing affection. The respiration, always oppressed, becomes extremely laborious on the slightest exertion; and where the expectoration is purulent, there are hectic fever, great emaciation, nocturnal sweats, and occasional diarrhœa, forming frequently an aggregate of symptoms so closely resembling those of tubercular phthisis, that an accurate diagnosis between the two diseases can only be formed by the aid of auscultation. This form of bronchitis may be induced by a long continuance of the milder form; it may supervene on an attack of acute bronchitis; or it may be consecutive on measles or other affections of children, which involve the lining membrane of the air-passages. There is a very severe and fatal form of chronic bronchitis, which arises from the inhalation of metallic or other irritating particles to which persons engaged in particular arts and occupations are exposed. (See *Diseases of Artisans.*) Lastly, chronic bronchitis forms a frequent complication of tubercular phthisis and asthma, and may be induced by any of those diseases of the thoracic viscera which occasion great disturbance of the pulmonary circulation. The

only disease with which chronic bronchitis is likely to be confounded, is tubercular phthisis. The history of the case, the greater dilatability of the chest, the general absence of pain, and the minor degree and less regular course of the hectic symptoms, will generally suffice to distinguish chronic bronchitis from phthisis; but auscultation and percussion afford the best criterion.

In chronic bronchitis, the resonance of the chest on percussion is little diminished; in many cases not at all. The sibilant, sonorous, and mucous rattles are heard at different parts of the chest at different times, according as the mucus happens to be accumulated and the bronchi obstructed in one portion of the lungs or another. The respiratory murmur often varies much in intensity, being sometimes indistinct and sometimes puerile; but it is never permanently absent in any part of the chest. There is one circumstance, and only one, which may render the diagnosis by auscultation obscure;—when the disease has been of long standing, the bronchial tubes sometimes become dilated — a state which we shall presently advert to; and when this dilatation is considerable, a loud bronchophony, scarcely distinguishable from pectoriloquy, is heard in the situation of the dilated tube; occasionally, indeed, the sound is that of very distinct pectoriloquy, and the cavernous rattle is also heard. The dulness of sound on percussion, which surrounds a vomica, is not, however, perceived in an equal degree in the vicinity of a dilated bronchial tube; moreover, the situation of the cavity in the two cases is generally different; vomicæ being most frequently found in the subclavian and axillary regions, and dilated bronchi in the scapulary, mammary, and lateral regions. A remarkable fœtor has often been observed in the sputa in cases of dilated bronchi; and, where it exists, is considered by M. Louis and others as especially diagnostic of this state of the tubes. There are, no doubt, a few cases in which even the most careful attention both to the symptoms and the signs afforded by auscultation will not enable us to form a certain diagnosis; but this is of the less consequence, since chronic bronchitis, with purulent expectoration, dilated tubes, and hectic fever, is a case as formidable and as little likely to be benefited by treatment as the advanced stage of phthisis itself.

On dissection of the bodies of those who have died of chronic bronchitis, the lining membrane of the bronchi is generally found of a purplish red colour; sometimes the redness is only in patches; and occasionally it is entirely absent, the membrane being even paler than natural. Thickening of the membrane is very frequent; softening or ulceration much less so. Among the consequences of chronic bronchitis is dilatation of the bronchial tubes. This morbid state, which was first described by Laennec, has been very fully investigated by Andral, who distinguishes three varieties of it. In the first, one or more tubes are uniformly dilated through their whole extent; in the second there is no uniform dilatation, but a partial dilatation at some particular point of one of the tubes; in the third, a tube is dilated at several successive points, preserving its natural diameter in the intervals. For a minute description of these dilatations, and the symptoms by which they may be recognised during life, we must refer the reader to the *Clinique Médicale* of M. Andral.

The treatment of chronic bronchitis must vary according as it is intended to be curative or merely palliative. In cases of recent date, and especially where the chronic succeeds the acute form of the disease, a complete cure may generally be effected; while in cases of very long standing, in which the texture of the bronchial membrane has undergone a morbid change and the constitutional powers are greatly impaired, our endeavours must be confined to allaying urgent symptoms as they arise, and regulating the habits of the patient in the manner best adapted to sustain the system under a continued irritation, and to guard against such causes as are likely to increase it.

At an early period, blisters and the tartar emetic ointment are of great utility, and should be frequently applied; and throughout the course of the disease they are useful in subduing occasional exacerbations. Where the disease is obstinate, and the patient has sufficient strength, issues and setons may be very advantageously used; but in the advanced stage, or where the constitution is feeble, their effect is much too exhausting.

Blood-letting may occasionally be required to obviate partial attacks of acute inflammation, but it should never be practised to a greater extent than is necessary for this purpose, since it tends in the main to debilitate a constitution suffering under a protracted and wasting disease. Digitalis or colchicum may often be advantageously substituted for bleeding, since they reduce the increased action of the arterial system at less expense of vital power.

Expectorants are useful only when the sputa are viscid and their excretion difficult; in which case squill and ipecacuan will generally be found the most effectual. Where the excretion from the lungs is profuse, expectorants are, we conceive, injurious, as tending to increase a discharge which is daily exhausting the system more and more by its excess; they are, however, recommended by many, on the ground that they tend to alter the action of the excretory vessels of the bronchi. Where the expectoration is purulent, and there is a tendency to hectic fever, expectorants generally augment the irritation and debility, and accelerate the progress of the hectic symptoms. When the sputa are viscid, and expectoration difficult, the occasional use of ipecacuan as an emetic has a great temporary effect in unloading the bronchial vessels and rendering the respiration freer.

Balsamic medicines, as balsam of Peru and turpentine, are often very useful in chronic bronchitis, where there is no tendency to active inflammation: they seem to diminish the bronchial secretion by their astringent action on the extreme vessels, at the same time that they render the secreted matter easy of expectoration, and gently stimulate the lungs to throw it off. Medicines of this kind were formerly much em-

ployed in chronic bronchial affections, and are now undeservedly laid aside. The inhalation of the fumes of balsamic substances was once a favourite practice.

Dr. Mead speaks highly in praise of it, and adds, "I am very sensible that this method of administering balsamicks is almost entirely neglected as useless. But whoever considers the length of the way which they must make by the blood vessels before they reach the lungs, and what a small part of them comes to the place of their destination, will easily see that this is the best way of communicating their virtue, if they have any."

The direct application of medicinal substances to the bronchial membrane is now again coming into vogue. The tar vapour recommended by Sir A. Crighton in phthisis, however inefficacious in that disease, has been found very serviceable in many cases of chronic bronchitis; and several very active substances, as chlorine, iodine, &c., have been recently used in this manner with some success. See *Inhalation*.

On the whole, chronic bronchitis is more influenced by regimen than by medicine. There is, perhaps, no disease, except hooping cough, in which change of air has so beneficial an effect; and in cases of long standing, nothing is of greater importance than residence in a locality, the atmosphere of which has been found by the patient's own experience to agree with him, for it is a fact which must have been observed by all practitioners, that many individuals are afflicted with chronic bronchitis to a severe degree in some localities, and are comparatively free of it in others.

Bronchius musculus. The sterno-thyroideus muscle is so called by Riolan.

Bronchlemmit'is. (From βρογχος, the windpipe, and λεμμα, a sheath or membrane.) The specific name of croup in Dr. Good's system of nosology.

BRONCHOCE'LE. (*c, es.* f.; from βρογχος, the windpipe, and κηλη, a tumour.) Goitre. Derbyshire neck. Called also *Botium, Hernia guttaris, Guttur tumidum, Trachelophyma, Gossum, Exechebronchos, Gongrona, Hernia bronchialis,* and *Trachecele*. A tumour on the fore-part of the neck formed by an indolent enlargement of the thyroid gland. "The tumour, when not accidentally inflamed, is free from pain; and, in its incipient state, has a soft, elastic consistence. When it has existed some time, the gland loses its natural figure, assumes a firm fleshy feel, being firmer, however, in some places than in others, spreading towards the sides of the neck, and sometimes attaining a prodigious magnitude. When the adjacent cellular substance and lymphatic glands participate in the disease, the base of the swelling may extend from one side of the neck to the other. In a few instances, only one lobe is affected.

"Bronchocele is endemic in several mountainous countries; as, for instance, Switzerland, Savoy, the Tyrol, Derbyshire, &c.; and is most frequent in young females. The disease is sometimes a mere hypertrophy of the thyroid gland; sometimes an excessively indurated, or even a partly ossified, condition of it; and, in other instances, the swelling consists of many cysts of different sizes, filled with a transparent viscid fluid, or matter of various kinds. The tumour sometimes creates no particular inconvenience, and is merely a deformity. When large, however, it is frequently attended with considerable obstruction of the speech, respiration, and deglutition. It has little tendency to become malignant, that is to say, cancerous, and is not very liable to inflammation and its consequences, though these changes sometimes happen. In Mr. Langstaff's museum is a fine specimen of fungus hæmatodes of the thyroid gland, which has been mistaken for bronchocele.

"The causes of bronchocele are involved in great obscurity. At one time it was conjectured, that drinking water, obtained from melted ice or snow, frequently gave rise to the disorder. The disease, however, is frequent in Sumatra, where ice and snow are never seen; while it is entirely unknown in Thibet, where the rivers are exclusively supplied by the melting of the mountain's snow. Bronchocele has been regarded as a scrofulous complaint; but this doctrine is denied by Prosser, who argues that the disease is often seen in persons entirely free from every mark of scrofula; and that, while boys are as subject to scrofulous diseases as girls, the bronchocele of this country occurs only in young females.

"Formerly, the medicine commonly given for the cure of bronchocele, was burnt sponge, in the dose of a scruple, two or three times a day, either made into an electuary with syrup, or prescribed in the form of a lozenge, the efficacy of which was thought to be greatest when it was placed under the tongue, and allowed gradually to dissolve there. A mercurial purgative was usually given about once a fortnight. The good effects of burnt sponge are now well known to depend upon the iodine which it contains, and, consequently, at the present day, iodine itself is commonly prescribed. Its efficacy is promoted by the previous application of leeches to the swelling, and a low regimen.

"With such treatment, external means are to be combined; as repeated frictions of the swelling with strong camphorated or ammonia liniment, or, what is still better, the hydriodate of potash ointment, with or without a proportion of mercurial ointment blended with it.

"From the foregoing description of the very different conditions of the thyroid gland in different instances, it is manifest, however, that iodine will not cure every form of it.

"Accident has sometimes furnished useful suggestions in the practice of surgery: bronchoceles have occasionally festered, or ulcerated, and the result has sometimes been the dispersion of most of the swelling. Hence, the plans of forming issues and setons, as a mode of cure. Valuable information respecting the effects of setons may be collected from a paper by Dr. Somerville, describing the practice of Quadri at Naples, and inserted in the *Med. Chir. Trans.* vol. x.; and from another paper in the eleventh volume, drawn up by Mr. Copland Hutchison. The seton was often

employed by Dupuytren. The trial of a seton should never be made, except when iodine has decidedly failed, and the complaint is beginning to be very oppressive. When a seton is passed through the thyroid gland, the venous hemorrhage is always profuse, and might prove fatal, were it not checked by cold applications, and pressure. In general, the seton must be kept in several months, before the swelling is completely reduced. It will not cure the hardest forms of bronchocele, or those which Dupuytren calls scirrhous; but it will cure hypertrophy, cysts, and hydatid formations, which iodine, and other specifics, frequently fail to disperse.

"If this latter measure, or the formation of an issue, should not be deemed advisable, and the patient's life be rendered miserable, or seriously endangered by the pressure of the swelling on the trachea, œsophagus, and veins returning the blood from the head, it will be for the practitioner to consider, whether he will imitate Blizard, Walther, Wedemeyer, Graefe, Cootes, Brodie, &c. in tying one or both of the superior thyroid arteries, or follow the example set by Gooch, Desault, Theden, Vogel, and Hedenus, who ventured to extirpate the enlarged thyroid gland. The latter surgeon has performed this bold operation, at least six times, with complete success. The most essential rule in the operation would be to secure every large artery directly it was cut, so that the patient might not be lost by hæmorrhage ere the complete detachment of the swelling was effected. The ligature of the superior thyroid arteries is generally followed by some diminution of the tumour, but this amendment has not always been permanent. In some of the cases on record, the patients died either of inflammation and its consequences, or of secondary hæmorrhage."—*Cooper's First Lines of the Practice of Surgery.*

Broncho'phony. (*Bronchophonia, æ.* f.; from *βρογχος*, the windpipe, and *φωνη*, the voice.) The sound of the voice as heard by applying the stethoscope over a large bronchial tube. See *Auscultation.*

Bro'ncho-pneumo'nia. A form of inflammation of the lungs, which commences in the bronchial membrane, and afterwards involves the parenchyma of the lungs. *Frank.*

Broncho'tomus. (From *βρογχος*, the windpipe, and *τεμνω*, to cut.) A kind of sheathed knife, formerly used in the operation of Bronchotomy.

BRONCHO'TOMY. (*Bronchotomia, æ.* f.; from *βρογχος*, the windpipe, and *τεμνω*, to cut.) A surgical operation in which an opening is made into the larynx or trachea, to afford a passage for the air into and out of the lungs, when any disease prevents the patient from breathing through the mouth or nostrils; or to extract foreign bodies, which have accidentally fallen into the trachea; or, lastly, to facilitate the inflation of the lungs, in cases of suffocation, drowning, &c. The operation is called *Tracheotomy*, when the opening is made into the trachea; and *Laryngotomy*, when the opening is made into the larynx. The practice of bronchotomy is of great antiquity, having been first introduced by Asclepiades; for the method of performing it, we must refer the reader to works on the practice of surgery.

BRO'NCHUS. (*us, i.* m.; *βρογχος*, from *βρεχω*, to moisten; so called from the belief of the most ancient physiologists, that liquids which are swallowed pass through the windpipe to the lungs. 1. The trachea.

2. This word has been improperly substituted by some writers for branchus, *βραγχος*, hoarseness.

Bro'ntolithe. (From *βροντος*, thunder, and *λιθος*, a stone.) A thunder-stone; so called from the explosion which generally precedes its fall. A meteoric stone. See *Meteorolite.*

BRONZE. A mixed metal, consisting of copper, with a small proportion of tin.

Brooklime. See *Veronica beccabunga.*

Broom. See *Spartium scoparium.*

Broom-rape. See *Orobanche.*

BRO'SIMUM. (*um, i.* n.; from *βρωσιμος*, eatable.) The name of a genus of plants in the Linnæan system. Class, *Diœcia;* Order, *Monandria.*

Brosimum alicastrum. The tree which affords the bread-nut. The nut abounds in farinaceous matter, and when boiled or roasted is a nutritious and agreeable article of food. The negroes eat it as bread.

Brossardière. The name of a château in Bas Poitou, where there are mineral waters containing carbonates of iron and lime, muriate of soda, and sulphate of lime.

BRU'CEA. (*a, æ.* f.; so named by Sir Joseph Banks, in honour of Mr. Bruce, the traveller in Abyssinia, who first brought the seeds thence into England.) The name of a genus of plants in the Linnæan system. Class, *Diœcia;* Order, *Tetrandria.*

Brucea ferruginea. *Brucea antidisenterica.* An African tree called by the natives of Abyssinia *Wooginoos.* Its bark is bitter and astringent, and is much valued in the countries where it grows, as a remedy in dysentery and diarrhœa. This has generally been said to be the tree that affords the false angustura bark, which, however, is probably obtained from the following species.

Brucea pseudo-ferruginea. The tree which is supposed to yield the false angustura bark; it is little known, and frequently confounded with the *Brucea ferruginea.*

BRU'CIA. (*a, æ.* f.; so called because obtained from the plant of that name.) Brucine. A vegetable alkali, extracted from the false angustura bark, by Pelletier and Caventou. It exists also in small quantity in St. Ignatius's bean, the nux vomica and the Strychnos tiente. After being treated with sulphuric ether, to get rid of a fatty matter, it was subjected to the action of alkohol. The dry residuum, from the evaporated alkoholic solution, was treated with solution of acetate of lead, which threw down the greater part of the colouring matter, and the excess of lead was separated by a current of sulphuretted hydrogen. The liquid was saturated with oxalic acid, and evaporated to dryness. The residuum, being freed from its remaining colouring particles by absolute alkohol, was then

decomposed, by lime or magnesia and the *brucia* thus disengaged. It was dissolved in boiling alkohol, and obtained in crystals, by slow evaporation of the liquid. The crystals thus obtained are oblique prisms, the bases of which are parallelograms. When deposited from a saturated solution in boiling water, by cooling, it is crystallises in plates. It is soluble in 500 times its weight of boiling water, and in 850 of cold.

Its taste is exceedingly bitter, and acrid. It is soluble in cold, and still more so in hot alkohol, and it is also soluble with the aid of heat in diluted alkohol. It is insoluble in sulphuric ether. Nitric acid strikes a red colour with brucia; and this is changed into a violet by the addition of protomuriate of tin. Bromine also gives a violet colour to the alkoholic solution of Brucia. These characters distinguish brucia from strychnia and the other alkaloids. Brucia is not changed by exposure to the air. The crystals of brucia fuse at a temperature a little above that of boiling water, and assume a waxy appearance. Brucia is resolved by a strong heat into its constituent elements. According to Liebig a hundred parts of it consist of carbon, 70·96; hydrogen, 6·50; oxygen, 17·40; nitrogen, 5·14. Brucia forms with the acids, salts which are soluble and generally crystallisable: they are decomposed by potash, soda, and ammonia, and also by morphia and strychnia.

The action of brucia on the animal economy is entirely analogous to that of strychnia, but much less powerful. According to Andral, six grains of brucia are equivalent to one of strychnia. Brucia may be given in the quantity of from half a grain to two or three grains in the course of the day. The dose should always be small at first, and may be gradually increased. It may be conveniently given made up into pills with conserve of roses, each pill containing the eighth of a grain of brucia; six of these pills in the course of the day will be enough to begin with. It may also be given dissolved in distilled water, in corresponding doses.

Brucine. See *Brucia.*

Brucourt. A village of Normandy, where there are mineral waters containing carbonic acid, muriate and sulphate of soda, sulphate of lime, &c. They are purgative, and are esteemed in cutaneous and other diseases.

Bruisewort. See *Saponaria.*

Bruit de frottement. See *Sound of friction.*

Bruit de râpe. See *Rasp sound.*

Bruit de scie. See *Rasp sound.*

Bruit de soufflet. See *Bellows sound,* in the Supplement.

Bruma'les plantæ. Plants of warm climates which flower during the time of the year corresponding to our winter.

Brunella. See *Prunella.*

Brunner's glands. *Brunneri glandulæ.* The solitary muciparous glands of the stomach and small intestines have been so named, after Brunner, a Swiss anatomist, who died in 1727; these glands, however, had been previously described by Peyer. See *Intestine.*

BRUNONIAN SYSTEM. A peculiar system of medicine, promulgated by John Brown, a Scotch physician of the last century, who was a cotemporary, and a persevering opponent of Cullen. In this system it is assumed that the living body is endowed with a peculiar property of *excitability;* that every agent capable of affecting the living body acts on the excitability as a *stimulant;* that the effect of the operation of stimulants, or excitement, when only in a due degree, is to produce the natural and healthy functions of life; that the effect of excessive excitement is to produce exhaustion, or *direct debility;* and the effect of deficient excitement to cause an accumulation of excitability, or *indirect debility.* All morbid actions are supposed to arise from one or other of these states of direct or indirect debility, and all diseases are consequently referred to two classes, the *sthenic* or the *asthenic.* On these purely hypothetical notions, Brown founded a practice in which diseases were treated with a view merely to increasing or diminishing excitement, without regard to their peculiar symptoms. The doctrines of Brown were first set forth in his *Elementa Medicinæ,* in 1780; and afterwards further illustrated in an English translation of the same work, with notes by the author, in 1788. They never prevailed to any great extent in this country, but gained many adherents in Italy. They may now be considered as exploded, though a few scattered Brunonians are still extant.

Brunswick green. An ammoniaco-muriate of copper.

Brunus. A name of erysipelas. — *Ruland.*

Brusca'ndula. A name that has been given to the hop according to some authors, and to the lupin according to others.

Bruscus. See *Ruscus.*

Brush. See *Flesh-brush,* and *Metallic Brush.*

Bruta. 1. A tree resembling the cypress, mentioned by Pliny. According to Dalé-champs, it is the same with savine.

2. A term used by the Paracelsians, signifying the celestial influence on which the instinct of animals depends.—*Ruland.*

Bru'tia. The epithet of a kind of pitch. See *Pix Brutia.*

Bruti'no. Turpentine.

Brutobon. The barbarous name of an ointment used by the Greeks, the composition of which is not known.

Brutolé. See *Brytolé.*

Brutua. See *Cissampelos Pareira.*

Bruxaneli. (Indian.) A tall tree of Malabar, the bark of which is said to be diuretic, and the root antiarthritic. Its juice mixed with butter is used as a liniment for boils.

Bry'gmus. (*us, i.* m.; *βρυγμος,* from *βρυχω,* to grind the teeth.) Grinding of the teeth; also the gnashing and chattering of the teeth which takes place in epilepsy and other convulsive disorders from spasm of the muscles of the lower jaw.

BRYO'NIA. (*a, æ.* f.; *βρυωνια,* probably from *βρυω, circumfluo,* to flow or spread around, from its luxuriant growth. Blancard derives it from the same verb, *βρυω,* meaning to germinate, or from *βρυον,* a cluster, "*uvas enim profert et plura et longa germina.*") Bryony.

1. The name of a genus of plants in the Linnæan system. Class, *Diœcia;* Order, *Syngenesia.*

2. The pharmacopœial name of the white bryony. See *Bryonia dioica.*

Bryonia dioica. *Bryonia alba.* The systematic name of the white bryony plant; called also *Vitis alba sylvestris, Vitis agrostis, Agriampelos, Ampelos agria, Archeostris, Echetrosis, Bryonia aspera, Cedrostis, Chelidonium, Labrusca, Melothrum, Ophiostaphylon, Psilothrum.* Wild Vine. Wild Hops. Tetter-berry.

Bryonia—foliis palmatis utrinque calloso-scabris of Linnæus. The *Bryonia dioica* and *alba* are generally considered by English botanists as the same plant; but the true Bryonia alba of Linnæus, found on the Continent, has black berries, and is called alba from its white root, in contradistinction to *tamus*, the black-rooted bryony; whereas the *Bryonia dioica* or *alba* of our floras has always red berries. This plant is very common in woods and hedges. The root has a very nauseous biting taste, and disagreeable smell. Bergius states it to be purgative, hydragogue, emenagogue, and diuretic; and, when fresh, emetic. This powerful and irritating cathartic, though now seldom prescribed, was formerly esteemed highly efficacious in evacuating serous humours, and was employed in dropsy and other chronic diseases, as asthma, mania, and epilepsy. In small doses, it is said to operate as a diuretic, and to be resolvent and deobstruent. Given in powder from ℈j. to ʒj., it proves strongly purgative; and the expressed juice, in the quantity of a spoonful, operates violently both upwards and downwards. A watery extract acts more mildly, and with greater safety, than the root in substance; it may be given in the dose of half a drachm to a drachm. It is said to prove a gentle purgative, and likewise to operate powerfully by urine. Externally, the fresh root has been employed in cataplasms, as a resolvent and discutient: also in ischiadic and other rheumatic affections. Taken in an overdose, the white bryony produces inflammation of the bowels, and all the other effects of an acrid vegetable poison, which are to be treated in the same way as the symptoms produced by other similar poisons.

Bryonia mechoachanna alba. See *Convolvulus mechoachanna.*

Bryonia mechoachanna nigra. See *Convolvulus jalapa.*

Bryonia nigra. See *Tamus communis.*

Bryonia peruviana. See *Convolvulus jalapa.*

Bryony, black. See *Tamus communis.*

Bryony, white. See *Bryonia dioica.*

Bry'thrion. Βρυθριον. The name of a malagma described by Paulus Ægineta.

Brytolé. Brutolé. (From βρυτον, beer.) A French term applied to a preparation made by macerating some medicinal substance in beer, as *brutolé de quinquina*, cinchona beer, *brutolé de raifort*, horse radish beer.

Bry'ton. Βρυτον. (From βρυω, to germinate, because the grain germinates in the process of malting.) Ale or beer.

BU'BO. (*o, onis.* m.; βουβων, from the Hebrew *bobo*, which is a reduplicate of the verb *boc*, or *bo*, to swell.) A swelling of a lymphatic gland, particularly those of the groin or axilla. This may arise from the mere irritation of some local disorder, in which case the bubo is styled *sympathetic;* from the absorption of some irritating matter, such as the venereal poison; or from constitutional causes, as in the pestilential bubo, and scrofulous swellings, of the inguinal and axillary glands. The term bubo is now seldom applied except to venereal swellings of the inguinal glands, and pestilential glandular tumours, or those which occur in the plague and fevers allied to it.

BU'BON. (Βουβων, from the Hebrew verb *bo*, to swell.) 1. The Greek word for the groin, and also for a bubo or glandular swelling occurring in the groin.

2. The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Digynia.* So named, because one of its species was supposed to cure tumours in the groin.

Bubon galbanum. The plant which produces galbanum has been till lately erroneously referred to the genus bubon. See *Galbanum.*

Bubon macedonicum. Macedonian parsley. The systematic name of the plant which affords the *semen petroselini Macedonici* of the shops. It is also called *Apium petræum*, and *Petrapium.* This plant is similar in quality to the common parsley, but weaker and less grateful. The seeds enter into the composition of the mithridate and theriaca. Quincy says the plant is so little cultivated, that the seeds of the common parsley are generally substituted for them. This is said to be the species from which the genus derives its name.

Bubo'nium. (Βουβωνιον, from βουβων, the groin; so called, because it was supposed to be efficacious in diseases of the groin.) *Aster Atticus. Asterion. Asteriscus.* A species of starwort, but which species is uncertain.

BUBO'NOCE'LE. (*e, es.* f.; from βουβων, the groin, and κηλη, a tumour.) An inguinal hernia. See *Hernia.*

Bubonore'xis. (From βουβων, the groin, and ῥηξις a rupture or division.) *Bubonorixis.* A term which has been applied to a bubonocele when accompanied with a division of the peritoneum, or, in other words, when it is without a hernial sac. The term is ill derived; it would signify bursting of the groin.

Bubonorixis. See *Bubonorexis.*

BU'CCA. *a, æ.* f. The cheek. The hollow of the cheek, that is inflated by the act of blowing.

Bucca'craton. (Βουκκακρατον; from *bucca*, or *buccella*, a morsel, and κραω, to mix.) A morsel of bread, sopped in wine, which served in old times for a breakfast.—*Vander Linden.*

BU'CCAL. (*Buccalis*, from *bucca*, the cheek.) Of or belonging to the cheek.

Buccal artery. A branch of the internal maxillary artery. See *Internal maxillary artery.*

Buccales glandulæ. The small mucous glands or follicles situated within the cheek, under its lining membrane. Their fluid lubricates the mouth, and assists the saliva in preparing the food for deglutition.

Bu'ccea. *Buccella.* (From *bucca*, the cheek.) As much as can be contained at one time within the cheeks. A mouthful; a morsel.

Bucce'lla. This name is given by Paracelsus to a polypus in the nose, because he believed the disease to grow from the cheek into the nose.

Bucce'laton. Βουκκελατον. A purgative medicine consisting of scammony, opium, and aromatics, made into loaf-shaped pieces according to the prescription of Aëtius, or into a thick electuary according to that of Paulus.

BUCCINA'TOR. (*or, oris.* m.; from *buccino*, to blow the trumpet: so named from its use.) *Bucco-labialis; Retractor anguli oris.* The trumpeter's muscle. It arises from a ridge extending between the last molar tooth and the coronoid process of the lower jaw-bone, and from the upper jaw between the last molar tooth and pterygoid process of the sphenoid bone: it goes forward, with direct fibres, to be inserted into the corner of the mouth: it is thin and flat, covers in the mouth, and forms the walls of the cheek, to the lining membrane of which it adheres closely, and is perforated in the middle of the cheek by the duct of the parotid gland. Its use is to flatten the cheek, thereby assisting in the swallowing of liquids, and aiding manducation by keeping the morsel of food within the line of the teeth; it is also the muscle by which we are enabled to blow wind instruments which require a strong blast of air, the muscle contracting on the air and expelling it with considerable force.

Bu'cco-pharynge'al aponeuro'sis. A tendinous expansion extending from the internal ala of the pterygoid process of the sphenoid bone to the posterior part of the lower alveolar arch; its anterior part gives attachment to the buccinator muscle, and its posterior to part the constrictor pharyngis superior.

Bu'ccula. (*a, æ.* f.; diminutive of *bucca.*) The fleshy part under the chin.—*Bartholin.*

Bucella'tio. (Low Latin.) A method of stopping hæmorrhage by applying lint upon a vein or artery.—*Fallopius.*

Bucephalon, red-fruited. See *Trophis Americana.*

Bu'ceras. *Buceros.* (βουκερας, βουκερως, from βους, an ox, and κερας, a horn; so called from the horn-like appearance of its seed.) Fenugreek. See *Trigonella Fœnumgræcum.*

Buceros. See *Buceras.*

Buchu. See *Diosma crenata.*

Buck-bean. See *Menyanthes trifoliata.*

Buck-thorn. See *Rhamnus catharticus.*

Buck-wheat. See *Polygonum fagopyrum.*

Buck-wheat, eastern. See *Polygonum divaricatum.*

Buckoo. See *Diosma crenata.*

BUCNE'MIA. (*a, æ.* f.; from βου, a Greek intensive particle, and κνημη, the leg.) Dr. Good gives this generic name to a disease which is characterised by a tense, diffuse, inflammatory swelling of a lower extremity; usually commencing at the inguinal glands, and extending in the course of the lymphatics. The genus comprises two species — *Bucnemia parganosis*, or the puerperal swelled leg, and *Bucnemia tropica*, or the Barbadoes leg. See *Phlegmasia dolens*, and *Barbadoes leg.*

Bucra'nion. (From βους, an ox, and κρανιον, the head; so called from a supposed resemblance of its flower to the head of an ox.) The Snap-dragon plant. See *Antirrhinum.*

Bu'cron. The hymen is so called by *Severinus Pinæus.*

Bud. See *Gemma.*

BU'FO. (*o, onis.* m.) A well known genus of Batrachian animals. The toad.

Bufo vulgaris. The common toad. Many superstitious notions were formerly entertained of this animal. It was esteemed in the highest degree poisonous, and a deadly antipathy was supposed to exist between it and the spider. It was also believed to be of great efficacy in medicine; the flesh dried and powdered was held to be powerfully diuretic and diaphoretic, and was given in dropsy and other diseases. The living animal was applied to carbuncles to draw out the virulent matter, and was alleged to swell visibly with the absorbed virus. The whole animal dried was worn about the neck as an amulet, and the powder entered into various alexipharmic and antihæmorrhagic preparations. The poisonous properties of this animal, as well as its medicinal virtues, are purely imaginary;—it possesses, however, the power of exuding an acrid liquid from the pores of its cuticle, when annoyed or frightened, which irritates the skin of the hand. The flesh of the toad is sufficiently wholesome and nutritious; and in Paris its thighs are very generally sold for those of the frog. The toad was formerly believed to bear a gem in its head, to which extraordinary virtues were attributed. See *Bufonites.*

Bufoni'tes. *Bufonis lapis, Chelonites, Batrachites, Borax, Crapaudina, Garatronium, Brontia, Ombria, Ovum anguinum.* Toadstone. The teeth of several species of fossil fish, which appear to belong chiefly to the genera *anarrhicas* and *sparus*, were formerly named *bufonites*, because they were believed to be generated in the head of the toad, or vomited by the same animal; they were also called *chelonites*, because they were believed to be petrefied tortoises' eggs; and various other names, for equally good reasons. Boetius de Boot says that the lapis bufonis and batrachites are of the same kind; the chelonites, brontia, and ombria, of a second kind; and the ovum anguinum of a kind different from either. The toadstone had formerly extraordinary properties attributed to it. It was supposed to possess great alexipharmic virtues, and to cure the bite of poisonous animals when applied to the part. It was also believed to be a great detector of poison; if brought near a cup containing poison, the stone changed colour and sweated, and if worn next the skin it produced a sensation of heat on the approach of any poison.

Buga'ntia. A chilblain. See *Pernio.*

Bugle. See *Prunella vulgaris.*

Bugloss. See *Anchusa officinalis.*

Buglo'ssa. See *Anchusa officinalis.*

Buglo'ssum. (*um, i.* n.; from βους, an ox, and λγωσσα, a tongue: so called from the shape and roughness of its leaf.) See *Anchusa officinalis.*

Buglossum angustifolium. See *Anchusa officinalis.*

Buglossum majus. See *Anchusa officinalis.*

Buglossum sativum. See *Anchusa officinalis.*

Buglossum sylvestre. See *Anchusa officinalis.*

Bu'gula. (Said by some to be a diminutive of *buglossa.*) See *Ajuga pyramidalis.*

Bulam fever. See *Remittent fever.*

BULBI'FERUS. (From *bulbus*, and *fero*, to bear.) Bulb-bearing. Having one or more bulbs; applied to plants, as *Lilium bulbiferum*, *Dentaria bulbifera.*

Bulbocas'tanum. (*um*, *i.* n.; from βολβος, a bulb, and καστανον, a chesnut; because its bulbous root has somewhat the flavour of a chesnut.) See *Bunium bulbocastanum.*

Bulboca'vernosus. (The accelerator urinæ muscle is so called from its origin and insertion.) See *Accelerator urinæ.*

Bu'lbonach. *Bolbonach.* So called, according to Lobel, on account of its bulbous root. See *Lunaria rediviva.*

BULBO'SUS. (From *bulba*, a bulb.) Bulbous: 1. In *Anatomy*, applied to soft parts which are naturally enlarged; as the bulbous part of the urethra.

2. In *Botany*, to roots; but improperly, for a bulb is not a root. See *Bulbus.*

Bulbosæ. (From *bulbus.*) The name of a class in *Cæsalpinus's* systematic method, consisting of herbaceous vegetables, which have a bulbous root, and a pericarpium, divided into three cells; also, the name of a natural order of plants.

Bu'lbulus. A little bulb.

BUL'BUS. *us*, *i.* m.; βολβος. A bulb. A globular or pyriform coated body, solid, or formed of fleshy scales or layers, constituting the lower part of some plants, and giving off radicles from the circumference of the flattened basis. A bulb differs from a *tuber*, which is a farinaceous root, and sends off radicles in every direction.

Bulbs are divided into,

1. The *solid*, which consists of a solid fleshy nutritious substance; as in *Crocus sativus*, *Colchicum autumnale*, *Tulipa gesneriana.*

2. The *scaly*, which consists of fleshy concentric scales attached to a radical plate; as in *Allium cepa.*

3. The *squamose*, consisting of concave, overlapping scales; as in *Lilium candidum*, and *Lilium bulbiferum.*

4. The *compound*, consisting of several lesser bulbs lying close to each other; as in *Allium sativum.*

The bulbs of the orchis tribe differ from the common bulbs in not sending off radicles from the lower part, but from between the stem and basis. These are distinguished into,

5. *Testiculate*, having two bulbs of a round-oblong form; as in *Orchis morio*, and *Orchis mascula.*

6. *Palmate*, a compressed bulb, hand-like, divided below into finger-like lobes; as in *Orchis maculata.*

Bulbus vomitorius. See *Hyacinthus muscari.*

Bulge-water-tree. See *Geoffroya jamaicensis.*

Bulging. See *Gibbus.*

BULI'MIA. (*a*, *æ.* f.; from βου, a particle of excess, and λιμος, hunger.) Voracity, insatiable hunger, canine appetite: called also, *Bulimiasis*, *Boulimos*, *Bulimus*, *Bolismos*, *Fames canina*, *Fames borina*, *Appetitus caninus*, *Phagedæna*, *Addephagia*, *Bupeina*, and *Cynorexia.*

Many persons in good health do all they can to destroy it by eating enormously; this is a vice rather than a disease: but there is a morbid state of the system, in which the appetite becomes so excessive that it is no longer under the moral control of the individual, and the quantity eaten is in some cases so great as to be scarcely credible. A case is related in the Philosophical Transactions, by Dr. Mortimer, of a boy only twelve years old, who from a feeling of hunger, had so strong a craving that he would gnaw his own flesh when not supplied with food. When awake, he was constantly eating: the food given him consisted of bread, meat, beer, milk, water, butter, cheese, sugar, treacle, puddings, pies, fruits, broths, potatoes; and of these he swallowed, in six successive days, 384 lb. 8 oz. avoirdupois, being 64 lb. a day on the average. The disease continued for a year. The food was usually rejected soon after it was swallowed.

Mr. Percy, surgeon-in-chief to the French army, related to the National Institute the case of a soldier, named Tarrase, who, before he was enlisted, was in the habit of devouring enormous quantities of the coarsest flesh, fruits, and roots; and, subsequently, he was found, after swallowing his own rations, to feed on the refuse of his comrades' messes, or offensive meats thrown upon the dunghills; and to devour cats, dogs, and serpents. M. Fournier affirms of the same individual, that when he was seventeen years of age, and weighed one hundred pounds, he could eat a quantity of beef equal in weight to his own body, in the course of twenty-four hours; and that on one occasion, when he was in the army, he devoured in seven minutes a dinner prepared for fifteen German labourers. He was strongly suspected of cannibalism; and was often kept with difficulty from the place appropriated to the dead. He at length fled from the army, in consequence of a rumour of his having devoured a child sixteen months old, which had suddenly disappeared. The alvine evacuations of this man were not immoderate; but, after gorging his stomach, he slept and sweated to an excessive degree—the latter is a symptom of common occurrence in this disease. He fell at length into a hectic state, and died of marasmus.

Bulimia, in various degrees, is often symptomatic of worms, pregnancy, and diseases and anomalies of organisation in the stomach, duodenum, and other abdominal viscera; it seems, however, sometimes to occur as an idiopathic affection, which may consist simply in excessive voracity, or may be accompanied with a sense of faintness, and in other instances by vomiting. Hence, Dr. Cullen makes three species:

1. *Bulimia helluonum;* in which there is no other disorder of the stomach, than an excessive craving for food.

2. *Bulimia syncopalis;* in which there is a

frequent desire for food, preceded by swooning.

3. *Bulimia emetica;* in which an extraordinary appetite for food is followed by vomiting. The real causes of this disease are little understood; it has been supposed to proceed from an acid in the stomach, from disordered states of the gastric juice, from indigested sordes, from worms, or from malformation of the stomach — causes which are manifestly insufficient to account for the disease in question, because they are well known to exist in many cases without any increase of appetite. The voracious appetite which is produced by an exhausted state of the system, and that which occurs during pregnancy, is soon removed by an abundance of nutritious food: that which accompanies the rapid growth of the body, and that which results from excessive discharges, or long fasting, is removed in the same way. The treatment of bulimia must necessarily vary greatly, according to the morbid states of the particular organs, or of the whole system, with which it appears to be more immediately connected. Tonics are indicated in some cases, and nauseating doses of ipecacuan may be useful in others; but in most proper regulation of the diet is the most important means of cure.

Bulimi'asis. See *Bulimia.*

Bu'limus. See *Bulimia.*

BU'LITHOS. (From βους, an ox, and λιθος, a stone.) A bezoar, or intestinal concretion found in the kidneys, gall bladder, or urinary bladder, of the ox.

BU'LLA. (*a, æ.* f.; a bubble.) A bleb. 1. A vesicle containing a watery humour, which arises from burns, scalds, or other causes.

2. In the phraseology adopted by Dr. Willan, in his celebrated work on cutaneous diseases, a bulla is defined as "a large portion of the cuticle detached from the skin by the interposition of a transparent watery fluid." The *Bullæ* constitute the fourth order of Dr. Willan's arrangement of cutaneous diseases.

Bu'llace. The English name of the fruit of the *Prunus insitia* of Linnæus, which grows wild in our hedges. There are two varieties of bullace, the red and the white, which are used for the same purposes as the common damsons.

BULLA'TUS. (From *bulla*, a bubble, or blister.) Bullate; blistered. Applied, 1. In *Botany*, to a leaf which has portions of its upper surface raised in the form of blisters, with corresponding concavities on its inferior surface: the word is also employed as the specific name of certain plants, the leaves of which have the peculiarity above mentioned, as *Ranunculus bullatus.*

2. In *Pathology*, to the vesicular fever, because the skin is covered with little blisters. See *Pemphigus.*

Bullo'sus. (From *bulla*, a bubble.) The same as *bullatus.*

Bunch. See *Racemus.*

Bundle. See *Fasciculus.*

BUNIAS. 1. The ancient name of the turnip.

2. The name of a genus of plants in the Linnæan system. Class, *Tetradynamia;* Order, *Siliculosa.*

Buni'tes vinum. Wine made of bunium and must.

BU'NIUM. (*um, ii.* n.; from βουνος, a little hill: so called from the tuberosity of its root.) 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Digynia.*

2. The name bunium was applied by the ancients to the turnip: but it has been used at different times to designate several plants.

Bunium bulbocastanum. Earth-nut; Hawk-nut; Kipper-nut; Pig-nut. The systematic name of a plant, the root of which is called also *Agriocastanum, Nucula terrestris, Bulbocastaneum, Bulbocastanetum majus, et minus.* The root is as large as a nutmeg; hard, tuberous, and whitish. It is nutritious, and has a sweetish taste. When roasted, its flavour resembles that of the chesnut. It has been supposed to be useful against strangury and bloody urine.

BU'PEINA. (*a, æ.* f.; from βου, an intensive particle, and πεινα, hunger.) A voracious appetite. See *Bulimia.*

BU'PHAGOS. (From βου, a particle of excess, and φαγω, to eat.) The name of a medicine recommended by Marcellus Empiricus against colic, and to promote digestion. It was made with aromatic herbs, pepper, and honey.

Buphthalmia. See *Buphthalmus.*

BUPHTHA'LMUM. (*um, i.* n.; from βους an ox, and οφθαλμος, an eye: so called from a supposed resemblance of its flowers to an ox's eye.) The name of a genus of plants in the Linnæan system. Class, *Syngenesia;* Order, *Polygamia superflua.* Ox-eye.

Buphthalmum creticum. See *Anthemis pyrethrum.*

Buphthalmum germanicum. See *Chrysanthemum leucanthemum.*

Buphthalmum majus. See *Chrysanthemum leucanthemum.*

Buphthalmum oleraceum. According to Loureiro, this plant is used as a pot-herb in Cochin China.

Buphtha'lmum salicifolium. This plant is said to be slightly narcotic. According to Pallas, its leaves are used in Persia as tea.

BUPHTHA'LMUS. (*us, i.* m.; from βους, an ox, and οφθαλμος, an eye: so named from the enlarged state of the eye.) *Buphthalmia.* Most writers have applied this name to the first stage of hydrophthalmia, or dropsy of the eye. Sabatier applies it to an increase of the vitreous humour, which pushes the iris forwards and forms a sort of border round the crystalline lens.

BUPLEU'RUM. (*um, i.* n.; from βου, intensive, and πλευρον, a rib: so named from its having large ribs upon its leaves.) 1. The name of a genus of plants in the Linnæan system. Class, *Syngenesia;* Order, *Polygamia superflua.*

2. The pharmacopœial name of the herb hare's ear. See *Bupleurum rotundifolium.*

Bupleu'rum rotundifolium. Round-leaved hare's ear, or thorow-wax; called also *Bupleuron, Bupleuroides, Perfoliata.* This plant was formerly celebrated for curing ruptures:

was made into a poultice with wine and oatmeal.

Burac. Borax, or any kind of salt.—*Ruland.*

Burbot. See *Gadus lota.*

Burdock. See *Arctium lappa.*

BURGUNDY. A province of France, the vines of which afford the grape of which the wine called Burgundy is made. It is a light and pleasant flavoured wine, but is apt to become acid in weak stomachs.

Burgundy pitch. See *Pinus abies.*

Buris. The name given by Avicenna to a species of hernia. The disease referred to is probably a schirrous induration of the testicle.

Burn. See *Ambustio.*

Burina. Pitch.—*Ruland.*

Burnet saxifrage. See *Pimpinella.*

Burning. *Brenning.* An old English name of gonorrhœa.

Burnt hartshorn. See *Cornu ustum.*

Burnt sponge. See *Spongia usta.*

Bu'rrhi spi'ritus matrica'lis. Burrhus's spirit, for disorders of the womb. A compound of myrrh, olibanum, amber, mastich, and spirit of wine. It varied somewhat in its ingredients according to different formulæ.

Bu'rsa. (*a, æ.* f.; from βυρσα, a bag.) The scrotum.

BU'RSA MUCO'SA. A small sac lined with synovial membrane, which secretes an oily fluid to lubricate the surfaces over which the tendons of muscles play. The bursæ mucosæ are of different sizes, and are situated near the joints, particularly the large joints of the extremities.

Bursa pastoris. Shepherd's purse, so called from the shape of its seed-vessels. See *Thlaspi bursa pastoris.*

Bursa'lis. (From its resemblance to a *bursa*, or purse.) The *Obturator internus* muscle is thus named by Bartholin.

Bursa'logy. (*Bursalogia, æ.* f.; from βυρσα, a bag, and λογος, a discourse.) The doctrine of the bursæ mucosæ.

Buseli'num. (*um, i.* n.; from βου, intensive, and σελινον, parsley.) The carrot. See *Daucus carota.*

Bu'ssii spi'ritus bezoa'rdicus. Bezoardic spirit of Bussius. It was made by distilling spirit of hartshorn or of ivory, sal ammoniac, crude potash, amber, oil of cedar, and alkohol.

Butchersbroom. See *Ruscus.*

Bu'tiga. Swelling of the face; *gutta rosea.* —*Ruland.*

BUTTER. (*Butyrum, i.* n.; from βους, a cow, and τυρος, *coagulum*, or cheese.) The oily inflammable part of milk, separated by the mechanical operation of churning, and used as an article of diet in most civilised countries. Butter differs from the common animal fats in containing a peculiar fluid oleaginous matter, called *butyrine* by M. Chevreuil. This substance, when saponified, yields, in addition to the usual products, three volatile odoriferous substances, called the *butyric*, *caproic*, and *capric* acids. The common mode of preserving it is by the addition of salt, which will keep it good a considerable time, if in sufficient quantity.

Fresh butter is nutritious, and not unwholesome unless taken in too great quantity; it generally disagrees, however, with very bilious persons. Rancid butter is extremely unwholesome and indigestible.

Butter of antimony. See *Antimony.*

Butter of cacao. An oily concrete matter, obtained from the cacao nut. It is separated by bruising the cacao and boiling it in water. The greater part of the uncombined oil is thus liquefied, and rises to the surface, where it swims, and is left to congeal, that it may be the more easily taken off. It is generally mixed with small pieces of the nut, from which it may be purified, by keeping it in fusion without water in a deep vessel, until the several matters have arranged themselves according to their specific gravities.

Butter of cacao, when fresh, is of a white colour, of a firmer consistence then suet, inodorous, and nearly insipid. In its general properties it resembles the concrete oils. It is used as an ingredient in pomatums.

Butter-bur. See *Tussilago petasites.*

Butter-flower See *Ranunculus.*

BUTTER-MILK. The sour milk which is separated from the cream by churning it into butter. It is wholesome and nutritious.

Butterfly-shaped. See *Papilionaceus.*

Butterwort. See *Pinguicula.*

Butua. See *Cissampelos pareira.*

Buty'ric acid. (*Acidum butyricum*; so called, because obtained from butter.) See *Butter.*

Buty'rum. Butter. See *Butter.*

Butyrum antimonii. See *Antimony.*

Buxine. An alkaline substance, lately detected by M. Faure in the *Buxus sempervirens.*

BUXTON. A village in Derbyshire, where there are thermal springs. *Buxtonienses aquæ.* Their temperature is about 82° Fahr. Though long celebrated for their medicinal virtues, they contain no mineral impregnation, and differ in no respect from common water at the same temperature, except in the evolution of a quantity of gas that arises in the form of bubbles, which pass through the water, and break as soon as they reach the surface. The air of these bubbles was ascertained, by Dr. Pearson, to consist of azotic gas, mixed with a small proportion of atmospheric air. Buxton water is employed both internally and externally: one of which methods often proves beneficial, when the other would be injurious: but, as a bath alone, its virtues may not be superior to those of common tepid water. As the temperature of 82° is several degrees below that of the human body, a slight shock of cold is felt on the first immersion into the bath; but this is almost immediately succeeded by a pleasing glow over the whole system. The cases which derive most benefit from the *external* use of Buxton waters are said to be those in which the limbs are debilitated or torpid in consequence of long-continued or violent inflammation, or external injury. Hence, in chronic rheumatism of the limbs succeeding the acute, great relief is affirmed to attend the use of these waters as a bath. The *internal* use of the water has been found to be of considerable service in derangement of the digestive organs, and is stated to relieve heart

burn, flatulence, and sickness, to animate the spirits, and to improve the appetite and the general health. At first, however, it sometimes occasions diarrhœa, which is rather salutary than detrimental: but costiveness is a more usual effect, especially in sluggish habits. It is also conceived to afford great relief when taken internally, in painful disorders of the bladder and kidneys; and has likewise been recommended in cases of gout: but when taken for these complaints, the addition of some aromatic tincture is recommended. In all cases of active inflammation, the use of these waters should, we are told, be carefully avoided, on account of their supposed heating properties. They are drunk in the quantity of two thirds of a pint, twice a day — once before breakfast, and once between breakfast and dinner. In chronic cases, a long residence on the spot is requisite to ensure the desired effect.

BUX'US. (*us, i.* m.; from πυκαζω, to become hard.) The box-tree.

1. The name of a genus of plants in the Linnæan system. Class, *Monœcia*; Order, *Triandria*.

2. The pharmacopœial name of the box. See *Buxus sempervirens*.

BUXUS SEMPE/RVIRENS. The systematic name of the *buxus* of the Pharmacopœias. The leaves possess a very strong, nauseous, bitter taste, and aperient virtues. They have been employed, in form of decoction, in cases of dropsy, asthma, and worms. In some countries they are used in making beer. The wood has been supposed to possess diaphoretic, diuretic, and alexipharmic virtues, but it has probably little real activity.

BY'ARUS. A plexus of blood-vessels in the brain.

BYRETHRUM. Forest gives this name to a kind of cap for the head, containing cephalic drugs.

BY'RSA. (Βυρσα, a hide.) A piece of leather to spread plasters upon.

BY'SSUS. *Byssum.* Βυσσος. 1. A species of fine linen much prized by the ancients. What it was made of is not known.

2. A genus of lichens.

3. The hairy appendage by which some of the bivalve mollusca attach themselves to rocks and other objects. The byssus of the *pinna* is used in Sicily to make stockings and gloves.

BYSTI'NI ANTIDOTUS. A corroborant and diuretic medicine mentioned by Aretaeus.

C.

CAA-APIA. See *Dorstenia Braziliensis.*

CAA-ATAYA. A Brazilian plant, which is probably a species of gratiola. It is bitter, and esteemed as a good purgative.

CAB. An alchemical name of gold.

CA'BALA. *Cabbala; Kabala; Cabalia; Caballa; Ars caballistica; Cabula; Gaballa.* A term derived from the Hebrew *Kibel*, to receive, and applied to a mystical interpretation of the Pentateuch alleged to have been received by Moses from the Deity, and transmitted by an uninterrupted tradition through Joshua, the seventy elders &c., to the Rabbinical doctors. In a general way, the term cabala is applied to the whole system of occult philosophy of the Rabbins. In the sixteenth and seventeenth centuries the doctrines of the cabala were extensively adopted by the Rosicrucians, and intimately blended with the study of medicine by Paracelsus and his followers, who distinguished the *Judaical* or *theological* cabala, which treated of divine things, and the *Hermetical* or *medical*, which treated of medicine. The cabalistical doctrines involved some of the wildest absurdities that ever came into the mind of man, and they have long ceased to have any influence in the world of science.

CABALATAR. Nitre. — *Ruland.*

CABALLINE ALOES. Horse aloes. A coarse species of aloes, so called because it is given only to horses. See *Aloe.*

Cabbage. See *Brassica.*

Cabbage tree. See *Andira inermis.*

CACALIA. Κακαλια. The name of a genus of plants in the Linnæan system. Class, *Syngenesia*; Order, *Polygamia Æqualis.*

CACALIA ALPINA. *Leontice veterum.* Strange colt's foot. This plant is probably the Κακαλια of Dioscorides. It has been supposed to possess desiccative and other virtues.

CACALIA ANTEUPHORBIUM. An African plant which has long been supposed to be an antidote to the euphorbium.

CACALIA HASTATA. This plant, which grows in Siberia, is a violent purgative, and is said to be antisyphilitic.

CACALIA ODORA. This is used in Arabia as a fumigation in the chambers of those sick of small-pox.

CACALIA PENDULA. The expressed juice of this is used in Arabia against diseases of the ear.

CACALIA SONCHIFOLIA. This is used in India as a condiment. Its juice mixed with arack is taken to favour the eruption of small-pox. The juice is also employed externally as a resolvent and suppurative, and, as an application to inflamed eyes.

CACANUM. Κακανον. A plant, the root of which was esteemed demulcent by the ancients. — *Paulus Ægineta.*

CA'CAMUM. This word has been improperly substituted by some writers for *Cancamum*, which see.

Cacao. See *Theobroma cacao.*

Cacatoria febris. *Febris dejectoria. Febris cathartica.* A species of intermittent fever accompanied with diarrhœa, and sometimes with tormina.

Cacciondc. See *Pilulæ de Cacciondc.*

CACHE'CTIC. *Cachecticus,* καχεκτικος. Affected with cachexia. See *Cachexia.*

CACHE'XIA. (*a, æ.* f.; from κακος, bad, and ἑξις, a habit.) A bad condition or habit of body, as that arising from scurvy, syphilis, &c. Some writers have also used the term cachexia synonymously with diathesis, or disease, as *Cachexia Icterica,* the jaundice or a disposition to it; *Cachexia uterina,* the whites.

Cachexia africana. See *Pica.*

Cache'xiæ. (The plural of *cachexia.*) A class of diseases in Cullen's Nosology, embracing three orders, viz. *Marcores, Intumescentiæ,* and *Impetigines.*

Cachinna'tio. (From *cachinno,* to laugh aloud.) Immoderate laughter, a symptom which occurs in hysteria, mania, and other affections.

Ca'chlex. Καχληξ. A small stone or pebble found on the sea shore. Galen says that when heated in the fire and cooled in whey, it communicates an astringency to the liquid which renders it useful in dysentery.

Cachore. A name of catechu.

CA'CHRYS. The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order *Digynia.*

Cachrys libanotis. This plant is aromatic and astringent. The seeds are acrid.

Cachrys odontalgica. The root of this species has been used like that of the pyrethrum against toothach.

Cachu. *Catechu.*

CACHU'NDE. A medicine highly celebrated among the Chinese and Indians, made of several aromatic ingredients, perfumes, medicinal earths, and precious stones. They make the whole into a stiff paste, and form out of it several figures according to their fancy, which are dried for use. These are principally used in the East Indies, but are sometimes brought over to Portugal. In China, the principal persons usually carry a small piece in their mouths, which is a continued cordial, and renders the breath fragrant. It is highly esteemed as a medicine in nervous complaints; and it is reckoned a prolonger of life, and a provocative to venery; the two great intentions of most of the medicines used in the East.

Cacoalexite'rium. (From κακος, bad, and αλεξητηριον, a remedy.) The same as *alexiterium.* See *Alexiterium.*

CACOCHO'LIA. (*a, æ.* f.; from κακος, and χολη, bile.) A vitiated or unhealthy condition of the bile.

CACOCHY'LUS. (From κακος, bad, and χυλος, chyle.) Productive of bad chyle—*cacochyla alimenta,* aliments which afford bad chyle, that is, aliments which are of difficult digestion.

CACOCHY'LIA. (*a, æ.* f.; from κακος, bad, and χυλος, the chyle.) Depraved chylification.

CACOCHY'MIA. (*a, æ.* f.; from κακος, bad, and χυμος, juice, or humour.) An unhealty state of the humours.

Cachochymica febris. An intermittent or remittent fever, supposed to arise from a depraved state of the humours.

CACOCORE'MA. (From κακος, bad, and κορεω, to purge or cleanse.) A medicine which purges off vitiated humours.

CACODÆ'MON. (*on, onis.* m.; from κακος, bad, and δαιμων, a demon.) 1. An evil spirit or genius, which was supposed to influence the bodies of men, and afflict them with certain disorders.

2. The night-mare.

CACOE'THES. (Κακοηθης; from κακος, bad, and ηθος, disposition.) 1. As a substantive. A bad habit of body or a malignant ulcer.

2. As an adjective. Ill-conditioned. Applied by Galen to an ulcer or disease which resists every mode of cure.

CACOPHO'NIA. (*a, æ.* f.; from κακος, bad, and φωνη, the voice.) A discordance or indistinctness of the voice.

CACOPRA'GIA. (From κακος, bad, and πρατ'ω, to perform.) A disease in those viscera which minister to nutrition.

Cacorry'thmus. (Κακορ'ρυθμος; from κακος, bad, and ῥυθμος, order. Disordered. Applied to an irregular pulse.

CACO'SIS. (Κακωσις; from κακος, bad.) A bad habit of body. *Hippocrates.*

CACOSI'TIA. (*a, æ.* f.; from κακος, and σ'ιτιον, food.) An aversion to food.

CACOSPHY'XIA. (*a, æ.* f.; from κακος, bad, and σφυξις, pulse.) A disordered or bad state of the pulse.

CACOSTO'MACHUS. (Κακοστομαχος; from κακος, bad, and στομαχος, the stomach.) An adjective term applied by the Greeks to food which is ungrateful to the stomach, or which the stomach rejects. It was opposed to ευστομαχος.

CACOTHY'MIA. (*a, æ.* f.; from κακος, ill, and θυμος, the mind.) A diseased state of the mind.

Cacotri'bulus. An old name of the *Centaurea calcitrapa.*

CACOTRO'PHIA. (*a, æ.* f.; from κακος, bad, and τρεφω, to nourish.) Disordered nutrition.

CACTUS. Κακτος. 1. An ancient name of the artichoke.

2. The name of a genus of plants in the Linnæan system. Class, *Icosandria;* Order, *Monogynia.*

Cactus Coccinellifer. This plant is a native of Mexico, and is there called *Nopal.* Its leaves are the habitation of the cochineal insect, which also appears to be found on several other species of cactus.

Cactus melo-cactus. *Melo-cactus communis.* The melon thistle. This plant is a native of South America. The fruit, which is esculent, is globular like a melon, and beset with prickles, whence its name.

Cactus opuntia. *Opuntia vulgaris.* The systematic name of the Indian fig or prickly pear; the *opuntia* of the pharmacopœias. This plant grows in South America, Spain, and Italy. The fruit, which somewhat resembles a fig, has a sweet flavour, and gives a deep red tinge to the urine. The prickly leaves abound with a mu-

cilaginous matter, and are used in the form of poultices as an emollient application.

CADA'VER. (*er, eris.* neut.; from *cado*, to fall: because the body, when deprived of life, falls to the ground.) A carcase, or body deprived of life.

CADAVERIC. Appertaining to a dead body. Thus the changes induced in a corpse by putrefaction are called cadaveric phenomena. It is of much importance in medico-legal inquiries, to distinguish accurately between cadaveric appearances, and those which result from injury inflicted before death.

CADMI'A. Καδμεια. Καδμια. A name which has been given by ancient and modern writers to a variety of substances.

Cadmia factitia. See *Tutia.*

Cadmia fornacum. See *Tutia.*

Cadmia fossilis. See *Calamine.*

Cadmia lapidosa. See *Calamine.*

Cadmia metallica. Cobalt.

Cadmia nativa. This name has been given to *cobalt*, and to the *lapis calaminaris.*

CADMI'UM. (*um, i.* n.; from *cadmia*, tutty, because it was first detected in that substance.

"A metal discovered in the year 1817 by Stromeyer in an oxide of zinc which had been prepared for medical purposes; and he has since found it in several of the ores of that metal, especially in a radiated blende from Bohemia which contains about five per cent of cadmium. The late Dr. Clarke detected its existence in some of the zinc ores of Derbyshire, and in the common zinc of commerce. Mr. Herapath has found it in considerable quantity in the zinc works near Bristol. During the reduction of calamine by coal, the cadmium, which is very volatile, flies off in vapour mixed with soot and some oxide of zinc, and collects in the roof of the vault, just above the tube leading from the crucible. Some portions of this substance yielded from twelve to twenty per cent of cadmium.

"The process by which Stromeyer separates cadmium from zinc or other metals is the following. The ore of cadmium is dissolved in dilute sulphuric or muriatic acid, and after adding a portion of free acid, a current of sulphuretted hydrogen gas is transmitted through the liquid by means of which the cadmium is precipitated as sulphuret, while the zinc continues in solution. The sulphuret of cadmium is then decomposed by nitric acid, and the solution evaporated to dryness. The dry nitrate of cadmium is dissolved in water, and an access of carbonate of ammonia added. The white carbonate of cadmium subsides, which, when heated to redness, yields a pure oxide. By mixing this oxide with charcoal, and exposing the mixture to a red heat, metallic cadmium is sublimed.

"A very elegant process for separating zinc from cadmium was proposed by Dr. Wollaston. The solution of the mixed metals is put into a platinum capsule, and a piece of metallic zinc is placed in it. If cadmium is present, it is reduced, and adheres so tenaciously to the capsule, that it may be washed with water without danger of being lost. It may then be dissolved either by nitric or dilute muriatic acid.

"Cadmium, in colour and lustre, has a strong resemblance to tin, but is somewhat harder and more tenacious. It is very ductile and malleable. Its specific gravity is 8·604 before being hammered, and 8·694 afterwards. It melts at about the same temperature as tin, and is nearly as volatile as mercury, condensing like it into globules which have a metallic lustre. Its vapour has no odour.

"When heated in the open air, it absorbs oxygen, and is converted into an oxide. Cadmium is readily oxidised and dissolved by nitric acid, which is its proper solvent. Sulphuric and muriatic acids act upon it less easily, and the oxygen is then derived from water.

"Cadmium combines with oxygen, so far as is yet known, in one proportion only; and this oxide is conveniently procured in a separate state by igniting the carbonate. It has an orange colour, and is fixed in the fire. It is insoluble in water, and does not change the colour of violets; but it is a powerful salifiable base, forming neutral salts with acids. This oxide, according to the analysis of Stromeyer, is composed of 55·8 parts of cadmium and 8 parts of oxygen. It is regarded as a compound of one equivalent of each element, and consequently its equivalent is 63·8.

"Oxide of cadmium is precipitated as a white hydrate by pure ammonia, but is redissolved by excess of the alkali. It is precipitated permanently by pure potash as a hydrate, and by all the alkaline carbonates as carbonate of cadmium.

"Sulphuret of cadmium, which occurs native in some kinds of zinc blende, is easily procured by the action of sulphuretted hydrogen on a salt of cadmium. It has a yellowish-orange colour, and is distinguished from sulphuret of arsenic by being insoluble in pure potash, and by sustaining a white heat without subliming. It is composed according to Stromeyer of 55·8 parts, or one equivalent of cadmium and 16 parts or one equivalent of sulphur.

"Chloride of cadmium may be prepared by decomposing the muriate by heat." — *Turner.*

Caduca membrana. See *Decidua.*

CADU'CUS. (From *cado*, to fall.) Caducous. Falling off: applied generally in natural history. 1. In *Botany*, to parts which fall off before the unfolding of the flower or leaf; as the *perianth* of *Papaver*, and the *stipulæ* of *Prunus avium*; to a calyx which drops at the first opening of the petals, or even before, as in the poppy; to petals, which are scarcely unfolded before they fall off, as in *Thalictrum*; and to such leaves as fall off before the end of summer.

2. In *Anatomy*, to the *tunica decidua uteri.*

3. In *Pathology*, to *epilepsy* or the falling sickness.

Ca'dus. *Ceramium. Metreta.* An ancient measure equal to 120 pounds when applied to wine, and 105 when applied to oil.

CÆCAL. Appertaining to the cæcum.

Cæcal appendix. The appendix cæci vermiformis, which see.

CÆ'CITAS. (From *cæcus*, blind.) Blindness. See *Caligo*, and *Amaurosis.*

CÆ'CUM. (*um, i.* n.; from *cæcus*, blind:

so called from its being perforated at one end only.) The blind gut. The first portion of the large intestine, situated in the right iliac region. It is in this intestine that the ilium terminates by a valve, called the valve of the cæcum. The *appendix cæci vermiformis* is also attached to it. See *Intestines.*

CÆ'CUS. Blind: applied in anatomy to canals which are closed at one extremity, as the *intestinum cæcum.*

Cæla-dolo. See *Torenia Asiatica.*

CÆLI DONUM. The gift of Heaven. A name given to the *Chelidonium majus,* on account of its supposed excellent virtues.

CÆLI FLOS. *Cæli rosa.* The *Lychnis coronaria.*

CÆSALPI'NIA. (*a, æ.* f.; so named in honour of Cæsalpinus.) The name of a genus of plants in the Linnæan system. Class, *Decandria;* Order, *Monogynia.* All the plants of this genus afford wood which is used in dyeing: these woods are known in commerce under the name of Brazil woods.

CÆSALPINIA CRISTA. This plant yields a valuable wood, which, however, is less prized than that of the following species.

CÆSALPINIA ECHINA'TA. The plant that yields the best Brazil wood, or Fernambuco wood. It grows in the Brazils, the Isle of France, Japan, and elsewhere: the wood possesses astringent properties, but is chiefly used as a red dye.

CÆSALPINIA SAPPAN. A small tree found in Siam and Amboyna. A decoction of the wood is used in cases of contusion; and it also affords a red or black dye.

CÆRULEUM BEROLINENSE. Prussian blue. See *Ferrocyanic acid.*

CÆRULEUM MONTANUM. The Armenian stone. See *Armenius lapis.*

CÆSARIAN OPERATION. *Cæsarian section. Hysterotomia. Tomotocia. Hystero-tomotocia. Gastro-hysterotomia.* The operation of making an incision into the uterus to extract the child, either after the death of the mother, or when the obstacles to delivery are so great as to leave no other alternative. It is so named because Julius Cæsar is said to have been brought into the world in this manner.

CAFA. *Caf. Cafar.* Camphire.

Cæsarian section. See *Cæsarian operation.*

CAFFEIN. A peculiar principle discovered in coffee by Robiquet, in the year 1821, and subsequently observed by Pelletier and Caventou. It is best obtained by boiling bruised raw coffee in water, adding acetate of lead to throw down the extractive and colouring matter, precipitating the excess of lead by sulphuretted hydrogen, and evaporating the remaining fluid. The caffein thus obtained should be digested with animal charcoal to take away the remaining colouring matter, and re-crystallised. It is then a white, volatile matter, sparingly soluble in cold water, but readily dissolved by boiling water, or alcohol, from which it is again deposited, on cooling, in silky filaments. It neither affects vegetable blues nor forms salts with the acids; it is, therefore, not an alkali. According to the latest analysis by Pfaff and Liebig, it consists of 48 parts of hydrogen, 28 of nitrogen, and 16 of oxygen. It contains more nitrogen than most animal substances, yet it never, under any circumstances, undergoes putrefaction.

CAGA'STRUM. A barbarous term used by Paracelsus to designate the germ of diseases which are not congenital nor hereditary, but arise from corruption.

CAIPA SCHORA. A cucurbitaceous plant of Malabar. The natives drink the juice of its fruit, with a little nutmeg, to stop the hiccough. The unripe fruit is emetic.

CAIUCA. The Brazilian name of a root celebrated as an antidote to the bite of serpents, and for other virtues. See *Chiocca racemosa.*

Cajan. See *Phaseolus creticus.*

Cajeput oil. See *Melaleuca.*

CAL. An alchemical name of the yellow sulphuret of arsenic, and also of vinegar.

Calaba. See *Calophyllum inophyllum.*

Calaf. See *Salix ægyptiaca.*

Calaguala. See *Polypodium calaguala.*

CALAMAGRO'STIS. (*is, is.* f.; καλαμαγρωστις, from καλαμος, a reed, and αγρωστις, a sort of grass.) Reed grass. *Gramen Arundinaceum.* The *Arundo calamagrostis* of Linnæus. The root has been said to possess diuretic and emmenagogue properties.

CALAMA'RIÆ. The name of an order in Linnæus's fragments of a natural method, which embraces the reed-plants.

CALAMBAC. *Calambouk.* The Indian name for Lignum aloes. See *Lignum aloes.*

CALAME'DON. (Καλαμηδον; from καλαμος, a reed.) A term applied by some to a longitudinal fracture of a bone; by others, to an oblique fracture, in which the ends of the fractured portions are shaped like the nib of a pen; and by others, again, to a comminuted fracture.

CALAMINA PRÆPARATA. Prepared calamine. Burn the calamine and reduce it to powder; then let it be brought into the state of a very fine powder, in the same manner that chalk is directed to be prepared. See *Calamine.*

CA'LAMINE. (*Calamina, æ.* f.; from *calamus,* a reed: so called from its reed-like appearance.) *Cadmia, Cathmia, Cadmia lapidosa ærosa, Cadmia fossilis, Cadmia natura, Lapis calaminaris.* A native carbonate of zinc, blended with a portion of iron, and sometimes with other substances. It is very heavy, moderately hard and brittle, of a grey, yellowish red, or blackish brown colour, insoluble in water, but soluble with effervescence in sulphuric acid. It is found in quarries of considerable extent, in several parts of Europe, and particularly in this country, in Derbyshire, Gloucestershire, Nottinghamshire, and Somersetshire; as also in Wales. This mineral, prepared by calcination and reduced to fine powder, forms an article of the materia medica. In this state it is sprinkled on ulcers and excoriations to promote their healing. Mixed with rose, or elder-flower water, it has been used as a collyrium for weak eyes. It is the basis of an officinal cerate, the *Ceratum calaminæ* of the London Pharmacopœia, a preparation long known under the name of *Turner's cerate.*

Calamint. See *Melissa calamintha.*

Calamint, mountain. See *Melissa grandiflora.*

CALAMI'NTHA. (*a, æ.* f.; from καλος, beautiful, and μινθα, mint.) See *Melissa calamintha.*

Calamintha anglica. See *Melissa.*

Calamintha humilior. See *Glechoma.*

Calamintha magno flore. See *Melissa grandiflora.*

Calamintha montana. See *Melissa.*

Calamintha palustris. See *Mentha.*

Calamita. See *Styrax.*

CALAMITA BIANCA. The Italian name of a very adhesive kind of white bole. It was formerly supposed to possess extraordinary alexipharmic and aphrodisiac virtues. The literal meaning of the words *calamita bianca* is *White loadstone.*

CA'LAMUS. (*us, i.* m. Καλαμος.) The name of a genus of plants in the Linnæan system. Class, *Hexandria;* Order, *Monogynia.* The reed.

CALAMUS ALEXANDRINUS. A medicine mentioned by Celsus, which was long confounded with the *Calamus aromaticus.* The calamus of Celsus was the stalk of a plant growing in India and Egypt, most probably the *Andropogon nardus.*

CALAMUS AROMATICUS. With modern writers this is a synonyme of the sweet flag, or *Acorus calamus* of Linnæus. The calamus aromaticus of the ancients is believed by some to have been the *acorus,* and by others the *galangal.*

Calamus aromaticus asiaticus. See *Acorus calamus.*

CALAMUS ODORATUS. A name given by Mathiolus to the *Andropogon nardus.*

CALAMUS ROTANG. One of the plants from which the resin called *Dragon's blood* has been supposed to be obtained; but this appears to be an error. The *Calamus rotang* and *C. sciopionum* afford the rattan canes which are used as walking sticks.

CALAMUS SACCHARINUS. The sugar-cane. See *Saccharum officinale.*

CALAMUS SCRIPTORIUS. A furrow at the bottom of the fourth ventricle of the brain, so called from its resemblance to a writing pen.

Calamus vulgaris. See *Arundo phragmites.*

CALAPI'TTE. A name given by Rumphius to stony concretions found in the inside of some cocoa nuts. These stones are also called *vegetable bezoars;* the Malays attribute great virtues to them, and wear them as amulets. The cocoa tree is called *calappa* in the Malayan language.

CALBIA'NUM. The name of a plaster mentioned by Myrepsus, the composition of which is not known.

CALCADINUM. *Calcatar. Colcotar.* Red ink. Vitriol. — *Ruland.*

CALCA'NEUM. (*um, i.* n.; from *calx,* the heel.) The heel, or bone of the heel.

Calcanthos. See *Calcanthum.*

CALCAN'THUM. (*um, i.* n.; from χαλκος, brass, and ανθος, a flower.) A name given to flowers of brass, to vitriol, and to oxide of copper.

CA'LCAR. (*ar, aris.* n.; a spur.) A term applied 1. By anatomists to the os calcis.

2. By botanists to a part of the ringent and personate corolla of plants. It is a tube forming an obtuse or acute sac at the side of the receptacle.

CALCARA'TUS. Spurred: applied to the corols and nectaries of plants; as *Corolla calcarata, Nectarium calcaratum;* in *Aquilegia* and *Antirrhinum linaria.*

CALCA'REOUS. (*Calcarius;* from *calx,* lime.) Partaking of the nature of lime.

CALCAREOUS EARTH. See *Lime.*

CALCARIS FLOS. The larkspur. See *Delphinium.*

Calcatar. See *Calcadinum.*

CALCATON. A troche containing arsenic.

CALCATRIPPA. The larkspur. See *Delphinium.*

CALCENA, *Calcenon, Calcenonia, Calcinonia.* Terms applied by Paracelsus to concretions of tartrate of lime which form in the human body.

CALCEOLA'RIA. (From *calceolus,* a small slipper.) The name of a genus of plants in the Linnæan system. Class, *Diandria;* Order, *Monogynia.* Slipper-wort.

CALCEOLARIA PRIMATA is used in Peru as a laxative.

CALCEOLARIA TRIFIDA is employed as a febrifuge.

CALCETUS, *Calcenonius, Calcenos.* A term applied by Paracelsus to the blood when supposed to abound in tartrate of lime; whence the expression *calcined blood.*

CA'LCEUM EQUI'NUM. (From *calceus,* a shoe, and *equus,* a horse: so called from the figure of its leaf.) The herb colt's-foot. See *Tussilago.*

CALCHITHIUS. Verdigris.

CALCIDICUM. An alchemical name of a medicine in which arsenic was an ingredient.

CALCI'FRAGA. (*a, æ.* f.; from *calx,* a stone, and *frango,* to break: so named from its supposed property of breaking the stone in the bladder.) Breakstone. *Scribonius Largus* gives this name to the herb *scolopendrium,* or spleenwort: the calcifraga of Pliny is supposed to be the *globularia alypum* of modern botanists. By some writers calcifraga has been used synonymously with *saxifraga.*

CALCII CHLORIDI LIQUOR. In the London Pharmacopœia of 1837, this preparation is directed to be made by dissolving four ounces of chloride of calcium in twelve ounces of distilled water. The dose is from mx to ʒij. The *Liquor calcis muriatis* of the London Pharmacopœia of 1824 was nearly double the strength of this.

CALCII CHLORIDUM. Chloride of Calcium. *Murias calcis.* Muriate of lime. *Calx salita. Sal ammoniacus fixus.* Take of chalk five ounces; hydrochloric acid, distilled water, each half a pint. Mix the acid with the water, and add the chalk to saturation. The effervescence being finished, strain and evaporate the liquor until the salt is dried. Put the salt into a crucible, and having liquefied it by exposure to the fire, pour it upon a flat clean stone. When it is cold, break it into small pieces, and keep it in a well closed vessel. For the chemical properties of this substance, see *Lime.* Muriate of lime

has been supposed to possess tonic and deobstruent properties. It was introduced into medical practice by Fourcroy, and acquired, some years back, a high reputation in scrofula and bronchocele, which, however, it has failed to maintain. The dose for an adult is from xv grains to ʒj.

CALCINA'TION. (*Calcinatio, onis.* f.; from *calx*, lime.) The process of subjecting a body to the action of fire, or to a considerable degree of heat, to drive off its volatile parts. Thus we speak of the calcination of chalk, by which it is converted into lime by driving off its carbonic acid and water; of gypsum, or plaster-stone; of alum; of borax, and other saline bodies, by which they are deprived of their water of crystallisation; of bones which lose their volatile parts by this treatment, and of various other bodies.

Calcinatio philosophica, *Calcinatio spagyrica, Calcinatio sine igne.* A name applied by the alchemists to the process of rendering bony or horny matter brittle and pulverable, by suspending it for some hours over boiling water.

Calcinatum majus. A term applied by the alchemists to all dulcified substances. See *Dulcification.*

Calcinatum majus Poterii. A protochloride of mercury, prepared by dissolving the metal in aquafortis, and precipitating with salt water. It was used by Poter as an application to obstinate ulcers.

Calcinatum minus. A term applied by the alchemists to any thing naturally sweet, as sugar, honey, manna, &c.

Calcinonius. See *Calcetus.*

Calcis carbonas. See *Lime* and *Creta præparata.*

Calcis cremor. Cream of lime. A name formerly given to the pellicle of carbonate of lime, which is formed on the surface of lime-water when it is exposed to the air.

Calcis chloridum. Chloride of lime, called also *Oxymuriate of lime.* A preparation, the chemical constitution of which is not yet well ascertained. Hence, in the New London Pharmacopœia it is termed *Calx chlorinata*, to avoid hypothesis. (See *Lime.*) It is much used in bleaching, under the name of *bleaching powder*; and an aqueous solution of it, commonly known under the name of *Labaracque's disinfecting fluid*, is a powerful corrector of putrid effluvia.

Calcis liquor. Solution of lime, formerly called *aqua calcis.* Lime-water. Take of lime, half a pound; boiling distilled water, twelve pints. Upon the lime, first slaked with a little of the water, pour the remainder of the water and shake them together; next cover the vessel immediately, and let it stand for three hours; then keep the solution upon the remaining lime in stopped glass bottles, and pour off the clear liquor when it is wanted for use.

Lime is soluble in about 450 times its weight of water, or little more than one grain in one fluid ounce. Lime-water is colourless and inodorous, and has an unpleasant alkaline taste. It absorbs carbonic acid rapidly from the atmosphere, so that, if it be not carefully preserved, the whole of the lime is soon precipitated in the form of carbonate. It is given internally as an antacid, in doses of from two ounces to six, in cardialgia, diarrhœa, &c. Mixed with olive oil, it forms the celebrated application to burns, known under the name of *Carron oil.*

Calcis murias. See *Calcis chloridum.*

Calcis muriatis liquor. See *Calcis chloridi liquor.*

Calcis os. *Calcar. Calcaneum. Pterna.* The largest bone of the tarsus, which forms the heel. It is situated posteriorly under the astragalus. It is divided into a body and processes. It has a large *tuberosity*, or knob, projecting behind to form the heel. A *sinuous cavity*, as its fore-part, which, in the fresh subject, is filled with fat, and gives origin to several ligaments. Two *prominences*, at the inner and fore-part of the bone, with a pit between them, for the articulation of the under and fore-part of the astragalus. A *depression*, in the external surface of the bone near its fore-part, where the tendon of the peronæus longus runs. A large *cavity*, at the inner side of the bone, for lodging the long flexors of the toes, together with the vessels and nerves of the sole. There are two *prominences*, at the under and back part of this bone, that give origin to the aponeurosis, and several muscles of the sole. The anterior surface of the os calcis is concave, for its articulation with the os cuboides, and it is articulated to the astragalus by ligaments.

Calcis vivi flores. The pellicle on the surface of lime-water.

Calcitari. Alkaline salt.

Calcitea. Vitriol.

Calciteosa. Litharge.

Calcithos. Verdigris.

Calcitra'pa. (*a, æ.* f.; an old botanical term of similar meaning to *tribulus.* See *Centaurea calcitrapa.*

Calcitrapa officinalis. See *Centaurea.*

Calcitrea. Vitriol.

CA'LCIUM. (*um, i.* n.; from *calx*, of which it is the basis.) The metallic basis of lime. There is only one known combination of calcium and oxygen, which is the substance called lime.

Calcoi'dea ossi'cula. The three cuneiform bones of the tarsus are so called by Fallopius.

Calcokeumenos. Oxide of copper. — *Ruland.*

Cal'cotar. Vitriol.

Calculi'fragus. (From *calculus*, a stone, and *frango*, to break.) Having the power of breaking stone in the bladder. 1. Applied to medicines which are supposed to have this power. See *Lithontriptic.*

2. The name of an instrument which is introduced into the bladder to break down calculi. See *Lithotrity.*

3. The scolopendrium, and pimpernel.

Calculosus. Afflicted with the stone.

CA'LCULUS. (*us, i.* m. The Latin for a pebble.) In pathology this term is applied to morbid concretions of a hard or stony consistence, which form in different cavities and other parts of the body.

Calculus, arthritic. Gouty concretions; chalk-stones. See *Podagra*.

Calculus, articular. See *Concretions, articular.*

Calculus, biliary. *Chololithus. Calculus biliosus. Biliary concretion.* Gall-stone. Biliary calculi are of common occurrence, and usually consist of the substance called *cholesterine*, blended with various proportions of colouring matter, inspissated bile, albumen, &c., which occasion considerable variety in their colour, texture, and other physical properties. Four kinds of biliary concretions have been particularly observed.

1. One kind is of a white colour, sometimes a little yellowish or greenish. When broken, it is found to consist of crystalline plates, or striæ, of a shining appearance, and unctuous to the touch. It is lighter than water, insoluble in water; but readily soluble in hot alkohol and in oil of turpentine. When melted, it has the appearance of oil, and exhales the smell of melted wax; when suddenly heated, it evaporates altogether in a thick smoke. It is soluble in pure alkalis, and the solution has all the properties of a soap. Nitric acid also dissolves it; but it is precipitated unaltered by water. The lamellated portion of this calculus consists of cholesterine, occasionally pure, but more frequently with some admixture of inspissated bile. The nucleus around which the lamellated matter is arranged, consists usually of inspissated bile. These whitish calculi are by far the most frequent.

2. Another kind is of a round or polygonal shape, often of a grey colour externally, and brown within. It exhibits concentric layers, which appear to consist of inspissated bile; and there is generally a central nucleus of the white crystalline matter or cholesterine. A number of calculi of this species are generally found together; indeed the gall-bladder is sometimes nearly filled with them. Calculi of this kind are often light and friable, and of a brownish-red colour. The gall-stones of oxen, used by painters, belong to this species.

3. A third kind is of a deep brown, or green colour. Its texture is made up of crystals of cholesterine, intermixed with inspissated bile. The three kinds of biliary concretions above described are soluble in alkalis, in soap ley, in alkohol, and in oils.

4. There appears to be a fourth species of gall-stone, concerning which very little is known with accuracy. Dr. Saunders tells us, that he has met with gall-stones insoluble both in alkohol and oil of turpentine; some of which do not inflame, but become red, and consume to ashes like charcoal. Haller cites several examples of similar calculi. Gall-stones often occur in the inferior animals, particularly in cows and hogs; but the biliary concretions of these animals have not hitherto been examined with much attention.

Gall-stones often exist without occasioning pain, or any disagreeable symptoms, so that their presence is not detected till after death. In Dr. Baillie's Morbid Anatomy, there is an example of a concretion of the size of a pullet's egg, which filled up the whole of the fundus of the gall-bladder, and never caused any inconvenience. A gall-stone weighing two drachms was found in the gall-bladder of the late Lord Bute, though he had never complained of the jaundice, nor of any disorder which Dr. Heberden could attribute to that cause: and the gall-bladder has been found, in several instances, filled with large gall-stones, from which no inconvenience ever resulted. Where, however, they become impacted in their passage through the gall-ducts, they obstruct the flow of bile into the intestines, thereby causing jaundice; and they sometimes occasion excruciating pain. See *Icterus*.

Calculi of the ears. The masses of indurated wax which frequently block up the auditory meatus, and cause deafness, have been dignified by some with the name of calculi.

Calculus intestinal. See *Enterolithus*.

Calculi lachrymal. Concretions sometimes form in the lachrymal passages, where they cause abscesses and fistulæ. They have not been analysed.

Calculus pancreatic. Some have supposed that certain transparent calculi, which have been vomited or passed by stool, were formed in the pancreas; but there seems no good reason for any such belief.

Calculi of the pineal gland. Morbid concretions have been found on dissection in the pineal gland, the presence of which was not indicated during life by any particular symptoms. They consist of phosphate of lime, like the gritty matter naturally found in the part.

Calculi of the prostate gland. Stony concretions are sometimes found in the substance of the prostate gland, and occasion the same evil as any other enlargement of the part. They generally consist of phosphate of lime.

Calculus, pulmonary. Concretions, formed of carbonate of lime and a little animal matter, are sometimes expectorated in great number during life, or found in the substance of the lungs, or ramifications of the bronchi, after death. In most cases in which this occurs, it is an accompaniment of tubercular phthisis; but there are cases on record in which an expectoration of chalky concretions has taken place from time to time during a number of years, unconnected with any bad symptoms, and without injury to the general health of the patient. The presence of such concretions is supposed, by M. Bayle, to give rise to a form of phthisis which he calls *Phthisie calculeuse*. On this subject M. Andral arrives at the following conclusions: —

"1. That the expectoration of a larger or smaller number of calculi is frequently, but not constantly, connected with pulmonary tubercles.

"2. That the serious symptoms which precede, accompany, or follow the expectoration of such calculi, depend much less on the presence of these in the pulmonary parenchyma than on the simultaneous existence of tubercles. We know of but very few cases where the symptoms of phthisis have been consecutive on simple calculi of the lungs. Bayle has only cited a single

example in the thirty-third observation of his work; and even to this it may be objected, that the 'slightly humid cretaceous matter' which surrounded the calculi disseminated through the pulmonary parenchyma, had been originally true tuberculous matter; a conclusion which Bayle has not drawn, but which would result from the aggregate of the facts that we have already cited. The calculous phthisis of Bayle is then, at any rate, a very rare disease: we admit the possibility of its occurrence, but we know not of any positive facts which demonstrate its existence.

"3. A certain number of calculous concretions may have their origin in the different ramifications of the bronchial tree. After death this origin may be demonstrated by anatomical inspection, and during life it may be presumed, if no symptom of pulmonary phthisis is observed after the expectoration of the calculi.

"4. Finally, in all cases of calculous expectoration, the prognosis must vary according to the constitution of the patient, the antecedent circumstances, and the nature of the symptoms which present themselves during and after the expulsion of the calculi."

Calculi, salivary. Concretions which are sometimes found in the substance of the salivary glands, or in their ducts. They generally consist of phosphate of lime and animal matter.

Calculi, spermatic. Calculi have occasionally been detected after death in the vesiculæ seminales. Their composition is not known.

Calculi, urinary. Calculi formed by a morbid deposition from the urine may be found in the kidney, ureter, bladder, or urethra. Whatever be their position they are always formed in the kidney or bladder: they are therefore *renal* or *vesical*.

1. *Renal calculi.* When calculous matter is separated in the kidneys, it assumes the form, either of fine sand, which passes off without causing any severe symptoms, and is deposited after the excreted urine has been some time at rest, or of distinct calculi, varying in size, but large enough to occasion very distressing pain in their passage through the urinary canals. Both these varieties are in popular language called the *gravel;* and the severe symptoms arising from the passage of renal calculi through the ureters is styled a *fit of the gravel.*

For the sake of perspicuity it will be best to designate mere sabulous deposits as *urinary sand,* and distinct concretions as *renal calculi.*

a. Urinary sand is of two kinds: *white* and *red.* The white consists of phosphate of lime, or of the ammonio-magnesian phosphate, or of a mixture of the two. The red consists of uric acid. Both of these morbid states of the urine are usually connected with disorder of the digestive organs; and those general therapeutical means which are adapted to the removal of such disorder, are beneficial in both. With a view to correct the state of the urinary secretion, on which the sabulous deposit more immediately depends, alkalis are given where the uric acid predominates, and the mineral acids where the deposit consists of the phosphates. In the latter case the muriatic acid is generally found most useful.

b. Renal calculi. These, sometimes, exist for a long time, and remain stationary in the kidney, where they may attain a considerable magnitude without giving rise to any symptoms which lead to a suspicion of their presence; or they may excite chronic inflammation and suppuration of the kidney, with bloody urine and hectic fever, which finally destroys the patient. More generally, however, they descend along the ureter, and give rise to the painful affection commonly called a fit of the gravel. The descent of a renal calculus is usually attended with pain in the loins, shooting down through the pelvis to the inside of the thighs, retraction of the testicle, and numbness of the leg of the affected side, shivering, faintness, nausea, and vomiting. In ordinary cases the calculus soon reaches the bladder, and the distressing symptoms cease for the time. It is then either voided through the urethra, with more or less pain and difficulty, or it remains in the bladder and becomes the nucleus of a vesical calculus. If the calculus become firmly impacted in the ureter, inflammation of the kidney supervenes, or a fatal suppression of the urinary secretion, which may take place in both kidneys, though there be a calculus in only one of the ureters; or the case may terminate fatally in a more gradual manner, by inflammation and ulceration of the ureter and extravasation of urine. In a few cases an abscess has formed in the ureter, and discharged itself by a fistulous opening in the lumbar region, or in the groin, through which the urine also finds an outlet. These formidable consequences are, however, comparatively rare; the calculus generally finds its way through the ureter; and, even where it is so large as to be for some time impacted, the dilatability of this canal is so great that it frequently adapts itself at length to the size of the calculus, and, after much suffering and danger, the patient is relieved by the passage of the calculus into the bladder. The composition of renal calculi will be stated under the head of vesical calculi, since urinary calculi in general have the same composition, and are, in effect, generally derived from the same source, namely the kidney. The treatment, while a calculus is passing down the ureter, should consist in the use of the warm bath, which is of great service by its relaxing and antispasmodic effect; blood-letting, if necessary to obviate inflammation, and opiates to allay pain.

The constitutional disposition to the formation of renal calculi is to be obviated by the means applicable to calculous disorders in general. These will be noticed at the conclusion of the present article.

2. *Vesical calculus.* A vesical calculus, or stone in the bladder, may arise from a renal calculus having passed into the bladder, and there increased in size by successive deposition upon its surface; or it may be originally formed in the bladder itself; or a foreign body, which has accidentally got into the bladder, may form a nucleus around which calculous matter is deposited: it appears, however, that calculi found

n the bladder have generally their origin in the idney. The composition of urinary calculi is ery diversified. The calculi hitherto observed onsist of,

1. Uric or lithic acid.
2. Urate of ammonia.
3. Phosphate of lime.
4. Ammonio-magnesian phosphate.
5. Oxalate of lime.
6. Cystic oxide.
7. Carbonate of lime.
8. Silica.
9. The alternating calculus, consisting of alternate layers of the matters composing those already enumerated.

The following account of the chemical nature of urinary calculi is taken from Mr. Brande's "Manual of Chemistry:"

The first five of the foregoing substances are of most frequent occurrence, but their relative frequency varies in different countries and districts. Dr. Yelloly, in a paper on the "Tendency to Calculous Diseases" (*Phil. Trans.* 1829), has given the following view of the different descriptions of calculi contained in the collection belonging to the Norwich hospital: from this table it will be seen that about one-half of the specimens are composed of one description of material only; and that the remainder consist of alternating layers, more or less numerous, of most of the substances of which human urinary calculi are composed:

Calculi consisting principally of one deposit.

Lithic acid	81
Lithate of ammonia	20
Oxalate of lime	20
Phosphate of lime	4
Fusible calculus, or mixed phosphates; that is to say, calculi composed of the triple, or ammoniaco-magnesian phosphate, mixed with phosphate of lime	37

Calculi consisting of two deposits.

Lithic acid and lithate of ammonia	37
oxalate of lime	11
mixed phosphates	10
phosphate of lime	2
Lithate of ammonia and lithic acid	2
oxalate of lime	25
mixed phosphates	14
phosphate of lime	1
Oxalate of lime and lithic acid	10
lithate of ammonia	1
mixed phosphates	15
phosphate of lime	3
Mixed phosphates and phosphate of lime	2

Calculi consisting of three deposits.

Lithic acid, phosphate of lime, and mixed phosphates	2
oxalate of lime and phosphate of lime	1
oxalate of lime, and lithate of ammonia	2
oxalate of lime, and lithic acid	4
lithate of ammonia, and oxalate of lime	2
oxalate of lime, and mixed phosphates	1
Lithate of ammonia, oxalate of lime, and mixed phosphates	3
oxalate of lime, and lithic acid	8
phosphate of lime and lithate of ammonia	1
lithic acid and mixed phosphates	2
Oxalate of lime, lithic acid, and lithate of ammonia	1
lithic acid, and oxalate of lime	1
lithic acid, and mixed phosphates	2

Calculi consisting of four or more deposits.

Lithate of ammonia, oxalate of lime, lithic acid, and mixed phosphates	1
Oxalate of lime, lithic acid, oxalate of lime, and mixed phosphates	1
Lithate of ammonia, oxalate of lime, phosphate of lime, oxalate of lime, and lithate of ammonia	1
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1. *Calculi composed of uric acid,* are of a brown or fawn-colour; and, when cut through, appear of a more or less distinctly laminated texture. Their surface is generally smooth, or nearly so, being sometimes slightly tuberculated. Before the blowpipe, this calculus blackens, and gives out a peculiar ammoniacal odour, leaving a minute portion of white ash: it is soluble in solution of pure potassa, and, heated with a little nitric acid, affords the fine pink compound above mentioned.

2. *Urate of ammonia* forms calculi, the surface of which is sometimes smooth, sometimes tuberculated; they are made up of concentric layers, and the fracture is fine earthy, resembling that of compact limestone; they are generally of a small size, and rather uncommon, though urate of ammonia often occurs mixed with uric acid. They usually decrepitate before the blowpipe, are more soluble than the uric calculus, evolve ammonia when heated with solution of potassa, and are readily soluble in the alkaline carbonates, which pure uric acid is not.

3. *Phosphate of lime calculus* is of a pale brown or grey colour, smooth, and made up of regular and easily separable laminæ. It is soluble in muriatic acid, and precipitated by pure ammonia, and does not fuse before the blowpipe. *Calculi from the prostate gland* are frequently composed of phosphate of lime.

4. *Ammonio-magnesian*, or *triple calculus*, is generally white, or pale grey, and the surface often presents minute crystals; its texture is generally compact, and often somewhat hard and translucent; heated by the blowpipe, it exhales ammonia, and leaves phosphate of magnesia. It is more easily soluble than the preceding; and oxalate of ammonia forms no precipitate in its muriatic solution.

It frequently happens that calculi consist of a mixture of the two last-mentioned substances, in which case they fuse before the blowpipe, and are hence termed *fusible calculi*. They are

white, or nearly so, and softer than the separate substances, often resembling chalk in appearance. They are easily soluble in muriatic acid, and if oxalate of ammonia be added to their solution, the lime is precipitated in the state of oxalate.

5. *Oxalate of lime* forms calculi, the exterior colour of which is generally dark brown, or reddish; they are commonly rough or tuberculated upon the surface, and have hence been called *mulberry calculi*. Before the blowpipe, they blacken and swell, leaving a white infusible residue, which is easily recognised as quicklime. Small oxalate of lime calculi are, however, sometimes perfectly smooth upon the surface, and somewhat resemble a hempseed in appearance.

6. *Cystic oxide* is a peculiar animal substance; the calculi composed of it, which are rare, are in appearance most like those of the ammoniomagnesian phosphate. They are soft, and when burned by the blowpipe, exhale a peculiar fœtid odour. They are soluble in nitric, sulphuric, muriatic, phosphoric, and oxalic acids, and also in alkaline solutions. Cystic oxide forms crystallisable compounds with nitric, muriatic, and oxalic acids. With sulphuric acid it forms a viscid, colourless, and uncrystallisable compound. Its component parts, according to Prout, are carbon 29·9, hydrogen 5·1, oxygen 53·1, nitrogen 29·9. A specimen from a dog, analysed by Lassaigne (*Ann. de Chim. et Phys.* xxiii. 329.), yielded carbon 36·2, nitrogen 34·0, oxygen 17·0, hydrogen 12·8; it is probable, therefore, that the latter was a different substance.

7. Dr. Prout, and Mr. Smith of Bristol (*Medico. Chir. Trans.* xi. 14.), have described calculi composed almost entirely of *carbonate of lime*; but this species is exceedingly rare, and among several hundred calculi which Mr. Brande has examined, he never met with it from the human bladder. Carbonate of lime calculi are small, white, and friable. He has seen many beautiful specimens of carbonate of lime calculus from other animals, and especially from the horse. He has also observed very small and perfectly spherical concretions, composed of carbonate of lime and animal matter, voided in a case in which they apparently came from the prostate gland. In the case of this calculus cited by Mr. Smith, several small ones were voided, and three large calculi of similar composition were removed by operation.

8. *Silica*, as an ingredient in urinary sand and in some calculi, is very rare. It would appear from the statement of Mr. Venables (*Quart. Jour. N. S.*, December, 1829), that it most commonly is voided in the form of sand. Several supposed cases of siliceous sand have been traced to imposture. Mr. Brande, however, has seen, in the possession of Dr. Yelloly, an unequivocal specimen of siliciferous calculus; it was taken from a boy by an operation, and consisted chiefly of oxalate of lime, having small cavities in its interior, lined with an apparently chalcedonic crust, which, on examination, proved to be silica.

A stone may exist in the bladder without causing much inconvenience, provided it be small, smooth, and of a rounded figure; but if it be large, rough, or of an angular figure, it is always productive of severe suffering. The degree of pain will, however, vary greatly according to the state of the bladder and the quality of the urine: if the bladder be inflamed or irritable, or if the urine, by the predominance of an acid or alkali in its constitution, become too stimulating, the irritation of a stone in the bladder will be more severely felt.

The general symptoms indicative of a stone in the bladder are the following. A painful itching is felt along the penis, especially at the extremity of the glans; there are frequent calls to pass the urine, and difficulty of retaining it, with a disposition to void the fæces at the same time; micturition is painful, and the stream of urine is liable to be suddenly arrested before the bladder is empty, so that the urine is expelled by fits, and the pain is greatest immediately after its evacuation; there is a dull pain and sense of weight about the neck of the bladder; the urine is mixed with a large quantity of mucus, and frequently tinged with blood, especially after exercise. All the symptoms of stone are aggravated to an intolerable degree by the motion of a carriage, or exercise on horseback. At an advanced stage of the disease the bladder becomes inflamed, and its mucous coat suppurates; the ureters and kidneys participate in the diseased action; large quantities of blood and pus are passed with the urine; the patient becomes emaciated, and finally dies, worn out by pain and hectic fever.

The symptoms attendant on enlargement of the prostate gland in some respects resemble those of stone, but the pain arising from calculus in the bladder generally comes on only in paroxysms, while that from a diseased prostate is constant; it is, moreover, less acute, and is not aggravated, like that from stone, by riding in a coach or on horseback. Some other diseases, as inflammation and spasmodic states of the bladder, sometimes occasion symptoms closely resembling those of stone; and surgeons are generally agreed that the presence of a calculus in the bladder can never be positively inferred from the symptoms, and can only be distinctly ascertained by the operation of *sounding*.

For the details of this, as well as for a description of those cases in which the calculus becomes *encysted*, or enclosed in a pouch, prolonged from the bladder, thus occasioning a cessation of the symptoms for a variable length of time, and getting out of the reach of the sound, so as to render this mode of exploration unavailable, we must refer the reader to the treatises on practical surgery.

The *causes* of urinary calculus are exceedingly obscure; some remarkable circumstances have, however, been observed in connexion with their formation.

Calculus is more common in temperate than in warm or very cold climates. It occurs more frequently in early life than in old age, but more frequently in either than during the middle period of life. Persons of sedentary

habits are more liable to it than those of active habits. Luxurious persons are more obnoxious to it than those who are temperate, yet it frequently occurs also in the latter; and insufficient nutrition seems rather to conduce to it, for it is rather common among the ill-fed children of our manufacturing districts. The disposition to gravel and urinary calculi is intimately connected with the gouty diathesis, and, like the latter, appears to be hereditary. Sea-faring people are very seldom subject to calculous complaints, and soldiers also appear to be very free of them. Women are much less subject to stone than men, which appears partly to arise from a smaller disposition to the formation of calculous matter, and partly from the facility afforded for the exit of small calculi by the structure of the female urethra. Injuries of the spine and kidneys have been observed to give a disposition to calculus, and especially to that form of it which arises from a deposition of the *phosphates*. Strictures of the urethra, and enlargement of the prostate gland favour the formation of calculi, both by occasioning disorder in the whole urinary system, and causing a portion of the urine to become long stagnant in the bladder by the obstacles they oppose to its complete evacuation. Local causes operate very powerfully in producing the calculous diathesis; thus it is well known that more cases of stone occur in Norfolk than any where else in Great Britain, and it is equally well known that the disease is hardly ever seen in Herefordshire.

Of the nature of the causes which determine the frequency of calculous complaints in particular localities, we may be said to be entirely ignorant. Hard waters have long been blamed for producing stone; but there is no sufficient evidence in support of this opinion. Cider and acid wines have also incurred censure; but how little the former has to do with the matter, may be estimated from the fact that in Herefordshire, where the disease is nearly unknown, cider is the principal drink of the people. The frequency of calculous complaints in Norfolk has been ascribed to a kind of hard-boiled greasy dumplings which are much eaten there: no doubt all indigestible articles of diet may conduce to the formation of the calculous diathesis; but why these dumplings in particular?

When a stone in the bladder has become too large to pass through the urethra, it can only be got rid of with certainty by a surgical operation, which consists according to circumstances in *lithotomy*, that is, the extraction of the stone through an incision made into the bladder, or *lithotrity*, that is the comminution of the calculus within the bladder, so that its fragments may be discharged through the urethra. See *Lithotomy* and *Lithotrity*.

Certain means have long been in use for the purpose of dissolving the stone, and rendering an operation unnecessary. Several medicines of this kind have owed more to public credulity, than to their own efficacy. The most celebrated nostrum of this kind, was Mrs. Stevens's alkaline solvent, for the secret of which five thousand pounds was given by Parliament. It consisted at first of calcined egg-shells alone, but the inventor afterwards added to it incinerated snails, decoction of chamomile flowers, parsley, sweet fennel, and burdock. It is now quite laid aside. There are, however, many cases on record in which the judicious use of alkalis appears to have had a marked effect on uric acid calculi. It was proposed by Fourcroy to attempt the solution of stones in the bladder by the injection of appropriate fluids. It appears, from the trials which have been made at different times, that alkaline injections of sufficient strength to answer the purpose are too irritating for the bladder to bear; but Sir B. Brodie has succeeded in dissolving some deposits of phosphate and carbonate of lime by nitric acid, highly diluted, sent in a stream through the bladder by means of a double catheter of pure gold.

Admitting, which we may very fairly do, that a stone of a certain size is, generally speaking, only to be got rid of by the aid of surgery, it becomes of great importance to obviate if possible the calculous diathesis, and prevent any new deposition from taking place. There are certain indications of cure common to calculous complaints in general. There is more or less derangement of the digestive functions in all; and hence a particular attention to diet and regimen, and the use of vegetable bitters and astringents, are serviceable in most cases. Among the bitters the *Uva ursi* and *Pareira brava* are especially recommended. In the treatment of the several varieties of calculus, chemistry comes powerfully to our aid. In the cases which depend on an *acid diathesis*, namely, those in which the calculus is composed of uric acid, of oxalate of lime, or of cystic oxide, the general principle is to obviate the acid tendency by alkaline medicines. There are, however, many exceptions to this rule. In cases where lithic acid is predominant, it has frequently been found most beneficial to promote a copious discharge of that acid by means of turpentine and other medicines which are known to have this effect. Dr. Prout has also found that the disposition to form oxalate of lime is converted by the use of muriatic acid into the common lithic diathesis; he has made similar observations with respect to the cystic oxide, and hence in these cases he recommends the use of muriatic acid where it is not contra-indicated by an irritable state of the bladder.

Where the *alkaline* or *phosphatic* diathesis prevails, the mineral acids are indicated; their effect, however, is by no means so striking as that of alkalis in the acid diathesis; indeed it is supposed by many, and probably with good reason, that the benefit derived from them is chiefly referrible to the tonic effects on the digestive organs. The muriatic acid has been found most generally useful.

Where the calculous diathesis is connected with gout, the treatment must of course be influenced by this circumstance; and where it appears to have arisen from injury of the spine or kidney, counter irritation by setons or issues is rationally indicated.

In the actual paroxysm of stone in the bladder the suffering is dreadfully severe, and generally admits of no effectual relief; it may, however,

be considerably palliated by the use of the warm hip-bath and anodyne suppositories and enemata.

Caldar. Tin.

Caldas. A small town, twelve leagues from Lisbon, where there are thermal mineral waters containing carbonic acid, sulphuretted hydrogen, carbonates and muriates of lime and magnesia, sulphates of soda and lime, sulphate of iron, silica, and alumina. The waters are drunk in cases of atonic gout, and in many chronic diseases.

CALDA'RIUM. (*Quasi calidarium*; from *calco*, to make hot.) The hot bath of the ancients. See *Balneum*.

Calde'riæ ita'licæ. Warm baths in the neighbourhood of Ferrara in Italy were formerly so called. They were much used in cases of dysuria.

Calebash. See *Cucurbita sagenaria*.

CALEFA'CIENT. (*Calefaciens*; from *calefacis*, to make warm. Substances are so called which excite a degree of warmth in the parts to which they are applied, as mustard, pepper, &c. They belong to the class of stimulants.

CALLEFA'CTION. *Calefactio* (same etymon). The act or process of heating.

CALE'NDULA. (*a. æ.* f.; *quod singulis calendis*, i. e. *mensibus, florescat*: so called because it flowers every month.) 1. The name of a genus of plants in the Linnæan system. Class, *Syngenesia*; Order, *Polygamia necessaria*.

2. The pharmacopœial name of the single marigold. See *Calendula officinalis*.

Calendula alpina. See *Arnica*.

Calendula arvensis. See *Caltha*.

Calendula officinalis. Garden marigold: called also, *Calendula sativa*, *Chrysanthemum*, *Sponsa solis*, and *Caltha vulgaris*. The flowers and leaves of this plant, *Calendula — seminibus cymbyformibus, muricatis, incurvatis omnibus*, of Linnæus, have been exhibited medicinally: the former, as aperients in uterine obstructions and feteric disorders, and as diaphoretics in exanthematous fevers; the latter as gentle aperients, and to promote the secretions in general.

Calendula palustris. See *Caltha*.

Calenturas. According to Pomet and Lemery this is a name of the *cinchona*: according to Camelli, it is the name of a tree growing in the Philippine Islands, the bark of which is very bitter and febrifuge.

CA'LENTURE. (*Calentura, æ.* f.; from *calco*, to be hot.) A form of phrenitis alleged formerly to have been common among seamen in tropical latitudes. It was attended with a delirium, in which the patient fancied the sea to be green fields, and would leap into it if not restrained. There appears to be no such disease known at present.

Cale'sium. The Indian name of a tree which grows in Malabar, the bark of which, made into an ointment with butter, cures convulsions from wounds, and heals ulcers. The juice of the bark cures aphthæ, and, taken inwardly, the dysentery. — *Ray*.

Caleza de Negro. See *Phytelephas*.

Cali. See *Kali*.

Calidum innatum. See *Calidus*.

CA'LIDUS. Warm. In the language of physiology the neuter of this adjective has been made a substantive: thus *calidum innatum*, animal or vital heat.

Calieta. A name given by Paracelsus to the yellow funguses which grow on juniper bushes.

CALI'GO. (*o, inis.* f.; a Latin word signifying dimness, darkness, cloudiness, obscurity.) In pathology this term is applied to dimness of sight or blindness, caused by the interposition of an opake body between the object and the retina: hence its species are:

1. *Caligo palpebrarum.* The obstruction to the light being in the eyelids.

2. *Caligo corneæ.* Opacities, &c.

3. *Caligo lentis.* The obstruction being in the lens or its capsule.

4. *Caligo pupillæ.* The iris being closed.

5. *Caligo humorum.* The aqueous or vitreous humours having lost their transparency.

Callecamenon. Oxide of copper.

Callena. A kind of saltpetre.

Callible'pharon. Καλλιβλεφαρον; from καλος, beautiful, and βλεφαρον, the eyelid.) A medicine for beautifying the eyelids. — *Galen*.

Callicarpa. (From καλος, beautiful, and καρπος, fruit.) A genus of plants of the Class *Tetrandria*; and Order *Monogynia*. It contains only one species *C. americana*, which grows in South Carolina and Virginia. The leaves are used in dropsy.

CALLICO'CCA. (*a, æ.* f.) The name of a genus of plants in the Linnæan system. Class *Pentandria*; Order, *Monogynia*. See *Ipecacuanha*.

Callicreas. (From καλος, good, and κρεας, meat; so named from its delicacy as food. The sweet bread. See *Pancreas*.

Callidunion. See *Chelidonium*.

Calli'gonum. (From καλος, beautiful, and γονυ, a joint; so named from its being handsomely jointed, like a cane.) The knot-grass. See *Polygonum*.

Callioma'rchus. The Gallic name of the herb coltsfoot according to Marcellus Empiricus.

Callio'nymus. The lily of the valley. See *Convallaria*.

Callipædi'a. (From καλλος, beauty, and παις, a child.) This term has been used to designate the art of generating beautiful children. In 1655 Claude Quillet published a poem, entitled *Callipedia sive de pulchræ prolis habendæ ratione*. The term, as Kühn has observed, is misapplied for it does not signify the art of begetting beautiful children, but simply the circumstance of having them.

Calliphy'llum. From καλος, beautiful, and φυλλον, a leaf. The herb spleenwort. See *Asplenium Trichomanes*.

CALLI'TRICHE. (From καλος, beautiful, and θριξ, a hair; so called because it is said to beautify the hair.) 1. The name of a genus of plants in the Linnæan system. Class, *Monandria*; Order, *Digynia*. Water starwort. Water chickweed.

2. A name given to the herb maidenhair from its resembling long beautiful hair. See *Adiantum*.

Callitrichum. See *Callitriche.*

Calonia. Καλονια. An epithet of myrrh. – *Hippocrates.*

CALLOSITY. *Callositas.* Preternatural ardness.

CALLO'SUS. Callous, indurated. Applied, — 1. In *Surgery,* to parts which are morbidly hard; as the callous edges of ulcers.

2. In *Botany,* to seeds which are hard; as those of the *Citrus medica.*

Callous. See *Callosus.*

CA'LLUS. (*us, i.* m.) 1. The flexible substance deposited between the divided ends of broken bones, in which the osseous matter by which they are permanently united is deposited. See *Fracture.*

2. A preternatural hardness of any part, specially of the skin.

Calmet. Antimony.

Caloca'tanus. A name of the wild poppy. – *Marcellus Empiricus.*

Calome'lanos turque'ti. A purgative pill formerly in use, made of calomel, sulphur, and resin of jalap. *Calomelanos* is the genitive of calomelas, but seems to have been mistaken by some for a nominative.

CALO'MELAS. (*as, ănos,* m.; from καλος, good, and μελας, black: from its virtues and colour.) This name was originally applied to the Æthiops mineral, or black sulphuret of mercury; it was afterwards very inappropriately applied to the protochloride of mercury, which is the only substance now known under the name of calomel.

Calor animalis. See *Animal temperature.*

Calor mordicans. The pungent heat of the skin in ardent fevers, which leaves an unpleasant tingling sensation on the fingers for some minutes after touching the patient.

Calor nativus. Animal, or vital heat.

CALO'RIC. (*Caloricum, i.* n.; from *calor,* heat.) The terms heat and cold are not sufficiently definite for philosophical language, because they are used to denote both a particular sensation and the cause which produces that sensation; hence the term *caloric* has been introduced to designate that cause, whatever may be its nature, on which the sensation of heat, the expansion and liquefaction of bodies, and other well known phenomena, depend.

Theories of Heat. Two opinions have long divided the philosophical world concerning the nature of caloric.

1. The one is; that the cause which produces the sensation of heat, is a real, or distinct substance, universally pervading nature, penetrating the particles or pores of all bodies, with more or less facility, and in different quantities.

This substance, if applied to our system in a greater proportion than it already contains, warms it, as we call it, or produces the sensation of heat.

2. The other theory concerning heat is; that the cause which produces that sensation is not a separate substance; but that it is merely like gravity, a property of matter; and that it consists in a specific or peculiar *motion,* or *vibration* of the particles of bodies.

The arguments in favour of the first theory have been principally deduced from the evolution and absorption of heat during chemical combinations, and the existence of calorific rays along with those of light in the solar beam: those of the latter are chiefly founded on the production or heat by friction; for it has been observed, that whatever is capable of producing motion in the particles of any mass of matter, excites heat. Count Rumford and Sir H. Davy have paid uncommon attention to this fact, and proved, that heat continues to be evolved from a body subjected to friction, so long as it is applied, and the texture or form of the body not altered.

All the effects of heat, according to this theory, depend therefore entirely on the vibratory motion of the particles of bodies. According as this is more or less intense, a higher or lower temperature is produced; and as it predominates over, is nearly equal, or inferior to the attraction of cohesion, bodies exist in the gaseous, fluid, or solid state.

Different bodies are susceptible of it in different degrees, and receive and communicate it with different celerity. From the generation, communication, and attraction of this repulsive motion, under these laws, all the phenomena ascribed to heat are explicable.

Each of these theories has been supported by the most able philosophers, and given occasion to the most important disputes in which chemists have been engaged; which has contributed, in a very particular manner, to the advancement of the science. The obscurity of the subject, however, is such, that both parties have been able to advance most plausible arguments.

Setting aside all inquiries concerning the merits of these different doctrines, we shall confine ourselves to the general effects which heat produces on different bodies. For the phenomena which heat presents, and their relation to each other, may be investigated with sufficient precision, though the materiality, or immateriality of the cause may remain undecided.

Nature of Heat. Those who consider caloric as matter, assert that it exists in two states, namely, in combination, or at liberty.

In the first state it is not sensible to our organs, nor indicated by the thermometer; it forms a constituent part of the body, but it may be brought back to the state of sensible heat. In this state it affects animals with the sensation of heat. It has, therefore, been called sensible, or free heat, or fire; and is synonymous with uncombined caloric, thermometrical caloric, caloric of temperature, interposed caloric, &c., expressions now seldom used.

From the diversity of opinion among chemists respecting the nature of caloric, several other expressions have been introduced, which it is proper to notice. For instance, by *specific heat* is understood the relative quantities of caloric contained in equal weights of different bodies at the same temperature. *Latent heat* is the expression used to denote that quantity of caloric which a body absorbs when changing its form. It is, however, more properly called *caloric of fluidity.* The disposition, or property by which different bodies contain certain quan-

tities of caloric, at any temperature, is termed their *capacity for heat*. By the expression of *absolute heat*, is understood the whole quantity of caloric which any body contains.

Methods of exciting and collecting heat. Of the different methods of exciting heat, the following are the most usual: —

1. *Percussion or Collision.* This method of producing heat is the simplest, and therefore it is generally made use of, in the common purposes of life, for obtaining fire.

When a piece of hardened steel is struck with a flint, some particles of the metal are scraped away from the mass, and so violent is the heat which follows the stroke, that it melts and vitrifies them. If the fragments of steel are caught upon paper, and viewed with a microscope, most of them will be found perfect spherules, and very highly polished. Their sphericity demonstrates that they have been in a fluid state, and the polish upon their surface shows them to be vitrified.

No heat, however, has been observed to follow the percussion of liquids, nor of the softer kind of bodies which yield to a slight impulse.

2. *Friction.* Heat may likewise be excited by mere friction. This practice is still retained in some parts of the world. The natives of New Holland are said to produce fire in this manner with great facility, and spread it in a wonderful manner. For that purpose, they take two pieces of dry wood; one is a stick about eight or nine inches long, and the other piece is flat; the stick they bring to an obtuse point at one end, and pressing it upon the other piece, they turn it very nimbly, by holding it between both hands, as we do a chocolate-mill, often shifting their hands up, and then moving down upon it, in order to increase the pressure as much as possible. By this method they get fire in a few minutes, and from the smallest spark they increase it with great speed and dexterity.

If the irons at the axis of a coach-wheel are applied to each other, without the interposition of some unctuous matter to keep them from immediate contact, they will become so hot, when the carriage runs swiftly along, as to set the wood on fire; and the forewheels, being smallest, and making most revolutions in a given time, will be most in danger.

The same will happen to mill-work, or to any other machinery.

It is no uncommon practice, in this country, for blacksmiths to use a plate of iron as an extemporaneous substitute for a tinder-box; for it may be hammered on an anvil till it becomes red hot, and will fire a brimstone match. A strong man, who strikes quick, and keeps turning the iron, so that both sides may be equally exposed to the force of the hammer, will perform this in less time than would be expected.

If, in the coldest season, one dense iron plate be laid on another, and the two be pressed together by a weight, and then rubbed upon each other by reciprocal motions, they will gradually grow so hot as, in a short time, to emit sparks, and at last become ignited.

It is not necessary that the substances should be very hard; a cord rubbed backwards and forwards swiftly against a post or a tree, will take fire.

Count Rumford and Professor Pictet have made some very ingenious and valuable experiments concerning the heat evolved by friction.

3. *Chemical Action.* To this belongs the heat produced by combustion. There are, besides this, many chemical processes wherein rapid chemical action takes place, accompanied with a development of heat, or fire, and flame.

4. *Solar Heat.* It is well known that the solar rays, when collected by a lens, into a focus, produce a strong degree of heat.

Dr. Herschel has discovered that there are rays emitted from the sun which have not the power of illuminating or producing vision; and that these are the rays which produce the heat of the solar beam.

Consequently, heat is emitted from the sun in rays, but these rays are not the same with the rays of light.

5. *The Electric Spark, and Galvanism.* The effects of electricity are too well known, in this point of view, to need any description.

Galvanism has of late become a powerful instrument for the purpose of exciting heat. Not only easily inflammable substances, such as phosphorus, sulphur, &c. have been fired, but likewise gold, silver, copper, tin, and the rest of the metals, have been burnt by means of galvanism.

General Effects of Heat. The first and most obvious effect which heat produces on bodies, is its expansive property. Experience has taught us that, at all times, when bodies become hot, they increase in bulk. The bodies experience a dilatation which is greater in proportion to the accumulation of caloric, or, in other words, to the intensity of the heat. This is a general law, which holds good as long as the bodies have suffered no change, either in their combination or in the quantity of their chemical principles.

This power, which heat possesses, consists, therefore, in a constant tendency to separate the particles of bodies. Hence philosophers consider heat as the *repulsive power* which acts upon all bodies whatever, and which is in constant opposition to the power of attraction.

The phænomena which results from these mutual actions, seems, as it were, the secret springs of nature. Heat, however, does not expand all bodies equally, and we are still ignorant of the laws which it follows.

1. *Expansion of Fluid Bodies.* Take a glass globe, with a long slender neck (called a bold head); fill it up to the neck with water, ardent spirit, or any other fluid, which may be coloured with red or black ink, in order to be more visible, and then immerse the globe of the instrument in a vessel of hot water; the included fluid will instantly begin to mount into the neck. If it be taken out of the water and brought near the fire, it will ascend more and more, in proportion as it becomes heated; but upon removing it from the source of heat, it will sink again, a clear proof that caloric dilates it, so as to make it occupy more space when hot than when cold.

These experiments may, therefore, serve as a demonstration that heat expands *fluid* bodies.

2. *Expansion of Aeriform Bodies.* — Take a bladder partly filled with air, the neck of which is closely tied, so as to prevent the inclosed air from escaping, and let it be held near a fire. The air will soon begin to occupy more space, and the bladder will become gradually distended; on continuing the expansion of the air, by increasing the heat, the bladder will burst with a loud report.

3. *Expansion of Solid Bodies.* — If we take a bar of iron, six inches long, and put it into a fire till it becomes red hot, and then measure it in this state accurately, it will be found 1-20th of an inch longer than it was before; that is about 120th part of the whole. That the metal is proportionally expanded in breadth, will be seen by trying to pass it through an aperture which it fitted exactly when cold, but which will not admit it when red hot. The bar is, therefore, increased in length and diameter.

To discover the minutest changes of expansion by heat, and the relative proportions thereof, instruments have been contrived, called *Pyrometers*, the sensibility of which is so delicate as to show an expansion of 1-100,000th of an inch.

It is owing to this expansion of metals, that the motion of time-pieces is rendered erroneous; but the ingenuity of artists has discovered methods of obviating this inaccuracy, by employing the greater expansion of one metal to counteract the expansion of another; this is effected in what is called the gridiron pendulum. Upon the same principle, a particular construction of watches has been contrived.

The expansion of metals is likewise one of the principal causes of the variation of clocks and watches in winter and summer, when they are worn in the pocket or exposed to the open air, or when they are carried into a hotter or a colder climate. For the number of the vibrations of the pendulum is always in the sub-duplicate ratio of its length, and as the length is changed by heat and cold, the times of vibration will be also changed. The quantity of alteration, when considered in a single vibration, is exceedingly small, but when they are often repeated it will be very sensible. An alteration of 1000th part in the time of a single vibration of a pendulum which beats seconds, will make a change of eighty-six whole vibrations in twenty-four hours.

As different metals expand differently with the same degree of heat; those musical instruments, whose parts are to maintain a constant true proportion, should never be strung with different metals. It is on this account that harpsichords, &c. are out of tune by a change of temperature.

Bodies which are brittle, or which want flexibility, crack or break if suddenly heated. This likewise depends upon the expansive force of heat, stretching the surface to which it is applied, while the other parts, not being equally heated, do not expand in the same ratio, and are therefore torn asunder or break. Hence thin vessels stand heat better than thick ones. The same holds, when they are suddenly cooled.

Measurement of Heat. — Upon the expansive property of heat, which we have considered before, is founded its artificial measurement. Various means have been employed to correct the erroneous judgment of the different degrees of heat formed from our sensations; for our feelings unaided, afford but very inaccurate information concerning this matter; they indicate the presence of *heat*, only when the bodies presented to them are *hotter* than the actual temperature of our organs of feeling. When those bodies are precisely of the same temperature with our body, which we make the standard of comparison, we then are not sensible of the presence of heat in them. When their temperature is less than that of our bodies, their contact gives us what is called the sensation of cold.

The effects of heat upon material bodies in general, which are easily visible to us, afford more precise and determinate indications of its intensity, than can be derived from our feelings alone. The ingenuity of the philosopher and artist has therefore furnished us with instruments for measuring the relative heat or temperature of bodies. These instruments are called *Thermometers* and *Pyrometers*. By these, all degrees of heat are measurable, from the slightest to the most intense; the higher degrees of temperature, however, cannot be measured with nearly as great exactness as the lower. See *Thermometer* and *Pyrometer*.

Exceptions to the law of Expansion by Heat. — There are a few exceptions, real or apparent, to the law of heat expanding bodies. For instance; water, when cooled down within about 7° of the freezing point, instead of contracting on the further abstraction of heat, actually expands, and ice occupies a greater space than the water of which it is formed.

Another seeming exception is manifested in alumina, or clay; others occur in the case of cast-iron, and a few other metals. Alumina contracts on being heated, and cast-iron, bismuth, &c. when fully fused, are more dense than when solid; for as soon as they become so, they decrease in density, they expand in the act of cooling, and hence the sharpness of figures upon iron which has been cast in moulds, compared to that of many other metals.

It has been generally maintained that these exceptions are only *apparent*, but not really true. It is said that when water freezes, it assumes a crystalline form, the crystals cross each other and cause numerous vacuities, and thus the ice occupies more space. The same is supposed to be the case with fused iron, bismuth, and antimony. The contraction of clay is considered owing to the loss of water, of which it loses a part at every increased degree of temperature hitherto tried; there is, therefore, a loss of matter, and a reduction of volume must follow; but others assert, that this only happens to a certain extent.

It is evident that the above explanation is quite hypothetical with respect to water previously to congelation; and, with respect to other analogous phenomena, it must be confessed that it is good only for want of a better.

Equal Distribution of Heat. — If a number of bodies of different temperatures are placed in

contact with each other, they will all at a certain time acquire a temperature which is intermediate; the caloric of the hottest body will diffuse itself among those which are heated in a less degree, till they have all acquired a certain mean temperature. Thus, if a bar of iron, which has been made red-hot, be kept in the open air, it does not retain the heat which it had received, but becomes gradually colder and colder, till it arrives at the temperature of the bodies in its neighbourhood. On the other hand, if we cool down the iron bar by keeping it for some time covered with snow, and then carry it into a warm room, it does not retain its low temperature, but becomes gradually hotter, till it acquires the temperature of the room. It is therefore obvious, that in the one instance the temperature is lowered, and in the other it is raised.

These changes of temperature occupy a longer or a shorter time, according to the nature of the body, but they always take place at last. This law itself is, indeed, familiar to every one: when we wish to heat a body, we carry it towards the fire; when we wish to cool it, we surround it by cold bodies.

Propagation of Heat. —We have seen, that when bodies of higher temperature than others are brought into contact with them, the heat is propagated from the first to the second, or the colder body deprives the warmer of its excess of heat. We shall now see that some bodies do so much more quickly than others. Through some bodies caloric passes with undiminished velocity, through others its passage is very much retarded.

This disposition of bodies, of admitting under equal circumstances the refrigeration of a heated body within a shorter or a longer time, is called *the power of conducting heat;* and a body is said to be a *better* or *worse conductor of heat*, as it allows the refrigeration to go on quicker or slower. Those bodies, therefore, which possess the property of letting heat pass with facility, are called *good conductors;* those through which it passes with difficulty are called *bad conductors;* and those through which it is supposed not to pass at all, are called *non-conductors:* thus we say, in common language, some bodies are *warm*, or capable of preserving warmth, and from this arises the great difference in the sensation excited by different bodies, when applied at the same temperature to our organs of feeling. Hence, if we immerse our hand in mercury, we feel a greater sensation of cold than when we immerse it in water; and a piece of metal appears to be much colder than a piece of wood, though their temperatures, when examined by means of the thermometer, are precisely the same.

It is probable that all solids conduct heat in some degree, though they differ very much in their conducting power. Metals are the best conductors of heat; but the conducting powers of these substances are by no means equal. Stones seem to be the next best conductors. Glass conducts heat very slowly; wood and charcoal slower; feathers, silk, wool, and hair, are still worse conductors than any substance yet mentioned.

The best conductors of electricity and galvanism are also the best conductors of heat.

Experiment. — Take a number of straight wires, of equal diameters and lengths, but of different metals; for instance, gold, silver, copper, iron, &c.; cover each of them with a thin coat of wax, and plunge their extremities into water, kept boiling. The melting of the coat of wax will show that caloric is more quickly transmitted through some metals than others.

It is on this account also, that the end of a glass rod may be kept red-hot for a long time, or even melted, without any inconvenience to the hand which holds the other extremity; though a similar metallic rod, heated in the same manner, would very soon become too hot to be held.

Liquid and Aeriform Bodies convey Heat by an actual Change in the Situation of their Particles. — Count Rumford was the first who proved that fluids in general, and aeriform bodies, convey heat on a different principle from that observed in solids. This opinion is pretty generally admitted, though various ingenious experiments have been made by different philosophers to prove the contrary. In water, for instance, the Count has proved that caloric is propagated principally in consequence of the motion which is occasioned in the particles of that fluid.

On the same principle all fluids are considered by him, strictly speaking, as *non-conductors* of caloric. They can receive it, indeed, from other substances, and can give it to other substances; but no particle can either receive it from, or give it to, another particle of the same kind. Before a fluid, therefore, can be heated or cooled, every particle must go individually to the substance from which it receives or to which it gives out caloric. Heat being, therefore, only propagated in fluids, in consequence of the internal motion of their particles, which transport the heat; the more rapid these motions are, the more rapid is the communication of heat. The cause of these motions is the change in the specific gravity of the fluid, occasioned by the change of temperature; and the rapidity is in proportion to the change of the specific gravity of the liquid by any given change of temperature. The following experiment may serve to illustrate this theory: —

Take a thin glass tube, eight or ten inches long, and about an inch in diameter. Pour into the bottom part, for about the depth of one inch, a little water coloured with Brazil wood, or litmus, and then fill up the tube with common water, extremely gently, so as to keep the two strata quite distinct from each other. Having done this, heat the bottom part of the tube over a lamp; the coloured infusion will then ascend, and gradually tinge the whole fluid. On the contrary, if the heat be applied above, the water in the upper part of the tube may be made to boil, but the colouring matter will remain at the bottom undisturbed. The heat cannot act downwards to make it ascend.

By thus being able to make the upper part of a fluid boil without heating the bottom part, water may be kept boiling for a considerable

ime in a glass tube over ice, without melting t.

Other experiments, illustrating the same principle, may be found in Rumford's Essays, especially the 7th; 1797.

To this indefatigable philosopher we are wholly indebted for the above facts: he was he first who taught us that air and water were nearly non-conductors. The results of his experiments, which are contained in the above Essay, are highly interesting; they also show hat the conducting power of fluids is impaired by the admixture of fibrous and glutinous matter.

Count Rumford proved that ice melted more han 80 times slower, when boiling-hot water tood on its surface, than when the ice was placed to swim on the surface of the hot water. Other experiments showed that water, only 3° of Fahrenheit above the freezing point, or at the temperature of 40°, melts as much ice, n any given time, as an equal volume of that luid at any higher temperature, provided the vater stands on the surface of the ice. Water t the temperature of 41°, is found to melt more ce, when standing on its surface, than boiling vater. It appears, however, that liquids are ot, as he supposes, complete non-conductors f caloric: because if heat be applied at top, it s capable of making its way downwards, through vater for example, though very imperfectly and lowly.

It becomes further evident, from the Count's ngenious experiments, that of the different ubstances used in clothing, hares' fur and eiderown are the warmest; next to these, beavers' ur, raw silk, sheep's wool, cotton wool, and, astly, lint, or the scrapings of fine linen. In ur, the air interposed among its particles is so ngaged as not to be driven away by the heat ommunicated thereto by the animal body; not eing easily displaced, it becomes a barrier to efend the animal body from the external cold. ence it is obvious, that those skins are warmest which have the finest, longest, and thickest ur; and that the furs of the beaver, otter, nd other like quadrupeds, which live much in he water, and the feathers of water-fowl, are apable of confining the heat of those animals n winter, notwithstanding the coldness of the vater which they frequent. Bears, and various ther animals, inhabitants of cold climates, which do not often take the water, have their ur much thicker on their backs than on their ellies.

The snow which covers the surface of the arth in winter, in high latitudes, is doubtless esigned as a garment to defend it against the iercing winds from the polar regions, which revail during the cold season.

Without dwelling farther upon the philosophy f this truth, we must briefly remark that the appy application of this law satisfactorily elucidates some of the most interesting facts of the conomy of nature.

Theory of Caloric of Fluidity, or Latent Heat.— There are some bodies which, when submitted o the action of caloric, dilate to such a degree, nd the power of aggregation subsisting among their particles is so much destroyed, and removed to such a distance by the interposition of caloric, that they slide over each other in every direction, and therefore appear in a fluid state. This phenomenon is called *fusion*. Bodies thus rendered fluid by means of caloric, are said to be *fused*, or *melted*; and those that are subject to it, are called *fusible*.

The greater number of solid bodies may, by the application of heat, be converted into fluids. Thus metals may be fused; sulphur, resin, phosphorus, may be melted; ice may be converted into water, &c.

Those bodies which cannot be rendered fluid by any degree of heat hitherto known, are called *infusible*.

If the effects of heat, under certain circumstances, be carried still further than is necessary to render bodies fluid, vaporisation begins; the bodies then become converted into the vaporous or *gaseous state*. Vaporisation, however, does not always require a previous fusion. Some bodies are capable of being converted into the vaporous state without previously becoming fluid, and others cannot be volatilised at any temperature hitherto known: the latter are termed *fixed*.

Fluidity is therefore by no means essential to any species of matter, but always depends on the presence of a quantity of caloric. Solidity is the natural state of all bodies, and there can be no doubt that every fluid is capable of being rendered solid by a due reduction of temperature; and every solid may be fused by the agency of caloric, if the latter does not decompose them at a temperature inferior to that which would be necessary for their fusion.

Dr. Black was the first who proved that, whenever caloric combines with a solid body, the body becomes heated only, until it is rendered fluid; and that, while it is acquiring the fluid state, its temperature remains stationary, though caloric is continued to be added to it. The same is the case when fluids are converted into the aeriform or vaporous state.

From these facts, the laws of *latent heat* have been inferred. The theory may be illustrated by means of the following experiments: —

If a lump of ice, at a low temperature, suppose at 22°, be brought into a warm room, it will become gradually less cold, as may be discovered by means of the thermometer. After a very short time, it will reach the temperature of 32° (the freezing point); but there it stops. The ice then begins to melt; but the process goes on very slowly. During the whole of that time its temperature continues at 32°; and as it is constantly surrounded by warm air, we have reason to believe that caloric is constantly entering into it; yet it does not become hotter till it is changed into water. Ice, therefore, is converted into water by a quantity of caloric uniting with it.

It has been found by calculation, that ice in melting absorbs 140° of caloric, the temperature of the water produced still remaining at 32°.

This fact may be proved in a direct manner.

Take one pound of ice, at 32°, reduced to a coarse powder; put it into a wooden bowl, and

pour over it one pound of water, heated to 172°; all the ice will become melted, and the temperature of the whole fluid, if examined by a thermometer, will be 32°: 140° of caloric are therefore lost, and it is this quantity which was requisite to convert the ice into water. This experiment succeeds better, if, instead of ice, fresh-fallen snow be employed.

This caloric has been called *latent caloric*, because its presence is not measurable by the thermometer: also, more properly, caloric of fluidity.

Dr. Black has also ascertained by experiment, that the fluidity of melted wax, tallow, spermaceti, metals, &c. is owing to the same cause; and Landriani proved, that this is the case with sulphur, alum, nitrate of potash, &c.

It is therefore to be considered as a general law, that whenever a solid is converted into a fluid, it combines with caloric, and that is the cause of fluidity.

Conversion of Solids and Fluids into the Aeriform or Gaseous state. — We have seen before, that, in order to render solids fluid, a certain quantity of caloric is necessary, which combines with the body, and therefore cannot be measured by the thermometer: we shall now endeavour to prove, that the same holds good in respect to the conversion of solids or fluids into the vaporous or gaseous state.

Take a small quantity of carbonate of ammonia; introduce it into a retort, the neck of which is directed under a cylinder filled with mercury, and inverted in a basin of the same fluid. On applying heat to the body of the retort, the carbonate of ammonia will be volatilised, it will expel the mercury out of the cylinder, and become an invisible gas, and would remain so if its temperature was not lowered.

The same is the case with benzoic acid, camphire, and various other substances.

All fluids may, by the application of heat, be converted into an aeriform elastic state.

When we consider water in a boiling state, we find that this fluid, when examined by the thermometer, is not hotter after boiling several hours, than when it began to boil, though to maintain it boiling a brisk fire must necessarily be kept up. What then, we may ask, becomes of the wasted caloric? It is not perceptible in the water, nor is it manifested by the steam; for the steam, if not compressed, upon examination is found not to be hotter than boiling water. The caloric is therefore absorbed by the steam; and although what is so absorbed is absolutely necessary for the conversion of water into the form of steam, it does not increase its temperature, and is therefore not appreciable by the thermometer.

The conclusion is further strengthened by the heat given out by steam on its being condensed by cold. This is particularly manifested in the condensation of this fluid in the process of distilling, where, upon examining the refrigeratory, it will be found that a much greater quantity of caloric is communicated to it, than could possibly have been transmitted by the caloric which was sensibly acting before the condensation. This may be easily ascertained by observing the quantity of caloric communicated to the water in the refrigeratory of a still, by any given quantity of liquid that passes over.

1. The boiling point, or the temperature at which the conversion of fluids into gases takes place, is different in different fluids, but constant in each, provided the pressure of the atmosphere be the same.

Put any quantity of sulphuric ether into a Florence flask, suspend a thermometer in it, and hold the flask over an Argand's lamp, the ether will immediately begin to boil, and the thermometer will indicate 98°, if the ether has been highly rectified.

If highly rectified ardent spirit is heated in a similar manner, the thermometer will rise to 176°, and there remain stationary.

If water is substituted, it will rise to 212°.

If strong nitrous acid of commerce be made use of, it will be found to boil at 248°; — sulphuric acid and linseed-oil at 600°; — mercury at 656°, &c.

2. The boiling point of fluids is raised by pressure.

Mr. Watt heated water under a strong pressure to 400°. Yet still, when the pressure was removed, only part of the water was converted into vapour, and the temperature of this vapour, as well as that of the remaining fluid, was no more than 212°. There was therefore 188° of caloric suddenly lost. This caloric was carried off by the steam. Now as only about one fifth of the water was converted into steam, that steam must contain not only its own 188°, but also the 188° lost by each of the other four parts; that is to say, it must contain 188° × 5, or about 940°. Steam, therefore, is water combined with at least 940° of caloric, the presence of which is not indicated by the thermometer.

3. When pressure is removed from the surface of bodies, their conversion into the gaseous state is greatly facilitated, or their boiling point is lowered.

In proof of this, the following experiments may serve: —

Let a small bottle be filled with highly rectified sulphuric ether, and a piece of wetted bladder be tied over its orifice around its neck. Transfer it under the receiver of an air-pump, and take away the superincumbent pressure of the air in the receiver. When the exhaustion is complete, pierce the bladder by means of a pointed sliding wire, passing through a collar of leather which covers the upper opening of the receiver. Having done this, the ether will instantly begin to boil, and become converted into an invisible gaseous fluid.

Take a small retort or Florence flask, fill it one half or less with water, and make it boil over a lamp; when kept briskly boiling for about five minutes, cork the mouth of the retort as expeditiously as possible, and remove it from the lamp. The water, on being removed from the source of heat, will keep boiling for a few minutes; and when the ebullition begins to slacken, it may be renewed by dipping the retort into cold water, or pouring cold water upon it.

The water, during boiling, becomes converted

into vapour; this vapour expels the air of the vessel, and occupies its place; on diminishing the heat, it condenses; when the retort is stopped, a partial vacuum is formed; the pressure becomes diminished, and a less degree of heat is sufficient to cause an ebullition.

For the same reason, water may be made to boil under the exhausted receiver at 94° Fahr., or even at a lower degree; alkohol at 56°; and ether at —20°.

On the conversion of fluids into gases is founded the following experiment, by which water is frozen by means of sulphuric ether: —

Take a thin glass tube, four or five inches long, and about two or three eighths of an inch in diameter; and a two-ounce bottle furnished with a capillary tube fitted to its neck. In order to make ice, pour a little water into the tube, taking care not to wet the outside, nor to leave it moist. Having done this, let a stream of sulphuric ether fall through the capillary tube upon that part of it containing the water, which by this means will be converted into ice in a few minutes; and this it will do even near a fire, or in the midst of summer.

If the glass tube, containing the water, be exposed to the brisk thorough air, or free draught of an open window, a large quantity of water may be frozen in a shorter time; and if a thin spiral wire be introduced previous to the congelation of the water, the ice will adhere to it, and may thus be drawn out conveniently.

A person might be easily frozen to death during very warm weather, by merely pouring upon his body for some time sulphuric ether, and keeping him exposed to a thorough draught of air.

The cooling or refrigeration of rooms in the summer season, by sprinkling them with water, is on the principle of evaporation.

The method of making ice artificially in the East Indies, depends on the same principle. The ice-makers at Benares dig pits in large open plains, the bottom of which they strew with sugar-canes or dried stems of maize or Indian corn. Upon this bed they place a number of unglazed pans, made of so porous an earth that the water penetrates through their whole substance. These pans are filled towards evening, in the winter season, with water that has boiled, and left in that situation till morning, when more or less ice is found in them, according to the temperature and other qualities of the air; there being more formed in dry and warm weather than in that which is cloudy, though it may be colder to the human body.

Every thing in this process is calculated to produce cold by evaporation: the beds on which the pans are placed, suffer the air to have a free passage to their bottoms; and the pans constantly oozing out water to their external surface, are cooled by the evaporation of it.

In Spain, they use a kind of earthen jars, called buxaros, which are only half-baked, the earth of which is so porous, that the outside is kept moist by the water which filters through it, and though placed in the sun, the water in the jar becomes as cold as ice.

It is a common practice in China to cool wine, or other liquors, by wrapping the bottle in a wet cloth, and hanging it up in the sun. The water in the cloth becomes converted into vapour, and thus cold is produced.

The Blacks in Senegambia have a similar method of cooling water by filling tanned leather bags with it, which they hang up in the sun; the water oozes, more or less, through the leather, so as to keep the outward surface wet, which, by its quick and continued evaporation, cools the water remarkably.

The winds on the borders of the Persian Gulf are often so scorching, that travellers are suddenly suffocated unless they cover their heads with a wet cloth; if this be too wet, they immediately feel an intolerable cold, which would prove fatal if the moisture was not speedily dissipated by the heat.

Condensation of Vapour.— If a cold vessel is brought into a warm room, particularly where many people are assembled, the outside of it will soon become covered with a sort of dew.

Before some changes of weather, the stone pavements, the walls of a house, the balustrades of staircases, and other solid objects, feel clammy and damp.

In frosty nights, when the air abroad is colder than the air within, the dampness of this air, for the same reason, settles on the glass panes of the windows, and is there frozen into curious and beautiful figures.

Thus *fogs* and *dews* take place, and in the higher regions clouds are formed from the condensed vapour. The still greater condensation produces *mists* and *rain*.

Capacity of Bodies for containing Heat.—The property which different bodies possess, of containing at the same temperature, and in equal quantities, either of mass or bulk, unequal quantities of heat, is called their capacity for heat. The capacities of bodies for heat are therefore considered as great or small, in proportion as their temperatures are either raised by the addition, or diminished by the deprivation, of equal quantities of heat, in a less or a greater degree.

In homogeneous bodies, the quantities of caloric which they contain are in the ratio of their temperature and mass: when, therefore, equal quantities of water, of oil, or of mercury, of unequal temperatures, are mingled together, the temperature of the whole will be the *arithmetical* mean between the temperatures of the two quantities that had been mixed together. It is a self-evident truth that this should be the case; for the particles of different portions of the same substance being alike, their effects must be equal. For instance: —

Mix a pound of water at 172° with a pound at 32°; half the excess of heat in the hot water will quit it to go over into the colder portion, thus the hot water will be cooled 70°, and the cold will receive 70° of temperature; therefore, 172 − 70, or 32 + 70 = 102, will give the heat of the mixture. To attain the arithmetical mean very exactly, several precautions, however, are necessary.

When heterogeneous bodies of different temperatures are mixed together, the temperature

produced is never the arithmetical mean of the two original temperatures.

In order to ascertain the comparative quantities of heat of different bodies, equal weights of them are mingled together; the experiments for this purpose being in general more easily executed than those by which they are compared from equal bulks.

Thus, if one pound of mercury, heated to 110° Fahr., be added to one pound of water of 44°, the temperature of the blended fluids will not be changed to 77°, as it would be if the surplus of heat were divided among those fluids in the proportion of their quantities. It will be found, on examination, to be only 47°.

On the contrary, if the pound of mercury be heated to 44°, and the water to 110°, then, on stirring them together, the common temperature will be 107°.

Hence, if the quicksilver loses, by this distribution, 63° of caloric, an equal weight of water gains only 3° from this loss of 63° of heat. And, on the contrary, if the water loses 3°, the mercury gains 63°.

When, instead of comparing the quantities of caloric which equal *weights* of different bodies contain, we compare the quantities contained in equal *volumes*, we still find that an obvious difference takes place. Thus it is found by experiment, that the quantity of caloric necessary to raise the temperature of a given volume of water any number of degrees, is, to that necessary to raise an equal volume of mercury, the same number of degrees as 2 to 1. This is, therefore, the proportion between the comparative quantities of caloric which these two bodies contain, estimated by their volumes; and similar differences exist with respect to every other kind of matter.

From the nature of the experiments by which the quantities of caloric which bodies contain are ascertained, it is evident that we discover merely the *comparative*, not the *absolute* quantities. Hence water has been chosen as a standard, to which other bodies may be referred; its capacity is stated as the arbitrary term of 1000, and with this the capacities of other bodies are compared.

It need not be told, that pains have been taken to estimate, on these experiments, that portion of heat which diffuses itself into the air, or into the vessel where the mercury and water are blended together. As, however, such valuations cannot be made with complete accuracy, the numbers stated above are only an approximation to truth.

Radiation of Caloric. — Caloric is thrown off, or radiates from heated bodies, in right lines, and moves through space with inconceivable velocity. Caloric in this state of radiation is termed *Radiant caloric*. It is retarded in its passage by atmospheric air, by colourless fluids, glass, and other transparent bodies.

If a glass mirror be placed before a fire, the mirror transmits the rays of light, but not the rays of heat.

If a plate of glass, talc, or a glass vessel filled with water, be suddenly interposed between the fire and the eye, the rays of light pass through it, but the rays of caloric are considerably retarded in its passage; for no heat is perceived until the interposed substance is saturated with heat, or has reached its *maximum*. It then ceases to intercept the rays of caloric, and allows them to pass as freely as the rays of light.

It has been lately shown by Dr. Herschel, that the rays of caloric are refrangible, but less so than the rays of light; and the same philosopher has also proved by experiment, that it is not only the rays of caloric emitted by the sun, which are refrangible, but likewise the rays emitted by fires, candles, heated iron, and even by hot water.

Whether the rays of caloric are differently refracted in different mediums, has not yet been ascertained. We are certain, however, that they are refracted by all transparent bodies which have been employed as burning glasses.

The rays of caloric are also reflected by polished surfaces, in the same manner as the rays of light. This was long ago noticed by Lambert, Saussure, Scheele, Pictet, and more recently by Dr. Herschel.

Professor Pictet placed two concave metallic mirrors opposite to each other, at the distance of about twelve feet. When a hot body, an iron bullet for instance, was placed in the focus of the one, and a mercurial thermometer in that of the other, a substance radiated from the bullet; it passed with incalculable velocity through the air, it was reflected from the mirrors, it became concentrated, and influenced the thermometer placed in the focus, according to the degree of its concentration.

An iron ball, two inches in diameter, heated so that it was not luminous in the dark, raised the thermometer not less than 10½° of Réaumur's scale, in six minutes.

A lighted candle occasioned a rise in the thermometer nearly the same.

A Florence flask, containing two ounces and three drachms of boiling water, raised Fahrenheit's thermometer 3°. He blackened the bulb of his thermometer, and found that it was more speedily influenced by the radiation than before, and that it arose to a greater height.

M. Pictet discovered another very singular fact; namely, the *apparent radiation of cold*. When, instead of a heated body, a Florence flask full of ice or snow is placed in the focus of one of the mirrors, the thermometer placed in the focus of the other immediately descends, and ascends again whenever the cold body is removed.

This phenomenon may be explained on the supposition, that from every body at every temperature caloric radiates, but in less quantity as the temperature is low; so that in the above experiment, the thermometer gives out more caloric by radiation, than it receives from the body in the opposite focus, and therefore its temperature is lowered. Or, as Pictet has supposed, when a number of bodies near to each other have the same temperature, there is no radiation of caloric, because in all of them it exists in a state of equal tension; but as soon as a body at an inferior temperature is introduced, the balance of tension is broken, and

A TABLE OF FREEZING MIXTURES.

Mixtures.	*Thermometer sinks.*
Muriate of ammonia - - - 5 parts Nitrate of potash - - - 5 Water - - - - - 16	From 50° to 10°.
Muriate of ammonia - - - 5 parts Nitrate of potash - - - 5 Sulphate of soda - - - 8 Water - - - - - 16	From 50° to 4°.
Sulphate of soda - - - 3 parts Diluted nitric acid - - - 2	From 50° to—3°.
Sulphate of soda - - - 8 parts Muriatic acid - - - - 5	From 50° to 0°.
Snow - - - - - 1 part Muriate of soda - - - 1	From 32° to 0°.
Snow, or pounded ice - - 12 parts Muriate of soda - - - 1	From 0° to—5°.
Snow, or pounded ice - - 12 parts Muriate of soda - - - 5 Muriate of ammonia and nitrate of potash - - - - 5	From —5° to—18°.
Snow, or pounded ice - - 12 parts Muriate of soda - - - 5 Nitrate of ammonia - - - 5	From —18° to—25°.
Snow - - - - - 3 parts Diluted nitric acid - - - 2	From 0° to —46°.
Muriate of lime - - - 3 parts Snow - - - - - 2	From 32° to—50°.
Potash - - - - - 4 parts Snow - - - - - 3	From 32° to—51°.
Snow - - - - - 8 parts Diluted sulphuric acid - - 3 Diluted nitric acid - - - 3	From —10° to—56°.
Snow - - - - - 1 part Diluted sulphuric acid - - 1	From 20° to—60°.
Muriate of lime - - - 2 parts Snow - - - - - 1	From 0° to—66°.
Muriate of lime - - - 3 parts Snow - - - - - 1	From —40° to—73°.
Diluted sulphuric acid - - 10 parts Snow - - - - - 8	From—68° to—91°.
Nitrate of ammonia - - - 1 part Water - - - - - 1	From 50° to 4°.
Nitrate of ammonia - - - 1 part Carbonate of soda - - - 1 Water - - - - 1	From 50° to—7°.
Sulphate of soda - - - 6 parts Muriate of ammonia - - - 4 Nitrate of potash - - - 2 Diluted nitric acid - - - 4	From 50° to—10°.
Sulphate of soda - - - 6 parts Nitrate of ammonia - - - 5 Diluted nitric acid - - - 4	From 50° to—14°.
Phosphate of soda - - - 9 parts Diluted nitric acid - - - 4	From 50° to—12°.
Phosphate of soda - - - 9 parts Nitrate of ammonia - - - 6 Diluted nitric acid - - - 4	From 50° to—21°.
Sulphate of soda - - - 5 parts Diluted sulphuric acid - - 4	From 50° to 3°.

caloric begins to radiate from all of them, till the temperature of that body is raised to an equality with theirs. In the above experiment, therefore, the placing the snow or ice in the focus of the mirror causes the radiation of caloric *from* the thermometer, and hence the diminution of temperature which it suffers.

These experiments have been since repeated by Dr. Young and Professor Davy, at the theatre of the Royal Institution. These gentlemen inflamed phosphorus by reflected caloric; and proved that the heat thus excited was very sensible to the organs of feeling.

It is therefore evident, that caloric is thrown off from bodies in rays, which are invisible, or incapable of exciting vision, but which are capable of exciting heat.

These invisible rays of caloric are propagated in right lines, with extreme velocity; and are capable of the laws of reflection and refraction.

The heating agency, however, is different in the different-coloured rays of the prismatic spectrum. According to Dr. Herschel's experiments, it follows inversely the order of the refrangibility of the rays of light: the least refrangible possessing it in the greatest degree.

Sir Henry Englefield has lately made a series of experiments on the same subject, from which we learn that a thermometer, having its ball blackened, rose, when placed in the *blue* ray of the prismatic spectrum, in 3′ from 55° to 56°; in the *green*, in 3′ from 54° to 58°; in the *yellow*, in 3′ from 56° to 62°; in the *full red*, in $2\frac{1}{2}$′ from 56° to 72°; in the *confines of the red*, in $2\frac{1}{2}$′ from 58° to $73\frac{1}{2}$°; and *quite out of the visible light*, in $2\frac{1}{2}$′ from 61° to 79°.

Between each of the observations, the thermometer was placed in the shade so long as to sink it below the heat to which it had risen in the preceding observation; of course, its rise above that point could only be the effect of the ray to which it was exposed. It was continued in the focus long after it had ceased to rise; therefore the heats given are the greatest effects of the several rays on the thermometer in each observation. A thermometer placed constantly in the shade near the apparatus, was found scarcely to vary during the experiments.

Sir Henry made other experiments with thermometers with naked balls, and with others whose balls were painted white, for which we refer the reader to the interesting paper of the Baronet, from which the above experiments are transcribed.

Production of Artificial Cold, by means of Frigorific Mixtures, &c. — It has been already shown that the evaporation of substances which undergo this process with great rapidity occasions a great reduction of temperature. A mixture of equal parts of sulphuric and muriatic ether will, by its evaporation, produce a degree of cold considerably below 0° of Fahrenheit's scale; the sudden restoration of liquefied gases to the elastic state, produces the greatest degree of cold hitherto known. The common means of producing artificial cold, however, is by the use of *freezing mixtures* as they are called, a table of which is appended to this article.

To produce the effects stated in the table, the salts must be reduced to powder, and contain their full quantity of water of crystallisation. The vessel in which the freezing mixture is made, should be very thin, and just large enough to hold it, and the materials should be mixed together as expeditiously as possible, taking care to stir the mixture at the same time with a rod of glass or wood.

In order to obtain the full effect, the materials ought to be first cooled to the temperature marked in *the table*, by introducing them into some of the other frigorific mixtures, and then mingling them together in a similar mixture. If, for instance, we wish to produce —46°, the snow and diluted nitric acid ought to be cooled down to 0°, by putting the vessel which contains each of them into the fifth freezing mixture in the above table, before they are mingled together. If a more intense cold be required, the materials to produce it are to be brought to the proper temperature by being previously placed in the second freezing mixture.

This process is to be continued till the required degree of cold has been procured.

CALORIMETER. An apparatus invented by Lavoisier and Laplace to measure the quantity of heat which a body gives out in cooling by the quantity of ice it melts. There are sources of fallacy which render the accuracy of the calorimeter extremely doubtful.

CA'LTHA. (*a, æ.* f.) 1. The name of a genus of plants in the Linnæan system. Class, *Polyandria*; Order, *Polygynia*. The marigold.

2. The pharmacopœial name of the wild marigold. See *Caltha arvensis.*

Caltha arvensis. *Calendula arvensis. Caltha vulgaris.* The wild marigold. The juice of this plant has been given, from one to four ounces, in jaundice, and depraved states of the fluids and solids; and the leaves have been commended as a salad for children afflicted with scrofulous humours.

Caltha palustris. *Populago.* Common single marsh marigold. It is said to be caustic and deleterious; but this is doubtful. The young buds of this plant make, when properly pickled, very good substitutes for capers.

Caltha vulgaris. See *Caltha arvensis.*

Calthula. See *Caltha.*

Caltrops. See *Trapa.*

Calumba. See *Cocculus palmatus.*

Calva. See *Calvaria.*

CALVA'RIA. (*a, æ.* f.; from *calvus*, bald.) *Calva.* 1. The skull.

2. The upper part of the head; so called because it frequently becomes bald first.

Calvata ferramenta. An old name for such surgical instruments as have a button at the end.

CALVITIES. (*es, ei.* f.; from *calvus*, bald.) *Calvitium.* Baldness; want or loss of hair, particularly upon the sinciput. See *Baldness.*

CALX. (*Calx, cis.* fœm.; from *kalah*, to burn. Arabic.) 1. Lime.

2. The residue of the combustion of any substance.

CALX. (*Calx, cis.* m.) The heel.

Calx antimonii. Oxide of antimony, as obtained by calcining the sulphuret.

Calx cum kali puro. See *Potassa cum calce.*

Calx cum potassâ. See *Potassa cum calce.*

Calx hydrargyri alba. See *Hydrargyri ammonio-chloridum.*

Calx viva. Quick-lime. The London College directs it to be prepared thus: — Take of limestone one pound: break it into small pieces, and burn it in a very strong fire for an hour. Lime may be procured by the same process from oyster-shells previously washed in boiling water, and cleared from extraneous matters.

Calyca'nthemæ. (From *calyx*, the flower-cup, and *ανθος*, the flower.) The name of an order in Linnæus's fragments of a natural method, consisting of plants which, among other characteristics, have the corolla and stamina inserted into the calyx.

Calyciflo'ræ. (From *calyx*, and *flos*, a flower.) The name of an order in Linnæus's fragments of a natural method, consisting of plants which have the stamina inserted into the calyx.

CALYCI'NUS. (From *calyx*, the flower-cup.) *Calycinalis.* Calycine: belonging to the calyx of a flower; applied to the nectary, *nectarium calycinum*, when it is a production of the calyx; as in *Tropæolum majus*, the garden nasturtium.

CALYCULA'TUS. (From *calyculus*, a small calyx.) Calyculate: having a double calyx, or several successively diminishing in size. Applied to a *perianth* when there are smaller ones, like scales, about its base; as in *Dianthus caryophyllus.*

Semina calyculata are seeds which are enclosed in a hard bone-like calyx, as those of the *Coix lachryma*, or Job's tears.

CALY'CULUS, (*us*, *i.* m.; Diminutive of *calyx.*) A little calyx.

I. The membranaceous border surrounding the apex of a seed.

The *varieties* are,

1. *Calyculus integer*, with the margin perfect, not incised; as in *Tanacetum vulgare*, and *Dipsacus laciniatus.*

2. *C. paleaceus*, with chaffy scales; as in *Helianthus annuus.*

3. *C. aristatus*, having two or three awns at the top; as in *Tagetes patula*, and *Bidens tripartita.*

4. *C. rostratus*, with the style of the germ remaining; as in *Sinapis* and *Scandix cerefolium.*

5. *C. cornutus*, horned, the rostrum bent; as in *Nigella damascena.*

6. *C. cristatus*, a dentate, or incised membrane on the top of the seed; as in *Hedysarum crista galli.*

II. A little calyx exterior to another proper one.

CALYP'TRA. (*a*, *æ.* f.; from *καλυπτω*, to cover.) I. The veil, or covering of mosses. A kind of membraneous hood placed on their capsule or fructification, like an extinguisher on a candle, well seen in *Bryum cæspitosum.* Linnæus considered it as a calyx; but other botanists, especially Schreber and Smith, regard it as a sort of corolla. It is either,

1. *Acuminate*, pointed; as in *Minium* and *Bryum.*

2. *Caducous*, falling off yearly; as in *Buxbaumia.*

3. *Conical*; as in most mosses.

4. *Smooth*, without any inequalities; as in *Splanchnum.*

5. *Oblong*; as in *Minium.*

6. *Villous*; as in *Polytrichum.*

7. *Complete*, surrounding the whole of the top of the capsule.

8. *Dimidiate*, covering only half the capsule; as in *Bryum androgynum.*

9. *Dentate*, toothed at the margin; as in *Eucalyptus ciliata.*

In many genera it is wanting.

II. The name given by Tournefort, and other botanists, to the proper exterior covering or coat of the seed, which falls off spontaneously.

CALYPTRA'TUS. (From *calyptra*, the veil, or covering of mosses.) Calyptrate: furnished with a calyptra.

CA'LYX. (*yx*, *icis.* f.; *καλυξ*; from *καλυπτω*, to cover.) I. The flower-cup. It is generally of a green colour.

There are five kinds of calyces, or flower-cups.

1. *Perianthium.*
2. *Involucrum.*
3. *Amentum.*
4. *Spatha.*
5. *Gluma.*
6. *Perichætium.*
7. *Volva.*

II. The infundibula or membranous tubes which rise round the base of the papillæ of the kidneys, and receive the urine from them are also called *calyces.* See *Kidney.*

CAMARA. (*a*, *æ.* f.; from *καμάρα*, a vault.) *Camarium.* 1. The fornix of the brain.

2. The vaulted part of the auricle of the heart.

Camandag. *Camandang.* A tree of the Philippine islands, which has not been classed botanically. It yields a milky juice, called by the natives *tague*; which is used to poison arrows.

Camarez. A small canton in the department of Aveyron. Its mineral waters are impregnated with the sulphates of soda and iron.

Camaro'ma (From *καμαρα*, a vault.) *Camarosis. Camaratio.* A fracture of the skull, where the bones present the appearance of an arch, or vault, which may happen in many ways. The older writers make several frivolous varieties of *Camaromata*, not worth detailing. They may be found in Blancard's Lexicon, art. *Camarosis.*

Cambill. Red earth. — *Ruland.*

CA'MBIUM. (*um*, *i.* n.; from *cambio*, to exchange.) 1. The nutritious humour which is changed into the materials of which the body is composed.

2. The gelatinous substance, or matter of organisation which Du Hamel and Mirbel suppose produced the young bark, and new wood of plants.

Cambine. A tree of the Molucca islands, the bark of which exudes a juice much esteemed against dysentery.

Cambo. A village in the department of the

Basses Pyrenées, where there are two mineral springs; one is an acidulous chalybeate, and the other sulphureous.

Cambo'dia. Gamboge.

CAMBO'GIA. (*a*, *æ*. f.; so called, because it comes from the province of *Cambaya*, in the East Indies.) See *Stalagmitis cambogioides* and *Garcinia Cambogia*.

Cambogia gutta. See *Stalagmitis* and *Garcinia*.

Cambogium. See *Cambogia*.

Cambro-britannica. See *Rubus Chamæmorus*.

Cambu'ca. *Cambucca membrata*. A name given by Paracelsus to a bubo in the groin, or an ulcer in the groin, or on the genitals.

Cambui. The American myrtle of Piso and Maregrave; said to be astringent.

Camel's hay. See *Andropogon*.

Camelan. *Anisum Moluccanum*. A small tree of Amboyna, the seeds of which smell like those of anise, and are used for the same purposes.

Cameli'na. (From καμηλος, a camel: so called, because camels are fond of it.) See *Myagrum*.

Came'llidæ. *Camelliceæ*. A natural family of plants, including the genera *Camellia* and *Thea*.

CA'MERA. A chamber; applied to the cavities of the eye, before and behind the iris, which contain the aqueous humour. See *Oculus*.

Cameratio. See *Camaroma*.

Cames. *Camet*. Silver.

Caminga. See *Canella alba*.

Caminus. A furnace, or its chimney.

Cami'sia fœtus. (From the Arabic word *kamisah*, an under garment.) The shirt of the fœtus. A whimsical name given to the chorion.

Ca'mmaron. By this name Pliny is thought to have designated the *Arnica scorpioïdes*.

Camomi'lla. Corrupted from *chamæmelum*.

Ca'mosiers. A canton, two leagues from Marseilles. It has springs containing carbonate of lime, sulphur, muriate of soda, &c. These waters are purgative, and are used in diseases of the skin.

CAMPA'NA. (*a*, *æ*. f.; so called because Paulinus, a bishop of Nola, in Campania, first used bells for religious purposes.) A bell. In *Chemistry*, a receptacle like a bell, for making sulphuric acid; whence the name of *oleum sulphuris per campanum*.

CAMPANA'CEÆ. Bell-shaped flowers. The name of an order in Linnæus's natural method.

Campana'ceus. (From *campana*, a bell.) Bell-shaped.

Campanifo'rmis. Bell-shaped; applied to the corolla and nectaries of plants.

CAMPA'NULA. (*a*, *æ*. f.; a diminutive of *campana*, a bell: named from its shape.) The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Monogynia*. The bell-flower.

Campanula trachelium. The great Throatwort; called also *Trachelium*, and *Cervicaria*. A decoction of the root has been recommended in cases of sore throat, relaxation of the uvula, &c.

CAMPA'NULATUS. (From *Campanula*, a little bell,) Bell-shaped: applied to many parts of plants, particularly to the corolla and nectary. See *Corolla* and *Nectarium*.

Campeachy wood. See *Hæmatoxylon Campechianum*.

CAMPE'STRIS. Of or belonging to the field: applied as a trivial name to many plants, which are common in the fields.

CAMPHIRE. The proper name of the substance now universally called *camphor*. See *Camphora*.

CA'MPHORA. (*a*, *æ*, f.; from the Arabic *cafoor*.) A peculiar substance which exists in several plants. It was long generally supposed that the camphor of commerce was the exclusive product of the *Laurus camphora*. It is now ascertained that there are two trees which yield it abundantly, viz. the *Dryobalanops camphora*, and the *Laurus camphora*.

1. The *Dryobalanops camphora* is a tall tree growing in forests in Sumatra and Borneo. It appears to be confined in each of these islands to a district extending about a degree and a half immediately north of the equator, and it is not known to occur in any other part of the world. It frequently attains the height of ninety feet, and its trunk is six or seven feet in diameter. The camphor concretes in the heart of the tree, occupying cavities a foot or a foot and a half long. The young trees contain an oily substance resembling camphor, except in not being concrete. A deep incision is made into the tree about fourteen or eighteen feet from the ground, to ascertain whether it contains camphor; and if it be found to do so, it is felled and cut into portions six feet long, which are split and the camphor extracted. The natives call the camphor *Se Tantong*. A middling-sized tree yields about eleven pounds, and a large one double that quantity. The greater part of the camphor used in Europe is derived from this source.

2. The *Laurus camphora* is a native of North America, China, and Japan. Its roots, wood, and leaves smell strongly of camphor, which is obtained by distillation from the roots and smaller branches. They are cut into chips and suspended in a net within an iron pot which is covered with water at the bottom and has an earthenware capital adapted to it. Heat is then applied, and the vapour of the water rising through the contents of the net, takes up the camphor along with it, and deposits it on rice straws placed within the capital. Camphor may be obtained from many other plants besides those above mentioned, as the cinnamon, cassia, and sassafras laurels, galangal, zedoary, ginger, thyme, rosemary, sage, elecampane, cardamom, long pepper, peppermint, &c.

The *Shorea robusta* of Hindustan is said to yield a very fine kind of camphor. Camphor was unknown to the ancients, and was introduced into Europe by the Arabians. The art of purifying crude camphor was long kept secret by the Venetians, and after them by the Dutch. As now generally practised, it consists in subliming the camphor, after it has been mixed with a twentieth of its weight of quicklime, and then fusing it. It is formed into

large round cakes two or three inches thick and generally perforated. Camphor when pure has a strong and peculiar fragrance, and a bitter pungent taste. It is white, semitransparent, unctuous to the touch, brittle, and of an irregular crystalline texture. Its specific gravity is ·9887; it therefore floats on water. It is very volatile, and looses a considerable portion of its bulk by exposure to the atmosphere. It melts at 88° Fahr.; boils at 400°; and sublimes in close vessels, crystallising in hexagonal plates. It is very inflammable, and burns with a bright flame and much smoke.

When nitric acid is distilled repeatedly in large quantities from camphor, it converts it into a peculiar acid. See *Camphoric acid.*

In its chemical constitution camphor is nearly related to the essential oils, from which it appears to differ only in containing a larger proportion of carbon. According to Thomson, it consists of carbon 6·375, hydrogen 1·250, and oxygen 1.

Camphor is not soluble in water in any perceptible degree, though it communicates its smell to that fluid. It is said, however, that a surgeon at Madrid has effected its solution in water by means of carbonic acid.

It may be powdered by moistening it with alkohol, and triturating it till dry. It may be formed into an emulsion by triturating it with near three times its weight of almonds, and afterwards gradually adding the water. Yolk of egg and mucilages are also effectual for this purpose; but sugar does not answer well.

Camphor is soluble in alkohol, ethers, and oils both fixed and volatile. Concentrated sulphuric acid decomposes camphor, giving rise to the formation of artificial tannin; diluted sulphuric or diluted nitric acid dissolves it; so do the muriatic, strong acetic, and fluoric acids.

The addition of water to the spirituous or acid solutions of camphor instantly separates it.

Alkalis have hardly any effect on camphor. Resins combine with it, forming a tenaceous mass.

Camphor, in its action on the animal economy, is stimulant, narcotic, antispasmodic, and diaphoretic. Its stimulus is very diffusible, and soon followed by a sedative effect. In cases to which it is well adapted, it renders the pulse full and soft, without quickening it much, increases the heat of the surface, moistens the skin, allays pain and spasm, soothes irritation, and induces sleep. In an over dose it causes vomiting, giddiness, delirium, and convulsions. Camphor is used as a stimulant in low fevers and other malignant diseases, and, in conjunction with bark and opium, to arrest the progress of gangrene. As an antispasmodic it is used in hysteria, epilepsy, chorea, &c. From the slight degree in which it accelerates the pulse, it may frequently be given as an anodyne in inflammatory cases where opium would be injurious; but its use must be preceded by evacuations and combined with that of diaphoretics, otherwise it is liable to excite burning heat of the surface, and to increase fever. It is by some considered as a refrigerant, and it is true that it sometimes proves so, especially when combined with nitre; but generally speaking its effect is of an opposite nature. Employed externally it is a very useful ingredient in anodyne liniments, and twenty or thirty grains of it added to a poultice, and applied to the perineum, allays chordee. It is used also in collyria, injections, &c. Camphor is alleged to possess the power of relieving the strangury caused by cantharides; this, however, is disputed by many. The dose of camphor is from gr. ij. to ℈j. When given in the solid form, it is very apt to occasion pain at the cardiac orifice of the stomach, and vomiting; it is therefore best given suspended in water by means of mucilage. The officinal preparations of camphor are the *Mistura camphoræ*, *Spiritus camphoræ*, *Tinctura camphoræ composita*, *Linimentum camphoræ*, *Linimentum camphoræ compositum*, *Linimentum saponis*, and *Acidum aceticum camphoratum*.

Camphoræ flores compositi. Camphor sublimed with benzoin.

Camphoræ flos. That portion of the camphor which ascends first in the process of sublimation has been thus named.

CA'MPHORAS. (*as, atis.* f.) A camphorate: a salt formed by the union of the camphoric acid with a base; thus, *camphorate of alumina, camphorate of ammonia*, &c.

Camphorata. See *Camphorosma.*

Camphora'tus. Camphorated: having camphor in its composition; thus *spiritus vini camphoratus*, camphorated spirit of wine.

CAMPHORIC ACID. *Acidum camphoricum.* An acid obtained by distilling nitric acid eight times following from camphor. It has a slightly acid bitter taste, and reddens infusion of litmus. It combines with the earthy, alkaline, and metallic bases, and forms salts, called *camphorates.*

CAMPHORO'SMA. (*a, æ.* f.; from *camphora*, and *οσμη*, smell: so called from its smelling of camphire.) 1. The name of a genus of plants in the Linnæan system. Class, *Tetandria*; Order, *Monogynia.*

2. The pharmacopœial name of the *camphorata.* See *Camphorosma Monspeliensis.*

Camphorosma monspeliensis. The systematic name of the plant called *camphorata* in the pharmacopœias. Stinking ground-pine. *Chamæpeuce, Camphorata hirsuta, Camphorosma Monspeliaca.* This plant, *Camphorosma—foliis hirsutis lineuribus*, of Linnæus, took its name from its smell resembling that of camphor: it has been exhibited internally, in form of decoction, in dropsical and asthmatic complaints, and was also esteemed in anodyne fomentations. It is rarely, if ever, used in modern practice.

Canabina aquatica. See *Bidens.*

Canabis. See *Cannabis.*

Canada balsam. See *Pinus balsamea.*

Canada maidenhair. See *Adiantum pedatum.*

Canal, intestinal. See *Intestinal canal.*

CANALICULA'TUS. Canaliculate, or channelled; having a long furrow: applied to leaves, pods, &c.; as the leaf of the *Plantago maritima.*

Canali'culus (Diminutive of *canalis*, a

channel.) A little canal. See *Ductus arteriosus.*

Canalis arteriosus. See *Ductus arteriosus.*

Canalis nasalis. See *Ductus nasalis.*

Canalis petitianus. Canal of Petit. See *Oculus.*

Canales semicirculares. The semicircular canal. See *Auris.*

Canalis venosus. See *Ductus venosus.*

Canary balsam. See *Dracocephalum.*

CA'NCAMUM. (*um, i.* n. καγκαμον.) 1. The gum of some Arabian tree, mentioned by Dioscorides. It is not known to what substance he applied this name. Sprengel thinks it was the resin called East India elemi.

2. A resin produced by the *Gardenia gummifera*, otherwise called *East India elemi.* See *Gardenia gummifera.*

3. The name of cancamum seems to have been given at different times to various gums and mixtures of gums.

CANCELLA'TUS. Latticed; having a reticulated appearance.

CANCE'LLI. (*i, orum.* pl. m.) Lattice-work. The reticular substance in bones is so called. See *Os.*

Cancellus. (Diminutive of *cancer.*) An old name of the hermit crab. See *Cancer Bernhardi.*

CA'NCER. (*Cancer, cri.* m.; from καρκινος.) A genus of crustaceous animals. In the system of Linnæus it was an exceedingly extensive one, but it has been much divided by more recent naturalists.

Cancer pagu'rus. This is the crab usually found at our tables. It inhabits most of the rocky shores of England, and other countries of Europe, and is said to be in the highest perfection about Christmas. The flesh is much esteemed, as being more palatable and wholesome than that of any other kind of crab. The crab's claws, *chelæ cancrorum* of the shops, are taken from this species.

Cancer gammarus. *Astacus marinus.* The common lobster. This is frequent in all the northern parts of Europe. It inhabits all the rocky shores of our island, but is the most abundant with us in the northern extremity of Scotland, and far more frequent on the coast of Norway. The flesh of the lobster is delicious, and that of the claw the most tender and easy of digestion.

Cancer a'stacus. *Cancer fluviatilis. Astacus fluviatilis.* The craw-fish. Its flesh is eaten, but is not so much esteemed as that of the crab or lobster. Certain concretions which form in the stomach of this animal constitute the *crab's eyes* of the shops. See *Cancrorum Oculi.*

Cancer squilla. The prawn. This is in common use, but is thought by most inferior in flavour to the shrimp.

Cancer crangon. *Crangon vulgaris.* The shrimp. This is common on our shores, and has a very fine flavour.

Cancer ruricola. *Gegarcinus.* The great land crab of the Bahama islands, the economy of which has attracted the notice of so many, and which is so well detailed by Sloane. This is eaten in many of the sugar islands, and forms no inconsiderable part of the food of the poor negroes.

Cancer bernhardus. *Pagurus strebionya.* Bernard the hermit. Hermit crab. This species takes up its abode in univalve shells which it finds empty. In allusion to this it has obtained the name of the *wrong heir.* It has been idly supposed to cure rheumatism, when rubbed on the part affected.

CANCER. *cri.* m. A malignant disease; so called because a part affected with it, being raised into a tumour and surrounded by dilated veins, bears some resemblance to a crab, for which reason it was called by the Greeks *Carcinoma*, from καρκινος, a crab. The following general account of this malady is condensed from Dr. Copland's Dictionary of Practical Medicine; for a particular account of the disease, as developed in the breast and several other parts, we must refer the reader to works on surgery, to which department the consideration of such affections is usually considered to belong.

Cancer consists of two states or stages: the *first*, in which it presents the appearances usually denominated *scirrhus*; the *second*, in which it softens, ulcerates, &c., and degenerates into true *cancer*, or *carcinoma.*

I. Scirrhous Stage. — *Occult cancer.* It commences with a tumour, a limited local hardness; is usually single; is very rarely, at its commencement, detected in different parts at once; and is not surrounded by a cyst. Several authors have stated the occurrence of a cyst; but Otto more accurately excludes it from this structure. It is of importance to attend to the appearances of the disease at its commencement, as serving to indicate its nature. It is distinguished, at this period, by hardness, coldness, whiteness or paleness, insensibility, and deficiency of red blood vessels; — a state indicating the low degree of vitality of the part.

The scirrhous structure, when fully developed, consists of a firm, hard, rugged, incompressible, and unequal mass, the limits of which are not distinctly defined. Its colour is generally of a light grey, and, when cut into thin slices, it is semi-transparent. Upon close inspection, it is found to consist of two distinct substances; — the one hard, fibrous, and organised; the other soft, and apparently inorganic. The former composes the chief part of the diseased mass, and consists of septa, which are opake, of a paler colour than the soft part, unequal in their length, breadth, and thickness, disposed in various directions; sometimes forming a nearly solid mass; in other instances, a number of cells or irregular cavities, which contain the soft part. The latter is sometimes semi-transparent, of a bluish colour, and of the consistence of softened glue; at other times more opake, softer, somewhat oleaginous, and like cream in colour and consistence.

The fibrous structure seems to be the cellular, or proper tissue of the part, in a state of induration and hypertrophy; assuming, in consequence of its increased density and bulk, an appearance similar to the fibrous or fibro-cartilaginous structure; whilst the softer portion,

contained in the meshes and cells of the former, appears to be merely a morbid secretion poured out by the vessels nourishing the organised fibrous tissue, and is probably the exhalation of the part, either secreted in a modified state, or accumulated and changed by the disease of its containing structure. If this view be correct, the former, or organised part, may be considered as chiefly resulting from an altered state of nutrition in the seat of disease; whilst the latter, or inorganised portion, may be viewed as proceeding from a morbid secretion,—the diseased structure thus being a product of a disordered state of both the nutritive and secreting functions, most probably in consequence of alteration of the vital influence exerted by the ganglial nerves on the capillaries of the part.

The proportion of each of those two substances, and the modes of their distribution, vary very considerably in different scirrhous masses. This diversity seems to be owing to the different tissues in which they are developed, and to the modifications arising from temperament, local irritation, and various concurrent circumstances to which the patient may have been exposed. It has been attempted by Mr. Abernethy to arrange these varieties of scirrhus into species, and to designate them according to the natural structures which they most resemble. Thus he divides them into Mammary, Pancreatic, Tuberculous, &c.; but these different states of structure glide so insensibly into each other, and are so perfectly similar as respects their origin and consequences, that little practical advantage is derived from thus distinguishing them.

In some scirrhous tumours, the fibrous part of their structure is both most conspicuous and abundant, and is condensed into a solid mass, having the appearance of a centre or nucleus, whence radiate numerous septa in every direction. This is the most common appearance of the disease. In other instances, the tumour forms an uniformly hard mass, of an irregular shape, and of no very defined structure. In some cases, the organised part approaches more nearly to the cellular structure, its cells being filled with a soft matter which may be pressed out. Occasionally, cysts are formed within the tumour, of various sizes, containing a reddish, reddish-brown, or a chocolate-coloured fluid. These cysts are lined by a smooth membrane, from which a fungous tumour sometimes sprouts out. In some instances, portions of the scirrhous mass are converted into a hard substance resembling cartilage, in which bony or calcareous depositions are occasionally found. When the scirrhous structure is formed in the substance of a gland, its limits cannot generally be accurately determined, the two structures apparently being inseparably connected. In some cases, the scirrhous tumour condenses the cellular tissue surrounding it, and hence it acquires a somewhat sacculated appearance. — *Wardrop.*

At the commencement of scirrhous disease, the structure of the tissue or organ in which it is seated preserves for some time its aspect and colour, being changed merely in volume and density: sometimes, however, its volume is but little augmented, while its density is very much increased. As the disease advances, the proper tissue of the organ becomes more obscure, and verges nearer to that already described.

M. Hecht, of Strasbourg, analysed a portion of fully developed scirrhus of the mamma, and found 72 grains composed of 2 grains of albumen, 20 of gelatine, 20 of fibrine, 10 of a fluid fatty matter, and 20 of water and loss. He likewise analysed, by a similar process, 72 grains of scirrhous uterus, and found it to consist of 15 grains of gelatine, 10 of fibrine, 10 of oily or fatty matter, and 35 of water and loss.

Scirrhous tumours do not always remain in the state now described; and the period during which they thus continue is not determinate. When once they commence, they seldom retrograde, and the part affected never is restored to its healthy state. It is chiefly in this respect that the early stages of scirrhus differ from simple induration proceeding from chronic inflammation. Scirrhus may remain nearly stationary for several years, occasioning but little constitutional disturbance; but generally an important change takes place in its structure, and the disease afterwards makes rapid progress.

II. Carcinomatous, or Cancerous Stage. — *Open or ulcerated cancer.* After a time, portions of the scirrhous mass begin to soften, and pass into a state of unhealthy suppuration and ulceration, — unhealthy as respects the characters and progress of these processes, and their contaminating influence upon the whole frame. The soft or inorganic substance resolves itself into a thin ichorous matter, very different from pus; and disorganisation commences, generally about the centre of the mass, and extending towards that part of it which is nearest either the surface of the body or any of the natural openings. When this process commences, the disease is said to be in the state of *Carcinoma*, or *Cancer*. After this period the diseased mass seldom increases much in bulk, but is destroyed by an ulcerative process. The malady now makes rapid progress, owing to the contamination of the adjoining structures by the morbid matter secreted by the ulcerating part, a portion of which matter is evidently absorbed, irritating the lymphatic glands, and vitiating the whole frame. In consequence of this infection, the powers of life sink, the soft solids become cachexied, and the progress of the local affection accelerated. At last the patient sinks from the contamination of the circulating fluids, and the different textures of the body; the blood being diminished in quantity, as well as otherwise altered.

When the skin covering a scirrhous tumour ulcerates, a fungus of a cauliflower appearance, and hard gristly structure, sometimes proceeds from the surface of the mass. In some cases, ulceration destroys both the fungus and the primary tumour. It has been observed by Sir E. Home, that some cancerous sores have suddenly changed from a painful and malignant character, to a more healthy aspect at some part, and even have begun to cicatrize. This apparent amendment is never permanent, for, sooner or later, the ulcerative process is renewed, and

the disease pursues its usual course. Dr. Parr states, that he has seen several cases thus terminate spontaneously; but the patients were all soon afterwards cut off by internal disease; probably consisting of the internal development, or metastasis of the malady, cases of which occurrence are not unfrequent. (See *Journ. Hebdom.* t. i. p. 323. for a case wherein internal cancer appeared after the removal of the external disease by compression.)

Cancerous tumours generally contaminate the glands in the vicinity, particularly after ulceration has commenced. But these glands are seldom primarily affected. Mr. Wardrop states, in his excellent description of this disease, that he has only met with two cases of primary affection of the lymphatic glands. Besides these glands, various other organs and parts, sometimes far removed from the seat of the primary disease, become secondarily affected. This is most probably occasioned by contamination of the frame, from absorption of the morbid matter of the disease. Sometimes the existence of cancer in distant organs is not successive or secondary, but seemingly coeval. In this case the cause must be looked for in the originally morbid state of the system. Indeed, this state always obtains, to a certain extent; the disease being strictly constitutional even in its origin; the consecutive contamination, arising from the absorption of morbid matter from the primary tumour, merely augmenting the original vice, and accelerating its noxious effects.

Scirrho-cancer most commonly *originates* in glands whose functions have been interrupted, or which have never performed the offices intended for them; or it affects parts which have been previously diseased, or have received at some period an external injury. Thus it attacks the mammæ, the uterus, the ovaria, the testes, the thyroid glands. It also very frequently commences in the tegumental, and the digestive, and urinogenital mucous surfaces; more particularly in the skin of the face; in the mucous membrane of the nose, lips, mouth, pharynx, and œsophagus, in the stomach, especially the pylorus and cardia; in the intestinal canal, the ileo cæcal valve, rectum, and anus, and in the urinary bladder. The viscera which are *secondarily* affected, are commonly the lungs, bronchial glands, the liver, the omentum, the mesentery, the spleen, the pancreas, the brain, the medulla of the bones, and the skin. Several of these, particularly the liver, pancreas, mesentery, brain, &c. may also be primarily or coevally affected with other parts. Scirrhus affects the skin in two forms; — the one is that of wart, the other that of tubercle — the former being primary, the latter secondary.

III. Diagnosis. — It is of great importance to be able to distinguish between this disease and various others, for which it is liable to be mistaken. For instance, the simple induration proceeding from chronic inflammation has, in several instances which have come to my knowledge, been mistaken for scirrhus. This mistake not infrequently occurs in respect of induration of the neck of the uterus.

In *simple induration*, the part affected is redder, more injected, retains more of its original structure, is less indurated, and less lobulated, than scirrhus. The parts also surrounding the indurated portion are frequently slightly infiltrated with serum. Induration, the result of inflammatory action, admits of resolution, and entirely disappears, sometimes in consequence of a natural flux or evacuation, of active exercise, the return of accustomed discharges, or pregnancy. Thus the menstrual flux sometimes dissipates inflammatory induration of the mammæ, or of the neck of the uterus.

The *fibrous production* generally appears in the form of a rounded body, implanted, but isolated, in the proper structure of the organ, and adhering to it merely by means of laminated tissue. Upon dividing this structure, it grates under the scalpel; and it sometimes presents dilated vessels, which are never observed in scirrhous masses: moreover, it occasions little or no pain, and never passes into the cancerous state.

Compared with *tubercular* or *lardaceous* productions, scirrho-cancer offers remarkable differences: — 1st, The latter is never found isolated in the cellular tissue, or in the parenchyma of organs, in the form of granulations, or of small rounded tumours, as the tubercular formations are; nor in largely diffused masses, as the lardaceous substance: 2d, It is never inclosed in a cyst: 3d, It does not greatly increase the volume of the part it affects; sometimes the part is even diminished, but much more dense: 4th, It is not susceptible of the same kind of softening as the tubercular and lardaceous productions; but rather of a peculiar rarefaction, passing into a peculiar form of fungus, followed by the developement of blood-vessels: 5th, Its vital properties are excited, and its sensibility becomes exalted, as the disease advances, — circumstances which are never observed in connexion with these productions.

Cancerous ulceration is characterised by a jagged, thick, soft edge, which is turned outwards. The surface of the ulcer is greyish, or greyish brown, sometimes livid brown, elevated into loose, fungous vegetations, discharging a fœtid corroding *sanies* or *ichor*, and bleeding slightly upon irritation. *a. Chronic inflammatory ulcers* differ from the former in the absence of a fœtid corroding ichor; in the hardness of their margin, which turns inwards; and in the reddish and more healthy appearance of their bottoms, which in cancer is colourless, or of a livid brown, hard, irregular, fungous, sometimes with cauliform excrescences, and extremely offensive. *b. Local tumours* sometimes appear, particularly on the tongue, originating in irritation, and exasperated by the continuance of this cause. These usually commence with a small pimple or wart, becoming more and more hard and irritable as they increase, until they assume a scirrhus-like induration. They seldom endanger the constitution, yet appear sometimes to assume a malignant character.

As soon as the *carcinomatous change* takes place in the scirrhous mass, the disease involves adjoining parts, and the system generally. The local suffering is more fully developed, and the

vital actions of the part are changed greatly from the healthy course. The sensibility is morbidly augmented in short paroxysms; the pain being violent, and what is usually called *lancinating* or stinging during the exacerbations, but often slight, or almost altogether absent in the intervals. If the surface be exposed, the pain is burning, and the part is always sore. As the disease advances, and particularly as the ulceration proceeds, the paroxysms of lancinating and burning pains increase in violence, and the remissions become more imperfect, and of shorter duration. The *cancerous sanies* is generally very fluid; but its appearance varies with the treatment, the situation of the disease, and with the diet of the patient. It is generally of a greyish white, or reddish grey; it slightly effervesces with sulphuric acid, and turns syrup of violets green.

The *extension* and *contamination* of the system characterising cancerous ulceration appear to be owing, 1st, to the corroding influence of the secretion on the parts with which it is in contact: 2d, to the absorption of a portion of the morbid secretion by the lymphatic vessels: this is evinced by the swelling and affection of the glands in the vicinity of the primary disease. But the affection of the glands may not be altogether owing to the absorption of the morbid matter, but partly to the irritation of the lymphatic vessels occasioned by the disease of the part in which they originate: and, 3d, to the absorbing functions of the veins, according to the researches of Mayer, Magendie, Tiedemann, Gmelin, &c. These different sources of contamination seem more than sufficient to account for the general cancerous cachexia characterising the advanced stages of the disease.

The characters of this *cancerous cachexia* are, emaciation; softness and flaccidity of the soft solids; œdema of the extremities; hectic fever; a peculiar change of the complexion and colour of the whole surface of the body, which become of a pale leaden, or pale straw colour, or waxy hue; and general depravation of the functions. This state of cachexia increases with the progress of the disease, and augments at the same time the primary local change. It is rapidly developed and increased when the scirrhous mass ulcerates, when also carcinomatous tumours frequently manifest themselves in various parts of the body. Ultimately the circulating fluid is deficient in quantity, and is poor and morbid; and the vital cohesion of the soft solids, and even of the bones, is diminished.

Causes — Scirrhus, like scrofula, is undoubtedly an hereditary malady. Instances are numerous of several individuals in the same family having been affected by it. It is almost altogether confined to persons advanced in life. Cases of the disease are very rare before the age of thirty. Sir A. Cooper met with it only twice previously to this age. Mr. Wardrop has seen one instance of it in the skin of a girl of twelve years. Females, owing to the liability of their appropriate organs to be attacked, are more subject to it than males; especially those who have not borne children, the disease generally appearing in them upon the cessation of the catamenia. The disease seems commonly to result from an original or acquired diathesis, existing previously to the development of morbid structure, and very often connected with the lymphatic temperament. MM. Breschet and Ferrus found twenty-three instances of this temperament prominently marked, out of forty-four cases of the disease. Anxiety and distress of mind, and all the depressing passions, are most disposing causes, particularly to cancer of the breast. An inactive state of the part for a considerable time previously; a poor unwholesome diet; laborious and exhausting occupations, and an unhealthy locality, also dispose to it.

It is generally *excited* by blows and external injuries; by repeated or continued irritation; the abuse of spirituous liquors; and by low and poor diet. It is not liable to be propagated by contagion; the experiments of MM. Alibert, Biett, and Dupuytren, having shown that the matter discharged from a cancerous ulcer cannot produce the disease in another person. Although irritating agents of any description may give occasion to its appearance, yet there must have previously existed cancerous diathesis, or constitutional disposition, in which it almost always originates.

The *proximate cause* of this dreadful disease is extremely obscure, and opinions respecting it have consequently been numerous. Schaeffer and Gamet consider it to be caused by a singular depravation of the nervous fluid. Dr. Adams and Dr. Baron impute it to the existence of an hydatiform body, which they call the *hydatis carcinomatosa*; and Mr. Carmichael, to a body enjoying an independent state of existence developed in those parts of the frame, the vitality of which is enfeebled, and the organised matter of which begins to be decomposed. He supposes that, at first, this constituent of cancer occupies but a minute spot, consists of a substance nearly similar to cartilage; and that it afterwards extends itself in the form of radiations, resembling ligaments formed by thickened cellular tissue. The two latter opinions, which are not essentially different from each other, have been completely refuted by Burns, Cleri, and Hindy. According to M. Broussais, schirro-cancer is the result of an inflammatory or sub-inflammatory state of the vessels; and the opinions of MM. Begin, Breschet, and Ferrus differ but little from that of M. Broussais. They impute the disease to irritation of an inflammatory nature, occasioning the secretion of a coagulable lymph that becomes condensed into a scirrhous substance, which may remain stationary for a longer or shorter period, but which sooner or later undergoes a secondary inflammatory process, and experiences softening and disorganisation, with various other changes, as these processes proceed. To this doctrine of the modern French pathologists it may be objected, that scirrhus furnishes no sign, local or general, of inflammation, and yet it goes on increasing; and if it can increase rapidly without inflammation, may it not also originate independently of this cause? Where, therefore, neither the local appearances, nor the usual consequences, nor the constitu-

tional symptoms of inflammation can be perceived, ought we to impute disease to this state of vascular action? The inference is obvious; but it is only one of many arguments, which, if they were not superfluous, might be adduced against the doctrine.

According to M. Andral, cancer is not a specific alteration, but a state of disease arising from lesions of nutrition and secretion, which have reached the period of their termination in ulceration; the ulcer thus arising, constantly increasing either in depth or extent of surface, without any disposition to cicatrisation. Thus, M. Andral considers cancer in a generic acceptation, and comprises under it the ulcerative process in various species of disease of a constitutional origin and malignant nature, which, although always considered as closely allied, in their origin, nature, and tendency, to scirrhus, have usually been viewed as distinct maladies. This opinion is more in accordance with the wide signification of the term *cancer*, in the writings of French pathologists, but is very deficient in precision and applicability; inasmuch as it embraces the advanced states only of several organic changes, which, in their earlier periods especially, are very distinct from one another — distinct in causes, origin, the structures they principally attack, and in their appearances and properties. We have, therefore, adopted the more accurate views of British pathologists respecting this disease, which is considered in relation to its predisposing and exciting causes, to the states of the system in which it occurs, to its local appearances, and constitutional effects, to the results of treatment, and to the ultimate changes produced in the blood, and in the various structures, *as essentially depending upon a weakened and otherwise morbid state of the system generally; and arising from depravation of the vital conditions of the part affected, whereby its nutrition, nervous sensibility, and secreting function, become specifically changed, and all the fluids and solids ultimately contaminated.*

Treatment. — The conclusion now drawn respecting the nature and morbid relations of *scirrho-cancer* must render very apparent the futility of various measures which have been employed to remove it. Some writers have too exclusively viewed the disease as local; and thus, even in its advanced stages, resorted to most dangerous and painful operations to extirpate an evil, which, instead of being local, proceeds from the morbid state of the system generally, and which all depressing causes (the surgical operation itself being one) rapidly increase, disposing not only to its extension in its primary seat, but also to its appearance in new situations and more vital organs. The means of cure, therefore, should have especial reference to the state of the constitution favouring its development and progress; for, when the malady is advanced, local measures can, at the best, only be palliative, and are therefore subsidiary to judiciously devised means employed internally, and assisted by suitable diet and regimen.

Before proceeding to the indications which should guide the treatment of this disease, and the medicines which seem best calculated to fulfil them, we may take a brief view of the means which have been recommended or tried by preceding writers. The real importance of this subject to the physician will be the more obvious, when he reflects, that cancerous diseases are often — indeed most legitimately on all occasions — within his province, more particularly when they invade, as they frequently do, internal organs; and that the life of the patient may be greatly prolonged, and his sufferings much alleviated, by judicious medical treatment.

At the *commencement of the scirrhous stage*, various means have been employed, and sometimes with some advantage, according to the showing of those who employed them. *Conium* has, upon the whole, found the greatest number of supporters; and, when it has been combined with the alkaline tonic and stomachic preparations, it seems often to have been of considerable benefit. This seems to be nearly the opinion of several writers, and amongst others, of Gesner, Girard, Hufeland, Hahnemann, and Thilenius. Electricity and Galvanism have been employed by Brisbane and Walther; the muriate of baryta, by Hufeland; antimonials, by Rowley and Dowmann; aconitum, by Greding; digitalis, by Mayer; laurel-water, by Thilenius; mercury, particularly the corrosive-sublimate, by Ruysch, Thilenius, and Harris; sal-ammoniacum, by Justamond; belladonna, by Gataker; and the mezereon, by Home, with more or less benefit, chiefly of a temporary kind in those cases which were obviously scirrhous, and with permanent service in those which were only supposed to be of this description.

In the *more fully developed* and *less doubtful states* of the disease, as well as in its earliest stage, a number of medicines have been recommended, and for a while have obtained some credit, which few of them have long retained. The great majority, however, of them have been brought forward rather as palliatives, and with the view of keeping the disease in check, than as possessing the power of curing it; yet some have been exhibited with more sanguine expectations, particularly arsenic, conium, hyoscyamus, and belladonna. *a.* That *conium* is productive of benefit, when judiciously combined with other remedies, is manifest, notwithstanding the contradictory evidence respecting it. While we find Stoerck, Fothergill, Hamilton, Francke, Nicholson, Quarin, Fearon, Bell, Gruelmann, Renard, Schaeffer, and several other writers, in favour of it, we observe Siebold, Lange, Hill, Akenside, Oberteuffer, Schneider, and Burns, expressing opinions as to either its little efficacy, or its entire want of effect. This discrepancy may be accounted for upon the supposition of want of virtue in the preparations prescribed; the extract generally losing the virtues of the plant during the modes of preparing it formerly in use: and I find, upon referring to most of the authors now quoted, and to others not referred to, that the extract and decoction were usually employed by those who found it productive of no benefit; whilst the powdered

leaves, the expressed juice of the plant, or an infusion of it, had been preferred by those who had expressed themselves in favour of it, Dr. Copland has prescribed the inspissated juice and powdered leaves of this plant, in several cases of internal scirrho-cancer, in combination with the alkalis and tonics, and have always found them much more beneficial when associated with it.

Belladonna was first exhibited by Alberti, who highly praised it in the occult stage of the disease. It was afterwards recommended by Lambergen, Bellot, Lentin, Amoureux, Camperdon, Sulzer, and Grandvilliers; and declared of little use by Zimmermann and De Haen. Some advantage, however, may be procured from its internal and external use, particularly as a palliative, and when combined with medicines which are calculated to support the energies of life, and improve the secreting and digestive functions. A similar opinion may be offered respecting *hyoscyamus*.

There is, perhaps, no medicine which has been so commonly prescribed in this malady as *arsenic*. It forms the base of the several secret remedies, internal as well as external, employed by empirics; and has been very generally used by them as an escharotic, sometimes with very injurious effects, from being absorbed largely into the system. There can be no doubt, however, of its beneficial influence, in many cases, when cautiously prescribed, and judiciously combined with other medicines; but chiefly as a most energetic tonic and excitant of the capillary vessels, and powerful detergent in the ulcerative stage of the disease. Justamond prescribed it both internally and externally, with opium and various other medicines; Stark, Rush, and Odhelius state that they have found it cure incipient cancer, when applied in solution to the part; Collenbusch found it beneficial when applied externally, tonic extracts having been given internally at the same time; Fischer, Michaelis, and Reusner prescribed it in the form of the *powder of Guy* (composed of arsenic, sulphur, ranunculus sylvest., &c.), with marked benefit; Salmade cured a case with the *powder of Rousselot*, the twenty-fifth part of which, he says, consists of arsenic; Valesco de Taranta says he knew a surgeon who applied it with great effect along with the expressed juice of the solanum, and Hornung gave it with serpentary and soot. This evidence, however, in its favour, is not without powerful opposition. Fabricius Hildanus says, that arsenic was introduced into practice by a monk named Theodoric, in the tenth or eleventh century (having probably been made acquainted with it in the West), and details cases in which he considered it detrimental. A similar opinion has been entertained of it by Schneider, Thilenius, Acrel, Murray, Adams, Obertueffer, and Delius. Mr. Hill, however, expresses a very favourable opinion as to the effects of this mineral, and states that it will retard the progress of the true scirrhous tumour, in the great majority of cases, and often prevent it from becoming cancer. Dr. Copland believes that, when this medicine is cautiously employed, both internally and externally, in conjunction with narcotics and alkalis, or otherwise judiciously combined, Mr. Hill's opinion in its favour is not much too highly coloured.

The preparations of *mercury* are always injurious in this disease, when exhibited in any other manner than as an alterative, and, externally, as an astringent and stimulating wash. The oxymuriate, in minute doses internally, with the muriate of ammonia, or the compound sarsaparilla decoction, the tinctures of cinchona, with guiacum, &c., is often of service, at least in retarding the progress of its early stage; and when the disease has advanced to ulceration, the external use of the oxymuriate, with the muriate of ammonia, lime water, &c. may occasionally be of some service. Reidlin states, that the preparations of this mineral are always injurious when productive of salivation. Of the accuracy of this opinion, there can be no doubt. Prescribed, however, as now recommended, it has received the approbation of Moseley, Gooch, Gmelin, Hagen, Gataker, Chapuis, Büchner, Champelle, and Sir A. Cooper.

The preparations of iron have been recommended by Justamond and De Mare, who gave them variously combined, particularly with muriate of ammonia, and in the state of neutral salts. Mr. Carmichael strenuously advises the sub-phosphate, combined with a little pure fixed alkali. He prefers this preparation, but occasionally also employs the carbonate, the tartrate of iron and potash, the phosphate and oxyphosphate of the metal. If it occasion costiveness, he combines with it a little aloes; and, if it produce headach, fever, or full pulse, he leaves it off, and gives four grains of camphor every five hours. He prescribes it as follows; directing *externally* to ulcerated cancers, the carbonates, phosphates, or arseniate of iron, made into a thin paste with water; and to occult cancer a lotion constantly applied, consisting of a strong solution of some one of the salts of this metal.

℞ sub-phosph. Ferri gr. xxx. — ℥ij.; Potassæ vel Sodæ Puræ gr. iij. — v.; Extr. Aloës gr. iv.; Pulv. Glycyrrh. ℈j.; Albuminis Ovi q. s. ut fiant Pilulæ xij. Capiat binas tertiis vel quartis horis.

Besides these preparations, the *ferrum ammoniatum* is entitled to notice. It was considered by Dr. Denman the best medicine that could be directed against this disease.

The preparations of *lead* have also been used, chiefly externally, when the disease has advanced to ulceration. Gesner recommends the acetate in the form of liniment with turpentine, and Schoenheyder advises the continued application of lotions of this salt in a decoction of conium. It has also been used in thin sheets constantly pressed upon the scirrhous tumour. Of the various other remedies brought forward by authors at different periods, and stated by them to have proved serviceable, the following may be briefly noticed: — Horstius prescribed, internally and externally, *sulphur*, with spirit of turpentine; Ruland, the *balsamum sulphuris;* and various other writers the oleum sulphuris. The *sulphurets* have also been employed, both internally and externally, either alone, or with nar-

cotics, and sometimes with benefit. Gataker used the *solanum nigrum;* and Paulus Æginæ, Oribasius, and Carere, the expressed juice of the solanum *dulcamara*, externally; the last-named author exhibiting it internally at the same time. *Opium*, as well as other narcotics, is often necessary in order to alleviate the patient's sufferings, and with this view has chiefly been employed. Dr. Copland believes, however, that, when combined with suitable remedies, it is otherwise productive of benefit. The *volatile* and *fixed alkalis* have been exhibited by Barker, Martinet, and Barbette; *antimonials*, by Rowley and Theden; *baryta*, by Crawford; *cinchona*, by Homburg, Vieussens, and Plenk; the expressed juice of the *chelidonium* and the *sulphate of zinc*, by Berchellmann; *lime-water* by Vogel; the *orobanche virginiana*, by Barton and Bensell; an ointment with the juice of the *bardana* and *acetate of lead*, by Percy; *camphor*, by several authors; the *sedum acre*, by Buchoz and Quesnai; the *onopordum acanthium*, by Goelicke, Handel, Juncker, and Ross; *myrrh*, by Nicolas; *fixed airs*, by Beddoes, Percival, Ingenhousz, and Peyrilhé; *digitalis*, by Richter; the *hydro-sulphuret of ammonia*, by Burns; *petroleum*, by Rammazzini and Pierce; the *rhododendron chrysanthemum*, by Pallas; and *aconitum*, *sarsaparilla*, *guaiacum*, the *beccabunga*, the *phellandrium aquaticum*, &c. by various writers. All these have been prescribed both internally and externally, with little or no advantage, or only with very temporary benefit.

Of the numerous *external remedies* recommended at various periods, the preparations of arsenic and quicksilver; charcoal and carrot poultices; the mineral acids, particularly the oxymuriatic and chloric acids; the chlorurets, and many of the metallic salts; camphor, the balsams, and the terebinthinate substances; ammoniacum, galbanum, and myrrh; and the greater part of the astringent, antiseptic, detergent, and stimulating vegetable medicines have obtained a greater degree of reputation; and, when some of them are judiciously combined with one another, and with narcotics, they are deserving of notice as discutients in the early stage of the disease, and as palliatives in its ulcerating state.

Frictions of the part were advised by Ponteau, and Young entertained sanguine expectations of the result of pressure, — a practice which, very recently, has received the support of Recamier, and several French physicians. M. Joubert states, that he has found small local bloodlettings, and the following pills, most serviceable in the different stages of cancer.

℞ Saponis Medic. ʒiv.; Gum Ammoniaci ʒij.; Ext. Conii et Ext. Aconiti Nap. ʒjss.; Massæ Pilul. Rufi ʒj. M. Contunde bene simul, et divide in Pilulas gr. v.

He directs two of these to be taken night and morning, increasing the dose by an additional one daily, until twelve, fifteen, or even twenty, are taken, morning and night. The rest of the treatment consists in applying poultices of the recent conium; using deobstruent and solvent beverages, a mild diet and regimen, and wearing an issue or seton in the arm or thigh. This plan has likewise been advised by Dr. Lowassy, by whom it was first practised.

Sir A. Cooper expresses himself very strongly against low diet in this disease, — a practice which had been much insisted on by Mr. Pearson, Dr. Lambe, and Hufeland. Dr. Copland entirely coincides in the opinion of Sir Astley, which he believes to be in accordance with accurate observation and rational induction. Sir A. Cooper states, that he has seen most benefit derived from Plummer's pill given at bed-time, and stomachic tonics in the day, consisting chiefly of the bitter infusions, with ammonia, and the subcarbonates of the alkalis. Some advantage was also derived from a pill, consisting of half a grain of stramonium, with two grains of camphor, given twice or thrice a day.

Since the introduction of *iodine* into practice, the preparations of it have been tried in the different stages of cancer by several physicians. Dr. Copland is of opinion, that the results of the trials which have been made of this substance are certainly such as to warrant the use of it in the early states of the disease. The cases recorded by Dr. Wagner and by Mr. Hill, of Chester, are much in favour of it. Dr. Copland has been consulted in two cases occurring in females between thirty and forty, for what was considered, by the attending practitioners, *scirrhus mammæ*, owing to the lancinating and remitting pains, and the diseased state of the nipple and axillary glands. They were both put upon a course of iodine; and conium, with the sub-carbonates of potash, was given internally; a light nutritious diet, and strict attention to the state of the uterine functions, were also observed. Perfect recovery has taken place in both: but it appears doubtful whether or not they were genuine cases of scirrhus, notwithstanding the signs now alluded to were present. They had, however, withstood other means of cure for a long time. The treatment, in one of the cases, was chiefly conducted by Mr. Faxon, according to the above suggestions.

Dr. Copland conceives that the treatment of this disease should be directed to the fulfilment of the following *intentions:* — 1st, To support the energies of life, by exciting the digestive functions, and the abdominal secretions and excretions; 2d, to soothe the morbid sensibility of the part, and promote the absorption of morbid depositions in its tissues, by means of anodynes combined with deobstruents and discutients; and, 3d, to impart vigour to the frame by suitable medicine, diet, and regimen. The remedies which are calculated to fulfil the first indication, may be often conjoined with those intended to accomplish the second and third, and both internal and external means may be simultaneously used with those views. The medicines already enumerated comprise nearly all that have been found of any service in this distressing malady. But the advantage to be derived from them will mainly depend upon their combination and exhibition appropriately to the circumstances of individual cases.

The preparations of *iodine*, given in very small and frequently repeated doses, with potass, and conium, or opium, will be found amongst the best remedies that can be used; inasmuch as, when exhibited in this manner, they are both tonic and deobstruent. They may also be used externally in the form of ointment; but one third of the proportion of hydriodate to the ointment usually employed should be prescribed, and friction with it ought to be of much longer continuance than commonly directed. Either stramonium, conium, opium, belladonna, hyoscyamus, or aconitum, may be given in various forms in the intervals between the exhibition of the iodine; and be combined with tonic infusions or decoctions, with the fixed or volatile alkalies, or with camphor in doses of from two to six grains. They may also be tried in conjunction with the preparations of arsenic, or of iron, or the chlorates of potash, soda, or lime, and as external applications also, when the disease has gone on to ulceration. In females, scirrho-cancer is generally connected, at its commencement, with disorder or the cessation of the menstrual discharge. In such cases, the preparations of iron with ammonia, or the fixed alkalies, and aloes, are sometimes of service. Dr. Copland has observed most advantage in these cases from frequent and full doses of conium, in the form of powder, given with the sub-borate of soda.

Tonic infusions, or decoctions, with liquor ammoniæ acetatis, or with the carbonates of the alkalies, and extract of conium, or the tincture of hyoscyamus; the oxymur. hydrarg. in the compound tincture of cinchona, or compound decoction of sarsaparilla; or small doses of blue pill, or hydrarg. cum creta, with camphor, and either of the narcotic extracts; the preparations of sulphur, and the sulphurets; the phosphates of iron, or this metal combined with ammonia, and conium; the sulphates of quinine and zinc; and the balsams and terebinthinates; may severally be employed.

Although the malady obviously has a constitutional origin, yet the propriety of *extirpating the affected part*, as soon as the true scirrhous character becomes manifest, may be conceded. After this is accomplished, the constitutional vice may be more successfully combated, and the reappearance of the local disease more probably prevented than at a later period. When, however, the system exhibits any of the symptoms of cancerous cachexia, whether the adjoining glands be enlarged or not, nothing will be gained by an operation; but some advantage may still accrue from judicious and energetic medical treatment, particularly from tonics combined with anodynes, alteratives, and deobstruents. Whilst medical measures have often obtained the credit they by no means deserved, from the circumstance of local diseases mistaken for scirrhus having been removed by them: it is probable that surgical operations have sometimes acquired reputation from the same cause.

During the treatment of this malady, attention must be especially directed to the secretions and evacuations. The bowels ought to be kept freely open, with deobstruent laxatives, combined with tonics and vegetable bitters. The diet should be nutritious, and easy of digestion. Change of air and of scene, with agreeable amusements, serve essentially in assisting the influence of a judiciously devised method of cure, and should, therefore, not be overlooked by the practitioner; and several of the tonic and deobstruent mineral waters are of use, particularly those of Bath, Tunbridge, Buxton, Spa, &c.

Cancer aquaticus. The *cancrum oris* has been so called, for what reason we know not.

Cancer galeni. An eight-tailed bandage for the head was called *cancer* by Galen, from some fancied resemblance to a crab.

Cancer munditorum. A peculiar unlceration of the scrotum in chimney sweepers. See *Diseases of artisans.*

Cancer ossis. See *Osteo-sarcoma.*

Cancer scroti. The chimney-sweepers' cancer. See *Diseases of artisans.*

Cancer weed. See *Sylvia lyrata.*

Cancre'na. Paracelsus uses this word instead of gangræna.

Cancrorum chelæ. Crab's claws. See *Carbonas calcis*, and *Cancer pagurus.*

Cancrorum lapides. Crab stones. See *Cancer astacus.*

Cancrorum oculi. See *Carbonas calcis*, and *Cancer astacus.*

CA'NCRUM. (*um*, *i.* n.; from *cancer*, a spreading ulcer.) The canker.

Cancrum oris. Canker of the mouth; the common name for ulcerated gums, and ulcers inside the cheeks. See *Stomacace.*

Cande. A village of Haut Poitou, which has mineral waters containing sulphate of lime and iron.

Candela fumalis. A pastil. See *Pastillum.*

Candela medicata. A medicated bougie.

Candela probatoria. A bougie.

Candela regia. See *Verbascum.*

CANDELA'RIA. (*a*, *æ.* f.; from *candela*, a candle: so called from the resemblance of its stalks to a candle.) See *Verbascum thapsus.*

Candisa'tio. The process of candying sugar, which consists in dissolving it in water and crystallising.

Ca'ndum. *Canthum. Saccharum candi.* Sugar candy.

Candy carrot. See *Athamanta cretensis.*

Canela. See *Canella.*

CANE'LLA. (*a*, *æ.* f.; diminutive of *canna*, a reed: so named because the pieces of bark are rolled up in the form of a reed.) The name of a genus of plants in the Linnæan system. Class, *Dodecandria*; Order, *Monogynia.* The canella-tree.

Canella alba. This plant, the *Winterana canella* of Linnæus, produces the bark called *canella alba*, or false Winter's bark, which is often confounded with the true Winter's bark, which is the produce of another tree. See *Drimys Winteri.* The canella alba is a native of the West Indies and South America. The bark which is brought to this country is the inner bark of the branches. It is in quills or flat pieces, of a light yellowish grey colour, and

of an aromatic smell and taste. Alkohol extracts its aromatic principle; water does so imperfectly. It yields a thick essential oil by distillation. It is a sufficiently good aromatic, and is sometimes used with that intention in combination with other medicines.

Canella caryophyllata. The bark of the clove-berry tree. See *Myrtus caryophyllata.*

Canella cubana. See *Canella alba.*

Canellæ malabaricæ cortex. See *Laurus cassia.*

Canellifera malabarica. See *Laurus cassia.*

Canella ceylanica. Cinnamon. See *Laurus cinnamomum.*

Ca'nicæ. Coarse meal, or that in which the flower is much mixed with bran: so called as being food for dogs.

Canica'ceus panis. Bread made of coarse meal.

CANICI'DA. (*a, æ.* f.; from *canis*, a dog, and *cædo*, to kill: so called because dogs are poisoned by it; a name given by the ancients to aconite.

Canicula'ris. (From *canicula*, the dog-star.) Appertaining to the dog-star. Applied to the hottest days of the year. See *Dies caniculares.*

Canina appetentia. See *Bulimia.*

Canina brassica. See *Mercurialis perennis.*

Canina lingua. See *Cynoglossum.*

Canina malus. The fruit of the *Atropa mandragora.*

Canina rabies. See *Hydrophobia.*

CANINE. (*Caninus*, from *canis*, a dog.) Apertaining to, or partaking of the nature of, a dog.

Canine appetite. See *Bulimia.*

Canine fossa. See *Fossa canina.*

Canine madness. See *Hydrophobia.*

Canine teeth. The four eye-teeth are so called, from their resemblance to those of the dog. See *Dentes.*

Caninus musculus. The Levator anguli oris.

Caninus risus. The sardonic laugh. See *Risus sardonicus.*

Caninus spasmus. See *Risus sardonicus.*

Caninus sentis. See *Rosa canina.*

Canibu'bus. (From *canis*, and *rubus*, a bramble.) See *Rosa canina.*

Canis cerebrum. Dog's brain. The antirrhinum has been so called because its seed-vessels have been thought to resemble a dog's skull.

Cani'ties. (From *canus*, grey-headed.) Greyness of the hair.

CA'NNA. (*a, æ.* f.; from the Hebrew.) 1. A reed or hollow cane.

2. The tibia or fibula, from their resemblance to a reed.

Canna fistula. See *Cassia fistula.*

Canna indica. See *Sagittaria alexipharmaca.*

Canna major. The tibia.

Canna minor. The fibula.

Cannabi'nus. Appertaining to, or resembling, hemp. Applied as a specific name to some plants, as *Eupatorium cannabinum.*

CA'NNABIS. (*is, is.* f.; according to some from *κανασθαι*, fountains flowing in scattered streams, because the plant grows abundantly near fountains and streams; according to others from *καννα*, a reed, on account of its hollow stalk; others, again, derive the word from the Arabic language.) Hemp. 1. The name of a genus of plants in the Linnæan system. Class, *Diœcia*; Order, *Pentandria.*

2. The pharmacopœial name of the hemp-plant. See *Cannabis sativa.*

Cannabis sativa. The systematic name of the common hemp-plant, the economical uses of which are so familiar. It is a native of India, Persia, and other countries of Asia; but is now naturalised in the south of Europe. It has a strong and narcotic smell, which causes giddiness, dimness of sight, and intoxication. Water in which it has been long steeped is said to be strongly poisonous. Hemp-seeds, when fresh, afford a considerable quantity of oil. Decoctions and emulsions of them have been recommended against coughs, ardor urinæ, &c. Their use, in general, depends on their emollient and demulcent qualities.

Cannabis indica. A variety of hemp much used in the East as an excitant. The Hindoos call it *Bangue*, the Arabs *Hashish*, and the Turks *Malach.* The leaves are chewed or smoked like those of tobacco, and an intoxicating liquor is prepared from them. This plant is also used for similar purposes by the Hottentots, who call it *Dacha.*

CA'NNULA. (*a, æ.* f.; diminutive of *canna*, a reed.) A metallic tube used by surgeons for various purposes. It is often adapted to a sharp instrument, along with which it is thrust into a cavity containing a fluid: the perforation being made, the sharp instrument is withdrawn and the cannula left, in order that the fluid may pass through it.

Canopiте. The name of a collyrium mentioned by Celsus. It consisted of cadmia, oxide of zinc, aromatics, &c.

Cano'pum. *Κανωπον.* The flower or bark of the elder tree. — *Paulus Ægineta.*

Canta'brica. A plant, mentioned by Pliny, which some believe to have a dianthus, and others a campanula, &c., but which is most generally supposed to have been the same with the *convolvulus cantabrica* of Linnæus. See *Convolvulus.*

Ca'ntabrum. (*um, i.* n. Low Latin.) Bran, or very coarse bread.

Ca'ntacon. Garden saffron. — *Ruland.*

CANTERBURY. The chief town of the county of Kent. It has a mineral water, *Cantauriensis aqua*, strongly impregnated with iron, sulphur, and carbonic acid gas; it is recommended in disorders of the stomach, in gouty complaints, jaundice, diseases of the skin, and chlorosis.

Ca'nthari figuli'ni. Earthen cucurbits.

CA'NTHARIS. (*is, idis.* f. *Κανθαρις*; from *κανθαρος*, a beetle.) The blistering fly, and Spanish fly. *Musca Hispanica. Meloë vesicatoria. Lytta vesicatoria.* This insect is common in Spain, Italy, and France, and is found more or less all over Europe. Those imported into this country come chiefly from Astracan and from Sicily. The Spanish fly is about two thirds of an inch in length, and one fourth in breadth, of a somewhat oblong shape, and of a

greenish gold shining colour, with soft elytra or wing sheaths marked with three longitudinal raised stripes, and covering brown membraneous wings. They have a heavy disagreeable odour, and acrid taste. The *Melolontha vitis*, an insect somewhat resembling the cantharis, but destitute of any vesicating power, is often found, in commerce, mixed with it. The melolontha may be easily distinguished by the greater squareness of its shape, and its black feet.

If the inspissated watery decoction of these insects be treated with pure alkohol, a solution of a resinous matter is obtained, which being separated by gentle evaporation to dryness, and submitted for some time to the action of sulphuric ether, forms a yellow solution. By spontaneous evaporation, crystalline plates are deposited, which may be freed from some adhering colouring matter by alkohol. Their appearance is like spermaceti. They are soluble in boiling alkohol, but precipitate as it cools. They do not dissolve in water. According to Robiquet, who first discovered it, this crystalline substance is the true blistering principle. It has been named *cantharidin* by Dr. Thomson. Besides this substance, cantharides contain, according to Robiquet, a green bland oil, insoluble in water, but soluble in alkohol; a black matter, soluble in water, insoluble in alkohol, without blistering properties; a yellow viscid matter, mild, soluble in water and alkohol; the crystalline plates; a fatty bland matter; phosphates of lime and magnesia; a little acetic acid, and much lithic or uric acid. Cantharides are used in medicine both externally and internally. Their most important use is that of an external counter-irritant; and, as such, they form one of the most valuable articles of the materia medica. (See *Emplastrum cantharidis.*) Taken internally, they act powerfully on the urinary and generative organs, and on the small intestines; and, if not exhibited with proper caution, occasion strangury, bloody urine, and inflammation of the bladder and intestines. Even when externally applied they often cause strangury; and some persons experience this effect almost invariably on the application of a blister. Cantharides are successfully given in gleet, leucorrhœa, and paralysis of the bladder. They are given in powder and in tincture: the dose of the former is from one to three grains, that of the latter from ten drops to half a drachm, or more. (See *Tinctura cantharidis.*) The blistering fly, taken in an over-dose, acts as a violent acrid poison, occasioning horrible satyriasis, delirium, convulsions, and death. Oils, milk, syrups, frictions on the spine with volatile liniment and laudanum, and draughts containing musk, opium, and camphorated emulsions, are the best antidotes.

Cantharel'lus. The *Melöe proboscidea* of Linnæus is thus named by some old writers. See *Melöe proboscidea.*

Canthum saccharum. See *Candum.*

CA'NTHUS. (*us, i.* m.; Κανθος.) The angle of the eye, where the upper and under eyelids meet. That nearest the nose is termed the internal or greater canthus; and the other, nearest the temple, the external or lesser canthus.

Cantia'nus pulvis. Lady Kent's Powder. A cordial formerly in great esteem. It consisted of crabs' claws ʒviij. prepared pearls, red coral, of each ʒij., oriental bezoar ʒj.

Canton's phosphorus. A composition made by mixing three parts of calcined oyster-shells with one of flowers of sulphur, and subjecting them for an hour to a strong heat in a covered crucible. The resulting substance is luminous in the dark.

Cantum saccharum. See *Candum.*

Canula. See *Cannula.*

CAOUTCHOUC. 1. The vegetable substance commonly called elastic gum or Indian rubber. It is the concrete juice of the *Hœvea caoutchouc* and *Iatropa elastica*, natives of South America, and of the *Ficus Indica* and *Artocarpus integrifolia*, which grow in the East Indies. It is a soft yielding solid, of a whitish colour when not blackened by smoke, possesses considerable tenacity, and is particularly remarkable for its elasticity. It is inflammable, and burns with a bright flame. When cautiously heated, it fuses without decomposition. It is insoluble in water and alkohol; but it dissolves, though with some difficulty, in pure ether. It is very sparingly dissolved by the alkalis, but its elasticity is destroyed by their action. By the sulphuric and nitric acids it is decomposed, the former causing deposition of charcoal, and the latter the formation of oxalic acid.

Caoutchouc is soluble in the essential oils, in petroleum, and in cajeput oil; and may be procured by evaporation from the two latter without loss of its elasticity. The purified naphtha from coal tar dissolves it readily, and as the solvent is cheap, and the properties of the caoutchouc are unaltered by the process, the solution may be conveniently employed for forming elastic tubes, or other apparatus of a similar kind. It is used by Mr. Mackintosh of Glasgow for covering cloth with a thin stratum of caoutchouc, so as to render it impermeable to moisture. This property of coal naphtha was discovered by Mr. James Syme, Lecturer on Surgery in Edinburgh.

The composition of caoutchouc has not been satisfactorily determined. According to the analysis of Dr. Ure, 100 parts of it consist of carbon 90., oxygen 0·88, and hydrogen 9·12. But caoutchouc yields ammonia when heated in close vessels, and therefore must contain nitrogen as one of its constituents, a principle which was not detected by Dr. Ure. — *Turner.*

2. Elastic bitumen is called *mineral caoutchouc.* See *Bitumen.*

Capaiba. See *Copaifera officinalis.*

Capaiva. See *Copaifera officinalis.*

Capeli'na. (*a, æ.* f.; from *capeline*, French, a woman's hat.) A bandage which when applied has somewhat the form of a hood. Several kinds of capelins are described by the older surgeons.

Capella. See *Cupel.*

Caper. See *Capparis spinosa.*

Caphora. Camphor.

Capilla'ceus. Resembling a hair.

Capillaris. See *Capillary.*

Capillaris vermiculus. The hair-worm. See *Dracunculus.*

CAPILLARY. (*Capillaris*; from *capillus*, a hair.) Applied, 1. In *Natural Philosophy*, to a variety of attraction. See *Attraction*.

2. In *Anatomy*, to the minute vessels by which the terminal arteries and veins communicate with each other. See *Circulation*.

3. In *Botany*, to parts of plants, which resemble hairs: thus a capillary root is one which consists of many very fine fibres; as that of *Festuca ovina*, and many other grasses.

4. In *Surgery*. To a linear fracture of the skull unattended with any separation of the parts of the injured bone.

Capilla'tio. (From *capillus*, a hair.) A capillary fracture of the cranium. See *Capillary*.

CAPI'LLUS. (*us*, *i.* m.; quasi *capitis pilus*, the hair of the head.) The hair. Slender, cylindrical, semi-transparent, insensible, and elastic filaments, which arise from small bulbs or roots situated in the true skin, or the cellular substance under it. Each of the bulbs has two capsules, between which is an oily fluid containing the colouring matter of the hair. The hairs, in passing through the skin, carry with them transparent sheaths, which are processes of the epidermis. Each hair is found to consist of a bundle of smaller hairs, among which are one or two canals containing a nutritious fluid, called the *medulla*. If the hairs be much dried, their cuticular sheath gives way at the point, and the constituent filaments separate. Hair serves for ornament, warmth, or the protection of the parts near which it is placed. Hair is divided into two kinds: *long*, which arises on the scalp, chin, side of the face, arm-pits, and pudenda; and *short*, which is softer than the long, and is present over the greater part of the surface of the body: the palm of the hand and the sole of the foot are entirely destitute of hair

The hair is distinguished by different names in certain parts: —

1. *Capillus*, on the top of the head.
2. *Crinis*, on the back of the head.
3. *Circrinnus*, on the temples.
4. *Cilium*, on the eyelids.
5. *Supercilium*, on the eyebrows.
6. *Vibrissa*, in the nostrils.
7. *Barba*, on the chin.
8. *Pappus*, on the middle of the chin.
9. *Mystax*, on the upper lip.
10. *Pilus*, on the body.

From numerous experiments of Vauquelin it appears that black hair consists of

1. An animal matter, which constitutes the greater part. 2. A white concrete oil, in small quantity. 3. Another oil of a greyish-green colour, more abundant than the former. 4. Iron, the state of which in the hair is uncertain. 5. A minute proportion of oxide of manganese. 6. Phosphate of lime. 7. Carbonate of lime, in very small quantity. 8. Silex and sulphur, each in considerable quantity.

The same experiments show, that red hair differs from black only in containing a red oil instead of a blackish-green oil; and that white hair differs from both these only in the oil being nearly colourless, and in containing phosphate of magnesia, which is not found in them.

Capilli'tium. The hairy scalp.

Capillus veneris. See *Adiantum*.

Capillus veneris canadensis. See *Adiantum pedatum*.

Capitle'nium. (From *caput*, the head, and *plenus*, full.) An incorrect term which has been used in different senses. According to Schneider, it means a kind of catarrh, and, according to Baglivi, a particular heaviness of the head, which is very common at Rome.

Capistra'tio. (From *capistrum*, a bridle: so called because the præpuce is restrained, as it were with a bridle.) See *Phimosis*.

Capi'strum. (*um*, *i.* n; from *caput*, the head.) A bandage used chiefly in fractures and injuries of the lower jaw.

CA'PITAL. *Capitalis*. 1. Belonging to the head, as *capitalia medicamenta*, cephalic medicines, or medicines for the head.

2. The head or upper part of an alembic.

CAPITA'TUS. (From *caput*, the head.) Headed; resembling a head in shape. Applied in anatomy, botany, &c.

Capitatæ papillæ. The large or lenticular papillæ of the tongue.

Capitatæ plantæ. The name given by Linnæus to a section of the family of the *Synantheræ*. It comprises the *Cinarocephaliæ* or artichoke-headed plants.

Capitelium. Soap lees. — *Ruland*.

CAPITILU'VIUM. (*um*, *i.* n.; from *caput*, the head, and *lavo*, to wash.) A lotion for the head.

Capitis obliquus inferior et major. See *Obliquus inferior capitis*.

Capitis par tertium fallopii. See *Trachelomastoideus*.

Capitis posticus. See *Rectus capitis posticus major*.

Capitis rectus. See *Rectus capitis posticus minor*.

Capitula'tus. Headed: applied to objects which have a knob or little head on the top.

CAPI'TULUM. (*um*, *i.* n.; diminutive of *caput*, the head.) 1. A small head or knob.

2. A protuberance of a bone, received into the concavity of another bone.

3. An alembic.

4. In *Botany*, a species of inflorescence, called a head or tuft, formed of many flowers arranged in a globular form, upon a common peduncle. It is distinguished according to its position into

1. *Pedunculate*; as in *Astragalus syriacus*, and *Eryngium maritimum*.
2. *Sessile*; as in *Trifolium tomentosum*.
3. *Terminal*; as in *Monarda fistulosa*.
4. *Axillary*; as in *Gomphrena sessilis*.

According to its figure, into

1. *Globose*; as in *Gomphrena globosa*.
2. *Subrotund*; as in *Trifolium Pratense*.
3. *Conical*; as in *Trifolium montanum*.
4. *Dimidiate*, flat on one side, and round on the other; as in *Trifolium lupinaster*.

According to its covering, into

1. *Naked*; as in *Illecebrum polygonoides*.
2. *Foliose*; as in *Plantago indica*.

Capi'vi. See *Copaifera officinalis*.

CAPNELE'UM. (*um*, *i.* n. Καπνελαιον; from καπνος, smoke, and ελαιον, oil; so named from its emitting much smoke when exposed to

heat. A very liquid kind of resin mentioned by Galen.

Capnites. See *Capnos.*

Capni'tis. Tutty.

Capnium. See *Capnos.*

CAPNOI'DES. (From καπνος, fumitory, and ειδος, likeness,) Resembling fumitory.

CA'PNOS. (*us, i.* f.; καπνος, smoke: so called, says Blancard, because its juice, if applied to the eyes, produces the same effect and sensations as smoke.) *Capnium, Capnites.* The herb fumitory. See *Fumaria.*

Capnus. See *Capnos.*

CA'PPARIS. (*is, is.* m.; καππαρις. The caper plant. 1. The name of a genus of plants in the Linnæan system. Class, *Polyandria;* Order, *Monogynia.*

2. The pharmacopœial name of the caper plant. See *Capparis spinosa.*

Capparis baducca. *Badukka.* A species of caper cultivated in India. The natives make a liniment of its juice which is believed to be anodyne. The flowers, which are very beautiful, are purgative.

Capparis mithridatica. This species, which grows in Arabia, is said to be alexipharmic, and efficacious against the bite of serpents.

Capparis spinosa. The systematic name of the caper plant. *Capparis — pedunculis solitariis unifloris, stipulis spinosis, foliis annuis, capsulis ovalibus* of Linnæus. It is a native of the South of Europe. The buds, or unexpanded flowers of this plant, are in common use as a pickle, under the name of *capers.* They have been esteemed as antiscorbutic. The bark of the root was formerly used as a deobstruent.

CAPRA. (*a, æ.* f.; the Latin word for a she-goat.) The name of a genus of animals. Class, *Mammifera;* Order, *Ruminantia.* The Goat.

Capra hircus. The domesticated goat; the milk of which is much used in different parts of the world. See *Milk, goats'.*

CAPRARIA. A genus of plants, of the class *Didynamia,* and Order *Angiospermia.*

Capraria biflora. Mexican tea. This plant is used in America as a substitute for tea.

Caprate. A salt formed by the combination of the capric acid with a base.

CAPREOLA'RIS. (From *capreolus,* the tendril of a vine.) *Capreolatus.* Resembling the tendrils of a vine. The spermatic vessels have been called *Vasa capreolaria* from their tortuous course.

CAPREOLA'TUS. See *Capreolaris.*

CAPRE'OLUS. (*us, i.* m.; diminutive of *caprea,* a branch bearing tendrils.) A tendril. See *Cirrus.*

Capreolus auris. The helix, so called from its twisted shape. See *Auris.*

Capric acid. *Acidum Capricum.* A peculiar acid discovered by M. Chevreuil in the butter of goats' and cows' milk. See *Butyrum.*

Caprice'rva. (*a, æ.* f.; from *capra,* a goat, and *cerva,* a stag.) The antelope. See *Antilopus.*

Capricornus. An achemical name of lead.

Caprifi'cus. (*us, i* f; from *caper,* a goat, and *ficus,* a fig: because it affords food to goats The wild fig tree. See *Ficus.*

Caprifolia'ceæ. A family of plants in the natural system of Jussieu, of which the genus caprifolium is the type.

Caprifo'lium. (From *caprea,* a tendril, and *folium,* a leaf.) See *Lonicera.*

Capri'zans pulsus. (*Caprizans,* from *capra,* a goat.) A term used by some Latin writers to signify that kind of pulse called a *bounding pulse.* See *Pulsus.*

Caproic acid. A peculiar acid discovered in butter by M. Chevreuil. — See *Butyrum.*

Capronæ. *Caproniæ.* (*Quasi à capite pronæ.*) The hair which hangs down over the forehead.

Capse'lla. (Diminutive of *capsa,* a box.) 1. The *echium* or viper's bugloss. *Marcellus Empiricus.*

2. The herb shepherd's purse. *Cisalpinus.*

3. The name of a genus of plants which some modern botanists have detached from the genus *Thlaspi.*

CA'PSICUM. (*um, i.* n.; from καπτω, to bite: on account of its effect on the mouth.) 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Monogynia.*

2. The pharmacopœial name of the capsicum. See *Capsicum annuum.*

Capsicum annuum. The plant from which we obtain Cayenne pepper, called also Guinea pepper. Cayenne pepper. *Piper indicum, Lada chilli, Capo molago, Solanum urens, Siliquastrum Plinii, Piper Brazilianum, Piper Guinecnse, Piper Calecuticum, Piper Hispanicum, Piper Lusitanicum.* This species of pepper is obtained from the *Capsicum — caule herbaceo, pedunculis solitariis* of Linnæus. What is generally used under the name of Cayenne pepper, is, however, an indiscriminate mixture of the powder of the dried pods of many species of capsicum, but especially of the capsicum minimum, or bird pepper, which is the hottest of all. These peppers have been chiefly used as condiments. They prevent flatulence from vegetable food, and increase the digestive power of weak stomachs. Used in excess, however, they debilitate the digestive organs. In the practice of medicine, Cayenne pepper is a powerful and useful stimulant, and is very advantageously given in atonic gout, paralysis, low fevers, and other cases. Dr. Adair, who first introduced it to practice, found it useful in the *Cachexia Africana,* so frequent and fatal among the negroes. Dr. Wright says, that in dropsical and other complaints, where chalybeates are indicated, a minute portion of powdered capsicum forms an excellent addition, and recommends its use in lethargic affections. This pepper has also been successfully employed in a species of cynanche maligna, which proved very fatal in the West Indies, resisting the use of Peruvian bark, wine, and other remedies commonly employed. In the coma and delirium attendant on tropical fevers, cataplasms of capsicum are said to have a speedy and happy effect. They redden the parts, but seldom blister unless when kept on too long. A weak infusion of capsicum has been found a useful application to scrofulus and other languid ulcerations, and the diluted juice is esteemed of great efficacy in chronic ophthalmia. A gargle

made by adding ʒij. of the officinal tincture to ʒvi. of water, is in common use in malignant sore throat. Capsicum may be given in the form of pills in doses of from gr. v. to grs. x., or from ♏. x. to ʒi. of the officinal tincture may be administered in any proper vehicle. See *Tinctura capsici.*

CA'PSULA. (*a, æ.* f.; diminutive of *capsa*, a box or case.) A capsule.

I. In *Anatomy*, a membranous production enclosing a part like a bag; as the capsular ligaments, the capsule of the crystalline lens, &c.

II. In *Botany*, a dry, woody, coriaceous, or membranaceous pericarp, or seed-vessel, consisting of several valves.

The parts of a capsule are,

1. The *valves*, or external shell, into which the capsule splits.

2. The *sutures*, or the external surface in which the valves are joined.

3. The *dissepiments*, or partitions by which the capsule is divided into several cells.

4. The *loculaments*, or cells, the spaces between the partitions and valves.

5. The *columella*, or central column, or filament, which unites the partitions, and to which the seeds are usually attached.

From the number of the *valves*, a capsule is said to be,

1. *Bivalve;* as in *Magnolia*, and *Capraria.*

2. *Three-valved;* as in *Canna indica.*

3. *Four-valved;* as in *Datura stramonium*, and *Œnothera biennis.*

4. *Five-valved;* as in *Illecebrum*, and *Coris.*

5. *Many valved;* as in *Hura crepitans.*

6. *Operculate*, or *circumcised*, the operculum splitting horizontally; as in *Hyoscyamus niger.*

From the number of *cells*,

1. *Unilocular*, when there is no partition; as in *Parnassia palustris*, and *Agrostemma.*

2. *Bilocular*, two-celled; as in *Hyoscyamus niger*, and *Datura stramonium.*

3. *Trilocular*, three-celled; as in *Æsculus hypocastanum*, and *Iris germanica.*

4. *Quinquelocular*, five-celled; as in *Hibiscus syriacus*, and *Azalea procumbens.*

5. *Novemlocular*, nine-celled; as in *Punica granatum.*

6. *Submultilocular*, when there are many cells, and the partitions do not reach the middle of the capsule; as in *Papaver somniferum.*

From the *appearance* of the external surface, capsule is called,

1. *Glabrous;* as in *Papaver somniferum.*

2. *Aculeate;* as in *Datura stramonium.*

3. *Muricate;* as in *Canna indica.*

From the number of *tubercles* on the external surface,

1. *Dicoccal*, or *didymous;* as in *Spigelia.*

2. *Tricoccal;* as in *Euphorbia lathyrus*, and *Cucorum tricoccum.*

3. *Tetracoccal;* as in *Paururus cernuus*, and *Evonymus europeus.*

From the number of *contiguous* capsules,

1. *Simple*, if solitary.

2. *Duplex*, two aggregated; as in *Pæonia officinalis.*

3. *Triplex;* as in *veratrum album.*

4. *Quintuplex;* as in *Aquilegia vulgaris*, and *Nigella*

5. *Multiplex;* as in *Sempervivum tectorum.*

From the *substance*, a capsule is called,

1. *Membranaceous;* as in *Datura stramonium.*

2. *Corticate*, the external fungous membrane receding from the capsule; as in *Ricinus communis.*

3. *Woody*, very hard, yet splitting; as in *Hura crepitans.*

4. *Baccate*, when the seed is surrounded by a pulp; as *Evonymus europeus*, and *Samyda.*

5. *Spurious*, if the calyx, capsule-like, surrounding the seed, splits, as in *Fagus sylvatica.*

From the number of *seeds* contained in the capsule it is distinguished into,

1. *Monosperm*, one-seeded; as in *Gomphrenia*, *Herniaria*, and *Salsola.*

2. *Disperm*, two-seeded; as in *Hebenstratia*, and *Buffonia.*

3. *Trisperm*, three-seeded; as in *Glaux*, and *Hudsonia.*

4. *Polysperm*, many-seeded; as in *Papaver somniferum.*

Capsula atrabiliaris. See *Renal Glands.*

CAPSULA CORDIS. The pericardium.

Capsula glissonii. See *Capsule of glisson.*

CAPSULA LUMBA'RIS. The receptaculum chyli.

Capsula renalis. See *Renal Glands.*

CAPSULÆ SEMINALES. Bartholin gives this name to the dilated extremities of the vasa deferentia, near the vesiculæ seminales; some other anatomists have applied it to the vesiculæ themselves.

CAPSULÆ SYNOVIA'LES. The capsular ligaments of the joints.

CA'PSULAR. (*Capsularis;* from *capsa*, a bag.) 1. Surrounding a part, like a bag: applied to a ligament which surrounds every moveable articulation, and contains the synovia, as in a bag.

2. Appertaining to a capsule. As the *Capsular arteries*, and *Capsular veins.* See *Kidney.*

Capsule. See *Capsula.*

CAPSULE OF GLISSON. *Capsula glissonii. Capsula communis glissonii. Capsula hepatica.* A strong tunic, formed of cellular membrane, which accompanies the vena portæ in its ramifications through the liver. See *Hepar.*

CA'PULUM. (*um, i.* n.; from *καμπτω*, to bend.) A contortion of the eyelids, or other parts.

CAPUR. Camphor.

CA'PUT. (*ut, itis.* neut.) The head.

In *Anatomy*, this term is variously applied. 1. To the part called, in ordinary language, the head, supported on the atlas, or first vertebra of the neck. It is divided into the *cranium*, or skull, and the *face;* and each of these are again divided into particular regions, for which see the article *Body.*

2. To the upper extremity of a long bone; as the head of the humerus or femur.

3. To the origin of a muscle; as the long head of the biceps.

4. To a protuberance resembling a head; as *caput gallinaginis.*

5. To the beginning of a part; as *caput cæcum coli.*

Caput gallina'ginis. *Verumontanum.* An eminence of the urethra in men, situated before the neck of the bladder; and so called from a fancied resemblance to the head of a woodcock. See *Urethra.*

Caput inclava'tum. *Caput incuncatum.* Locked head. A case in obstetrics in which the head of the fœtus is firmly impacted in the bones of the pelvis.

Caput mo'nachi. Monk's head. A name of the Dandelion. See *Leontodon taraxacum.*

Caput mortuum. A fanciful term, much used by the old chemists. It denoted the fixed residue of chemical operations, in which volatile matters were driven off.

Caput obsti'pum. The wry neck. See *Wry neck.*

Caput purgum *Capitipurgium.* A medicine which causes a defluxion from the head, as an *errhine*, a *sialogogue*, &c. — *Matthæus Sylvaticus.*

Ca'rabe. A Persian name of amber.

Carabe funerum. Bitumen: so called, because it was used in embalming dead bodies.

CA'RABUS. (*us*, *i.* m.; Καραβος.) A genus of coleopterous insects. Two species, the *C. chrysocephalus* and *C. ferrugineus*, have been recommended for the toothach. They are to be pressed between the fingers, and then rubbed on the gum and tooth affected; the remedy, however, is inert.

Caraco'smos. A name of the sour mare's milk, much esteemed by the Tartars.

Caramel. The French name for sugar partly decomposed by the action of heat.

CARA'NNA. (*a*, *æ.* f.; Spanish.) A resin, called also *Caragna*, *Carannæ gummi*, *Bresilis.* It exudes from a large tree, the botanical characters of which have not been ascertained. It is the produce of New Spain, and is brought to Europe in little masses, rolled up in leaves of flags; externally and internally it is of a brownish colour, variegated with irregular white streaks. When fresh, it is soft and tenacious; but becomes dry and friable by keeping. Pure caranna has an agreeable aromatic smell, especially when heated, and a bitterish, slightly pungent taste. It was formerly employed as an ingredient in vulnerary balsams, strengthening, discutient, and suppurating plasters; but it is now disused, and is seldom to be met with.

CARAPA'CE. *Clypeus. Testa.* The hard covering, or shell, which protects the upper part of the body of the chelonian reptiles. See *Chelonia.*

Caraway. See *Carum.*

Cara schulli. A plant of Malabar, which is used by the natives externally as a suppurative, and internally against suppression of urine. It is the *Barleria buxifolia* of botanists.

Car'basus. (*us*, *i.* m. and f.; pl. *a*, *orum.* n.) Fine linen, lint.

CARBAZOTIC ACID. (*Carbazotic*, from *carbon* and *azote.*) A peculiar acid, formed by the action of nitric acid or indigo, and thus named by Liebig, who made the first investigation of its nature. It is the same substance with the bitter principle of Welter, obtained by the action of nitric acid on silk; and the same also with the bitter principle which Braconnot obtained from aloes by treating them with nitric acid. Carbazotic acid is procured by dissolving small pieces of the best indigo in eight or ten times their weight of moderately strong nitric acid, and boiling as long as fumes of nitrous acid are evolved. During the ebullition, carbonic, hydro-cyanic, and nitrous acids escape, and the liquid is found to contain carbazotic acid, a resinous matter, artificial tannin, and indigotic acid. The carbazotic acid is deposited in crystals as the liquor cools; and by evaporating the liquid, and adding cold water, a further deposition of the acid is obtained. To render the carbazotic acid quite pure, it should be dissolved in hot water, and neutralised by carbonate of potash: as the liquor cools, crystals of carbazotate of potash are deposited, which are to be purified by repeated crystallisation; and on decomposing the salt by sulphuric acid, the carbazotic acid is obtained pure. It is in transparent crystalline plates of a yellow colour. According to the researches of Professor Rapp of Tübingen, carboratic acid is a powerful narcotic poison. The following account of Rapp's experiments is given by Dr. Christison, from Buchner's Toxicology: —

It was found that sixteen grains in solution, when introduced into the stomach, killed a fox, ten grains a dog, and five grains a rabbit, in an hour and a-half; that the injection of a watery solution into the windpipe occasioned death in a few minutes; that the introduction of it into the cavity of the pleura or peritonæum occasioned death in several hours; that a watery solution of ten grains injected into the jugular vein of a fox killed it instantaneously, and in like manner five grains affected a dog in three minutes and killed it in twenty-four hours; and that thirty grains applied to a wound killed a rabbit. The symptoms remarked from its introduction into the stomach of the fox, were, in half an hour, tremors, grinding of the teeth, constant contortion of the eyes, and convulsions; in an hour, complete insensibility; and death in half an hour more. In the dog there was also remarked an attack of vomiting and feebleness of the pulse.

In the dead body no particular alteration of structure was remarked. The heart, examined immediately after death, from the introduction of the poison into the stomach, was found much gorged, and motionless; but the irritability of the voluntary muscles remained. The stomach was not inflamed, but dyed yellow. A very interesting appearance was dyeing of various textures and fluids throughout the body. In the fox, killed by swallowing sixteen grains, the conjunctiva of the eyes, the aqueous humour, the capsule of the lens, the membranes of the arteries, and in a less degree that of the veins, the lungs, and in many places the cellular tissue, had acquired a lemon-yellow colour. The dog, killed in the same manner, presented similar appearances; also animals killed by injection of the poison into the pleura or peritonæum; and in the latter animals the urine was tinged yel-

low. In a rabbit, killed by the application of the poison to a wound, the same discolouration was also every where remarked, together with yellowness of the fibrin of the blood. But no yellowness could be seen any where in the dog, which died in twenty-four hours after receiving five grains into the jugular vein. In no instance was there any yellow tint perceptible in the brain or spinal chord.

Dr. Christison observes, that it appears from the abstract given by Buchner, that Rapp did not use the pure crystals of carbazotic acid in his experiments, but the yellow fluid from which the crystals are procured, which contains, in addition to the acid, a resinous matter and artificial tannin.

CA'RBO. (*o, onis.* m. The Latin word for a coal.) 1. In *Chemistry*, charcoal. See *Carbon.*

2. In *Surgery*, a carbuncle. See *Anthrax.*

Carbo fossilis. Pit coal.

Carbo ligni. See *Carbon.*

Carbo vegetabilis. Charcoal.

CARBON. (*on, onis.* n.; from *carbo*, coal.)

1. The diamond. See *Adamas.*

2. *Charcoal.* A peculiar substance, which may be obtained from most organic matters by ignition in close vessels. Wood yields it very abundantly.

For general purposes, wood is converted into charcoal by building it up in a pyramidal form, covering the pile with clay or earth, and leaving a few air-holes, which are closed as soon as the mass is well lighted; by this means the combustion is carried on in an imperfect manner. If bones be exposed to a red heat in a covered crucible, a black mass remains, which consists of charcoal mixed with the earthy matter of the bone. This is called *animal charcoal*, and is much used by chemists for purifying other substances.

Charcoal is made on the great scale, by igniting wood in iron cylinders. When the resulting charcoal is to be used in the manufacture of gunpowder, it is essential that the whole of the acetic acid and tar be suffered to escape, and that the reabsorption of the crude vapours be prevented, by cutting off the communication between the interior of the cylinders and the apparatus for condensing the pyrolignous acid, whenever the fire is withdrawn from the furnace. If this precaution were not observed, the gunpowder made with the charcoal would be of inferior quality.

Charcoal is black, brittle, and somewhat sonorous when struck. It generally retains the figure of the vegetable from which it was obtained. If, however, the vegetable consist for the most part of water or other fluids, these in their extrication will destroy the connection of the more fixed parts. In this case the quantity of charcoal is much less than in the former. The charcoal of oily or bituminous substances is of a light pulverulent form, and rises in *soot.* The charcoal of oils is called *lamp-black.* A very fine kind is obtained from burning alkohol.

When coal is deprived of its volatile parts, by heating in close vessels, a peculiar kind of charcoal remains, which is called *coke:* this is abundantly obtained as the residuum of the process for making coal gas.

Well-burned charcoal is a conductor of electricity, though wood simply deprived of its moisture, by baking, is a non-conductor; but it is a very bad conductor of caloric, a property of considerable use on many occasions, as in lining crucibles.

It is insoluble in water, and hence the utility of charring the surface of wood exposed to that liquid, in order to preserve it, a circumstance not unknown to the ancients. This preparation of timber has been proposed as an effectual preventive of what is commonly called the dry-rot. It has an attraction, however, for a certain portion of water, which it retains very forcibly. At a red heat, or nearly so, it decomposes water; forming with its oxygen carbonic acid, or carbonic oxide, according to the quantity present; and with the hydrogen a gaseous carburet, called carburetted hydrogen, or heavy inflammable air.

Charcoal is infusible by any heat. If exposed to a very high temperature in close vessels, it loses little or nothing of its weight, but shrinks, becomes more compact, and acquires a deeper black colour.

Recently prepared charcoal has a remarkable property of absorbing different gases, and condensing them in its pores, without any alteration of their properties or its own.

M. Theodore de Saussure has ascertained that this takes place in very different proportions, with reference to different gases. He found that box-wood charcoal absorbed, in the course of 24 or 36 hours,

90	times its volume of ammoniacal gas.
85	muriatic acid.
65	sulphurous acid.
55	sulphuretted hydrogen.
40	nitrous oxide.
35	carbonic acid.
35	olefiant gas.
9·42	carbonic oxide.
9·25	oxygen.
7·5	nitrogen.
1·75	hydrogen.

The absorption of gases by charcoal, is evidently independent of any chemical action, since the quantity of each gas absorbed bears no relation to the affinity of that gas for the carbon. The absorbing power of charcoal appears to depend on capillary attraction; it is found to be greatest in the more compact varieties of charcoal, and is very much diminished by reducing the charcoal to powder. The proportion in which different gases are absorbed, appears to depend on their elasticity — those which possess least of this property being most readily absorbed.

Charcoal has a powerful affinity for oxygen; whence its use in disoxygenating metallic oxides, and restoring their base to its original metallic state, or reviving the metal. Thus, too, it decomposes several of the acids, as the phosphoric and sulphuric, from which it abstracts their oxygen, and leaves the phosphorus and sulphur free.

Carbon is capable of combining with sulphur and with hydrogen. With iron it forms steel;

ınd it unites with copper into a carburet, as ›bserved by Dr. Priestley.

A singular and important property of char-:oal is that of destroying the smell, colour, and :aste of various substances: for the first ac-:urate experiments on this subject we are chiefly ndebted to Mr. Lowitz, of Petersburgh, though :harcoal had been long before recommended for :orrecting the fetor of foul ulcers, and as an ıntiseptic. On this account it is one of the best lentifrices. Water that has become putrid by ong keeping in wooden casks, is rendered sweet ›y filtering through charcoal powder, or by ıgitation with it; particularly if a few drops of ;ulphuric acid be added. Common vinegar ›oiled with charcoal powder becomes perfectly impid. Saline solutions, that are tinged yellow ›r brown, are rendered colourless in the same way, so as to afford perfectly white crystals. The impure carbonate of ammonia obtained from bones, is deprived both of its colour and fetid smell by sublimation with an equal weight ›f charcoal powder. Malt spirit is freed from ts disagreeable flavour by distillation from char-:oal; but if too much be used, part of the spirit s decomposed. Simple maceration, for eight ›r ten days, the charcoal being in the proportion f about 1-150th of the weight of the spirit, im-›roves the flavour much. It is necessary that he charcoal be well burned, brought to a red ieat before it is used, and used as soon as may ›e, or at least be carefully excluded from the ir. The proper proportion, too, should be scertained by experiment on a small scale. The charcoal may be used repeatedly, by ex-›osing it for some time to a red heat before it is gain employed.

Charcoal is used on particular occasions as uel, on account of its giving a strong and teady heat without smoke. It is employed to onvert iron into steel by cementation. It nters into the composition of gunpowder. In :s finer states, as in ivory black, lamp black, :c., it forms the basis of black paints, Indian nk, and printers' ink.

The purest carbon for chemical purposes is ›btained by strongly igniting lamp black in a overed crucible. This yields, like the diamond, ınmixed carbonic acid by combustion in oxygen.

Carbon unites with all the common simple ombustibles, and with azote, forming a series f most important compounds. With sulphur t forms a curious limpid liquid, called carburet f sulphur, or sulphuret of carbon. With hosphorus it forms a compound, the properties f which are not yet perfectly ascertained. It nites with hydrogen in two definite proportions, onstituting carburetted and bicarburetted hy-rogen gases. With azote it forms cyanogen. teel and plumbago are two different compounds f carbon with iron. In black chalk we find his combustible intimately associated with silica nd alumina. The primitive combining pro-ortion, or prime equivalent of carbon, is 0·75 n the oxygen scale.

Carbon, or charcoal, in combination with xygen, forms two important compounds, viz. ıe oxide of carbon, and carbonic acid. See *'arbonic acid* and *Carbonic oxide.*

Carbon humanum. Paracelsus gives this name to human excrement.

Carbon, mineral. This is of a grey blackish colour. It is charcoal with various proportions of earth and iron, without bitumen. It has a silky lustre, and the fibrous texture of wood. It is found in small quantities, stratified with brown coal, slate coal, and pitch coal.

Carbonaceous acid. See *Carbonic acid.*

Carbonas ammoniæ. See *Ammonia.*

Carbonas calcis. See *Creta præparata.*

Carbonas ferri. See *Ferrum.*

Carbonas magnesiæ. See *Magnesia.*

Carbonas plumbi. See *Lead.*

Carbonas potassæ. See *Potash.*

Carbonas sodæ. See *Soda.*

CA'RBONATE. *Carbonas, atis,* f. A carbonate. A salt, formed by the union of carbonic acid with a base.

When the base is imperfectly neutralized by the carbonic acid, the salt is termed a *subcarbonate;* and when there is an excess of acid, a *bicarbonate.* The most remarkable general characteristic of the carbonates is their effervescing with almost all the acids. They are all deprived of their carbonic acid by heat, except the carbonates of potash, soda, and lithia.

Those used in medicine are,

1. The carbonate of lime. See *Creta præparata* and *Testæ præparatæ.*
2. The carbonate of potash.
3. ——————— soda.
4. ——————— baryta.
5. The sesquicarbonate of ammonia.
6. The carbonate of magnesia.
7. ——————— iron.
8. ——————— lead.
9. The bicarbonate of potash.
10. ——————— soda.

Carbonate of baryta. See *Baryta.*

Carbonated-hydrogen gas. See *Carburetted hydrogen gas.*

Carbonate of lime. See *Creta præparata,* and *Testæ præparatæ.*

Carbonate of potash. See *Potassæ carbonas.*

Carbonate of soda. See *Sodæ carbonas.*

CARBONIC. (*Carbonicus,* from *carbon,* its base.) Of, or belonging to carbon.

Carbonic acid. *Acidum carbonicum.* This acid, which has also been called Fixed air, Carbonaceous acid, Calcareous acid, and Aërial acid, is a compound of carbon and oxygen, and is formed during the combustion of charcoal. It is most readily obtained, however, by pouring sulphuric acid, diluted with five or six times its weight of water, on common chalk, which is a carbonate of lime. The carbonic acid gas is disengaged with strong effervescence, and may be received in the usual manner.

Carbonic acid is very abundant in nature, and appears to be produced in a variety of circumstances. It composes $\frac{44}{100}$ of the weight of limestone, marble, calcareous spar, and other natural forms of calcareous earth, from which it may be extricated either by the simple application of heat, or by the superior affinity of some other acid; most acids having a stronger action on bodies than this. This last process does not require heat, because fixed air

is strongly disposed to assume the elastic state.

Carbonic acid gas is much denser than common air, and for this reason occupies the lower parts of such mines or caverns as contain materials which afford it by decomposition. The miners call it *choke-damp*. The Grotto del Cano, in the kingdom of Naples, has been famous for ages on account of the effects of a stratum of fixed air which covers its bottom. It is a cave or hole in the side of a mountain, near the lake Agnano, measuring not more than eighteen feet from its entrance to the further extremity. If a dog or other animal that holds down its head be thrust into this cavern, it is immediately asphyxiated by inhaling the noxious atmosphere, but if not kept within its influence too long may be restored to animation by immersion in the water of the lake. This cruelty is continually practised for the amusement of travellers.

Carbonic acid gas is emitted in large quantities by bodies in the state of the vinous fermentation; and, on account of its great weight, it occupies the apparently empty space or upper part of the vessels in which the fermenting process is going on. A variety of striking experiments may be made in this stratum of elastic fluid. Lighted paper, or a candle dipped into it, is immediately extinguished; and the smoke remaining in the carbonic acid gas, renders its surface visible, which may be thrown into waves by agitation, like water. If a dish of water be immersed in this gas, and briskly agitated, it soon becomes impregnated, and obtains the pungent taste of Pyrmont water. In consequence of the weight of the carbonic acid gas, it may be lifted out in a pitcher, or bottle, which, if well corked, may be used to convey it to great distances, or it may be drawn out of a vessel by a cock like a liquid. The effects produced by pouring this invisible fluid from one vessel to another, have a very singular appearance: if a candle or small animal be placed in a deep vessel, the former becomes extinct, and the latter expires, in a few seconds after the carbonic acid gas is poured upon them, though the eye is incapable of distinguishing any thing that is poured. If, however, it be poured into a vessel full of air, in the sunshine, its density being so much greater than that of the air, renders it slightly visible by the undulations and streaks it forms in this fluid, as it descends through it.

Carbonic acid reddens infusion of litmus; but the redness vanishes by exposure to the air, as the acid flies off.

It has a peculiar sharp taste, which may be perceived over vats in which wine or beer is fermenting, as also in sparkling Champaign, and the brisker kinds of cider. It not only destroys life, but the muscular fibre of animals killed by it lose their irritability, so as to be insensible to the stimulus of galvanism.

Carbonic acid is expanded by heat, but not otherwise changed. It is not acted upon by oxygen or any of the simple combustibles. Charcoal absorbs it, but gives it out again unchanged, at ordinary temperatures; but when this gaseous acid is made to traverse charcoal ignited in a tube, it is converted into carbonic oxide.

It consists of one atom of carbon and two of oxygen. Its specific gravity is 1·5230.

Carbonic acid appears, from various experiments of Ingenhouz, to be of considerable utility in promoting vegetation. It is probably decomposed by the organs of plants, its base furnishing part, at least, of the carbon that is so abundant in the vegetable kingdom, and its oxygen contributing to replenish the atmosphere with that necessary support of life, which is continually diminished by the respiration of animals and other causes.

Water absorbs about its volume of this acid gas, and thereby acquires a specific gravity of 1·0015. On freezing it, the gas is as completely expelled as by boiling. By artificial pressure water may be made to absorb several times its bulk of carbonic acid. This is liquid carbonic acid, or water impregnated with carbonic acid. It goes under the name of *single soda water*. (See *Soda water*.) It sparkles in the glass, has a pleasant acidulous taste, and forms an excellent beverage. It diminishes thirst, lessens the morbid heat of the body, and acts as a diuretic. It is also an excellent remedy against irritability of the stomach, and it is one of the best anti-emetics which we possess. Carbonic acid has been found a useful stimulant in typhus fever, and hence yeast has been much recommended in that disease. For the purpose of allaying irritability of the stomach, carbonic acid is disengaged from carbonate of potash by lemon juice, in a draught given while effervescing.

In combination with the salifiable bases, this acid forms the salts called *carbonates*. See *Carbonate*.

Carbonic oxide. *Gaseous oxide of carbon.* This was first described by Dr. Priestley, who mistook it for a hydrocarbonate. It was first proved to be a peculiar gas by Mr. Cruikshank, of Woolwich, who made it known as such, in April 1801, through the medium of Nicholson's Journal for that month. It soon afterwards attracted the attention of Desormes, Clement, and others. Carbonic oxide forms an intermediate substance between the pure hydrocarbonates and carbonic acid gas; but not being possessed of acid properties, Mr. Cruikshank called it, conformably to the rules of the chemical nomenclature, *gaseous oxide of carbon*, for it consists of oxygen and carbon rendered gaseous by caloric.

The carbonic oxide is a compound of one prime equivalent of carbon, and one of oxygen. It cannot be artificially formed by the direct combination of its constituents; for at the temperature requisite for effecting a union, the carbon attracts its full dose of oxygen, and thus generates carbonic acid. It may be procured by exposing charcoal to a long continued heat. The last products consist chiefly of carbonic oxide.

To obtain it pure, however, our only plan is to abstract one proportion of oxygen from carbonic acid, either in its gaseous state, or as condensed in the carbonates.

If we subject to a strong heat, in a gunbarrel or retort, a mixture of any dry earthy carbonate, such as chalk, or carbonate of strontia, with metallic filings or charcoal, the combined acid is resolved into the gaseous oxide of carbon. The most convenient mixture is equal parts of dried chalk, and iron or zinc filings.

An excellent process for obtaining carbonic oxide has lately been suggested by M. Dumas. He subjects to heat in a small retort a mixture of binoxalate of potash with five or six times its weight of concentrated sulphuric acid. An effervescence ensues, and a gas consisting of equal measures of carbonic acid and carbonic oxide, escapes. The carbonic acid is then absorbed by means of lime-water or solution of potash, and the carbonic oxide remains pure.

This gas burns with a dark blue flame. It inflames in the atmosphere, when brought into contact with an iron wire heated to dull redness; whereas carburetted hydrogen is not inflammable by a similar wire, unless it is heated to whiteness, so as to burn with sparks. Carbonic oxide, when respired, is fatal to animal life. Sir H. Davy took three inspirations of it, mixed with about one-fourth of common air: the effect was a temporary loss of sensation, which was succeeded by giddiness, sickness, acute pains in different parts of the body, and extreme debility. Some days elapsed before he entirely recovered. Since then, Mr. Witter, of Dublin, was struck down in an apoplectic condition, by breathing this gas; but he was speedily restored by the inhalation of oxygen.

When a mixture of carbonic oxide and chlorine is exposed to sunshine, a curious compound, discovered by Dr. John Davy, is formed, to which he gave the name of *phosgene gas* It is now generally called *chlorocarbonic acid.*

Carbonisa'tion. The conversion of organic substances into charcoal.

CARBUNCLE. *Carbunculus.* 1. The name of a gem highly prized by the ancients, probably the *alamandine*, a variety of noble garnet.

2. The name of a disease. See *Anthrax.*

Carbunculate. Carbunculatus. 1. Applied in pathology to the nose and face when affected with the disease called *acne rosacea.* See *Acne.*

2. In *Natural History*, applied to small protuberances or elevations on any part of animals, vegetables, or minerals.

Carbu'nculus. (*us*, *i.* m.; diminutive of *carbo*, a burning coal.) A carbuncle. See *Anthrax.*

Carbunculus anginosus. This name has been given by some authors to the malignant sore throat.

CA'RBURET. (*Carburetum*, *i.* n.) A compound of carbon with any other substance: thus carburetted hydrogen is hydrogen holding carbon in solution.

Carburet of iron. Steel. See *Ferrum.*

Carburet of sulphur. See *Sulphuret of carbon.*

CARBURETTED HYDROGEN. Chemists have for some years been acquainted with two distinct compounds of carbon and hydrogen, viz. carburetted hydrogen and olefiant gas; but the researches of Mr. Faraday have enriched the science by the discovery of two new substances of a similar nature, and the same able chemist has demonstrated the existence of others, though he has hitherto been unable to obtain them in an insulated form. According to Dr. Thomson, naphtha and naphthaline are likewise pure carburets of hydrogen.

Light Carburetted Hydrogen.—This gas is sometimes called *heavy inflammable air*, the *inflammable air of marshes*, *hydrocarburet*, and *protocarburet of hydrogen.* Dr. Thomson proposed the term of *bi-hydroguret of carbon*; but it is more generally known by the name of *light carburetted hydrogen.* It is formed abundantly in stagnant pools during the spontaneous decomposition of dead vegetable matter; and it may readily be procured by stirring the mud at the bottom of them, and collecting the gas, as it escapes, in an inverted glass vessel. In this state it is found to contain 1-20th of carbonic acid gas, which may be removed by means of lime-water or a solution of pure potash, and 1-15th or 1-20th of nitrogen. This is the only convenient method of obtaining it.

Light carburetted hydrogen is tasteless and nearly inodorous, and it does not change the colour of litmus or turmeric paper. Water, according to Dr. Henry, absorbs about 1-60th of its volume. It extinguishes all burning bodies, and is of course unable to support the respiration of animals. It is highly inflammable; and when a jet of it is set on fire, it burns with a yellow flame, and with a much stronger light than is occasioned by hydrogen gas. With a due proportion of atmospheric air or oxygen gas, it forms a mixture which detonates powerfully with the electric spark, or by the contact of flame. The sole products of the explosion are water and carbonic acid.

Dr. Dalton first ascertained the real nature of light carburetted hydrogen, and it has since been particularly examined by Dr. Thomson, Sir H. Davy, and Dr. Henry. When 100 measures are detonated with rather more than twice their volume of oxygen gas, the whole of the inflammable gas and precisely 200 measures of the oxygen disappear, water is condensed, and 100 measures of carbonic acid are produced. From this it may be inferred that 100 cubic inches of light carburetted hydrogen contain 100 cubic inches of the vapour of carbon and 200 cubic inches of hydrogen gas; and that it is composed by weight of six parts or one equivalent of carbon, and two parts or two equivalents of hydrogen. Consequently, 8 is its equivalent.

From the same data it follows, that 100 cubic inches of light carburetted hydrogen, at 60° F., and when the barometer stands at 30 inches, must weigh 17·23 grains; and its specific gravity is therefore 0·5554. This calculated result is almost identical with the specific gravity of the gas as determined directly by Dr. Henry, and Dr. Thomson.

Light carburetted hydrogen is not decomposed by electricity, or by being passed through red-hot tubes, unless the temperature is very great. It may be inferred from the experiments of Berthollet, and from the phenomena that attend the formation of oil gas at high

temperatures, that light carburetted hydrogen is resolved into its elements, at least in part, when the heat is very intense. It follows from the nature of the gas, that for each volume so decomposed, two volumes of hydrogen must be set free.

Chlorine and light carburetted hydrogen do not act on each other at common temperatures, when quite dry, even if they are exposed to the direct solar rays. If the gases are moist, and the mixture is kept in a dark place, still no action ensues; but if light be admitted, particularly sunshine, decomposition follows. The nature of the product depends upon the proportion of the gases. If four measures of chlorine and one of light carburetted hydrogen are present, carbonic and muriatic acid gases will be produced. For, during this action, two volumes of chlorine combine with two volumes of hydrogen contained in the carburetted hydrogen, and the other two volumes of chlorine decompose so much water as will likewise give two volumes of hydrogen, — which forms muriatic acid; while the oxygen of the water unites with the carbon, and converts it into carbonic acid. If there are three instead of four volumes of chlorine, carbonic oxide will be generated instead of carbonic acid, because one-half less water will be decomposed. (Dr. Henry.) If a mixture of chlorine and light carburetted hydrogen be electrified or exposed to a red heat, muriatic acid is formed, and charcoal deposited.

It was first ascertained by Dr. Henry, and his conclusions have been fully confirmed by the subsequent researches of Sir H. Davy, that the *fire-damp* of coal mines consists almost solely of light carburetted hydrogen. This gas often issues in large quantity from between beds of coal; and by collecting in mines, owing to deficient ventilation, gradually mingles with atmospheric air, and forms an explosive mixture. The first unprotected light, which then approaches, sets fire to the whole mass, and a dreadful explosion ensues. These accidents, which were formerly so frequent and so fatal, are now comparatively rare, owing to the employment of the safety-lamp; and it appears demonstrable, on the view that light carburetted hydrogen is the sole constituent of fire-damp, that accidents of the kind cannot occur at all, provided the gauze-lamp is in a due state of repair, and employed with the requisite precautions. For this invention we are indebted to Sir H. Davy; and we must in justice remember that it is not, like many discoveries, the offspring of chance, but the fruit of elaborate experiment and close induction; an invention which originated solely with that philosopher, and which may be regarded as one of the happiest efforts of his genius.

Sir H. Davy commenced the inquiry by determining the best proportion of air and light carburetted hydrogen for forming an explosive mixture. When the inflammable gas is mixed with three or four times its volume of air, it does not explode at all. It detonates feebly when mixed with five or six times its bulk of air; and powerfully, when one to seven or one to eight is the proportion. With 14 times its volume, it still forms a mixture which is explosive; but if a larger quantity of air be admitted, a taper burns in it only with an enlarged flame.

The temperature which is required for causing an explosion was next ascertained. It was found that the strongest explosive mixture may come in contact with iron or other solid bodies heated to redness, or even to whiteness, without detonating, provided they are not in a state of actual combustion; whereas, the smallest point of flame, owing to its higher temperature, instantly causes an explosion.

The last important step in the inquiry was, the observation that flame cannot pass through a narrow tube. This led Sir H. Davy to the discovery, that the power of tubes in preventing the transmission of flame is not necessarily connected with any particular length; and that a very short one will have the effect, provided its diameter is proportionably reduced. Thus a piece of fine wire gauze, which may be regarded as an assemblage of short narrow tubes, is quite impermeable to flame; and consequently, if a common oil lamp be completely surrounded with a cage of such gauze, it may be introduced into an explosive atmosphere of fire damp and air, without kindling the mixture. This simple contrivance, which is appropriately termed the *safety-lamp*, not only prevents explosion, but indicates the precise moment of danger. When the lamp is carried into an atmosphere charged with fire-damp, the flame begins to enlarge; and the mixture, if highly explosive, takes fire as soon as it has passed through the gauze, and burns on its inner surface, while the light in the centre of the lamp is extinguished. Whenever this appearance is observed, the miner must instantly withdraw; for though the flame cannot communicate to the explosive mixture on the outside of the lamp, as long as the texture of the gauze remains entire, yet the heat emitted during the combustion is so great, that the wire, if exposed to it for a few minutes, would suffer oxidation, and fall to pieces.

The peculiar operation of small tubes in obstructing the passage of flame admits of a very simple explanation. Flame is gaseous matter heated so intensely as to be luminous; and Sir. H. Davy has shown that the temperature necessary for producing this effect is far higher than the white heat of solid bodies. Now when flame comes in contact with the sides of very minute apertures, as when wire gauze is laid upon a burning jet of coal gas, it is deprived of so much caloric that its temperature instantly falls below the degree at which gaseous matter is luminous; and consequently, though the gas itself passes freely through the interstices, and is still very hot, it is no longer incandescent. Nor does this take place when the wire is cold only; the effect is equally certain at any degree of heat which the flame can communicate to it. For since the gauze has a large extent of surface, and from its metallic nature is a good conductor of caloric, it loses heat with great rapidity. Its temperature, therefore, though it may be heated to

whiteness, is always so far below that of flame, as to exert a cooling influence over the burning gas, and reduce its heat below the point at which it is incandescent.

Olefiant Gas.—This gas was discovered in 1796 by some associated Dutch chemists, who gave it the name of *Olefiant gas*, from its property of forming an oil-like liquid with chlorine. It is sometimes called *bi-carburetted* or *per-carburetted hydrogen* and *hydroguret* of *carbon*; but as none of these terms convey a precise idea of its nature, the appellation proposed by its discoverers is here adopted.

Olefiant gas is prepared by mixing in a capacious retort six measures of strong alkohol with twelve of concentrated sulphuric acid, and heating the mixture as soon as it is made, by means of an Argand lamp. The acid soon acts upon the alkohol, effervescence ensues, and olefiant gas passes over. The chemical changes which take place are of a complicated nature, and the products numerous. At the commencement of the process, the olefiant gas is mixed only with a little ether; but in a short time the solution becomes dark, the formation of ether declines, and the odour of sulphurous acid begins to be perceptible: towards the close of the operation, though olefiant gas is still the chief product, sulphurous acid is freely disengaged, some carbonic acid is formed, and charcoal in large quantity deposited. The olefiant gas may be collected either over water or mercury. The greater part of the ether condenses spontaneously, and the sulphurous and carbonic acids may be separated by washing the gas with lime-water, or a solution of pure potash.

The olefiant gas in this process is derived solely from the alkohol; and its production is owing to the strong affinity of sulphuric acid for water. Alkohol is composed of carbon, hydrogen, and oxygen; and from the proportion of its elements it is inferred to be a compound of 14 parts or one equivalent of olefiant gas, united with nine parts or one equivalent of water. It is only necessary, therefore, in order to obtain olefiant gas, to deprive alkohol of the water which is essential to its constitution; and this is effected by sulphuric acid. The formation of ether, which occurs at the same time, will be explained hereafter. The other phenomena are altogether extraneous. They almost always ensue when substances derived from the animal and vegetable kingdoms are subjected to the action of sulphuric acid. They occur chiefly at the close of the preceding process, in consequence of the excess of acid which is then present.

Olefiant gas is a colourless elastic fluid, which has no taste, and scarcely any odour when pure. Water absorbs about one-eighth of its volume. Like the preceding compound, it extinguishes flame; is unable to support the respiration of animals; and is set on fire when a lighted candle is presented to it, burning slowly with the emission of a dense white light. With a proper quantity of oxygen gas, it forms a mixture which may be kindled by flame or the electric spark, and which explodes with great violence. To burn it completely, it should be detonated with four or five times its volume of oxygen. On conducting this experiment with the requisite care, Dr. Henry finds that for each measure of olefiant gas, precisely three of oxygen disappear, deposition of water takes place, and two measures of carbonic acid are produced. From these data the proportion of its constituents may easily be deduced in the following manner:—Two measures of carbonic acid contain two measures of the vapour of carbon, which must have been present in the olefiant gas, and two measures of oxygen. Two-thirds of the oxygen which disappeared are thus accounted for; and the other third must have combined with hydrogen. But one measure of oxygen requires for forming water precisely two measures of hydrogen, which must likewise have been contained in the olefiant gas. It hence follows that 100 cubic inches contain,

	Grains.
200 cubic inches of the vapour of carbon, which weigh	25·846
200 cubic inches of the vapour of hydrogen gas, which weigh	4·3068;
and consequently	
100 cubic inches of olefiant gas must weigh	30·1528.

Its specific gravity, accordingly, is ·9722: whereas its specific gravity, as taken directly by Saussure, is ·9852; by Henry, ·967; and by Thomson, ·97.

Olefiant gas, by weight, consists of

Carbon	25·846	12 or two equivalents,
Hydrogen	4·3068	2 or two equivalents;

and its atomic weight is 14.

Olefiant gas, when a succession of electric sparks is passed through it, is resolved into charcoal and hydrogen; and the latter of course occupies twice as much space as the gas from which it was derived. Olefiant gas is decomposed by being passed through red-hot tubes of porcelain. The nature of the products varies with the temperature. By employing a very low degree of heat, it may probably be converted solely into carbon and light carburetted hydrogen: and in this case no increase of volume can occur; because these two gases, for equal bulks, contain the same quantity of hydrogen. But if the temperature be high, then a great increase of volume takes place; a circumstance which indicates the evolution of free hydrogen, and consequently the total decomposition of some of the olefiant gas.

Chlorine acts powerfully on olefiant gas. When these gases are mixed together in the proportion of two measures of the former to one of the latter, they form a mixture which takes fire on the approach of flame, and which burns rapidly with formation of muriatic acid gas, and deposition of a large quantity of charcoal. But if the gases are allowed to remain at rest after being mixed together, a very different action ensues. The chlorine, instead of decomposing the olefiant gas, enters into direct combination with it, and a yellow liquid like oil is generated. This is called *chloric ether*; *chloride of hydrocarbon*; or more properly *perchloride of Carbon*. See *Chlorine*. Olefiant gas unites also

with iodine, forming the compound called *iodide of hydrocarbon*, or more properly *perodide of carbon*. See *Iodine*.

It unites also with bromine, constituting *bromide of hydrocarbon*.

Bromide of Hydrocarbon. — This compound was formed by Serullas by adding one part of the iodide of hydrocarbon to two parts of bromine contained in a glass tube. Instantaneous reaction ensues, attended with disengagement of caloric and a hissing noise; and two compounds, the bromide of iodine and a liquid bromide of hydrocarbon, are generated. By means of water the former is dissolved; while the latter, coloured by bromine, collects at the bottom of the liquid. The decoloration is then effected by means of caustic potash. In order that the process should succeed, the iodide of hydrocarbon must not be in excess.

Bromide of hydrocarbon, after being washed with a solution of potash, is colourless, heavier than water, very volatile, of a penetrating ethereal odour, and of an exceedingly sweet taste, which it communicates to water in which it is placed, in consequence of being slightly soluble in that liquid. It becomes solid at a temperature between 21° and 23° F. This compound is identical with that which M. Balard formed by letting a drop of bromine fall into a flask full of olefiant gas. (An. de Ch. et Physique, xxxiv.)

On the new Carburets of Hydrogen discovered by Mr. Faraday. — In the process of compressing oil gas in portable gas lamps, during which operation the gas is subjected to a force equal to the pressure of thirty atmospheres, a considerable quantity of liquid collects, which retains its fluidity at the common atmospheric pressure. This liquid, when recently received from the vessel, boils at 60° F. But as soon as the more volatile portions are dissipated, which happens before one-tenth is thrown off, the point of ebullition rises to 100°; and the temperature gradually ascends to 250° before all the liquid is volatilised. This indicated the presence of several compounds, which differ in volatility; and Mr. Faraday remarked that the boiling point was more constant between 176° and 190° F. than at any other temperature. He was hence led to search for a definite compound in the fluid which came over at that period; and at length, by repeated distillations, and exposing the distilled liquid to a temperature of zero, he succeeded in obtaining a substance, to which he has applied the term of *bi-carburet of hydrogen*.

Bi-carburet of hydrogen, at common temperatures, is a colourless transparent liquid, which smells like oil gas, and has also a slight odour of almonds. Its specific gravity is nearly ·85 at 60° F. At 32° it is congealed, and forms dendritic crystals on the sides of the glass. At zero it is transparent, brittle, and pulverulent, and is nearly as hard as loaf-sugar. When exposed to the air at the ordinary temperature it evaporates, and boils at 186°. The density of its vapour at 60°, and when the barometer stands at 29·98 inches, is nearly 2·7760.

Bi-carburet of hydrogen is very slightly soluble in water; but it dissolves freely in fixed and volatile oils, in ether, and in alkohol, and the alkoholic solution is precipitated by water. It is not acted on by alkalis. It is combustible, and burns with a bright flame and much smoke. When it is brought in contact with oxygen gas, so much vapour rises as to make a powerfully detonating mixture. Potassium heated in it does not lose its lustre. On passing its vapour through a red-hot tube, it gradually deposits charcoal, and yields carburetted hydrogen gas. Chlorine, by the aid of sunshine, decomposes it with evolution of muriatic acid. Two triple compounds of chlorine, carbon, and hydrogen, are formed at the same time, one of which is a crystalline solid, the other a dense thick fluid.

Bi-carburet of hydrogen was analysed in two ways. In the first, its vapour was passed over oxide of copper, heated to redness; and in the second, it was detonated with oxygen gas. Carbonic acid and water were the sole products: and as the absence of oxygen is established by the inaction of potassium, it follows that the bi-carburet consists of carbon and hydrogen only. Mr. Faraday infers from his analyses, that 100 measures of the inflammable vapour require 750 of oxygen for complete combustion; that 150 measures of oxygen unite with 300 of hydrogen; and that the remaining 600 combine with 600 of the vapour of carbon, forming 600 measures of carbonic acid gas. Consequently, 100 measures of the vapour are composed of

Carbon (·4166 × 6) 2·4996. 36. 6 equivalents.
Hydrogen (·0694 × 3) 0·2082. 3. 3 equivalents.

Its atomic weight is therefore 39; and its specific gravity, by calculation, 2·7078.

The second carburet of hydrogen discovered by Mr. Faraday, to which he has not given a name, was derived from the same source as the preceding. It is obtained by heating with the hand the condensed liquid from oil gas, and conducting the vapour which escapes through tubes cooled artificially to zero. A liquid is thus procured, which boils by slight elevation of temperature, and before the thermometer rises to 32° F. is wholly reconverted into vapour.

This vapour is highly combustible, and burns with a brilliant flame. Its specific gravity, at 60° F. and 29·94 of the barometer, is about 1·9065. On being cooled to zero, it is again condensed, and the specific gravity of this liquid at 54° is ·627; so that among solids and liquids it is the lightest body known.

Water absorbs the vapour sparingly; but alkohol takes it up in large quantity, and the solution effervesces on being diluted with water. Alkalis and muriatic acid do not affect it. Sulphuric acid, on the contrary, absorbs more than 100 times its volume of the vapour. A dark-coloured solution is formed, but no sulphurous acid is disengaged.

From the analysis of this vapour, made by detonating it with oxygen gas, Mr. Faraday infers that each volume requires six of oxygen for complete combustion, and yields four volumes of carbonic acid. It hence follows that 100 measures of the vapour contain 400 measures of the vapour of carbon and 400 of hydrogen

as, and that this carburet of hydrogen consists, y weight, of

Carbon (·4166 × 4) 1·6664 . 24 . 4 equiv.
Hydrogen (·0694 × 4) ·2776 . 4 . 4 equiv.

ts equivalent is therefore 28. Its specific ravity must be 1·9440; and Mr. Faraday gards this estimate of its specific gravity as earer the truth than that above stated. The omposition of this substance was calculated by)r. Thomson before the compound itself had een obtained in an insulated form. He terms *quadro-carburetted hydrogen;* and is of opinion iat it exists in sulphuric ether, combined with ne equivalent of water. This view is justified y the proportion in which the elements of ether re united.

A comparison of the atomic constitution of iis substance with that of olefiant gas affords n instance of what Berzelius calls *Isomeric ompounds.* The elements of the new carburet re united in the proportion of 24 to 4, and those f olefiant gas in that of 12 to 2; that is, the car- on and hydrogen in both are in the ratio of 6 1, and therefore each may be regarded as a ompound of one atom of its component princi- les. Hence we have an example, in addition several others, of two substances being iden- cal with respect to the proportion of their onstituents, and yet quite distinct in their hysical and chemical properties. See *Isome- c.*

This peculiarity is explicable on the sup- osition that the ultimate atoms of such com- ounds are differently disposed. It is to be resumed, that the smallest possible particle f olefiant gas contains two atoms of carbon and vo atoms of hydrogen; and that, in like man- er, an integrant particle of the new compound Mr. Faraday contains four atoms of each lement. Neither of these substances, it is onceived, could be formed by direct union of a ngle atom of carbon and a single atom of drogen. If a combination of the kind were occur, a new compound, different from any iown at present, would be the result. Such pears to be the only satisfactory mode of ac- ounting for the phenomena. — *Turner.*

Ca'rcarus. (Καρκαρος; from καρκαιρω, *sonitum lo; vibro; tremo.*) An epithet of the *febris rrifica* or *fièvre algide* of the continental riters. See *Febris remittens.*

Ca'rcax. A species of poppy, with a head large that its hollow will contain a pint and half. — *Hartmann de Opio.*

Ca'rcer. (*er, eris,* m. The Latin word for prison.) Paracelsus uses this term to signify medicine for restraining inordinate move- ents of the mind or body, as those of cho- a, &c.

CARCHE'SIUS. (Καρχησιος; from καρ- ησιον, the openings at the top of a ship's mast, rough which the ropes pass.) The epithet of kind of noose used in the reduction of dis- cations — καρκησιος βροχος. A single and a uble noose of this kind were employed by e Greek surgeons. — *Oribasius.*

Carcine'thron. Καρκινηθρον. The Greek ame of a plant supposed to be the *Polygonum icularе.*

CARCINO'DES. (From καρκινος, a can- cer, and ειδος, resemblance.) Cancer-like.

CARCINO'MA. (*a, atis.* n.; from καρ- κινος, a cancer.) Synonymous with cancer. See *Cancer.*

CARCINO'MATOUS. Cancerous; of the nature of carcinoma or cancer; thus a carci- nomatous tumour means a cancerous tumour.

Ca'rcinus. (*us, i.* m.; καρκινος, a cancer.) See *Cancer.*

Cardama'ntica. (Καρδαμαντικη; from καρ- δαμον, the nasturtium.) This name has been given to two plants, the *Lepidium iberis* and the *Cardamine pratensis.*

Cardamele'um. Καρδαμηλειος. A medicine mentioned by Galen.

CARDAMI'NE. (*e, es.* f.; from καρδια, the heart: because it was supposed to strengthen the heart, or from its having the taste of car- damon, or nasturtium.) Cuckoo-flower. 1. The name of a genus of plants in the Lin- næan system. Class, *Tetradynamia;* Order, *Siliquosa.*

2. The pharmacopœial name of the cuckoo- flower. See *Cardamine pratensis.*

Cardamine pratensis. The systematic name of the common ladies' smock, or cuckoo- flower, called *cardamine* in the pharmacopœias, and *Cardamantica, Nasturtium aquaticum, Culi flos,* and *Iberis sophia.*

Cardamine — foliis pinnatis, foliolis, radica- libus subrotundis, caulinis lanceolatis of Lin- næus. The flower has a place in the materia medica, upon the authority of Sir George Baker, who has published five cases, two of chorea Sancti Viti, one of spasmodic asthma, one of hemiplegia, and a case of spasmodic affection of the lower limbs, wherein the *flores cardamines* were supposed to have been success- fully used. A variety of virtues have been ascribed to this plant, but it is now banished from practice.

CARDAMO'MUM. (*um, i.* n.; from καρδαμον, and αμωμον: because it partakes of the nature both of the cardamon and amomum, or from the Arabic *Cardumeni.*) The car- damom or cardamum. See *Matonia* and *Amo- mum.*

Cardamomum majus. See *Amomum granum paradisi.*

Cardamomum medium. The seeds so called appear to be merely a variety of the lesser or common cardamom seeds; they differ only in being longer.

Cardamomum minus. See *Matonia carda- momum.*

Cardamomum piperatum. The common cardamom.

Ca'rdamon. (Καρδαμον.) The Greek name of the nasturtium.

Cardamum. See *Cardamomum.*

CA'RDIA. (*a, æ. f.*; Καρδια.) 1. A Greek name of the heart.

2. In modern anatomy, the superior orifice of the stomach is so called.

CA'RDIAC. (*Cardiacus;* from καρδια, the heart.) 1. Of, or belonging to, the heart.

2. Cordial. Applied to medicines supposed to strengthen the heart. See *Cordial.*

Cardiac arteries. The coronary arteries of the heart. See *Cor.*

Cardiac confection. See *Confectio aromatica.*

Cardiac herb. So named from the supposed relief it gives in faintings, and disorders of the stomach. A name given to the plant called Mother-wort. See *Leonurus cardiaca.*

Cardiac passion. *Passio cardiaca.* An old name of the heartburn.

Cardiac plexus. The plexus of nerves which supplies the heart. See *Cor.*

Cardiac veins. The coronary veins of the heart. See *Cor.*

Cardiacus morbus. The heartburn.

CARDIALGIA. (*a, æ.* f.; from *καρδια*, the cardia, and *αλγος*, pain.) *Cordolium.* An uneasy sensation in the stomach, with heat more or less violent, sometimes attended with anxiety and faintness, and often with an inclination to vomit, or a plentiful discharge of a clear watery fluid.

Cardialgia is frequently a symptom also of other complaints; as dyspepsia, scirrhus, chronic inflammation of the stomach, worms, retrocedent gout, suppressed menstruation, and various diseases of the heart, liver, pancreas, kidneys, and intestines; but it is likewise found, in many instances, as an idiopathic affection.

In some cases the gnawing and burning pain is felt chiefly at the cardia, or upper orifice of the stomach, whence the name of cardialgia. The cardia, indeed, has been supposed to be the immediate seat of this affection; but it is merely from the greater sensibility of the upper orifice of the stomach than any other part of it, that we are most sensible of uneasiness in that region: irritability of the whole, or of any part of the organ, and perhaps of the adjoining organs, as the pancreas, spleen, and liver, will often produce the same local pain; and, in some instances, of very long standing, it has been ascertained after death to have been occasioned by a scirrhous, or some other obstruction of the pylorus.

In other cases, the pain or uneasiness are somewhat less intense, but far more general; reaching, indeed, over the whole range of the stomach and epigastrium, accompanied with nausea and anxiety, and sympathetically affecting the general system, attended with coldness of the extremities, failure of strength, shortness of breath, and great tendency to faint.

This is distinguished, in popular language, by the name of the *heartburn.*

In another form, the disease is characterised by increased secretion, and eructation of a thin watery liquor, frequently in considerable abundance. This takes place chiefly in the morning, when the stomach contains nothing but its own fluids. Dr. Cullen has described this form of the disease as follows: — "It appears most commonly," says he, "in persons under middle age, but seldom in any persons before the age of puberty. When it has once taken place, it is ready to recur occasionally for a long time after; but it seldom appears in persons considerably advanced in life. It affects both sexes, but more frequently the female. The fits of this disease usually come on in the morning and forenoon, when the stomach is empty. The first symptom is a pain at the pit of the stomach, with a sense of constriction, as if the stomach were drawn towards the back: the pain is increased by raising the body into an erect posture, and therefore the body is bended forward. This pain is often severe; and, after continuing for some time, brings on an eructation of a thin watery fluid in considerable quantity. This fluid has sometimes an acid taste, but is very often absolutely insipid. The eructation is for some time frequently repeated, and does not immediately give relief to the pain which preceded it; but does so at length, and puts an end to the fit." This variety of cardialgia constitutes the *pyrosis* of medical writers. In England, its popular name is *black-water;* in Scotland, *water-brash* or *water-qualm.*

Most of these varieties have sometimes returned periodically, especially in the spring. Since their general causes and mode of treatment do not essentially differ, it is more convenient to consider them jointly than under detached heads.

The remote causes of cardialgia, under whatever variety it shows itself, which is chiefly regulated by the habit or idiosyncrasy of the individual, are indigestible articles of diet, especially fat, oil, butter, or cheese, taken in excess; an habitual and copious use of very cold or very hot beverages, but especially the latter; indulgence in spirituous potations; worms, drastic purges; obstructed perspiration; repelled cutaneous eruptions; and a depraved, or excessive secretion of bile.

All these causes have a direct tendency to produce debility of the stomach, and, consequently, a morbid condition of its secreted fluids, which hence become changed in their quantity or quality, are given forth too freely or too scantily, or acquire an acid or other acrimonious character.

There seems generally to be a predominance of acid in the stomach in cases of cardialgia.

The acid, according to the experiments of M. Perperes, is chiefly the acetic. The gastric fluid itself appears to be secreted in too dilute or weakly a condition for the purposes of digestion; on which account, the food, instead of being converted into chyme, passes readily into a state of fermentation, so that some persons cannot take either honey or sugar without producing this effect: in some cases also the gastric juice may contain an acid at the time of its secretion.

In applying to this disease the resources of the art of healing, it is obvious that our intention should be twofold:

1. To palliate the present distress.
2. To prevent a recurrence of the paroxysms.

The first may be obtained by small doses of opium, and sometimes by other antispasmodics, as ether, and where acidity prevails by alkalis, especially ammonia, which conjoins an antispasmodic with an antacid effect.

Oleaginous preparations have also been had recourse to, and in some habits apparently with success; and when we have full proof of acidity

as the existing cause, there are few medicines we can more fully depend upon than soap: probably because in its decomposition it lets loose the oleaginous principle, which may in some degree obtund the pain, and at the same time unites its alkali with the acid of the stomach; thus neutralising its acrimony, and forming a valuable aperient. "It is often," says Dr. Cullen, "a more convenient remedy than common absorbents or simple alkalines." If the pain be very severe, we shall much improve the beneficial operation of the soap, by combining it with opium — a very valuable medicine in all the varieties of the disease, but particularly so in pyrosis.

It is necessary, in every case, to direct our view to the second intention, that of preventing a recurrence of the paroxysm.

This can only be done effectually by restoring the stomach to its proper tone. The warmer bitters, the oxides of zinc and bismuth, and mild chalybeates bid fairest for success.

The terebinthinate balsams appear sometimes to have been highly serviceable. The balsam of Gilead, and that of Mecca, were once highly extolled; but are too dear for common use. The Turks take eight or ten drops as a dose; but the quantity may be considerably increased.

It is almost superfluous to add, that the diet should consist of articles least disposed to ferment; for which reason plain animal food is generally to be preferred. Weak brandy-and-water, toast-and-water, or soda-water may be used as the ordinary drink.

Cardialgia sputatoria. Pyrosis. See *Cardialgia.*

Cardiana'strophe. (From καρδια, the heart, and αναστροφη, *conversio.*) Malposition of the heart.

Cardie'ctasis. (From καρδια, the heart, and εκτασις, extension.) The name given by Breschet to dilatation of the heart.

Cardielco'sis. (From καρδια, the heart, and ελκωσις, ulceration.) Ulceration of the heart.

Cardimelech. (From καρδια, the heart, and *melech*, the Hebrew for a king.) A term forged by Dolæus, by which he would designate a particular active principle resident in the heart, and superintending what we call the vital functions.

Cardinalis de lugo cortex. In the year 1653, Cardinal de Lugo administered the Peruvian bark, then a new medicine, to a great number of patients; whence the bark got the name of *Cortex Cardinalis de Lugo*, Cardinal de Lugo's bark.

Cardinalis flos. See *Lobelia.*

Cardinal flower. See *Lobelia.*

CARDINAL HUMOURS. Hippocrates, following the doctrine of the Pythagorean school, taught that the four elements, variously combined, formed four primary humours in the animal body, namely *blood*, *phlegm*, *yellow bile*, and *black bile*; and that from these all the solids and fluids of the body were derived. This doctrine was adopted by Galen and his followers, and in later times the four humours got the name of *Cardinal humours* — *humores cardinales.*

Cardiname'ntum. (From *cardo*, a hinge.) An articulation like a hinge. See *Ginglymus.*

Cardioce'le. (From καρδια, the heart, and κηλη, a tumour.) The protrusion of the heart into the abdomen through a wound of the diaphragm has been so called.

CARDIO'GMUS. (*us*, *i.* m. Καρδιωγμος.) This term has been variously applied. With the Greek writers it is synonymous with *cardialgia*; some modern authors have applied it to *angina pectoris*; and Sauvages understands by it an incipient aneurism of the heart or its large vessels.

Cardio'nchus. (*us*, *i.* m.; from καρδια, the heart, and ογκος, a tumour.) Aneurism of the heart.

Cardiopa'lmus. (From καρδια, the heart, and παλμος, palpitation.) Palpitation of the heart.

Cardiorrhe'xis. (From καρδια, the heart, and ῥηξις, a rupture.) Rupture of the heart.

Cardio'tromus. (From καρδια, the heart, and τρεμω, to tremble.) Tremor of the heart; that is, a slight degree of palpitation.

CARDI'TIS. (*is*, *idis.* f.; from καρδια, the heart.) Inflammation of the heart. Inflammation of the entire substance of the heart is of comparatively rare occurrence, although inflammation of particular parts of it is not very uncommon. When the muscular substance of the heart becomes inflamed, this proceeds, in a great majority of cases, from the extension of inflammation from the pericardium. See *Pericarditis.*

CA'RDIUM. (*um*, *i.* n.; from *cardo*, a hinge: so called from the hinge-like union of the two shells.) The name of a genus of bivalve mollusca. The cockle.

Cardium edule. The common cockle. It is found plentifully buried in the sands on all the arid shores of Europe. It has a very peculiar flavour, and is much esteemed by some. It is never eaten raw, but boiled or stewed, in which state it is considered as wholesome.

Ca'rdo. A hinge. The articulation called *Ginglymus.*

Cardo'nium. A wine medicated with herbs. — *Paracelsus.*

Cardopa'tium. 1. The ancient name of a plant, which was probably the *carline thistle.* See *Carlina acaulis.*

2. A genus of plants in the Linnæan system. Class, *Syngenesia*; Order, *Polygamia æqualis.*

CA'RDUUS. (*us*, *i.* m. Latin for a thistle.) A genus of plants in the Linnæan system. Class, *Syngenesia*; Order, *Polygamia æqualis.*

Carduus acanthius. The bear's breech. See *Acanthus mollis.*

Carduus altilis. See *Cinara.*

Carduus arvensis. See *Serratula.*

Carduus benedictus. See *Centaurea.*

Carduus chrysa'nthemus. The artichoke. See *Cinara.*

Carduus domesticus. The artichoke.

Carduus fullonum. The fuller's teasel. See *Dipsacus fullonum.*

Carduus hæmorrhoidalis. See *Serratula arvensis.*

Carduus lacteus. The milk-thistle. See *Carduus marianus.*

Carduus mariæ. An officinal name of the *Carduus marianus.*

Carduus marianus. The systematic name of the officinal *Carduus mariæ.* Common milk-thistle, or Lady's-thistle. *Carduus — foliis amplexicaulibus, hastato-pinnatifidis, spinosis; calycibus aphyllis; spinis caliculatis, duplicato-spinosis,* of Linnæus. The seeds of this plant, and the herb, have been employed medicinally. The former contain a bitter oil, and are recommended as relaxants. The juice of the latter is said to be salutary in dropsies, in the dose of four ounces; and, according to Miller, to be efficacious against pungent pains. The leaves, when young, surpass, when boiled, the finest cabbage, and in that state are diuretic.

Carduus pinea. See *Atractylis.*

Carduus sativus. See *Cinara.*

Carduus solstitialis. See *Calcitrapa officinalis.*

Carduus spinossimus. See *Carduus nutans.*

Carduus stellatus. See *Centaurea calcitrapa.*

Carduus tomentosus. See *Onopordium acanthium.*

Carduus veneris. The *Dipsacus sylvestris.*

CAREBARI'A. (*a, æ.* f. Καρηβαρια; from καρη, the head, and βαρος, weight.) Heaviness of the head. — *Hippocrates. Galen.*

Carena. The twenty-fourth part of a drop. — *Ruland.*

Ca'reum. (*eum, ei.* n.; from *Caria,* the country whence they were brought.) The caraway. See *Carum carui.*

Careum vinum. Wine boiled away to two thirds of its original quantity.

CA'REX. (*ex, icis.* fœm.) A genus of plants in the Linnæan system. Class, *Monœcia;* Order, *Triandria.* Sedge.

Carex arenaria. Sea sedge. This plant grows plentifully on the sea-coast. The root is said to have been found serviceable in some affections of the trachea, in rheumatic pains, and gouty disorders.

Carex hirta. The roots of this and several other species, as *C. villosa, C. disticha,* and *C. intermedia,* are called *German sarsaparilla,* and are sometimes mixed with the true sarsaparilla.

Cariacou. A fermented liquor, made in Cayenne, from a mixture of cassava, potatoes, and cane syrup.

CA'RICA. (*a, æ.* f.; from *Caria,* the place where they were cultivated.) The fig. See *Ficus carica.*

Carica papaya. Papaw-tree. This is a native of both Indies and of the Guinea coast. When the roundish fruit is nearly ripe, the inhabitants of India boil and eat it with their meat, as we do turnips. They have somewhat the flavour of a pompion. Before they are boiled they are soaked for some time in salt and water, to extract the corrosive juice. This juice, diluted with water, is used to wash meat in order to make it tender. The fruit, when pickled, forms a substitute for the mango. The buds of the female flowers are made into a sweetmeat; and the inside of the fruit is eaten with sugar, like a melon. Every part of the papaw-tree, except the ripe fruit, affords a milky juice, which is considered, in the Isle of France, as an effectual remedy for the tape-worm. In Europe, however, whither it has been sent in the concrete state, it has not answered, perhaps from some change it had undergone, or not having been given in a sufficient dose.

Ca'ricum. (Καρικον.) An escharotic and detergent application used by the Greeks, consisting of black hellebore, sandarach, copper, burnt lead, sulphur, orpiment, and cantharides, made up with oil to the consistence of a liniment.

CA'RIES. (*es, ei.* f.; the Latin word for rottenness.) In medical language this word is used to designate the ulceration of a bone, or that state of a bone which is analogous to ulceration of the soft parts.

CARI'NA. (*a, æ.* f.; the keel of a ship.) 1. In *Anatomy,* a name formerly applied to the back-bone.

2. In *Botany,* the keel, or that part of a papilionaceous flower consisting of two petals united or separate, which incloses the parts of fructification.

CARINA'TUS. Keel-shaped; boat-shaped: applied to leaves and petals when the back is longitudinally prominent, like the keel of a boat; as in the leaf of *Allium carinatum,* and the petals of *Allium ampeloprasum.*

Cariosse. See *Ady.*

Carious. *Cariosus.* Affected with caries.

Ca'rium terræ. Lime. — *Ruland.*

CARLI'NA. (or *Carolina, æ.* f.; from *Carolus Magnus,* Charles the Great, or Charlemagne: because, as the story goes, an angel showed the Carline thistle to him, and, by the use of it, his army was preserved from the plague.) A genus of plants in the Linnæan system. Class, *Syngenesia;* Order, *Polygamia æqualis.*

Carlina acanthifolia. In the mountainous regions in the south of France, this species is used as a substitute for the artichoke, under the name of *artichaut sauvage.*

Carlina acaulis. The Carline thistle. Called also *Chamæleon album, Carlina, Cardopatium, Crocodilium, Heracantha,* and *Ixia. Carlina — caule unifloro, flore breviore,* of Linnæus. The root of this plant is bitter, and said to possess tonic, diaphoretic, anthelmintic, and other virtues. It was formerly extolled as a remedy for various diseases, but is now discarded.

Carlina gummifera. See *Atractylis gummifera.*

Carline thistle. See *Carlina acaulis.*

Ca'rlo sancto. St. Charles's root; so called by the Spaniards, on account of its great virtues. It is found in Mechoachan, a province in America. Its bark has an aromatic flavour, and a bitter acrid taste. It is said to be sudorific, and to strengthen the gums and stomach.

Carmelite water. See *Eau des Carmes.*

Ca'rminans. Synonymous with *carminativus.*

CARMI'NATIVE. (*Carminativus;* from *carmen,* a verse, or charm: because the medicine was thought to operate like a charm.) Applied to medicines which allay spasmodic pain of the

bowels, and dispel flatulence. The principal carminatives are ginger, cardamom, anise, and caraway seeds; several of the essential oils, as those of peppermint, anise, caraway, and juniper; ardent spirits, and especially aromatic tinctures.

CARMINE. A beautiful pigment, formed of the colouring matter of the cochineal.

CARMOT. An alchemical term for the matter which composed the philosopher's stone.

CARNABA'DIUM. Caraway-seed.

Carneæ columnæ. See *Cor.*

CA'RNEOUS. Carneous: fleshy. 1. Applied to some muscles of the heart. See *Cor.*

2. Applied generally, in *Natural History*, to designate colour: *color carneus*, flesh colour.

CARNI'CULA. (*a*, *æ*. f.; diminutive of *caro*, *carnis*, flesh.) A small fleshy substance.

CA'RNIFEX SPAGY'RICUS. A name given by the alchemists to fire when employed in the pursuit of the philosopher's stone.

CARNIFICA'TIO. (*o*, *onis*. f.) Carnification. The conversion of any texture of the animal body into a substance resembling flesh.

CARNIFO'RMIS. (From *caro*, flesh, and *forma*, likeness.) Having the appearance of flesh.

CARNI'VORA. An order of the class *Mammalia*. See *Animal kingdom.*

CARNIVOROUS. (*Carnivorus*; from *caro*, flesh, and *voro*, to devour.) Flesh devouring: applied to animals that live on flesh.

CARNO'SA. The name of an order of animals of the Class *Polypi.*

Carnosa cutis. See *Panniculus carnosus.*

CARNO'SUS. Fleshy: applied generally, in *Natural History*, to parts which are either fleshy, or of a consistence resembling that of flesh; thus, in botany, many leaves are styled fleshy, *folia carnosa*, as those of *sedum crassula*, &c.

Carnosus panniculus. See *Panniculus carnosus.*

CA'RO. (*Caro*, *carnis*. fœm.) 1. Flesh. The fibrous part of the muscles, which constitutes the greater portion of the bulk of the limbs, and affords a general covering to the bones, is called in common language the flesh.

2. The soft part of a fruit.

CARO ANSERINA. *Caro gallinacea.* The same as cutis anserina. See *Cutis anserina.*

Caro gallinacea. See *Caro anserina.*

CAROLI. A barbarous name for syphilitic sores on the penis.

Carolina. See *Carlina.*

Caros. See *Carus.*

Caro'sis. See *Carus.*

Caro'ta. (*a*, *æ*. f.) See *Daucus.*

CARO'TID. (*Carotis*, *Caroticus*, from καροω, to cause to sleep; because the arteries so called supply the head with blood, and the ancients believed sleep to be caused by an increased flow of blood to the head.) The name of an artery on each side of the neck, *Arteria carotica.* The common carotids are two considerable arteries, that ascend on the fore part of the cervical vertebræ, to the head, to supply it with blood. The right common carotid is given off from the arteria innominata. The left arises from the arch of the aorta. In its course up the neck, the common carotid artery lies by the side of the trachea, and behind the sterno-mastoid muscle, and is contained in a common cellular sheath, with the internal jugular vein, and the pneumogastric nerve. About midway between the thyroid cartilage and the os hyoides, the common carotid divides into the *external* and *internal carotids*; the point at which this division takes place, however, varies considerably in different subjects.

The external carotid usually gives off the following branches to the neck and external part of the head. The *superior thyroideal*, the *lingual*, the *facial*, the *inferior pharyngeal*, the *occipital*, the *posterior auris*, the *internal maxillary*, and the *temporal*. The internal carotid passes through the carotic canal of the temporal bone to the interior of the cranium, where it gives off the *opthalmic*, the *middle cerebral*, and the *arteria communicans.*

CARO'UM. The caraway-seed.

Carp. See *Cyprinus carpio.*

CA'RPASUS. Καρπασος. A plant mentioned by Dioscorides, Pliny, Galen, and other ancient authors. It is not known what plant it was. Its concrete juice, which was called οποκαρπασον, *opocarpasum*, bore some resemblance in appearance to myrrh, but was considered as a violent narcotic poison.

Carpathian balsam. See *Balsamum carpathicum.*

Carpa'thicum balsamum. See *Balsamum carpathicum.*

CARPENTA'RIA. (*a*, *æ*. f.; from *carpentarius*, a carpenter: so named because carpenters applied it to the wounds made by their tools.) The old name of a vulnerary herb, which was probably the *Achillea millefolium*, but has also been supposed to have been the *Sanicula Europæa*, or the *Nasturtium barbarea.*

CARPE'SIUM. (*um*, *i*. n.. Καρπησιον.) 1. An aromatic plant mentioned by the ancient writers. It is not at present known to what plant the name was applied.

2. The name of a genus of plants in the Linnæan system. Class, *Syngenesia*; Order, *Polygamia superflua.*

CARPHOLO'GIA. (*a*, *æ*. f.; from καρφος, chaff, and λεγω, to pluck.) *Carpologia.* A disposition to pick minute objects, which accompanies the delirium of low fever. Continual picking at the bed clothes is a frequent symptom in such cases. It is usually accompanied by a vacancy of expression in the countenance, and is indicative of great cerebral exhaustion and extreme danger.

CA'RPHOS. A Greek name of the herb *Fenugreek.*

CA'RPIA. (*a*, *æ*. f.; from *carpo*, to pluck, as lint is made from linen cloth.) Lint.

CARPI'SMUS. The wrist.

CARPOBA'LSAMUM. (*um*, *i*. n.; from καρπος, fruit, and βαλσαμον, balsam.) See *Amyris gileadensis.*

Carpologia. See *Carphologia.*

CARPO'TICA. (From καρπος, fruit.) Diseases affecting impregnation. The name given by

Mason Good to the third order of his class *Genetica*.

CA'RPUS. (*us*, *i.* m. Καρπος.) The wrist. The wrist is a very complex articulation, by means of which the hand moves on the fore arm. It consists of eight bones, viz. the *os scaphoides*, *lunare*, *cuneiforme*, *pisiforme*, *trapezium trapezoides*, *magnum*, and *unciforme*. The first four of these bones form one row, and the second form another row. These bones are connected to each other, and to the metacarpal bones, by numerous ligaments, styled *oblique*, *transverse*, *capsular*, *lateral*, &c., according to their shape and position. The three first bones of the carpus are connected with the extremities of the radius and ulna by a *capsular* and two *lateral ligaments*. A *transverse*, *anterior*, or *annular* ligament is stretched from the projecting points of the pisiform and unciform bones to the scaphoides and trapezium, binding down the tendons of the flexor muscles of the fingers, and giving firmness to the articulation of the wrist.

Carrot. See *Daucus carota*.

Carrot, *candy*. See *Athamanta cretensis*.

Carrot poultice. See *Cataplasma dauci*.

CA'RTHAMUS. (*us*, *i.* m.; from καθαιρω, to purge.) 1. The name of a genus of plants in the Linnæan system. Class, *Syngenesia*; Order, *Polygamia æqualis*.

2. The pharmacopœial name of the saffron flower. See *Carthamus tinctorius*.

Carthamus tinctorius. The systematic name of the saffron flower, or bastard saffron; called also *Cnicus*, *Crocus saracenicus*, *Carthamum officinarum*, and *Carduus sativus*. *Carthamus—foliis ovatis, integris, serrato-aculeatis* of Linnæus. The seeds are strongly cathartic: they are also emetic, and are thought by some to be diuretic. They are given as food to parrots, and are thence called parrots' corn. The dried flowers are frequently mixed with saffron to adulterate it. The plant is cultivated in many places on account of its flowers, which are used as a dye. Rouge is prepared from this plant; and it is in very general use for dying silk of a poppy, cherry, rose, and bright orange red.

CA'RTILAGE. (*Cartilago*, *inis.* f.) A white, elastic, glistening substance, commonly called *gristle*. Cartilage forms the nidus in which the earthy matter of most bones is deposited; and when the earthy matter of a bone is removed by macerating it in diluted muriatic acid, a mass of cartilage remains, retaining the original figure of the bone, and permeated by its vessels. The cartilage forms about one third of the weight of the bone. (See *Os.*) Cartilage, independently of its entering into the constitution of bone, exists as a separate substance, covering articular surfaces, and forming a medium of connexion between bones. The organisation of cartilage is obscure; it is generally admitted, however, to be of a fibrous texture. In pure cartilage no blood-vessels can be demonstrated, even by the finest injections; but in those cartilages which are attached to the extremities of growing bones, blood-vessels of considerable size may often be seen with the naked eye. Neither nerves nor absorbents have hitherto been found in cartilage. That it is a vascular and living substance is nevertheless certain, from the facts that it becomes yellow in jaundice, has its colour affected by substances combined with the blood, and, when cut, exudes serous fluid. Cartilages are divided by anatomists into *obducent*, which cover the moveable articulations of bones; *inter-articular*, which are situated between the articulations, and *uniting* cartilages, which unite one bone with another.

The chemical properties of cartilage have not yet been very accurately ascertained. Nitric acid converts it into gelatine. With alkalis it forms an animal soap. According to Dr. J. Davy it consists of 44·5 parts of albumen, 55·0 water, and ·5 phosphate of lime.

CARTILA'GINOUS. *Cartilagineus*. 1. In *Anatomy*, applied to parts which naturally, or from disease, have a cartilaginous consistence.

2. In *Botany*, to the margin of leaves, when they are of a hard or horny consistence, as in several species of saxifrage. See *Leaf*.

Cartilago annularis. The ring-like cartilage. See *Cartilago cricoides*.

Cartilago arytænoidea. See *Larynx*.

Cartilago arytænoides. See *Larynx*.

Cartilago cricoi'des. The cricoid cartilage. See *Larynx*.

Cartilago ensiformis. *Cartilago xiphoides*. Xiphoid cartilage. Ensiform cartilage. A cartilage shaped somewhat like a sword, attached to the lower end of the sternum.

Cartilago gutturalis. The arytenoid cartilage.

Cartilago scutiformis. See *Thyroid cartilage*.

Cartilago thyroidea. See *Thyroid cartilage*.

Cartilago tri'quetra. The arytenoid cartilage.

Cartilago xiphoides. See *Cartilago ensiformis*.

Ca'rui. See *Carum*.

CA'RUM. (*um*, *i.* n.; Καρος; so named from *Caria*, a province of Asia where it grows abundantly.) The caraway. 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Monogynia*.

2. The pharmacopœial name of the caraway plant. See *Carum carui*.

Carum carui. The caraway plant. *Carvi*, *Carus*, *Caruon*, *Cuminum pratense*. The seeds are well known to have a pleasant spicy smell, and a warm aromatic taste; and, on this account, are used for various economical purposes. They are esteemed carminative, cordial, and stomachic, and recommended in dyspepsia, flatulencies, and other symptoms attending hysterical and hypochondriacal disorders. An essential oil and distilled water are directed to be prepared from them by the London College.

CARU'NCULA. (*a*, *æ.* f.; diminutive of *caro*, flesh.) A caruncle, or little fleshy excrescence. It is variously applied. 1. To healthy and natural parts; as the caruncule myrtiformes, and caruncula lachrymalis.

2. To soft, fleshy excrescences which are the product of disease.

Caruncule cuticulares. This name has been given to the nymphæ.

Caruncula lachrymalis. The lachrymal caruncle. A little fleshy conoidal glandiform body, red externally, situated in the internal canthus of each eye. It appears to be formed of numerous sebaceous glands, from which many small hairs grow. The gum-like substance found in the inner corner of the eye in the morning, is the indurated secretion of this caruncle.

Carunculæ mamillares. The extremities of the lactiferous tubes in the nipple.

Carunculæ myrtiformes. After the laceration of the hymen there remain in its place, two, three, or four caruncles, which have received the name of myrtiform.

Carunculæ papillares. The protuberances within the pelvis of the kidney, formed by the convergence of the tubuli uriniferi.

Ca'ruon. See *Carum.*

CA'RUS. (*us, i.* m. ; Καρος.) 1. The most profound degree of coma. The word has been variously applied by different medical writers, but by all to some form of coma.

2. The caraway plant.

Ca'rva. The cassia lignea.

Carydon. See *Caryedon.*

Carye'don. (From καρυα, a nut.) *Carydon.* A sort of fracture, where the bone is broken into small pieces, like the shell of a cracked nut.

Caryoces. See *Ady.*

Caryocosti'num. An electuary ; so named from two of its ingredients, the clove and costus.

CARYOPHILLA'TA. (*a, æ.* f. ; from καρυοφυλλον, the clove ; so named because its root has an odour resembling that of the clove.) See *Geum urbanum.*

Caryophy'lleæ. The name of a natural family of plants of which the genus caryophyllus is the type.

Caryophylloides cortex. See *Laurus culilawan.*

Caryophy'llum. (*um, i.* n. ; Καρυοφυλλον, from καρυον, a nut, and φυλλον, a leaf ; so named because it was supposed to be the leaf of the Indian nut.) The clove. See *Eugenia caryophyllata.*

CARYOPHY'LLUS. (*us, i.* m. Same etymology.) The clove-tree. The name of a genus of plants in the Linnæan system. Class, *Polyandria ;* Order, *Monogynia.*

Caryophyllus aromaticus. See *Eugenia caryophyllata.*

Caryophyllus aromaticus americanus. See *Myrtus pimenta.*

Caryophyllus hortensis. See *Dianthus caryophyllus.*

Caryophyllus ruber. The clove pink. See *Dianthus caryophyllus.*

Caryophyllus vulgaris. See *Geum urbanum.*

CASCARI'LLA. (*a, æ.* f. ; diminutive of *cascara*, the Spanish for bark or rind.) A name given originally to small specimens of cinchona ; but now applied to another bark. See *Croton cascarilla.*

Caschu. See *Acacia catechu.*

CASEIC ACID. The name given by Proust to an acid obtained from cheese. Braconnot denies the existence of any such acid.

Caseous oxide. See *Cheese.*

Caseum. See *Cheese.*

Cashew-nut. See *Anacardium occidentale.*

Cashow. See *Acacia catechu.*

Casia. See *Cassia.*

Casminar. See *Cassumuniar.*

Cassa'da. See *Jatropha manihot.*

Ca'ssamum. The fruit of the balsam tree.—*Turton.*

Cassava. See *Jatropha manihot.*

CA'SSIA. (*a, æ.* f. ; from the Arabic *katsia*, which is from *katsa*, to tear off : so called from the act of stripping the bark from the tree.) The name of a genus of plants in the Linnæan system. Class, *Decandria ;* Order, *Monogynia.*

Cassia absus. The systematic name of a small Egyptian lotus. The Egyptians powder the seeds with an equal quantity of sugar, and put a little of the mixture under the eyelids at the commencement of their ophthalmia.

Cassia alata. The systematic name of a plant, the leaves of which are bitter, nauseous in their taste, and supposed to be cathartic. They are said to cure herpes.

Cassia bark. See *Laurus cassia.*

Cassia caryophylla'ta. The clove-bark tree. See *Myrtus caryophyllata.*

Cassia fistula. The purging cassia. Called also, *Cassia nigra, Cassia fistularis, Cassia Alexandrina, Canna, Cassia solutiva.* This plant is now transferred to another genus. See *Cathartocarpus.*

Cassia fistularis. See *Cassia fistula.*

Cassia latinorum. See *Osyris.*

Cassia lignea. See *Laurus cassia.*

Cassia monspeliensium. See *Osyris.*

Cassia nigra. See *Cassia fistula.*

Cassia poetica. See *Osyris.*

Cassia, purging. See *Cassia fistula.*

Cassia senna. One of the plants which produce senna. See *Senna.*

Cassia solutiva. See *Cassia fistula.*

Cassiæ artamentum. The pulp of cassia.

Cassiæ flores. The cassia flowers. See *Laurus cinnamomum.*

Cassiæ pulpa. See *Cassia fistula.*

Cassina. See *Ilex cassine.*

Cassius's precipitate. The purple powder of Cassius. See *Aurum.*

Ca'ssor. An obsolete term for kali.

Cassoleta. A kind of moist fumigation described by P. Morellus.

CASSUMU'NIAR. (Of uncertain derivation ; perhaps Indian.) *Casamunar, Casmina, Risagon, Bengale Indorum.* A root which is brought from the East Indies in irregular slices of various forms, some cut transversely, others longitudinally. The cortical part is marked with circles of a dusky brown colour ; the internal part is paler, and unequally yellow. It possesses moderately warm, bitter, and aromatic qualities, and a smell like ginger. It is recommended in hysterical, epileptic, and paralytic affections.

CASTA'NEA. (*a, æ.* f. ; καστανον, from *Castana*, a city in Thessaly, where it was abundant.) The chesnut. See *Fagus castanea.*

Castanea equina. The horse-chesnut. See *Æsculus hippocastanum.*

Castjoe. See *Acacia catechu.*

Castle-leod. The name of a place in Ros-

Shire, in Scotland, where there is a sulphureous spring, celebrated for the cure of cutaneous diseases and foul ulcers.

CA'STOR. (*or, oris.* m.; καστωρ, the beaver, according to some *quasi* γαστωρ; from γαστηρ, belly: because of the largeness of its belly; the or *à castrando*, because he was said to castrate himself in order to escape the hunters. Neither of these are very probable derivations, but we have no better to offer.) 1. The name of a genus of animals.

2. The English name of the *Castoreum* of the Pharmacopœias; a peculiar concrete substance obtained from the *Castor fiber* of Linnæus. See *Castor fiber.*

Castor fiber. The systematic name of the beaver. A quadruped, inhabiting some parts of Prussia, Russia, Germany, &c.; but abounding chiefly in Canada. The name of *castoreum*, or castor, is given to two bags, situated in the inguinal regions of the beaver, which contain a very odorous substance, soft, and almost fluid when recently cut from the animal, but which dries, and assumes a resinous consistence in process of time. The best comes from Russia. It is of greyish yellow, or light brown colour. It consists of a mucilage, a bitter extract, a resin, an essential oil, in which the peculiar smell appears to reside, and a flaky crystalline matter, much resembling the adipocire of biliary calculi. Castor has an acrid, bitter, and nauseous taste; its smell is strong and aromatic, yet at the same time fœtid. It is used medicinally, as a powerful antispasmodic, in hysterical and hypochondriacal affections, and in convulsions, in doses of from 10 to 30 grains, in the form of bolus. A tincture of castor is directed in the three British Pharmacopœias. It is also said to have been successfully administered in epilepsy and tetanus. It is occasionally adulterated with dried blood, gum ammoniacum, or galbanum, mixed with a little of the powder of castor, and the fat of the beaver.

Castor oil. See *Ricinus.*

Castor, Russian. See *Castor fiber.*

Casto'reum. *um, i.* n. Castor. See *Castor fiber.*

CASTRATION. (*Castratio, onis.* f.; from *castro.*) 1. In *Surgery*, an operation, by which a testicle is removed from the body.

2. In *Botany*, the removal of the anther of a flower.

Castra'tus. One who is castrated.

Castre'nsis. (From *castra*, a camp.) Belonging to a camp: applied to those diseases with which soldiers, encamped under unhealthy circumstances, are especially liable to be affected; as *febris castrensis*, camp fever.

Cataba'ticus. (Καταβατικος; from καταβαινω, to descend.) Applied to a fever which gradually diminishes in severity till it terminates.

Catable'ma. (Καταβλημα; from καταβαλλω, to throw round.) *Epiblema. Periblema.* The outermost fillet, which secures other bandages.

Catacau'ma. (From κατακαιω, to burn.) A burn or scald.

CATACAU'SIS. (From κατακαιω, to burn.) Combustion or burning. This name is given by Dr. Young and Dr. Good to the phenomenon commonly called spontaneous combustion of the human body. See *Combustion, spontaneous.*

Cataceras'ticus. (From κατακεραννυμι, to mix; to temper.) Having the property of obtunding the acrimony of humours, by mixing with and reducing them.

Catachri'ston. (From καταχριω, to anoint.) *Catachrisma.* An ointment.

Cata'clasis. (From κατακλαω, to break.) The fracture of a bone.

Ca'tacleis. (From κατα, beneath, and κλεις, the clavicle.) 1. The first rib, which is placed immediately under the clavicle.

2. The subclavicular region of the chest.

Catacly'sma. (From κατακλυζω, to wash.) A clyster.

Catacly'smus. (From κατακλυζω, to wash.) 1. An embrocation.

2. The dashing of water upon any part.

Catag'ma. (Καταγμα; from καταγνυμι, to break.) A fracture.

Catagma'ticus. (From καταγμα, a fracture.) Catagmatic: promoting the formation of callus. Formerly applied to medicines which were supposed to possess this power.

Catale'ntia. A name given by Paracelsus to a kind of epilepsy.

CATALE'PSIA. (*æ.* f.; from καταλαμβανω, to seize, to hold.) Catalepsis. Catalepsy. Trance. This disease has also been denominated *Catoche, Catochus, Congelatio, Detentio, Encatalepsis* by Hippocrates, *Aphonia* by Antigenes, *Anaudia* by Cælius Aurelianus, *Apprehensio, Oppressio*, and *Comprehensio.* It consists in a total suspension of sensibility and voluntary motion, and generally also of mental power; the pulsation of the heart and the breathing continuing, the muscles remaining flexible, the body yielding to and retaining any given position, in which respect it differs chiefly from ecstacy.

It is very difficult to ascertain the causes of this nervous affection: the most frequent exciting cause is some mental perturbation, the state of the habit or idiosyncrasy determining the effect. The countenance is usually florid; the eyes open, and apparently fixed intently upon some object, but in most cases without perception, though occasionally it is otherwise.

In most cases the paroxysm comes on without any previous warning, and closes with sighing. Its duration is from a few hours or minutes to two or three days; and, according to well-established authorities, sometimes for a much longer period. This disease is far from common. Dr. Cullen affirms he never saw an instance of it that was not counterfeited, and asserts the same of other practitioners. On careful examination a very feeble flutter of the heart, and some movement of the involuntary organs are generally detected; and if a clear mirror be applied to the mouth and nostrils, it will in most cases be found to have a slight halitus on its surface: but even these signs of animation are not always present; the disease has been mistaken

or real death; and, in countries where the rite of sepulture takes place speedily, it is much to be feared that the unfortunate sufferer has, in a few instances, been buried alive.

The cure of this disease is to be effected by stimulants: no good has resulted from blood-letting, nor means which reduce the nervous influence. Volatile stimulants should be applied to the nostrils, and ammoniated and spirituous fluids injected into the stomach through a tube passed down the œsophagus. Electricity and galvanism are likely to be serviceable. The body should be kept warm, with a free influx of pure air, and general friction resorted to.

When the paroxysm has passed off, tonics, and medicines which strengthen the nervous system, should be persisted in for a considerable time.

CATALE'PTIC. Relating to, or of the nature of, catalepsy.

CATALO'TICUS. Sometimes improperly written for *Catuloticus*.

CATAME'NIA. (*a,orum.* neut. plur.; from κατα, according to, and μην, the month.) The monthly discharge from the uterus of females. See *Menstruation*.

CATANA'NCE. This name has been given to several plants, as the *scorpiurus sulcata, plantago cretica*, &c.

CATAPA'SMA. (*a, atis.* n.; from καταπασσω, to sprinkle.) *Catapastum, Conspersio, Epipaston, Pasma, Sympasma, Aspersio.* The ancient Greek physicians meant by this word any dry medicine reduced to powder to be sprinkled on the body. The various forms and uses of catapasmata may be seen in Paul of Egina, lib. iii. cap. xiii. Those which were valued for their grateful smell were called *diapasms; emplasms* were used to restrain sweat; and *symplasms* were of an acrid quality, and used to produce heat.

CATA'PHORA. (*a, æ.* f.; from καταφερω, to sink or fall down.) A term used by some authors to designate a state of coma, and by others an unusually profound sleep.

CATAPHRA'CTA. (Καταφρακτα; from καταφρασσω, to fortify.) A bandage for the thorax, used in cases of fracture of the sternum and ribs.

CATAPLAS'MA. (*a, atis.* n.; from καταπλασσω, to spread like a plaster.) A poultice.

CATAPLASMA ACETI. Vinegar poultice. This is made by adding vinegar to crumb of bread, or any simple farinaceous matter. It is a good application to bruises and sprains.

CATAPLASMA ACETOSÆ. Sorrel poultice. The leaves are to be beaten in a mortar into a pulp. A good application to scorbutic ulcers.

Cataplasma aeratum. See *Cataplasma fermenti.*

CATAPLASMA ALUMINIS. This application was formerly used in chronic inflammation of the eyes: it is now seldom applied, a solution of alum being generally substituted.

CATAPLASMA BYNES. Malt poultice. Finely ground malt is to be mixed with thin yeast to the consistence of a poultice, and applied warm. Some surgeons prefer this to the yeast poultice against gangrene.

CATAPLASMA CARBONIS. Charcoal poultice. Made by mixing very finely powdered charcoal with linseed and warm water. Some put the charcoal only on the surface. It is used to correct the state of ill-conditioned ulcers and destroy their fetor.

CATAPLASMA CEREVISIÆ. Strong beer poultice. This is sometimes made with the grounds or dregs of strong London porter, when it can be had, or with that of other strong beer, by stirring in as much oatmeal as is necessary to make it of a proper consistence, and heating it cautiously in a pipkin or pan. It is considered a good stimulant and antiseptic for sloughing or gangrenous parts. See *Fermentum cerevisiæ.*

CATAPLASMA CONII. Hemlock poultice. R. Conii foliorum exsiccatorum ʒj. Aquæ fontanæ, Oij. Boil till only a pint remains, when as much linseed meal as necessary is to be added. This is an excellent application to many cancerous, scrophulous, and other ill-conditioned ulcers; frequently producing great diminution of the pain, and improving the appearance of the ulcers. Justamond preferred the fresh herb bruised.

CATAPLASMA CUMINI. Take of cumin seeds, one pound; bay berries, the leaves of water germander dried, Virginia snake root, of each three ounces; cloves, one ounce; with honey equal to thrice the weight of the powder formed: of these make a cataplasm. It was formerly called Theriaca Londinensis. This is a warm and stimulating poultice, and was formerly much used as an irritating antiseptic application to gangrenous ulcers, and the like. It is now seldom ordered.

CATAPLASMA DAUCI. Carrot poultice. R. Radicis dauci recentis, ℔j. Bruise it in a mortar into a pulp. Some, perhaps with reason, recommend the carrots to be first boiled. The carrot poultice is employed as an application to cancerous, scrofulous, and other irritable and unhealthy ulcers. It is a most useful application.

CATAPLASMA DIGITALIS. Fox-glove poultice. Linseed-meal, oatmeal, or crumb of bread are to be made into the consistence of a poultice, by mixing them with a strong decoction of the leaves of fox-glove. This poultice is said to be more sedative than hemlock, and to allay the pain of irritable sores.

CATAPLASMA FERMENTI. Yeast cataplasm. Take of flour, a pound; yeast, half a pint. Mix and expose to a gentle heat, until the mixture begins to rise. This is a celebrated application in cases of sloughing and mortification.

CATAPLASMI FUCI. Sea-weed poultice. This is prepared by bruising a quantity of the marine plant, commonly called sea-tang, which is afterwards to be applied by way of a poultice. Its chief use is in cases of scrofula, white swellings, and glandular tumours more especially. When this vegetable cannot be obtained in its recent state, a common poultice of sea-water and oatmeal has been substituted by the late Mr. Hunter, and other surgeons of eminence.

CATAPLASMA LINI. Linseed poultice. R. Farinæ lini, ℔ss. Aquæ ferventis, Ojss. The linseed meal is to be gradually sprinkled into the water, while they are quickly blended toge-

ther with a spoon. This is the best and most convenient of all emollient poultices for common cases, and has, in a great measure, superseded the bread and milk one, so much in use formerly.

Cataplasma panis. Bread poultice. This is either made with milk or water. It is made by putting the crumb of stale bread into milk or water, and letting them gently simmer over a fire, in a pipkin, until they are properly softened. The mass is then to be beat and stirred about with a spoon. A small quantity of lard, or sweet oil, should be spread over it before it is applied. The linseed meal poultice is much better than this as an emollient. A cold bread and water poultice is sometimes used to allay inflammation.

Cataplasma plumbi acetatis. R. Liquoris plumbi acetatis, ʒj. Aquæ distill., Oj. Micæ panis, q. s. Misce. Practitioners, who place much confidence in the virtues of lead, often use this poultice in cases of inflammation.

Cataplasma quercus marini. See *Cataplasma fuci.*

Cataplasma sinapeos. See *Cataplasma sinapis.*

Cataplasma sinapis. Mustard cataplasm. Take of mustard-seed, linseed, of each powdered half a pound; boiling vinegar, as much as is sufficient. Mix until it acquires the consistence of a cataplasm.

Cataple'xis. (*is, is.* f.; from κατα, and πλησσω, to strike.) A sudden stupefaction, or deprivation of sensation, in any member, or organ, as the eye, &c.

Catapo'tium. (Καταποτιον. *um. ii.* n.; from καταπινω, to swallow down.) A pill. See *Pilula.*

Catapsy'xis. (From κατα, and ψυχω, to refrigerate.) A considerable degree of chilliness without shivering. — *Galen.*

Catapto'sis. (From καταπιπτω, to fall down.) A sudden falling down, as of the whole body in apoplexy or epilepsy; or of a particular limb when seized with palsy.

Catapu'tia. (*a, æ.* f.; from *catapotium*, a pill, because the seeds of the plants so called were swallowed like pills.) A name given to three plants, viz., the *Ricinus americanus*, which was called *Cataputia maxima*; the *Ricinus communis*, which was called *Cataputia media*; and the *Tithymalus latifolius* (*Euphorbia Lathyris* of Linnæus). — *Blancard.*

Cataputia major. See *Ricinus.*

Cataputia minor. See *Euphorbia Lathyris.*

CA'TARACT. (*Cataracta, a, æ.* f.; generally derived from καταρασσω, to disturb or confound, because it disturbs or destroys the sense of vision. Baratta has suggested, with more probability, that it is derived from καταρακτης, the gate of a city, because it is interposed like a gate or barrier between the light and the retina.) The following general illustration of the subject of cataract is taken from Mr. S. Cooper's First Lines of the Practice of Surgery.

Cataract is usually defined to be a weakness or interruption of sight, produced by opacity either of the crystalline lens, its capsule, or the fluid of Morgagni. Occasionally, however, the term is used in a more comprehensive sense, implying every perceptible obstacle to vision, situated between the vitreous humour and the uvea and pupil.

When the disease is seated in the lens, its capsule, or the fluid of Morgagni, it is called *a true cataract*; but, when it consists of opake matter deposited in front of the lens, it is denominated a *false cataract*. The terms, *lenticular*, *capsular*, and *capsulo-lenticular cataracts*, express some of the distinctions referred to. The *Morgagnian* may be dismissed from present consideration, its separate existence not being generally credited.

Cataracts are also distinguished into *idiopathic*, or such as arise from internal, but generally unknown causes, — and *accidental*, which originate from external violence, or active inflammation. In general, the idiopathic, sooner or later, affect both eyes; but an accidental cataract is frequently restricted to one eye.

The symptoms of a cataract are of the following description: — 1st. All objects, especially white ones, seem to the patient as if covered with a mist, a circumstance that generally precedes any visible opacity behind the pupil. 2d. The decline of vision bears an exact proportion to the degree of opacity. 3d. The opacity is almost always first noticed in the centre of the pupil, the examples in which it first presents itself at the circumference being much less frequent. 4th. When the iris is light-coloured, the more opake the cataract is, the more plainly a blackish ring is seen at the edge of the pupil; and such a ring is particularly conspicuous when the cataract is soft and large, as it then propels the margin of the uvea forwards. 5th. As a cataract generally begins at the central point behind the pupil, objects placed directly in front of the eye are most difficultly seen, even in the early stage of the disease; but those which are on one side may yet be discerned, particularly if the light be not strong, which would make the pupil too diminutive to let the rays pass through the thinner transparent edge of the lens. 6th. What has just been observed likewise explains why patients, having an opacity in the centre of the lens, are sometimes completely blind in a strong light, though they may enjoy a useful degree of vision in the shade, or in moderately dark places. 7th. The eyesight of patients affected with incipient cataract may be materially assisted by convex glasses, because objects are magnified by them. 8th. To patients in this state, the flame of a candle seems to be obscured in a white misty halo, which always becomes broader the further the patient is from the light. When the cataract is more advanced the flame cannot be discerned, but merely the situation of the light. 9th. The action of the iris is not affected.

In amaurosis, the horn-like or glaucomatous appearance is more deeply seated in the eye than the opacity of a cataract, and is somewhat concave. It is frequently of a greenish colour, while the opacity of cataract is usually greyish, white, or amber coloured. The decline of vision, also, is not in a ratio to the opacity, and the patient may be entirely blind, with little appearance of defect

in the eye. The pupil is likewise generally dilated and motionless, with its pupillary margin somewhat irregular. The temporary increase or decrease of blindness, a circumstance so common in patients with incomplete amaurosis, depends upon circumstances which depress or excite the system, and not, as in cases of cataract, upon the degree of light, and the corresponding alterations in the size of the pupil.

The misty halo, seen by amaurotic patients round the flame of a candle, is not like a whitish cloud, as in cases of cataract, but exhibits all the colours of the rainbow. To amaurotic patients spectacles are of no service; and objects situated on one side are not better seen by such persons, than those which are directly in front of the eye. Neither is there any temporary increase of the power of vision obtained by the use of belladonna, as in cataract.

Whiteness denotes either a dissolved lens or a capsular cataract; a grey colour, a lenticular cataract; an amber colour or dark grey, a firm lens; and light grey, a soft one. If the whole extent of the pupil is uniformly opake, the cataract is probably one of the lens; if the opacity is streaked or speckled, it is likely to be one of the capsule. If the opake streaks radiate from a centre, the posterior layer of the capsule is probably affected. If the form of the opacity is convex, either the anterior capsule or the lens is the seat of it; if concave, the posterior part of the capsule. With the light concentrated on the pupil by means of a double convex glass, all these particulars may be ascertained. Mr. Cooper believes that the size of a cataract is a better criterion of its consistence than its colour; and, at all events, that the smaller the lens is, and the darker its colour, the more solid its substance will generally be; while the larger and more protuberant it is against the iris, the greater is the probability of its being soft.

A cataract of the lens itself, as already explained, is termed a *lenticular cataract*, which may vary much in its consistence. Thus, such a cataract may be *hard*, as it is often found to be in elderly persons, with an amber colour, the tint being deeper in proportion as the cataract is firmer.

A lenticular cataract may be *soft*, that is to say, of a cheesy, gelatinous, or even milky consistence. Soft cataracts are more bulky than hard ones, so that they project nearly into the pupil. Hence, sight is more considerably interrupted than when the cataract is hard, and the power of distinguishing colours frequently quite abolished. The capsular cataract has a smooth and glistening surface, with streaks upon it, and it lies close to the edge of the pupil.

When the lens is present, a capsular cataract is rarely unaccompanied by a lenticular one; but an opake lens may be removed or taken away by absorption, and a capsular cataract may be left. In this case, as the opacity is merely a thin layer of the capsule, the cataract makes no projection against the iris, and the anterior chamber is not lessened by the advance of the iris towards the cornea.

In children, cataracts are never hard: but in adults, we meet with both hard and soft ones.

Cataracts may occur at any period of life, and are sometimes *congenital*. They are most frequent in elderly persons, and usually arise without any manifest cause, or anything wrong in the rest of the eye, or the constitution at large. The capsulo-lenticular cataract is alleged to form very commonly under circumstances denoting a determination of blood to the head and the eye, accompanied by uneasy sensations in those parts; but generally we cannot refer the origin of a cataract to any particular causes. There is an exception, with respect to cataracts following a wound of the lens, or its capsule. Experience proves that the slightest prick of these parts will lead to their opacity, or, to speak more accurately, the capsule inflames, and becomes opake, and the lens itself is afterwards absorbed; so that the result is, in fact, a capsular cataract.

A cataract is termed *simple* when accompanied by no other disease of the eye likely to impair its functions, or with no particular constitutional disease; *complicated*, when joined with other diseases of the eye, as adhesion of the crystalline capsule to the iris, amaurosis, glaucoma, or a gouty, rheumatic, or syphilitic state of the system. The circumstances denoting glaucoma have already been explained. If in addition to a sluggish or immovable iris, the patient is totally incapable of distinguishing the least glimpse of light, the cataract is combined with amaurosis.

When a cataract is free from every complication; when it is not attended with frequent headach, nor pains in the eye; when the pupil retains its regular circular shape; when the iris possesses its natural power of motion in the different degrees of light; and when the patient can readily discern the difference between light and darkness, and even perceive bright colours, and the outlines of objects, in shady places where the pupil naturally expands — the prognosis is favourable.

There are no medicines, nor applications, capable of dispersing an opacity of the lens, or its capsule. The cases, injudiciously blended with the subject of cataract under the name of *false cataracts*, which are only obstructions of the pupil by lymph, effused in consequence of inflammation, may indeed sometimes be benefited, or even cured, by the means recommended for the cure of iritis; but no real analogy exists between such cases and opacity of the lens and its capsule. In all examples of true cataract, it is only by an operation that sight can be restored.

Whether an operation should be performed when the cataract is single, and the other eye in the enjoyment of good vision, is a question on which some difference of opinion is entertained. Diversity in the refracting powers of the eyes after the removal of the lens from one of them, and the apprehension of confused vision, as the result, are the reasons usually urged against the practice, which has, however, to a certain extent, proved successful; while the continuance of a cataract in one eye not only gives a disposition to the origin of the same kind of opacity in the other, but permanently impairs the sensibility of the retina itself for want of exercise.

It is a general and judicious maxim, never to operate upon both eyes at the same time. In the case of extraction in particular, this rule is universally observed. It is also a maxim to let the patient have the benefit of preparatory treatment before he undergoes the operation. His diet should be lowered and his bowels emptied.

In cases of congenital cataract, ought the operation to be delayed till the patient has attained the age of docility and reason? Or ought it to be practised in early infancy? Every consideration seems to be in favour of an early performance of it. If it be postponed, the eyes, having no distinct perception of external objects, acquire such an inveterate habit of rolling, that for a long time after the pupil has been cleared by an operation no voluntary effort can control this irregular motion. The retina, too, by a law common to all structures of the animal body, for want of being exercised, becomes more or less deprived of power. From the age of eighteen months to that of two years is deemed an advantageous period for operating on congenital cataracts.

Persons blind from congenital and other cataracts of long duration, and habituated to live with four senses, are generally confused and perplexed on the restoration of vision. They have a difficulty in combining the action of the eye with that of the other senses. Hence Dupuytren has often found it necessary to deprive them, for a time, of the use of one or two of the other senses, in order to enable them to use the organ of vision. He has applied this principle to infants, by closing their ears, as it was noticed that they suffered themselves to be guided by sound, and by impressions received by the hands, which they thrust out before their bodies, like tentacula.

There are three kinds of operation for cataract. 1st. The method formerly termed *couching*, and which is simply the removal of the cataract out of the axis of vision, leaving it still in the eye. It is now frequently called *displacement*; and has two varieties, *depression* and *reclination*. 2d. Surgeons practise *extraction of the cataract*; that is, they take the opake lens completely out of the eye. 3d. Another method, often adopted, consists in the *division of the cataract into fragments*, which, being exposed to the aqueous humour, become absorbed.

By *depression* and *reclination*, we change the situation of the cataract. In *depression*, the lens is pushed directly below the level of the pupil. In *reclination*, the lens is made to turn over into the middle, and towards the bottom of the vitreous humour; so that the surface of the lens, which was previously directed forwards, is now placed upwards, and what was the upper edge is turned backwards. Over the lens, displaced in this manner, the vitreous humour will close much more completely than over the simply depressed lens, so that it will be less likely to reascend behind the pupil. Nor will the retina be so liable to be pressed upon by the cataract as after depression; yet, reclination unavoidably does more extensive injury to the hyaloid membrane of the vitreous humour.

Extraction is the complete removal of the cataract from the eye through an opening made in the cornea. The incision for this purpose must form the segment of a regular circle, be smooth, and, at the same time, of sufficient size to permit the easy passage of the cataract through it. Both in this first period of the operation, and in the subsequent one of opening the capsule, the iris should remain entirely free from injury.

One of the chief dangers of extraction is that of loss of the vitreous humour, which if due care be not taken, is apt to be suddenly forced out of the eye along with the cataract.

Another risk is that of the iris being wounded. Sometimes the operation is followed by a prolapsus of this organ, and occasionally by a closure of the pupil from the inflammation excited in the iris by injury of its texture.

The *division*, or breaking of a cataract piecemeal, may be done with a needle, either through the sclerotica or the cornea. It has the recommendation of being the most easy, but sometimes needs repetition. Opake portions of the capsule, however, frequently resist absorption, and must, after all, either be extracted or displaced. The division of a cataract, when performed by passing the needle through the cornea and pupil, is termed *keratonyxis*.

No method of operating for the cure of cataract should be exclusively preferred; each having its advantages in particular cases.

Cataract, black. 1. A very rare variety of cataract, in which the opake lens is black.

2. Some authors have designated amaurosis by this term.

Cata'ria. (From *catus*, a cat: so called because cats are fond of it.) See *Nepeta cataria*.

Catarrhal. Appertaining to or partaking of the nature of a catarrh; thus *catarrhal fever*, fever complicated with catarrh.

Catarrhe'cticus. (From καταῤῥηγνυμι, to break.) A name given by Hippocrates to medicines supposed to have a dissolvent power, as *oxymel* — καταῤῥηκτικα φαρμακα.

Catarrheu'mia. (*a, atis.* n.; from καταῤῥέω to flow from.) Synonymous with *catarrh*.

CATARRHE'XIS. (*is, is.* f.; from καταῤῥηγνυμι, to burst out.) A sudden and violent effusion. Hippocrates applies it to a sudden and profuse diarrhœa. Schneider calls a copious and rapid discharge of blood from the bowels *catarrhexis vera*.

CATA'RRHUS. (*us, i.* m.; from καταῤῥεω, to flow from.) Catarrh. The older writers distinguished the symptoms of what is commonly called a cold by different names according to the part more immediately affected; as expressed in the old verse —

"Si fluit ad pectus dicatur rheuma *catarrhus*;
Ad fauces *branchus*, ad nares esto *coryza*."

The term catarrh is now applied to a cold in the head or on the chest. Bronchitis is called *pulmonary catarrh* by some writers, and an increased secretion of mucus from the internal coat of the urinary bladder is styled *catarrh of the bladder*. Catarrh or inflammation of the lining membrane of the air passages presents itself under two forms, *common catarrh*, called in ordinary language a cold, and *epidemic catarrh* or *influenza*. The symptoms of common catarrh

are a sense of fulness in the head, and of weight over the eyes, which are weak and watery. The nostrils are obstructed, and pour forth a fluid which is at first thin and acrid, and excoriates the skin around the nostrils, but which afterwards becomes thicker and often purulent. There is frequent sneezing, hoarseness of the voice, cough, generally attended with expectoration, and often a sense of fulness or soreness in the fauces. The common cause of catarrh is the direct exposure of the affected surfaces to a cold or damp atmosphere, or the sudden suppression of perspiration from a rapid reduction of temperature. These, however, are not the sole causes, since patients who have been long confined to their room by other diseases, frequently catch cold without any exposure whatever; some persons always get a cold in the head on quitting the town for the country; and others on quitting the country for the town; and since we know of no reason why the mucous membrane of the air passages should be exempt from the general causes, whatever these may be, which produce inflammation in other mucous membranes, what ground have we for supposing that a catarrh must always arise from cold?

Where the attack is slight, medical aid is not often sought for, or needed. A few days' confinement to the house in a warm but not a close apartment, diluent drinks, abstinence from animal food, and vinous or other fermented liquors, gentle laxatives and diaphoretics usually succeed in carrying off the complaint. But if there be a sense of oppression on the chest, or much fulness in the head, with a degree of symptomatic fever, a more decided antiphlogistic treatment is indicated; smart purgatives should be given, and venesection may sometimes be advisable. If the cough be troublesome, it is to be allayed by demulcent mixtures, with small doses of henbane, gentle expectorants, &c. Opium uncombined is not generally serviceable in catarrh, as it is apt to check the secretion from the inflamed membranes, and thus increase the inflammation: Dover's powder, however, is recommended by many practitioners.

Catarrh is a pretty constant accompaniment of measles, and is not unfrequent in fever, smallpox, worms, dentition, rheumatism, and other diseases.

In the epidemic catarrh or influenza, the attack is very sudden; there is great heaviness over the eyes; and the fever is attended with great depression.

It commences, according to Dr. J. C. Smith, who has accurately recorded its progress as it appeared in 1781 and 1782, with the usual catarrhal symptoms, in conjunction with others of a much graver character, such as great languor, lowness, and oppression at the præcordia; anxiety, with frequent sighing, sickness, and violent headach. The pulse is peculiarly quick and irregular, and at night there is often delirium. The heat of the body is seldom considerable, particularly when compared with the violence of the other symptoms; the skin is moist, with a tendency to profuse sweating; the tongue moist, but white or yellowish. Sometimes there are severe muscular pains, general or local; at other times, erysipelatous patches or efflorescences on different parts of the body. From the onset, for the first twenty-four or forty-eight hours, the symptoms are extremely violent, far beyond the danger or duration of the distemper. For the most part it attacks the healthy and robust: children, and old people either escape entirely, or are affected in a slighter manner. Pregnant women, when affected by it, are disposed to miscarry, and the flooding is in some cases fatal. Patients subject to pulmonic complaints, suffer much from the cough, difficulty of breathing, and other peripneumonic symptoms, which occasionally lead to a fatal result.

Such is the general character of influenza in most of the periods in which it has shown itself. But in every period its symptoms have considerably varied in severity in different individuals. In many instances, they have scarcely exceeded those of a common cold; in others, the pleuritic pain has been very acute, or the headach intolerable, shooting up to the vertex with a sense of splitting; the pulse has been a hundred and forty, and often considerably more, in a minute, with incoherency or delirium from the first night. Yet cases of real danger are very few; and the violence of the disease is over frequently in forty-eight hours; sometimes in twenty-four. Those who have suffered, appear to be little susceptible of a second attack during the continuance of the epidemy, though they have no indemnity against the next that may appear. In many cases, however, the general debility which has been induced does not terminate with the catarrh itself, but remains for weeks, perhaps for months afterwards, and is sometimes removed with great difficulty.

The disease has been known and described from the time of Hippocrates to the present day; and is dwelt upon at great length by Sydenham, who regarded it, in the autumn of 1675, as a general cough produced by cold and moist weather, grafted upon the autumnal epidemy, and varying its symptoms.

Influenza, however, has not only occurred in the autumn, but in every season of the year, whether hot, cold, damp, or temperate; and when there has been apparently no other constitutional distemper with which it could unite itself. That it is an epidemy, cannot be doubted: yet this is to advance but a very little way towards a knowledge of its origin or remote cause; for we have still to inquire into the nature of epidemies, their sources, diversities, and means of diffusion; often, as in the case of spasmodic cholera, in the very teeth of periodical winds and other meteorological phenomena that we might fairly conclude, if we did not know the contrary, would irresistibly oppose their progress. Sydenham freely confesses his ignorance upon the subject, though he is rather disposed to ascribe them to "some occult and inexplicable changes wrought in the bowels of the earth itself, by which the atmosphere becomes contaminated with certain effluvia, which predispose the bodies of men to some form or other of disease."

An epidemic constitution of the atmosphere,

however, or that state of the air capable of producing any general disorder, may depend either upon an intemperament, or inharmonious combination of the elementary principles of which it consists, or upon some miasm, or foreign morbific principle accidentally combined with it. It is possible that both these may be causes of different diseases.

Many writers have endeavoured to trace the malady under consideration to the first of the above causes, and particularly to the atmosphere's being in a state of negative electricity; and M. Weber, fully confiding in this cause, has recommended, somewhat whimsically, the use of socks made of the most powerful non-conductors, as oiled silk, or paper covered with sealing-wax, as a certain prophylactic. Others, without undertaking to determine in what the atmospheric intemperament consists, have regarded it as a mere exciting cause of catarrhs, or, in other words, as merely rendering the body more obnoxious to the ordinary causes of this disease, and hence converting a sporadic into a general distemper.

More commonly, however, catarrh, as well as other epidemies, have, in modern times, been contemplated as dependent upon the second of the aërial causes just adverted to, namely, the existence of a specific miasm, or morbid principle of a peculiar kind in the atmosphere, distinct from any change in the combination of its proper elements. It is, however, quite useless to speculate on a subject on which, if we are ever to know anything, such knowledge can only result from long-continued and laborious observation of the influence of external nature on the living body; nor is it a very philosophical occupation to weave hypotheses concerning the state of the *air* which causes epidemics, when, for aught we know to the contrary, the cause may just as well be in the earth, or in the waters under the earth. The sudden and simultaneous invasion of a great part of the population of a place, sufficiently demonstrates that the spread of influenza depends principally upon causes much more extensive in their operation than contagion: facts are not wanting, however, which render it highly probable that the disease is communicable from one individual to another; whilst there is nothing which at all tends to disprove its contagious character.

Cullen, in his synopsis, has followed the more striking returns of influenza from the fourteenth century down to his own times. "In all these instances," says he, "the phænomena have been much the same; and the disease has always been particularly remarkable in this, that it has been the most widely and generally spreading epidemic known. It has seldom appeared in any one country of Europe, without appearing successively in every other part of it." In some instances, the infection has passed the Atlantic, with little or no remission of its severity, and attacked Americans, who had not had the slighest intercourse with Europeans.

The track of this disease may be traced at sea as well as on land. In the epidemy of 1782, Lord Anson sailed in the month of May with a fleet for the Dutch coast; and Admiral Kempenfelt for that of France. The crews of both fleets were well on sailing; but in the same month both were attacked very generally, and the latter was obliged to return home. The previous state of the air, with respect to any of the sensible qualities of heat, cold, electricity, or damp, seems to have exercised but little appreciable influence. Influenzas have recurred at every different season, in every state of the barometer, thermometer, and hygrometer.

Thus the influenza of 1762, one of the severest on record, producing effects which continued, in many instances, for two or three years afterwards, was preceded by weather uncommonly warm; while in that of 1767, being the next in succession, which was also very severe, though productive of less durable mischief to the constitution, the weather was remarkable for being unusually cold. We know nothing of the country from which the disease has at any time taken its rise; but it has usually observed some particular track, as from north to south or from east to west. That of 1781 and 1782 is said to have originated in China, and to have travelled through Asia into Europe, thence crossing the Atlantic, and arriving the ensuing year in America; but this assertion wants confirmation.

The influenza which occurred in the spring of 1803, was prevalent in Paris and other parts of France, and in Holland, some weeks before it appeared in London; and it was again some weeks in travelling from London to Manchester. It visited Cork and Dublin before reaching the north of Ireland, and it finally crossed the Atlantic, and appeared in the United States the same spring. The epidemics of 1831–2 and 1836–7 are fresh in the memory of all practitioners, and were nearly universal throughout the civilised world. Influenza has sometimes been observed to precede the eruption of more formidable epidemics. That of 1803 was followed by an epidemic ophthalmia in France and a very severe dysentery in the United States. Of late years influenza has been the immediate precursor of malignant cholera in many places.

In the treatment of epidemic catarrh bleeding is rarely required, and, from the debility so soon induced, should be avoided, except when an inflamed state of important organs renders it necessity imperative. It was tried copiously by many practitioners in 1782, but they soon reverted to the cautionary track of Sydenham. Quiet, diluent drinks, the promotion of gentle perspiration, and a due attention to the state of the bowels, will usually be found sufficient. If the chest be much loaded, an emetic will afford the most effectual relief. If the cough be troublesome, and the breathing laborious, both which, however, are generally alleviated by an emetic, small doses of ipecacuan, with or without oxymel of squills, will promote an easy expectoration, and take off the sense of oppression. Cullen joined these with opium, and was particularly attached to the use of Dover's powder in all catarrhal affections, asserting that there is no disease in which opium has been found more

seful; but this position, doubtful with respect
o common catarrh, is decidedly opposed to
ecent experience in influenza, the symptoms of
which have very generally been found to be
ggravated by opium, exhibited in whatever
orm. A more liberal diet may be allowed in
nfluenza than is usual in ordinary febrile affec-
ions. The subsequent debility may be removed
y vegetable and mineral tonics, gentle exercise,
ure air, cold bathing, and a nutritious diet.
The cough which generally accompanies influ-
nza sometimes remains as a sequel, long after
he other symptoms have disappeared: and, in
his case, opium with camphor, or the resinous
alsams, often affords essential relief, and espe-
ially at night. It has not generally been found
hat the cough has proved any impediment to
he use of bark, or even that of cold bathing.
nfluenza has rarely terminated in phthisis;
which, according to Dr. Carmichael Smith, is
ess frequently consequent on epidemic than on
ommon catarrh.

Catarrh urethral. The name of urethral catarrh has been given to gleet.

Catarrh uterine. Leucorrhœa has been called uterine catarrh.

Catarrhus bellinsulanus. The mumps. See *Parotitis.*

Catarrhus suffocativus. See *Croup.*

Catarrhus vesicæ. This name has been given to a copious discharge of mucus from the bladder, which arises from chronic inflammation of its mucous coat.

Catarti'smus. Καταρτισμος. The reduction of a dislocated bone. — *Paulus Ægineta.*

Catasa'rca. (From κατα, and σαρξ, flesh.) Synonymous with *Anasarca.*

Catasta'gmos. (Καταστα̃γμος; from καταταξω, to distil.) The Greek word for distillation. Some medical writers have used it synonymously with coryza.

CATASTA'LTICUS. (From κατασελλω, to repress.) Catastaltic. Applied to medicines which repress evacuations, as astringents and styptics.

CATA'STASIS. (Κατασταστις; from καθιστημι, to constitute.) 1. The constitution or state of any thing, as of the human body or of the atmosphere.

2. The restoration of a dislocated part to its proper position.

Cata'tasis. (From κατατεινω, to extend.) Hippocrates used this term to signify the extension of a fractured or dislocated limb, in order to replace it, and also its actual reduction.

Cate. A name of catechu. See *Catechu.*

Ca'techu. (*Catechu*, indeclinable. It is said that, in the Japanese language, *kate* signifies a tree, and *chu*, juice.) See *Acacia catechu.*

Catechu, extractum. See *Acacia catechu.*

Cateia'dion. (Κατειαδιον; from κατα, and α, a blade of grass: so called from its shape.) A long-shaped instrument mentioned by Aretæus, which was thrust into the nostrils to provoke a hæmorrhage in cases of head-ach.

Cate'næ musculus. The anterior tibial muscle. — *Spigelius.*

CATHÆRE'TICUS. (Καθαιρετικος; from καθαιρω, to take away.) Escharotic.

CATHA'RMA. (*a, atis.* n.; from καθαιρω, to purge.) An excrement. Any thing purged from the body naturally or by art.

CATHA'RSIS. (*is, cos.* f.; from καθαιρω, to purge.) Purgation of the excrements or humours, either naturally or artificially.

CATHA'RTIC. (*Cathartĭcus*; from καθαιρω, to purge.) Purgative. Applied to a medicine which, taken internally, or applied externally, increases the evacuations. Purgative medicines have received many appellations: *purgantia; catocathartica; catoretica; catotetica; dejectoria; alviduca.* The different articles referred to this class are divided into five orders of cathartics: —

1. *Stimulating*, as jalap, aloes, bitter apple, and croton oil, which are well calculated to discharge accumulations of serum, and are mostly selected for indolent and phlegmatic habits, and those who are hard to purge.

2. *Refrigerating*, as sulphate of soda, supertartrate of potash, &c. These are better adapted for plethoric habits, and those with an inflammatory diathesis.

3. *Astringent*, as rhubarb and damask roses, which are mostly given to those whose bowels are weak and irritable, and subject to diarrhœa.

4. *Emollient*, as castor oil and olive oil, which may be given, in preference to other cathartics, to infants and very aged persons.

5. *Narcotic*, as tobacco, hyoscyamus, and digitalis. Medicines of this kind are never exhibited in the practice of the present day.

Murray, in his Materia Medica, considers the different cathartics under the two divisions of *laxatives* and *purgatives;* the former being mild in their operation, and merely evacuating the contents of the intestines; the latter being more powerful, and even extending their stimulant operation to the neighbouring parts. The following he enumerates among the principal laxatives: — Manna, Cassia fistula, Tamarindus indica, Ricinus communis, Sulphur, Magnesia. Under the head of purgatives, he names Cassia senna, Rheum palmatum, Convolvulus jalapa, Helleborus niger, Bryonia alba, Cucumis colocynthis, Momordica elaterium, Rhamnus catharticus, Aloe perfoliata, Convolvulus scammonia, Gambogia, Submurias hydrargyri, Sulphas magnesiæ, Sulphas sodæ, Sulphas potassæ, Supertartras potassæ, Tartras potassæ, Tartras potassæ et sodæ, Tighlii oleum, Phosphas sodæ, Murias sodæ, Terebinthina veneta, Nicotiana tabacum.

Cathartic salt. Both Epsom salt and Glauber's salt are so named. See *Magnesiæ sulphas* and *Sodæ sulphas.*

CATHA'RTINE. A substance of a reddish colour, a peculiar smell, and a bitter nauseous taste, soluble in water and alkohol, but insoluble in ether; obtained by Lassaigne and Feneulle from the leaves of senna.

CATHARTOCA'RPUS. A genus of plants separated from the Linnæan genus *Cassia.*

Cathartocarpus fistula. Cassia fistula of Linnæus. The plant which produces the cassia pulp. It grows in the East and West Indies and Egypt, and rises to the height of forty or

fifty feet. The fruit is a long cylindrical woody dark brown pod, about the thickness of the thumb, and two feet in length, divided into numerous transverse cells, each containing one seed, embedded in a soft black pulp. The greater part of the cassia pods imported into this country are from the West Indies, but those from the East Indies are reckoned finer; they are of smaller size, and the pulp is blacker. The pulp is the part used in medicine. According to Vauquelin, it contains sugar, gelatin, gluten, mucus, a small proportion of resin, extractive, and colouring matter. It is a gentle laxative in a small dose, but in large doses occasions nausea and griping. It is now hardly ever used except as an ingredient in compounds, as the confectio sennæ, &c. The dose of cassia pulp is from ʒiij. to ʒj.

Cathemeri'nus. (Καθημερινος; from κατα, and ἡμερα, a day.) Synonymous with quotidian.

CA'THETER. (*Catheter, teris*, m.; Καθετηρ, from καθιημι, to thrust into.) A long and hollow tube, introduced by surgeons into the urinary bladder, to draw off the urine when the patient is unable to pass it naturally. Catheters are either made of silver, or of a mixture of metals, or of elastic gum. That for the male urethra is much longer than that for the female, and so curved, if metallic, as to adapt itself to the urethra.

Catheteri'smus. (*us, i.* m.; from καθετηρ, a catheter.) The operation of introducing the catheter.

Cathi'drysis. (Καθιδρυσις; from καθιδρυω, to place together.) Hippocrates uses this term to signify reduction of a fracture.

Cathmia. A term applied by the alchemists to several things; as to a mineral vein containing gold and silver, to gold, to litharge, to the smoke arising from burnt copper, &c.

Catho'lceus. (Καθολκευς; from καθελκω, to draw over.) An oblong fillet, applied round that bandage for the head called *pericepastrum*, in order to secure it.

CATHO'LICON. (Καθολικος, universal.) *Catholicum.* An universal medicine: a medicine that was supposed to purge away all vitiated humours.

Catholicum duplex. An old purgative electuary, containing rhubarb, senna, cassia, tamarinds, &c.

Catholici humores. Humours which exist throughout the body were formerly so called.

Ca'tias. Κατιας. A knife used for cutting a dead fœtus out of the womb. — *Paulus Ægineta.*

Cati'llia. A weight of nine ounces.

Catillus. See *Capella.*

Catillus cinereus. See *Capella.*

Cati'nus fuso'rius. A crucible.

Catkin. See *Amentum.*

CA'TLING. A long, narrow, double-edged, sharp-pointed knife, used chiefly in amputations.

Catmia. Gold-filings.

Catmint. (So called, because cats are said to be fond of it.) See *Nepeta.*

Catocathia'rtic. (*Catocatharticus*; from κατω, downwards, and καθαιρω, to purge.) Applied to a purgative medicine.

Ca'toche. (From κατεχω, to detain.) See *Catalepsis.*

Catochei'lum. (*Catochellum, i.* n.; from κατω, beneath, and χειλος, the lip.) The lower lip.

CA'TOCHUS. (*us, i.* m. Κατοχη; from κατεχω, to detain.) Some writers use this term synonymously with *catalepsy*, and others with *coma-vigil*; others again distinguish catochus from catalepsy by the rigidity of the limbs, which obtains in the former, but not in the latter.

Catomi'smus. (From κατω, below, and ωμος, the shoulder.) A method of reducing a luxated humerus, practised by the Greeks. It consisted in throwing the arm of the patient over the shoulder of a strong man, so that the body was raised from the ground, and the reduction effected by the conjoined action of the patient's own weight and the shoulder of the operator.

Cato'pter. (Κατοπτηρ; from κατοπτομαι, to see clearly.) The Greek name for a speculum ani.

Catorchi'tes. (Κατορχιτης; from κατορχεομαι, properly to delight or soothe by dancing.) The name of a soothing or demulcent wine used by the Greeks, prepared with figs. It was the same with the *Sycites.*

Catore'ticus. This word appears to be merely a false reading for *catotericus*, which see.

Catote'ricus. (Κατωτερικος; from κατωτερος, inferior.) Applied to a cathartic as being a medicine which operates downwards.

Catulo'ticus. Κατουλωτικος. Catulotic. This term has been applied to medicines which promote cicatrisation; but in the fragment of the book *De Dynamidiis*, falsely attributed to Galen, we read "Catuloticæ sunt quæ cicatrices grossas comedendo æquant et limpidant." — *Ed. Venet. Ap. Junt Latin*, 1576. And this, as far as we know, is the only ancient authority for the word.

Ca'tulus. See *Amentum.*

CAU'CALIS. (*is, is* vel *idis*, f.; καυκαλις.) The name of a genus of plants. Class, *Pentandria*; Order, *Monogynia.*

Caucalis anthriscus. *Daucus annuus minor.* A common plant in the hedges, said to be diuretic, but not used in the present day.

Cauca'loi'des. (From καυκαλις, and ειδος, a likeness; from its likeness to the flower of the caucalis.) Like unto the caucalis. 1. A specific name of some plants.

2. An epithet of the patella, from an alleged resemblance to the flower of the caucalis. — *Moxon.*

CAU'DA. (*a, æ.* f.; from *cado*, to fall: because it hangs down behind.) A tail. 1. The tail of animals.

2. An appendage to seeds which resembles a tail; as in the genus *clematis.*

3. A name formerly given to the os coccygis, that being, in tailed animals, the beginning of the tail.

4. The clitoris, especially when of undue magnitude. — *J. G. Walther.*

Cauda equina. 1. The spinal marrow, at its termination about the second lumbar vertebra, gives off a large number of nerves, which,

hen unravelled, resemble the horse's tail; ence the name. See *Medulla spinalis.*

2. See *Hippuris vulgaris.*

Cauda muris. See *Myosotis.*

Cauda porcina. See *Peucedanum.*

CAUDA VULPIS RUBICUNDI. An alchemical ame of red lead.

CAUDA SEMINIS. The tail, or elongated, and enerally feathery appendage to a seed, formed of ne persistent style. It is simple, in *Geranium onale;* hairy, in *Clematis* and *Pulsatilla;* and eniculate, in *Tormentilla.*

CAUDAL. Relative to the tail. Thus we peak of the *caudal vertebræ* of a quadruped, nd the *caudal fin* of a fish.

CAUDA'TIO. (From *cauda*, a tail.) An elonation of the clitoris. — *Blasius.*

CAUDA'TUS. (From *cauda*, a tail.) Cauate; tailed: applied generally in natural hisory. In botany, to seeds which have a tail-like ppendage; as those of the *Clematis vitalba*, and *Anemone sulphurea.*

CAU'DEX. (*ex, icis.* m.) A name aplied by some botanists to that part, both of ne root and stem of a plant, which is not rami-ed: the former is called *caudex descendens*, and ne latter *caudex ascendens.*

CAUL. 1. The English name for the omenum. See *Omentum.*

2. A detached portion of the membrane is ometimes found covering the face of a newborn child: this is named, in popular language, caul. The superstitious believe that this piece f membrane, borne about the person, will preent an individual from ever being drowned.

CAULE'DON. (Καυληδον; from καυλις, a em.) This word has been introduced into ome lexicons as a substantive signifying a ransverse fracture, or a fracture resembling nat of the stem of a tree; but it is in reality an dverb, signifying "in the manner of a stem." -το καυληδον καταγμα, the kind of fracture which esembles that of a stem; namely, a transverse acture.

Caulescens. Having a stem.

Cauliflower. See *Brassica oleracea.*

CAULINE. (*Caulinus*, from *caulis*, the em.) Of or belonging to the stem. Leaves nd peduncles are so called, which grow on, or ome immediately from, the stem.

CAU'LIS. (*is, is.* m. Καυλος.) A stem hich bears the leaves as well as the flowers. plant is said to be

Caulescent, when furnished with a stem.

Acauline, when destitute of a stem; as in *arlina acaulis.*

From its *duration*, the caulis, or stem, is disnguished into,

1. *Herbaceous*, which perishes every year; as *Melissa officinalis.*

2. *Suffruticose*, which perishes halfway down very year; as in *Cheiranthus incanus.*

3. *Fruticose*, shrubby, having many stems, hich do not perish in the winter; as in *Melissa uticosa.*

4. *Arboreal;* as the trunk of trees.

From the *substance*, into,

1. *Fistulose*, hollow internally; as in *Anethum aveolens*, and *Allium fistulosum.*

2. *Loculamentose*, hollow and divided into cells; as in *Angelica, Archangelica*, and *Phellandrium aquaticum.*

3. *Inane*, or *medullary*, empty or pithy; as in *Sambucus nigra.*

4. *Solid;* as in *Mentha* and *Melissa.*

5. *Ligneous*, woody; as in *Prunus spinosa.*

6. *Carnose*, or fleshy; as in *Sedum arboreum*, and *Stapelia hirsuta.*

7. *Pulpous*, pulpy; as in *Mesenbryanthemum crystallinum.*

8. *Fibrose*, separable into long fibres; as *Cocos nucifera.*

9. *Succous*, full of juice; as in the *Euphorbias*, and *Chelidonium majus.*

From the difference of the *surface*, the *caulis* is said to be,

1. *Glaber*, or *lævis*, smooth, without any hairiness, or roughness, or inequality; as *Lepidium latifolium.*

2. *Scaber*, or *asper*, when it has hard inequalities; as in *Galium aparine*, and *Lithospermum arvense.*

3. *Suberose*, corky; as *Passiflora suberosa*, and *Quercus suber.*

4. *Rimose*, cracked; as in *Ulmus campestris.*

5. *Tuberculate*, with rough nobs; as in *Cissus tuberculata.*

6. *Tunicate*, the cuticle peeling off spontaneously in large portions; as in *Betula alba*, and some of the *Spiræas.*

7. *Striate*, having superficial longitudinal lines; as in *Chærophyllum sylvestre, Aster sibiricus*, and *Daphne mezereon.*

8. *Sulcate*, furrowed, fluted, when longitudinally indented with long and deep hollows; as in *Celosia coccynea, Selinum carvifolia, Pimpinella sanguisorba, Doronicum pardalianches.*

9. *Perfoliate;* as in *Bupleurum perfoliatum.*

The *figure* affords the following distinctions: —

1. *Caulis teres*, or *cylindrical*, round, without angles; as *Sinapis arvensis.*

2. *Semiteres*, half-rounded, flat on one side; as *Hyacinthus orientalis, Allium descendens.*

3. *Compressed*, which implies that two sides of the stem are flat, and approach each other; as in *Poa compressa, Lathyrus latifolius, Pancratium declinatum.*

4. *Anceps*, two-edged; as *Iris graminea, Hypericum androsæmum.*

5. *Angulate*, presenting several acute angles in its circumference.

a. *Triangulate*, three-cornered; as in *Cactus triangularis.*

b. *Quadrangulate*, four-cornered; as *Cactus tetragonus.*

c. *Quinqueangulate;* as in *Cactus pentagonus.*

d. *Hexangulate*, six-cornered; as *Cactus hexagonus.*

e. *Multangulate*, many-cornered; as *Cactus cereus.*

6. *Obtusangulate*, obtuse-angled; as in *Scrophularia nodosa.*

7. *Acutangulate*, acute-angled; as in *Scrophularia aquatica.*

8. *Triquetral*, three-sided, when there are three flat sides, forming acute angles; as *Hedysarum triquetrum, Viola mirabilis, Carex acuta.*

9. *Tetraquetral*, four-sided; as in *Hypericum quadrangulare, Monarda fistulosa, Mentha officinalis.*

10. *Membranaceous*, leaf-like; as in *Cactus phyllanthus.*

11. *Alate*, when the edges or angles expand into leaf-like borders; as in *Onopordium acanthium*, and *Lathyrus latifolius.*

12. *Articulate*, jointed; as *Cactus flagelliformis*, and *Lathyrus sylvestris.*

13. *Nodose*, knotty, divided at intervals by swellings; as in *Scandix nodosa, Geranium nodosum.*

14. *Enodus*, without knot.

From the *direction*, the caulis is,

15. *Rectus*, erect, when it ascends almost perpendicularly; as in the firs, *Chenopodium scoparium*, &c.

16. *Strictus*, straight, perpendicular; as in *Alcea rosea.*

17. *Obliquus*, oblique; as in *Solidago mexicana.*

18. *Adscendens*, ascending, when its lower portion forms a curve, the convexity of which is towards the earth, or rests upon it, and the summit rises; as exemplified in many grasses, *Trifolium pratense, Hedysarum onobrychis.*

19. *Descendens*, or *Declinatus*, the reverse of the former, forming an arch, towards the ground; as in *Pancratium declinatum, Ficus carica.*

20. *Nutans*, or *cernuus*, nodding, when bent towards the summit; as in *Convallaria polygonatum.*

21. *Procumbens*, or *Prostatus*, lying on the earth; as *Veronica officinalis.*

22. *Decumbens*, rising a little, and then turning towards the ground; as *Thymus serphyllum.*

23. *Repens*, creeping and sending radicles into the ground; as *Trifolium repens*, and *Gnaphalium repens.*

24. *Flexuosus*, zigzag; as in *Celastrus buxifolius*, and *Solidago flexicaulis.*

25. *Radicans*, sending fibres which take root in the earth; as in *Ficus indica.*

26. *Sarmentosus*, trailing, or sending off a runner, which fixes on neighbouring bodies; as in *Hedera helix.*

27. *Stoloniferus*, sending off radicating stolos; as in *Agrostis stolonifera*, and *Fragaria vesca.*

28. *Scandens*, climbing, furnished with tendrils; as in *Solanum dulcamara*, and *Cobæa scandens.*

29. *Volubilis*, twining, winding itself spirally round any other plant or body.

a. *Dextrorsum*, when from right to left; as in *Phaseolus multiflorus*, and *Convolvulus.*

b. *Sinistrorsum*, in the opposite direction, or following the apparent motion of the sun; as in *Lonicera periclimenum*, and *Humulus lupulus.*

30. *Laxus*, bent by the lightest wind; as in *Secale cereale*, and *Juncus bufonius.*

31. *Rigidus*, breaking when lightly bent; as in *Boerhaavia scandens.*

When *clothed* with any kind of appendage, the stem is designated by a term expressive of this; thus,

1. *Caulis foliosus*, when leafy; as in *Melissa officinalis.*

2. *Aphyllus*, when without leaves; as in *Asphodelus fistulosus.*

3. *Squamosus*, scaly; as in *Orobanche major.*

4. *Stipulatus*, when furnished with stipulæ; as in *Cystus helianthemum*, and *Geranium terebinthinaceum.*

5. *Imbricatus*, tiled or covered with little scales; as in *Crassula imbricata*, and *Aloe viscosa.*

6. *Vaginatus*, sheathed, embraced by the base of a leaf as by a sheath; as in *Canna indica*, and *Arundo donax.*

7. *Bulbiferus*, bulb-bearing, when studded with bulbs in the axilla of the leaves; as in *Lilium bulbiferum.*

8. *Nudus*, naked, without leaf, scale, or other covering; as in *Cuscuta europea.*

From its mode of *branching*, the stem is distinguished into,

1. *Simplex*, having few branches; as in *Campanula perfoliata*, and *Verbascum thapsus.*

2. *Simplicissimus*, without branches; as in *Orobanche americana*, and *Campanula barbata.*

3. *Prolifer*, shooting off new branches from the tops of the former ones; as in *Dracena draco.*

4. *Dichotomus*, forked, always divided into pairs; as in *Horanthus europæus*, and *Valeriana locusta.*

5. *Ramosus*, branched; as in *Rosmarinus officinalis.*

6. *Ramosissimus*, having many branches; as *Chenopodium scoparia, Ulmus, Grossularia*, &c.

7. *Paniculatus*, paniculate; as in *Crambe tataria.*

From the *pubescence* and *armature*, or defences, into,

1. *Spinosus*, when furnished with sharp spines; as in *Prunus spinosa*, and *Mespilus oxyacantha.*

2. *Aculeatus*, prickly, when covered with sharp-pointed bodies; as in *Rosa centifolia.*

3. *Cetaceus*, bristly, when the armature consists of brushes of minute bristles; as in *Cactus flagelliformis.*

4. *Ramentaceus*, ramentaceous; as in *Erica ramentacea.*

5. *Pilosus*, hairy, the pubescence consisting of long hairs; as in *Hieracium pilocella, Salvia pratensis.*

6. *Muricatus*, or *hispidus*, when the hairs are stiff or bristly; as in *Borago officinalis*, and *Echium vulgare.*

7. *Tomentosus*, downy; as in *Verbascum thapsus*, and *Geranium rotundifolium.*

8. *Villosus*, shaggy; as in *Stachys germanica*, and *Veronica villosa.*

9. *Lanatus*, woolly, when the hairs are long and matted; as in *Stachys lanata*, and *Ballote lanata.*

10. *Sericus*, silky, when the hairs are shining and silky.

Instead of pubescence, the covering is in some instances either a dry powdery, or a moist, excretion; and hence, the stem is denominated either,

1. *Incanus*, or *pruinosus*, when covered with a fine white dust; as the *Atriplex portulacoides.*

2. *Farinosus*, mealy; as the *Primula farinosa.*

3. *Glaucus*, of a sea-green colour; as *Ricinus ficinalis.*

4. *Viscidus*, viscid, covered with a resinous exudation; as in *Lychnis viscaria.*

5. *Glutinosus*, glutinous, when the exudation is adhesive and soluble in water; as in *Primula glutinosa.*

The primary division of a stem is into *lateral stems* or *branches.* These are variously distinguished,

From their *situation*, into,

1. *Opposite*, when one branch stands on the opposite side of the stem to another, and their bases are nearly on the same plane; as in *Mentha arvensis.*

2. *Alternate*, one opposite to another, alternately; as in *Althæa officinalis.*

3. *Verticillate*, when more than two proceed from a centre, like the spokes of a wheel; as *Pinus abies.*

4. *Scattered*, when given off from the stem in any indeterminate manner.

From their *direction*, the branches, or rami, are termed,

1. *Patentes*, spreading, when the angle formed by the branch and the upper part of the stem is obtuse; as in *Galium mollugo.*

2. *Patentissimi*, proceeding at a right angle from the stem, or horizontally; as in *Asparagus officinalis.*

3. *Brachiati*, brachiate, spread in four directions, crossing each other alternately in pairs; as *Syringa vulgaris.*

4. *Deflexi*, bending downward from the stem, in an arched or curved direction; as in *Pinus larix.*

5. *Reflexi*, hanging almost perpendicularly from the stem; as in *Salix babylonica.*

6. *Retroflexi*, turned backward; as in *Solanum dulcamara.*

7. *Introflexi*, bent inward, when the tops bend towards the stem; as in *Populus dilatata.*

8. *Fastigiati*, when the tops of the branches, from whatever part of the stem they spring, rise nearly to the same height; as in *Chrysanthemum corymbosum*, and *Dianthus barbatus.*

9. *Virgati*, weak and long; as in *Salix viminalis.*

10. *Appressi*, approximated, when nearly parallel and close to the stem; as in *Genista tinctoria.*

11. *Fulcrati*, supported or propped, when they project nearly horizontally, and give out root-like shoots from the under side, which, extending until they reach the ground, take root, and serve as props to the branches; as in *Ficus religiosus.*

CAULIS FLORIDA. Cauliflower.

CAULO'DES. (From *caulis*, a stem.) The name given by Pliny to cabbage.

CAU'MA. (*a*, *atis*. n. Καυμα, heat; from καιω, to burn.) Burning heat; febrile heat.

Cause. See *Ætiology.*

CAUSO'DES. (From καιω, to burn.) Ardent — καυσωδης πυρετος, an ardent fever; the same with *causus.*

Caustic. See *Causticum.*

CAUSTIC ALKALI. A pure alkali. See *Alkali.*

Caustic barley. See *Cevadilla.*

Caustic, lunar. See *Argenti nitras.*

Caustic volatile alkali. See *Ammonia.*

CAUSTICITY. A body which has the properties of a caustic is said to possess causticity.

CAU'STICUM. (*um*, *i*. n.; from καιω, to burn: because it produces effects on the animal body analogous to those of fire.) A caustic. 1. A substance which has so strong a tendency to combine with organised substances, as to destroy their texture. The caustics in most common use are the lunar caustic, or nitrate of silver, and the caustic potash.

2. An hypothetical body, imagined by Mayer as the cause of causticity.

Causticum americanum. See *Veratrum sabadilla.*

CAUSTICUM ANTIMONIALE. Muriate of antimony.

Causticum arsenicale. See *Arsenical caustic.*

Causticum commune fortius. See *Potassa cum calce.*

Causticum lunare. See *Argenti nitras.*

CAU'SUS. (*us*, *i*. m. Καυσος; from καιω, to burn.) An ardent fever. The opinions of medical critics have been divided as to the precise nature of the fever called καυσος by the Greeks. The Greek writers, from Hippocrates downwards, give nearly a similar account of it. Aretæus has left a very distinct description of it. The principal symptoms, as stated by that elegant writer, are a pungent and subtile heat, especially in the internal parts; great heat of the breath; desire of cold air; dryness of the tongue, lips, and skin; coldness of the extremities; the urine loaded with bile; watchfulness; quick, small, and weak pulse; eyes clear, splendid, and reddish; good complexion of the countenance. If the disease go on increasing, delirium supervenes, with oblivion of every thing; the respiration is hurried; the hands are cold, except the palms, but these are burning hot; the nails are livid, and there is a moisture on the neck and forehead. The last stage is that of complete collapse; the body is covered with a cold sweat, which is uncontrollably profuse; the breath is cold: but, amid this exhaustion of all the corporeal powers, the mind recovers its energy; the faculties become subtle and the senses acute; and the dying man appears as if endowed with the spirit of prophecy. (*De Causis et Signis acutorum Morborum*, lib. ii. c. 4. ed. Wigan.)

According to Alexander of Tralles there are two kinds of *causus*— the true, which is marked by intense thirst, bilious stools, and a rough and black tongue; and the *spurious*, in which the thirst is moderate, the tongue not black, and the stools not bilious: the former was ascribed to the predominance of a bilious, and the latter of a pituitous, humour. The Arabian writers describe the causus as bearing considerable resemblance to a tertian, but with more intense paroxysms, and no complete intermission, but a remission merely of the symptoms. According to Albucasis, the disease is caused by heated bile, accumulated in the veins near the heart, stomach, or liver. On the whole, the most probable conjecture seems to be, that the *causus* is identical with that variety of the malignant remittent of warm climates, which is called

ardent, or *burning remittent;* and which, though essentially of the remittent type, undergoes little actual remission on account of the intense visceral inflammation with which it is complicated. (See *Febris remittens.*) It must be acknowledged, however, that the προσωπου ευχροια — the good complexion of the countenance mentioned by Aretæus — is not very favourable to this conjecture. Some writers, who have supposed that the *causus* of the Greeks was *synocha*, or inflammatory fever, are evidently quite wide of the mark, and indeed have probably been deceived by the name of the disease without referring to the descriptions of the ancients.

Cauterets. A village in the department of the Hautes Pyrenées, celebrated for its warm sulphureous springs.

CAUTERIZATION. (*Cauterizatio;* from *cauterium*, a cautery.) The application of a cautery.

CAUTERY. (*Cauterium, ii.* n.; from καιω, to burn.) Cauteries were divided, by the older surgeons, into *actual* and *potential:* the former name was applied to a red hot iron; the latter, to what is now called a caustic. See *Causticum.*

Cava vena. See *Vena cava.*

Cave'rna. (*a, æ.* f.; from *cavus*, hollow.) A cavern: the pudendum muliebre is so called by some writers.

Caverno'sus. (From *caverna.*) Formed of large cells. See *Corpus cavernosum*, and *Sinus cavernosus.*

Cariare. See *Acipenser.*

Cavi'cula. (Diminutive of *cavilla.*) See *Cavilla.*

Cavi'lla. (From *cavus*, hollow.) 1. The malleolus, or protuberance of the ankle. — *Forestus.*

2. A name given by Haly Abbas to the cuneiform bone. — *Schneider.*

CAVITY. (*Cavitas, atis.* f.; from *cavus*, hollow.) A term applied generally to the hollow parts of the body; thus we speak of the *abdominal cavity*, the *thoracic cavity*, the *articular cavities*, &c. The cavities of bones are usually named according to some real or fancied resemblance; thus we have *glenoid cavities, cotyloid cavities, fossæ, sinuses*, &c.

Cayenne pepper. See *Capsicum.*

CEANO'THUS. (*us, i.* m.; from κεανωθος, quia κεει ανωθεν, because it pricks at the extreme part.) 1. A genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Monogynia.*

2. An ancient name of the *Serratula arvensis.*

Ceanothus americanus. The leaves of this plant are called *New Jersey tea*, and are used in some parts of North America as a substitute for the Chinese leaf. The root is said to be astringent, and yields a cinnamon-coloured dye.

Ceber. (Arabic.) The Lignum aloes.

Cebi gallinæ. A hen's liver roasted.

Cebiptra. A large Brazilian tree, decoctions of the bark of which are used in baths and fomentations, to relieve rheumatic pains in the limbs, and cutaneous diseases.

Cecryphalon. κεκρυφαλον. The same as *cecryphalos.*

Cecryphalos. (κεκρυφαλος, the net with which women confined their hair.) The name given by the Greek anatomists to the *reticulum*, or second stomach of ruminating animals.

Cedar. See *Pinus cedrus.*

Ce'dma. (κεδμα; from κεδαζω, or κεδαω, for σκεδαζω, to disperse.) A name given by the Greeks to chronic rheumatism of the joints, especially the hip.

Cedrinum lignum. Cedar wood. See *Pinus cedrus.*

Ce'drinus. Appertaining to the cedar, as *oleum cedrinum*, oil of cedar, &c.

Cedrinum oleum. See *Oleum cedrinum.*

Cedrinum vinum. See *Vinum cedrinum.*

Cedri'tes. (From κεδρος, the cedar-tree.) Wine in which the resin which distils from the cedar-tree has been steeped. It was formerly employed as a vermifuge.

Cedria. *Cedrium. Cedreleum.* This term seems to have been applied to several substances, but most generally to the resin of the cedar.

Cedrome'lla. The citron.

Cedrone'lla. Turkey balsam.

Cedro'stis. (*is, is.* f. κεδρωστις.) A Greek name of the white bryony.

Ce'drula. A name of the *Juniperus oxycedrus*, or berry-bearing cedar.

Ce'drus. (*us, i.* f. κεδρος; from the Hebrew *keder.* See *Pinus cedrus.*

Cedrus americana. The arbor vitæ.

Cedrus bacci'fera. The *Juniperus oxycedrus.*

Cei'ria. (Κειρια; from κειρω, to abrade.) The tape-worm: so called from its abrading the intestines. — *Galen.*

Cellandine. See *Chelidonium.*

Cela'strus. Κελαστρος. 1. The Greek name of a plant supposed to be the *Rhamnus alaternus.*

2. The name of a genus of plants of the Class *Pentandria*, and Order *Monogynia.*

Celastrus. See *Celastrus.*

Celauritis. An alchemical name of litharge.

CE'LE. (From κηλη.) A tumour caused by the protrusion of any soft part: a hernia. Hence the compound terms *enterocele, epiplocele*, &c.

Celery. See *Apium graveolens.*

Cell. *Cella.* See *Cellula*, and *Loculamentum.*

Cells, bronchial. See *Pulmo.*

Cells, mastoid. See *Auris.*

Ce'llula. (*a, æ.* f.; diminutive of *cella*, a cell.) A little cell, or cavity.

Cellulæ mastoideæ. See *Temporal bones.*

Ce'llular. *Cellularis.* Composed of little cells.

Cellular membrane. See *Membrana.*

Cellular texture. See *Membrana.*

Cellular tissue. See *Membrana.*

Cellular web. See *Membrana.*

Celoto'mia. (*a, æ.* f.; from κηλη, hernia, and τεμνω, to cut.) The operation for a strangulated hernia, by cutting.

Ce'lsa. A barbarous term in use among the Paracelsists. Ruland defines it "musculus vitæ, pulsus per singulas partes corporis oberrans," or what is called in common language

he "life blood." Paracelsus denotes by it some cutaneous disease supposed to depend on a morbid vapour striving to escape from the body.

Cembra. See *Pinus cembra.*

CEMENT. Chemists call by this name any substance employed to unite things together by adhesion, as lutes, glues, solders, &c.

CEMENTATION. A chemical process, which consists in surrounding a body in the solid state with the powder of some other bodies, and exposing the whole for a time, in a close vessel, to a degree of heat not sufficient to fuse the contents. Thus iron is converted into steel by cementation with charcoal; green bottle glass is converted into porcelain by cementation with sand, &c.

CEMENTE'RIUM. An aludel.

CE'NCHRIAS. *Cenchris. Cenchrites.* (From κεγχρος, a millet seed, so called from its resemblance to that seed.) A species of herpes.

CENEANGEI'A. (From κενος, empty, and αγγος, a vessel.) Emptiness of the vessels of the body.

CE'NEON. (Κενεων; from κενος, hollow.) 1. The hollow of the flank between the false ribs and the ilium. — *Hippocrates.* — *Galen.*

2. According to the editors of the Castelli, Moschion uses this word to designate the hollow of the navel in children.

CENIFICATUM. *Cenificatum.* A calx. — *Ruland.*

CENIOTE'MIUM. A purging remedy, formerly used in the venereal disease, supposed to be mercurial.

CENIPLAM. *Cenipotam. Cenigdam cenigoam.* An instrument used to open the head in epilepsy! — *Ruland.*

CENOBIUM. (Κοινοβιον, a society, especially of monks.) This name is given by Mirbel to a fruit consisting of several pericarps, without valves or sutures, styles or stigmata, united at the base; as in the labiated plants. Each of the pericarps is called *eremus*, a solitary.

CENO'SIS. (From κενοω, to empty.) Synonymous with evacuation.

CENO'TICUS. (Same etymon.) Cenotic, evacuant.

CENTAU'REA. (*ea, æ.* f.; Κενταυριον, so called from *Chiron*, the centaur, who is said to have employed one of its species to cure himself of a wound accidentally received, by letting one of the arrows of Hercules fall upon his foot.) The name of a genus of plants in the Linnæan system. Class, *Syngenesia*; Order, *Polygamia frustanea.*

CENTAUREA BEHEN. The *Behmen abiad* of the Arabians. The officinal *behen album. Jacea orientalis patula. Raphonticoides lutea.* White behen. This plant grows on Mount Libanus. The root is regarded in the east as a tonic. This is not the same with the *behen blanc* of the French, which is the root of the *cucubalus behen.*

CENTAUREA BENEDICTA. The systematic name of the blessed or holy thistle: called also, *Carduus benedictus* and *Cnicus sylvestris.*

Centaurea benedicta — calycibus duplicato-spinosis lanatis involucratis, foliis semi-decurrentibus denticulato-spinosis of Linnæus. This plant, a native of Spain, and some of the Archipelago islands, obtained the name of Benedictus, from its being supposed to possess extraordinary medicinal virtues. In loss of appetite, where the stomach has been injured by irregularities, its good effects have been frequently experienced. It is a strong bitter, and is tonic and astringent. Bergius considers it as antacid, corroborant, stomachic, sudorific, diuretic, and eccoprotic. Camomile flowers, are now generally substituted for the *carduus benedictus*, and are thought to be of at least equal value.

CENTAUREA CALCITRA'PA. The systematic name of the common star-thistle, or star-knapweed. Called also, *Calcitrapa, Carduus stellatus*, and *Jacea ramosissima, stellata*, and *rupina.* This plant, the *Centaurea — calycibus subduplicato-spinosis, sessilibus, foliis pinnatifidis, linearibus dentatis, caule piloso*, of Linnæus, is a strong bitter. The juice, extract, or infusion, is said to cure intermittents; and the bark of the root, and the seeds, have been recommended in nephritic disorders, and in suppression of urine. It is now little used.

CENTAUREA CENTAURIUM. The greater centaury; also named, *Rhaponticum vulgare, Centaurium magnum*, and *Centaurium majus.* The root of this plant was formerly used as an aperient and corroborant, in alvine fluxes. It is now discarded from the Materia Medica of this country.

CENTAUREA CYANUS. The systematic name of the blue-bottle, or corn-flower plant. *Cyanus* of the Pharmacopœias. The flowers of this plant, *Centaurea — calycibus serratis; foliis linearibus, integerrimis, infimis dentatis*, of Linnæus, were formerly in frequent use; but their antiphlogistic, antispasmodic, cordial, aperient, diuretic, and other alleged properties, are now disregarded.

CENTAUREA SOLSTITIALIS. St. Barnaby's thistle: also named, *Calcitrapa officinalis, Carduus stellatus luteus, Carduus solstitialis, Jacea stellata, Jacea lutea capite spinoso minori*, and *Leucanthe veterum.* It has been recommended as an anticteric, anticachectic, and lithontriptic; but is, in reality, only a weak tonic.

Centaurii cacumina. See *Chironia centaurium.*

CENTAURIOI'DES. (From κενταυριον, and ειδος, resemblance.) See *Gratiola officinalis.*

CENTAURIS. Κενταυρις. The lesser centaury. — *Theophrastus.*

CENTAURIUM. Κενταυριον. The herb centaury. See *Centaurea.*

Centaurium magnum. See *Centaurea centaurium.*

Centaurium majus. See *Centaurea centaurium.*

Centaurium minus. See *Chironia centaurium.*

Centaurium parvum. See *Chironia centaurium.*

Centaury. See *Chironia.*

CENTE'RIA. Κεντερια. The name given by Theophrastus to the *Hypericum androsæmum.*

CENTIGRAMME. A French weight; the 100th part of a *gramme.*

CENTILITRUM. An old liquid measure, equal to the 100th part of the Greek Λιτρα or pound.

Centimo'rbia. (*a*, *æ*. f.; from *centum*, a hundred, and *morbus*, a disease: so named, from its supposed efficacy in the cure of a multitude of disorders.) The *Lysimachia nummularia*, or moneywort.

Centine'rvia. (From *centum*, and *nervus*, a nerve or sinew; so called from the many ribs upon its leaf.) See *Plantago*.

Centinodia. See *Centumnodia.*

Centra'tio. (From *centrum*, a centre.) Paracelsus expresses by this term the degeneration of a saline principle, which thereby contracts a corrosive and ulcerating quality. Hence he calls *centrum salis* the principle and cause of ulcers.

Centres, nervous. The brain, spinal cord, and sympathetic ganglia are so called.

Ce'ntrium. (Κεντριον; from κεντεω, to prick.) The epithet of a plaster recommended by Galen against stitches in the side.

Centrum commune. The solar plexus. See *Nervous system.*

Centrum nerveum. The middle tendinous portion of the diaphragm. See *Diaphragm.*

Centrum ovale. This name was given by Vieussens to the oval expanse of white matter displayed when the hemispheres are removed down to the level of the corpus callosum; and this is generally called *Centrum ovale Vieussenii.* It has been said that this is not the part of the brain to which Vieussens gave the name of *centrum ovale;* but it unquestionably is so, and is figured as such in the plates accompanying the work of Vieussens entitled *Neurologia Universalis.* Again, if the upper part of the brain be removed by an horizontal section, at a level a little above that just mentioned, there appears in each hemisphere a smaller oval expanse of white matter, which has been described by Vicq D'Azyr, and is called the small, or lateral centrum ovale, or *centrum ovale of Vicq D'Azyr.*

Centrum tendinosum. See *Diaphragm.*

Centumno'dia. (*a*, *æ*. f.; from *centum*, a hundred, and *nodus*, a knot: so called from its many knots or joints.) *Centinodia.* See *Polygonum aviculare.*

Centu'nculus. (From *cento* a patched garment on account of its woolly ragged appearance.) The cud-weed. See *Gnaphalium.*

CE'PA. (*a*, *æ*. f.) An onion. See *Allium cepa.*

Cepa ascalonica. The chalot.

Cepæ'a. The *Sedum cepæa* of Linnæus.

Cephaëlis. See *Ipecacuanha.*

CEPHALÆ'A. (From κεφαλη, the head.) Violent and inveterate pain in the head.

CEPHALALGIA. (*a*, *æ*. f.; from κεφαλη, the head, and αλγος, pain.) This term has been generally applied to a common headach, while the term *cephalæa*, has been used to designate that obstinate and inveterate kind of headach, which in some cases resists all means of cure.

Cephala'rticus. (From κεφαλη, the head, and αρτιζω, to make perfect.) Having the property of purging the head as errhines, &c. Kraus says it is a corruption of *Cephalo-cathartica.*

CEPHALIC. (*Cephalicus.* From κεφαλη, the head.) Pertaining to the head. 1. In *Pharmacy*, a variety of medicines are so called, as being adapted for the cure of disorders of the head. Of this class are the snuffs, which produce a discharge from the mucous membrane of the nose, &c.

2. In *Anatomy*, applied to a vein of the arm which the ancients supposed to have some particular connexion with the head. Chaussier calls the internal jugular vein the *cephalic vein;* and the common carotid artery, the *cephalic artery.*

Cephalic vein. (*Vena cephalica;* so called because the head was supposed to be relieved by opening it.) The anterior or outermost vein of the arm, which receives the cephalic of the thumb.

Cephalic powder. See *Pulvis cephalicus.*

Cephalic snuff. An errhine powder, the active ingredient of which is asarabacca.

Cephali'tis. (From κεφαλη, the head.) A term that has been applied to inflammation of the brain; but improperly, for it would signify inflammation of the whole head, not of the brain in particular. See *Encepalitis.*

Cephalo'dium. (*um*, *i*. n.; from κεφαλη, a head, and ειδος, resemblance.) The orbicular and convex conceptaculum of some lichens is so called; as in the genus *stereocaulon.*

Cephaloi'des. (Same etymon.) Cephaloid. Applied in botany synonymously with *capitate.*

Cephalo'meter. (*Cephalometrum;* from κεφαλη, a head, and μετρον, a measure.) An instrument formerly used to estimate the size of the fœtal head during parturition.) It is now laid aside; the fingers are the best cephalometer.

Cephalo'nosus. (From κεφαλη, the head, and νοσος, a disease.) This name has been given to cephalic fever, or that kind of fever in which the brain is particularly affected.

Ce'phalo-pharynge'us. (From κεφαλη, the head, and φαρυγξ, the pharynx.) See *Constrictor pharyngis inferior.*

CEPHALO'PODA. (From κεφαλη, a head, and πους, a foot.) An order of molluscous animals, in which the mouth is surrounded with locomotive tentacula. See *Animal Kingdom.*

CEPHALOPO'NIA. (*a*, *æ*. f.; from κεφαλη, the head, and πονος, pain.) Pain or heaviness in the head.

Cepini. Vinegar.

Cepula. Large myrobalans. — *Nicolaus Myrepsus.*

CE'RA. (*a*, *æ*. f. Κηρος.) Wax. A fatty substance which, when pure, is white, pellucid, destitute of taste, but possessing often a slight smell, which, however, is not essential to it. Its specific gravity is from ·960 to ·966. At 32° it is brittle; but becomes soft and flexible when heated to 86°, and melts at 155°. It is insoluble in cold alkohol and ether, but partly soluble in hot alkohol, and boiling alkohol dissolves a twentieth part of its weight. It is soluble, to a considerable extent, in the volatile and fixed oils. It is capable of being made into a soap, which, however, is always very hard and not easily soluble in water, and which is decomposed by acids

eaving the wax almost unaltered. It is soluble n liquid ammonia, but separates from it on the ddition of water. It is converted into oxalic cid, though with some difficulty, by the action f nitric acid, and is dissolved by the aid of heat n concentrated sulphuric acid, from which it is leposited on cooling.

Wax has been found, like the oils and fats, to e composed of two substances which differ rom each other only in their fusibility and heir solubility in alkohol, and which are called Cerine and Myricine.

The *Cerine* may be separated from the *Myricine* in the same way as the elaine of unctuous odies is separated from the stearine. Cerine is nalogous to elaine, and myricine corresponds o stearine.

The properties of *Cerine* are almost exactly he same as those of wax. Its specific gravity is ·969. According to John, it melts at 109°; but, ccording to Boudet and Boissenot, at 145°, a esult which certainly does not agree very well with the other. It is soluble in sixteen times its weight of boiling alkohol, in twenty-four times ts weight of cold ether, and in a smaller quanity of hot ether, from which it separates in part s it cools. When subjected to dry distillation, t yields margaric acid and empyreumatic oil, ut no sebacic (benzoic) acid. By its saponifiation, we obtain from it margarate of potash, nd a substance resembling wax, which Boudet nd Boissenot named *Cerüine*. This substance loes not melt till heated above 158°, and may e distilled almost without alteration. It is insoluble in cold alkohol, and very slightly so in hot alkohol, forming a solution which, as it cools, becomes gelatinous. It cannot be converted into soap.

Myricine is not soluble in less than 200 times its weight of boiling alkohol of specific gravity ·833, and 123 times its weight of pure alkohol. It is soluble in 99 times its weight of cold ether. Its specific gravity is 1·000. It fuses, according to John, at from 95° to 100°, but according to Boudet and Boissenot at 149°; and, after being melted, it is softer than wax, although before it was much harder. When subjected to dry distillation, it passes over into the receiver almost unaltered. It does not form a soap with pure potash.

It is with wax that bees construct the cells intended to receive their honey or protect their larvæ. It was formerly thought that the wax was kneaded with the pollen of plants which the bees bring home attached to the brushes of their feet; but this is a mistake, for even crude wax does not show any thing by the microscope similar to the grains of pollen, and on analysis we do not detect in it the presence of either resin, or gluten, or water, all of which are abundant in pollen.

Huber and some observers following in his steps have gone yet farther. They have established as the result of direct observation, that the only purpose of the pollen which bees collect is, to form the paste with which they nourish their larvæ; for, having fed bees with sugar alone, and prevented them from quitting the hive, they, nevertheless, continued to construct cells. According to this experiment, it would follow that wax and honey are the produce of two different elaborations of sugar. M. Raspail objects to this experiment, that the pollen may be subjected in the digestive organs of the bees to an action by which, without changing its essential nature, the wax which it contains is extracted, and that, they may preserve this substance in their glands or viscera for a longer or shorter time after its extraction, until they require it for the purposes of their admirable architecture; and that it was with materials thus reserved that they continued to build during the whole of the short time that they were confined.

However this may be, the honey is separated from the wax of the combs by compression. The honey runs out, and the wax is left in cakes, which are afterwards thrown into boiling water. The impurities are skimmed off, and the wax is removed from the surface after the water has cooled. In this state wax possesses a smell and a colour which are owing to its still containing a portion of honey. It may be bleached by exposing it in thin plates to the dew and the sun, or by the action of chlorine; but it has been remarked, that candles made of wax bleached by chlorine, are of inferior quality. — *Raspail.*

Bees' wax is the only kind which has been subjected to chemical analysis. It consists, according to

	Carbon.	Oxygen.	Hydrogen.
Gay Lussac and Thenard, of	81·784	5·544	12·672
Saussure	81·587	4·554	13·859
Ure	80·69	7·94	11·37

Thus it appears to contain less oxygen than any other of the fatty substances except cholesterine; and, accordingly, it is very solid and very little soluble in alkohol.

Vegetable Wax. — Wax is also found as an exclusively vegetable product. Proust asserts, that the bloom on fruit, as well as the varnish on leaves, consists of wax; but this needs confirmation. It is certain, however, that some vegetables contain it, as the *Myrica cerifera*, *Ceroxylum andicola*, *Palma carnauba*, and *Galactodendron utile*. From these the wax may be extracted by boiling in water.

Wax is employed for various economical purposes. In medicine it is used for making plasters, cerates, and bougies.

Cera alba. White wax; bees' wax bleached. See *Cera.*

Cera flava. Yellow wax. See *Cera.*

Ceræ'æ. (Καραῖαι; from κερας, a horn.) The cornea of the uterus. — *Rufus Ephesius.*

Cera'mium. A Greek measure of about nine gallons.

Cerani'tes. (Κερανιτης; from κερανυμι, to temper together.) A pastil mentioned by Galen, consisting of orpiment, birth-wort, iris, galls, alum, chalcitis, oxide of copper, scales and flowers of brass, resin, and vinegar. It was, according to Galen, of manifold use.

Ce'ras. (From κερας, a horn; so named from its shape.) The wild parsnep.

Cerasa nigra. See *Prunus avium.*

Cerasa rubra. See *Prunus cerasus.*

Cerasia'tum. (From *cerasus*, a cherry.) The name of a purging medicine mentioned by Libavius: so called because cherries are an ingredient in it.

CE'RASIN. The name given by Dr. John, of Berlin, to those gummy substances which swell in cold water, but do not readily dissolve in it. Cerasin is soluble in boiling water, but separates as a jelly when the water cools. Water, acidulated with sulphuric, nitric, or muriatic acid, by the aid of a gentle heat, forms a permanent solution of cerasin. Gum tragacanth is the best example of this species of vegetable product.

Cera'sios. (From *cerasus*, a cherry.) The name of an ointment mentioned by Mesue; there was a greater and a lesser cerasios.

CE'RASUS. (*us*, *i.* f. Κερασος; from Κερασοντη, a town in Pontus, whence Lucullus first brought them to Rome: or from κηρ, the heart; from the fruit having a resemblance to it in shape and colour.) The cherry-tree. See *Prunus cerasus*.

Cerate. See *Ceratum*.

Cera'tia. This name has been given to the *Ceratonia siliqua*, and several other plants.

Ceratia diphyllus. A name of the plant from which the gum anime exudes.

Ceraticum. See *Ceratonia siliqua.*

Cera'tio. A term used by the alchemists to designate the covering of a body with wax; or the reduction of a body to a state in which it might be melted like wax; or the fixation of mercury.

Cerati'tes. The fossil unicorn. See *Unicornu*.

Cera'tium. Κερατιον. 1. The pod of a tree.

2. An ancient weight equal to four grains.

Ce'ratoce'le. (From κερας, a horn, and κηλη, a hernia.) When the outer layer of the cornea is destroyed by ulceration, and the inner layer, still entire, is protruded by the pressure of the aqueous humour, it forms what is called a *ceratocele*, or hernia of the cornea.

Ce'rato-glo'ssus. (From κερας, a horn, and γλωσσα, a tongue.) A muscle, so named from its shape, and insertion into the tongue. See *Hyoglossus*.

Cerato hyoideus. See *Stylo-hyoideus.*

CERATOI'DES. (From κερας, horn, and ειδος, appearance.) Horn-like. The Greek epithet of that part of the eye which we call the cornea.

Ce'ratomala'gma. (From κηρος, wax, and μαλαγμα, a poultice.) A cerate. See *Ceratum*.

CERATO'NIA. (*a*, *æ.* f. Probably the Κερατωνια of Galen and Paulus Ægineta: so called from its horn-like pod.) The name of a genus of plants. Class, *Polygamia*; Order, *Triœcia*.

Ceratonia si'liqua. The systematic name of the plant which affords the sweet pod. Called also *Ceratium*, *Ceratia*, and *Siliqua dulcis*. *Caroba.* The carob tree. St. John's Bread. This plant is a native of Europe and Asia. The pods are about four inches in length, and as thick as one's finger, compressed and unequal, and mostly bent; they are used as food both for man and beast; and the sweet brown pulp which they contain, is given, in the form of decoction, as a pectoral in asthmatic complaints and coughs.

CE'RATOTOME. (*Ceratotomus*, *i.* m.; from κερας, a horn, and τεμνω, to cut.) Baron Wenzel gave this name to the knife with which he divided the cornea of the eye.

CERA'TUM. (*um*, *i.* n.; from *cera*, wax, because its principal ingredient is wax.) Cerate.

1. A composition of wax, oil, or lard, with or without other ingredients. The obsolete synonyms are *cerelæum*, *ceroma*, *ceronium*, *cerotum*, *ceratomalagma*. The wax which enters into the composition of cerates is the ingredient to which they owe their consistence, which is intermediate between that of plasters and that of ointments; though no very definite rule for this consistence is, in fact, either given or observed.

2. Common cerate. See *Ceratum simplex.*

Ceratum album. See *Ceratum cetacei.*

Ceratum calami'næ. *Ceratum lapidis calaminaris*, *Ceratum epuloticum.* Calamine cerate. Take of prepared calamine, yellow wax, of each half a pound; olive oil, a pint. Mix the oil with the melted wax; then remove it from the fire; and, as soon as it begins to thicken, add the calamine, and stir it constantly until the mixture becomes cold. A composition of this kind was first introduced under the name of Turner's cerate. It is well calculated to promote the cicatrisation of ulcers.

Ceratum cantha'ridis. Cerate of blistering fly. Take of spermaceti cerate, six drachms; blistering flies, in very fine powder, a drachm. Having softened the cerate by heat, add the flies, and mix them together.

Ceratum ceta'cei. *Ceratum spermatis ceti. Ceratum album.* Spermaceti cerate. Take of spermaceti, half an ounce; white wax, two ounces; olive oil, four fluid ounces. Add the oil to the spermaceti and wax, previously melted together, and stir them until the mixture becomes cold. This cerate is cooling and emollient; and, applied to excoriations, &c., it may be used with advantage in ulcers, where no stimulating application is required.

Ceratum ci'trinum. See *Ceratum resinæ.*

Ceratum coni'i. Hemlock cerate. R. Unguenti conii, ℔j. Spermatis ceti, ℥ ij. Ceræ albæ, ℥ iij. Misce. One of the formulæ of St. Bartholomew's hospital, occasionally applied to cancerous, scrofulous, phagedenic, herpetic, and other inveterate sores.

Ceratum epuloticum. See *Ceratum calaminæ.*

Ceratum lapidis calaminaris. See *Ceratum calaminæ.*

Ceratum lithargyri acetati compositum. See *Ceratum plumbi compositum.*

Ceratum plumbi aceta'tis. *Unguentum cerussæ acetatæ.* Cerate of acetate of lead. Take of acetate of lead, powdered, two drachms; white wax, two ounces; olive oil, half a pint. Dissolve the wax in seven fluid ounces of oil; then gradually add thereto the acetate of lead, separately rubbed down with the remaining oil, and stir the mixture with a wooden slice, until

ie whole has united. This cerate is cooling nd desiccative.

CERATUM PLUMBI COMPOSITUM. *Ceratum hargyri acetati compositum.* Compound cerate f lead. Take of solution of acetate of lead, vo fluid ounces and a half; yellow wax, four unces; olive oil, nine fluid ounces; camphire, alf a drachm. Mix the wax, previously melted, ith eight fluid ounces of oil; then remove it om the fire, and, when it begins to thicken, dd gradually the solution of acetate of lead, nd constantly stir the mixture with a wooden ice, until it gets cold. Lastly, mix in the mphire, previously dissolved in the remainder f the oil. Its virtues are cooling, desiccative, nd resolvent. It is an application to super-ial ulcers, which are inflamed.

CERATUM RESINÆ. *Ceratum resinæ flavæ; eratum citrinum.* Resin cerate. Take of ellow resin, yellow wax, of each a pound; ive oil, a pint. Melt the resin and wax toge-er, over a slow fire: then add the oil, and rain the cerate, while hot, through a linen oth. Digestive.

CERATUM SABINÆ. Savine cerate. Take of esh leaves of savine, bruised, a pound; yellow ax, half a pound; prepared lard, two pounds. aving melted together the wax and lard, boil erein the savine leaves, and strain through a ien cloth. This article is of late introduction, r the purpose of keeping up a discharge from istered surfaces. It was first introduced by Ir. Crowther, and has since been received into tensive use, because it does not produce the conveniences that follow the constant appli-tion of the common blistering cerate. A ick white layer forms daily upon the part, hich requires to be removed, that the cerate ay be applied immediately to the surface from hich the discharge is to be made.

CERATUM SAPONIS. Soap cerate. Take of rd soap, eight ounces; yellow wax, ten nces; semi-vitreous oxide of lead, powdered, pound; olive oil, a pint; vinegar, a gallon. oil the vinegar, with the oxide of lead, over a ow fire, constantly stirring, until the union is mplete; then add the soap, and boil it again a similar manner, until the moisture is en-ely evaporated; then mix in the wax, previ-sly melted with the oil. Resolvent; against rofulous tumours, &c. It is a convenient plication in fractures, and may be used as an ternal dressing for ulcers.

CERATUM SIMPLEX. *Ceratum.* Simple cerate. ake of olive oil, four fluid ounces; yellow ax, four ounces: having melted the wax, mix e oil with it.

Ceratum spermatis ceti. See *Ceratum ce-ei.*

CE'RBERUS. (Κερβερος; because, like the ig Cerberus, it has three heads, or principal gredients, each of which is eminently active.) fanciful name that has been given to the com-und powder of scammony.

CE'RCIS. (Κερκις, the spoke of a wheel; e radius of a circle; a weaver's shuttle.) 1. he radial bone of the forearm was anciently called, from its shape, like a spoke.

2. A pestle, from its shape.

CERCO'SIS. (*is, is.* f.; from κερκος, a tail.) 1. A polypus of the uterus.

2. An enlargement of the clitoris.

CE'REA. (*a, æ.* f.; from *cera*, wax.) The *cerumen aurium*, or wax of the ear.

CEREA'LIA. (*Cerealis*, pertaining to corn; from *Ceres*, the goddess of corn and tillage.) All sorts of corn, of which bread or any nutritious substance is made, come under the head of *cerealia.*

CEREBE'LLA URI'NA. Paracelsus thus distinguishes urine which is whitish, of the colour of the brain, and from which he pretended to judge of some of the disorders of that organ.

CERE'BELLUM. (*um, i.* n.; diminutive of *cerebrum.*) The little brain. See *Encephalos.*

CEREBRUM ELONGATUM. The medulla oblongata, and medulla spinalis.

CEREFO'LIUM. (*um, i.* n.; most probably a corruption, of *chærophyllum.*) See *Chærophyllum.*

Cerefolium hispanicum. See *Scandix odorata.*

Cerefolium sylvestre. See *Chærophyllum sylvestre.*

CERELÆ'UM. (*um, i.* n.; from κηρος, wax, and ελαιον, oil.) A cerate, or liniment, composed of wax and oil.

CERE'OLUS. (*us, i.* m.; diminutive of *cereus.*) A wax bougie.

CE'REUS. (*us, i.* m.; from *cera*, wax, because it is made of wax.) A wax bougie.

CEREUS MEDICATUS. A medicated bougie.

CEREVI'SIA. (*a, æ.* f.; *quasi cererisia*, i. e. *cerealis liquor*, from *ceres*, corn, of which it is made.) Any liquor made from corn, especially ale and strong beer.

For the preparation of beer and ale, the grain is malted and boiled, and hops are then added, and the whole fermented. The grain is first steeped for two or three days in water, until it swells, becomes somewhat tender, and tinges the water of a bright reddish brown colour. The water being then drained away, the barley is spread about two feet thick upon a floor, where it heats spontaneously, and begins to grow, by first shooting out the radicle. In this state the germination is stopped by spreading it thinner, and turning it over for two days; after which it is again made into a heap, and suffered to become sensibly hot, which usually happens in little more than a day. Lastly, it is conveyed to the kiln, where, by a gradual and low heat, it is rendered dry and crisp. This is malt; and its qualities differ according as it is more or less soaked, drained, germinated, dried, and baked. In this, as in other manufactories, the intelligent operators often make a mystery of their processes from views of profit; and others pretend to peculiar secrets who really possess none.

Indian corn, and probably all large grain, requires to be suffered to grow into the blade, as well as root, before it is fit to be made into malt. For this purpose it is buried about two or three inches deep in the ground, and covered with loose earth; and in ten or twelve days it springs up. In this state it is taken up and washed, or fanned, to clear it from its dirt; and then dried in the kiln for use.

Barley, by being converted into malt, becomes one fifth lighter, or 20 per cent.; 12 of which are owing to kiln drying, 1·5 are carried off by the steep-water, 3 dissipated on the floor, 3 lost in cleaning the roots, and 0·5 waste or loss.

The degree of heat to which the malt is exposed in this process, gradually changes its colour from very pale to actual blackness, as it simply dries it, or converts it to charcoal.

The colour of the malt not only affects the colour of the liquor brewed from it; but, in consequence of the chemical operation of the heat applied, on the principles that are developed in the grain during the process of malting, materially alters the quality of the beer, especially with regard to the properties of becoming fit for drinking and growing fine.

Beer is made from malt previously ground or cut to pieces by a mill. This is placed in a tun, or tub, with a false bottom; hot water is poured upon it, and the whole stirred about with a proper instrument. The temperature of the water in this operation, called Mashing, must not be equal to boiling; for, in that case, the malt would be converted into a paste, from which the impregnated water could not be separated. This is called Setting. After the infusion has remained for some time upon the malt, it is drawn off, and is then distinguished by the name of Sweet Wort. By one or more subsequent infusions of water, a quantity of weaker wort is made, which is either added to the foregoing, or kept apart, according to the intention of the operator. The wort is then boiled with hops, which gives it an aromatic, bitter taste, and is supposed to render it less liable to be spoiled in keeping; after which it is cooled in shallow vessels, and suffered to ferment, with the addition of a proper quantity of yest. The fermented liquor is beer; and differs greatly in its quality, according to the nature of the grain, the malting, the mashing, the quantity and kind of the hops and the yest, the purity or admixtures of the water made use of, the temperature and vicissitudes of the weather, &c.

Beer well prepared should be limpid and clear, possess a due quantity of spirit, and excite no disagreeable sweet taste, and contain no disengaged acid. By these properties it is a species of vinous beverage, and is distinguished from wine in the strict sense, and other liquors of that kind, by the much greater quantity of mucilaginous matter which it has received by extraction from the malted grains, but which also makes it more nourishing. Brown beer derives its colour from malt strongly roasted in the kiln, and its bitterish taste from the hops. Pale beer is brewed from malt dried in the air, or but slightly roasted, with but little or no hops at all.

Besides the various qualities of malt liquors of a similar kind, there are certain leading features by which they are distinguished, and classed under different names, and to produce which, different modes of management must be pursued. The principal distinctions are into beer, properly so called; ale; table or small beer; and porter, which is termed beer in London. Beer is a strong, fine, and thin liquor; the greater part of the mucilage having been separated by boiling the wort longer than for ale, and carrying the fermentation farther, so as to convert the saccharine matter into alkohol. Ale is of a more syrupy consistence, and sweeter taste; more of the mucilage being retained in it, and the fermentation not having been carried so far as to decompose all the sugar. Small beer, as its name implies, is a weaker liquor; and is made, either by adding a large portion of water to the malt, or by mashing with a fresh quantity of water what is left after the beer or ale wort is drawn off. Porter was probably made originally from very high-dried malt; but it is said that its peculiar flavour cannot be imparted by malt and hops alone.

Mr. Brande obtained the following quantities of alkohol from 100 parts of different species of beer. Burton ale 8·88; Edinburgh ale, 6·2; Dorchester ale, 5·56; the average being = 6·87. Brown stout, 6·8; London porter (average) 4·2; London small beer (average) 1·28.

As long ago as the reign of Queen Anne, brewers were forbid to mix sugar, honey, Guinea pepper, essentia bina, coculus indicus, or any other unwholesome ingredient, in beer, under a certain penalty; from which we may infer that such, at least, was the practice of some; and writers, who profess to discuss the secrets of the trade, mention most of these, and some other articles, as essentially necessary. The essentia bina is sugar boiled down to a dark colour, and empyreumatic flavour. Broom-tops, wormwood, and other bitter plants were formerly used to render beer fit for keeping, before hops were introduced into this country; but are now prohibited to be used in beer made for sale.

By the present law of this country, nothing is allowed to enter into the composition of beer, except malt and hops. Quassia and wormwood are often fraudulently introduced; both of which are easily discoverable by their nauseous bitter taste. They form a beer which does not preserve so well as hop beer. Sulphate of iron, alum, and salt, are often added by the publicans, under the name of *beer heading*, to impart a frothing property to beer, when it is poured out of one vessel into another. Molasses, and extract of gentian root, are added with the same view. Capsicum, grains of paradise, ginger root, coriander seed, and orange peel, are also employed to give pungency and flavour to weak or bad beer. The following is a list of some of the unlawful substances seized at different breweries, and brewers' druggists' laboratories in London, as copied from the minutes of the committee of the House of Commons: — Coculus indicus multum (an extract of the coculus), colouring, honey, hartshorn shavings, Spanish juice, orange powder, ginger, grains of paradise, quassia, liquorice, caraway seeds, copperas, capsicum, mixed drugs. Sulphuric acid is very frequently added to *bring beer forward*, or make it hard, giving new beer instantly the taste of what is eighteen months' old. According to Mr. Accum, the present *entire* beer of the London brewer is composed of all the waste and

poiled beer of the publicans, the bottoms of utts, the leavings of the pots, the drippings of he machines for drawing the beer, the remnants of beer that lay in the leaden pipes of the brewery, with a portion of brown stout, bottling beer, and mild beer. He says, that opium, obacco, nux vomica, and extract of poppies, have been likewise used to adulterate beer. By evaporating a portion of beer to dryness, and igniting the residuum with chlorate of potash, he iron of the copperas will be procured in an insoluble oxide. Muriate of barytes will throw down an abundant precipitate from beer contaminated with sulphuric acid or copperas; which precipitate may be collected, dried, and ignited. It will be insoluble in nitric acid.

Beer appears to have been of ancient use, as Tacitus mentions it among the Germans, and has been usually supposed to have been peculiar to the northern nations: but the ancient Egyptians, whose country was not adapted to he culture of the grape, had also contrived this substitute for wine; and Mr. Park has found he art of making malt, and brewing from it very good beer, among the negroes in the interior parts of Africa. See *Wheat.*

Cerevisiæ fermentum. See *Fermentum cerevisiæ.*

Ce'ria. (*a. æ*, f.; from *cereus*, soft.) The flat worm generated in the intestines. — *Turton.* See *Tænia.*

Cerine. See *Cera.*

Ce'rion. (From κηριον, a honeycomb.) An eruptive disorder of the head. See *Achor.*

Cerite. See *Cerium.*

CE'RIUM. (*um, ii.* n.) A metal discovered in 1803 by Hisinger and Berzelius in a mineral which occurs in the Swedish mine of Bastnäs, and which had long been known to the German mineralogists under the name of *Bastnas schwerstein, heavy stone of Bastnas.* The metal was named *Cerium* by its discoverers, after the planet Ceres, which had been discovered by Piazzi the year before. The mineral has since been called *cerite*, from the metal it contains. The properties of cerium have hitherto been little investigated. It is brittle, white, and volatile in a very intense heat. It is not acted on by nitric, but is dissolved by nitro-muriatic, acid. It combines with oxygen in two proportions. The protoxide is white, and the peroxide of a fawn-red colour. Cerium may also be made to unite with sulphur, by transmitting the vapour of sulphuret of carbon over carbonate of cerium, at a red heat, or by fusing oxide of cerium at a white heat, with a large excess of sulphuret of potassium and washing away the soluble parts with water. The first process affords a porous light substance, of a colour like red lead; the sulphuret obtained by the second method is brilliant yellow scales: these sulphurets, however, are essentially the same.

Cernin, saint. St. Cernin is a parish in the diocese of St. Flour, in Upper Auvergne. It has a cold chalybeate spring, the water of which is called *Eau du Cambon.*

CER'NUUS. A Latin adjective applied to one who hangs down his head, and hence by botanists to flowers which are placed on curved peduncles and look towards the earth — *cernui flores.* Also to the peduncles which support such flowers — *pedunculi cernui.*

Cero'ma. (*a, atis.* n.; κηρωμα; from κηρος, wax.) *Ceroneum.* Cerotum, a cerate.

Ceropi'ssus. (*us, i.* m.; κηροπισσος: from κηρος, wax, and πισσα, pitch.) A cerate or plaster, composed of pitch and wax.

Cerotum. See *Ceroma.*

CERU'MEN. (*en, inis.* n.; from *cera*, wax.) The waxy matter of the ear secreted by follicles, situated under the cuticular lining of the meatus auditorius externus. Its principal use seems to be to entangle particles of foreign matter, and prevent them from reaching the membrana tympani. It consists of an inspissated oil, albumen, soda, phosphate of lime, and colouring matter.

Ceruminous glands. See *Auris.*

CERU'SSA. (Generally derived from κηρος, wax; but what it has to do with wax is hard to tell.) Cerusse; white lead. See *Plumbi subcarbonas.*

Cerussa acetata. See *Plumbi acetas.*

Cervi spina. See *Rhamnus catharticus.*

CERVICAL. (*Cervicalis*; from *cervex* the neck.) Belonging to the neck; as, cervical nerves, cervical muscles, &c.

Cervical artery. There are two cervical arteries, both of which generally rise from the subclavian, behind the scalenus muscle, sometimes by a common trunk, and sometimes separately. The *cervicalis profunda, vel posterior*, ascends obliquely backwards between the transverse processes of the two lowest cervical vertebræ, and continues its course directly upwards on the posterior part of the spine, supplying the adjacent muscles and inosculating with the occipital artery. The *cervicalis superficialis, vel anterior*, crosses the neck transversely, communicating with other branches of the subclavian, and with the occipital artery.

Cervicalis anterior. See *Cervical artery.*

Cervicalis posterior. See *Cervical artery.*

Cervicalis profunda. See *Cervical artery.*

Cervicalis superficialis. See *Cervical artery.*

Cervical nerves. See *Nervous system.*

Cervical vertebræ. The seven uppermost of the vertebræ, which form the spine. See *Vertebra.*

Cervical veins. The veins which correspond with the cervical arteries.

Cervica'ria. (*a, æ.* f.; from *cervix*, the neck: so named because it was supposed to be efficacious in diseases of the throat and neck.) The herb throatwort. See *Campanula trachelium.*

CE'RVIX. (*ix, icis.* f.) 1. The neck. Properly, the back part of the neck.

2. Applied also to portions of organs which somewhat resemble a neck, as *cervix uteri*, the neck of the uterus; *cervix vesicæ*, the neck of the bladder, &c.

CE'RVUS. (*us, i.* m.) The name of a genus of ruminant animals. The following are the principal species: —

1. *Cervus alces.* The elk or moose deer.
2. *C. tarandus.* The rein-deer.
3. *C. elephas.* The stag.

4. *C. dama.* The fallow deer.
5. *C. canadensis.* The Wapiti deer.
6. *C. virginianus.* The Virginian deer.
7. *C. axis.* The axis or spotted Indian deer.
8. *C. capreolus.* The European roebuck.
9. *C. muntjac.* The Indian roebuck.

The flesh of all these species is used as food. See *Venison.* The horns of several species were formerly in high esteem as an article of the Materia Medica: by distillation they yield ammonia, whence solution of ammonia, is commonly called *Spirit of hartshorn.* See *Cornu cervi* and *Spiritus cornu cervi.* The hoof of the elk, *Alcis ungula*, was formerly in vogue as antepileptic. It was believed that the animal was subject to epilepsy, and cured its fits by applying the hoof to the ear. The stag's pizzle, *Priapus cervi*, was once considered aphrodisiac. The dried powder was given in the dose of ℈j. — ʒj.

CE'SPITOSE. (*Cespitosus*, from *cespes*, a sod, or turf.) A plant is so called which produces many stems from one root, and which has all its leaves radical so as to resemble a turf.

Cestri'tes vinum. (From κεστρον, betony.) Wine impregnated with betony.

Ce'strum. (*um. i.* n. ; κεστρον.) The herb betony. See *Betonica officinalis.*

CETA'CEA. An order of marine mammiferous animals, including the whale, porpoise, dolphin, and others erroneously considered by the unscientific as fish: they are in reality mammiferous animals, destitute of hind feet: they are warm blooded, and breathe air by means of lungs; and they bring forth their young alive, and suckle them.

CETA'CEUM. (*um, ii.* n.; from *cete*, a whale.) The substance otherwise called *spermaceti.* See *Physeter macrocephalus.*

Cetaceus. (From *ceta*, a whale.) Cetaceous. Appertaining to the whale as *Oleum cetaceum*, whale oil.

Ce'terach. The herb spleenwort. See *Asplenium ceterach.*

Ceterach officinalis. See *Asplenium ceterach.*

Cetic acid. *Acidum ceticum.* A name given by Chevreuil to what he supposed to be a peculiar acid resulting from the saponification of *cetine*, but which he has since found to be merely a mixture of margaric acid and cetine.

Cetine. The name given by Chevreuil to spermaceti. See *Adeps.*

Cevadate. *Cevadas.* A salt formed by the combination of the cevadic acid with a base.

Cevadic acid. *Acidum cevadicum.* By the action of potash on the fat matter of the cevadilla, a plant that comes from Senegal, an acid is obtained which is called the *cevadic.*

Cevadi'lla. (*a, æ.* f.; from *cebada*, the Spanish for barley.) See *Veratrum sabadilla.*

Cevil. A name given by Paracelsus to a hardened substance which he also calls *Ludus.* He says, it is formed of the tartar of the earth indurated by an urinous spirit which is in the earth; that it resembles a human calculus, and is good against the calculus diathesis.

Ceyenne pepper. See *Capsicum annuum.*

Chacarilla. See *Cascarilla.*

Chærefolium. See *Scandix cerefolium.*

CHÆROPHY'LLUM. (*um, i.* n.; from χαιρω, to rejoice, and φυλλον, a leaf: so called from the luxuriance of its foliage.) 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Digynia.*

2. The pharmacopœial name of the *Scandix cerefolium*, or common chervil.

Chærophyllum odoratum. *Scandix odorata. Myrrhis.* Sweet cicely. It has the flavour of anise, and is used as a savoury herb.

Chærophyllum sativum. See *Scandix cerefolium.*

Chærophyllum sylvestre. The systematic name of the bastard hemlock, called, in the pharmacopœias, *Cicutaria. Chærophyllum — caule lævi striato; geniculis tumidiusculis*, of Linnæus. It is often mistaken for the true hemlock. It may with great propriety be banished from the list of officinals, as it possesses no remarkable property.

Chæ'te. Χαιτη. Properly the mane of a quadruped, but used also to signify the human hair.

Chala'sticus. (Χαλαστικος; from χαλαω, to relax.) Applied to a medicine which obviates an undue state of tension in parts. An emollient. — *Galen.*

Chala'za. (Χαλαζα, a hail-stone.) 1. The same as *Chalazion.*

2. Two white bodies attached to the membrane which covers the yolk of an egg, are called *chalazæ*, or grandines. See *Ovum.*

3. Gærtner gives the name of chalaza to a point marked on the internal tunic of the seeds of plants, which corresponds with the insertion of their umbilical cord.

Chala'zion. (*Chalazium, ii.* n. Χαλαζιον; from χαλαζα, a hail-stone.) *Chalaza.* A small tubercle on the margin of the eye-lid, commonly called a *stye.* See *Hordeolum.*

Chalazo'sis. Χαλαζωσις. The same as *Chalazion.*

Cha'lbane. Καλβανη. Galbanum.

Chalca'nthum. (*um, i.* n. Χαλκανθον; from χαλκος, brass, and ανθος, a flower.) 1. Flowers of brass; that is, verdigris.

2. Vitriol.

Chalcha'nthe. Χαλχανθη. The same as *Chalchanthon.*

Chalcedo'nius. The epithet of a medicine used by Galen in disorders of the ears.

Chalce'tum. A herb mentioned by Pliny, probably the *Valeriana locusta* of Linnæus.

Chalcoi'deum os. The cuneiform bone of the foot. See *Tarsus.*

Chalci'tis. Χαλκιτις. See *Colcothar.*

Chalcus. Χαλκους. See *Æreolum.*

Chali'cratum. (From χαλις, wine, and κερανυμι, to mix.) Wine mixed with water.

Cha'linos. (Χαλινος, a bridle.) That part of the cheeks which is contiguous on each side to the angles of the mouth. — *Cœlius Aurelianus, Julius Pollux.*

CHALK. A very common species of carbonate of lime, which forms the white cliffs of our shores, and is found abundantly in most parts of the world.

Chalk stone. See *Gout.*

CHALY'BEATE. (*Chalybeatus*; from *chalybs*, iron, or steel.) Of or belonging to

iron. Applied to a medicine containing iron, and to mineral waters which are impregnated with iron; such as the water of Tunbridge, Spa, Pyrmont, Cheltenham, Scarborough, Hartfel, and many others.

Chalybis rubigo præparata. See *Ferri subcarbonas.*

CHA'LYBS. (Χάλυψ. *Chalys, ybis.* m.; from the *Chalybes*, a people in Pontus, who used to prepare it.) Steel. See *Ferrum.* The medicinal preparations of iron are generally called in common language *steel* medicines.

Chalybs tartarizatus. See *Ferrum tartarizatum.*

CHAMÆA'CTE. (*e, es.* f.; from χαμαι, on the ground, and ακτη, the elder tree.) The dwarf elder. — *Dioscorides.*

CHAMÆBA'LANUS. (*us, i.* m.; from χαμαι, on the ground, and βαλανος, an acorn.) The Greek name of a plant, which was probably the *Lathyrus tuberosus* of Linnæus.

CHAMÆ'BATOS. (From χαμαι, on the ground, and βατος, a bramble.) Dwarf bramble. The *Rubus fruticosus*, or blackberry bush.

CHAMÆBU'XUS. (*us, i.* f.; from χαμαι, on the ground, and πυξος, the box-tree.) The dwarf box-tree. The *Polygala chamæbuxus* of Linnæus.

CHAMÆ'CEDRUS. (*us, i.* f.; from χαμαι, on the ground, and κεδρος, the cedar-tree.) *Chamæcedrys.* A species of dwarf abrotanum.

CHAMÆCI'SSUS. (*us, i.* f.; from χαμαι, on the ground, and κισσος, ivy.) Ground-ivy. The *Glechoma hederacea* of Linnæus.

CHAMÆCLE'MA. (*a, atis.* n.; from χαμαι, on the ground, and κλημα, a young shoot.) The ground-ivy.

CHAMÆCRIS'TA. (*a, æ.* f.; from χαμαι, on the ground, and *crista*, a plume or tuft.) The *Cassia chamæcrista* of Linnæus, a decoction of which, drunk freely, is said to be serviceable against the poison of the night-shade.

CHAMÆCYPARI'SSUS. (Χαμαικυπαρισσος: from χαμαι, on the ground, and κυπαρισσος, the cypress.) Lavender cotton. See *Santolina chamæcyparissus.*

CHAMÆDA'PHNE. (From χαμαι, on the ground, and δαφνη, laurel.) This name appears to have been given by Dioscorides to the Alexandrian laurel, *Ruscus hypoglossum* of Linnæus, by many to the periwinkle, *Vinca minor*, and by Matthiolus and Lobel to the spurge laurel, *Daphne laureola.*

Chamædrops. See *Chamædrys.*

CHAMÆDRYI'TES. Wine impregnated with germander.

CHAMÆ'DRYS. (*ys, yos.* f.; from χαμαι, on the ground, and δρυς, the oak: so called from its being a low plant with leaves somewhat resembling those of the oak.) The germander.

Teucrium chamædrys.

Chamædrys incana maritima. See *Teucrium marum.*

Chamædrys palustris. See *Teucrium scordium.*

Chamædrys spuria. See *Veronica officinalis.*

Chamædrys sylvestris. See *Veronica chamædrys.*

CHAMÆGEI'RON. Χαμαιγειρον. A Greek name for the colt's foot. — *Mentzel.*

CHAMÆLE'A. (*a, æ.* f.; from χαμαι, on the ground, and ελαια, the olive-tree.) See *Daphne alpina.*

CHAMÆLÆA'GNUS. (From χαμαι, on the ground, and ελαιαγνος, the Bohemian olive.) See *Myrica gale.*

CHAMÆLAI'TES. Wine impregnated with the chamælea.

CHAMÆ'LEON. (*on, ontis*, and *onis.* m.; from χαμαι, on the ground, and λεων, a lion, *i. e.* dwarf lion.) 1. A genus of lizards, containing several species, all inhabitants of hot climates. These animals are remarkable for the great size of their lungs, which, when fully dilated, make their body almost transparent. From this peculiarity arises the frequent change of colour which has rendered the chamæleon an object of curiosity in all ages. According to the degree in which the lungs are dilated, the animal is more or less transparent; a greater or less quantity of blood is thrown upon the surface of the body; and perhaps also the colour of the blood may vary somewhat according to its degree of aeration: thus the hue of the animal changes with its passions, temperature, and every other circumstance that can affect the circulation; and since the play of the lungs is under voluntary control, it is no fable that the chamæleon can change its colour at will. The blood and gall of the chamæleon were formerly supposed to possess divers medicinal virtues.

2. A name given to some thistles, from the variety and uncertainty of their colours.

Chamæleon album. See *Carlina acaulis.*

CHAMÆLEON MINERALIS. Mineral chamæleon. When peroxide of manganese is mixed with an equal weight of nitre or carbonate of potash, and the mixture fused at a red heat, a green-coloured mass is obtained called *mineral chamæleon.* When this substance is dissolved in water the solution is at first green; it then becomes successively blue, purple, and red, and finally throws down a brown precipitate, and becomes colourless: from these phenomena it derives its name. See *Manganese.*

Chamæleon verum. See *Cnicus.*

CHAMÆLEU'CE. (*e, es.* f.; from χαμαι, on the ground, and λευκη, the herb colt's-foot.) See *Tussilago farfara.*

CHAMÆLI'NUM. (*um, i.* n.; from χαμαι, on the ground, in allusion to its slow growth, and λινον, flax.) Purging flax. See *Linum catharticum.*

Chamæmelon. See *Chamæmelum.*

CHAMÆME'LUM. (*um, i.* n.; from χαμαι, on the ground, and μηλον, an apple; because it is of low growth, and is said to have the smell of an apple, which, however, is by no means true.) See *Anthemis nobilis.*

CHAMÆMELUM CANARIE'NSE. The *Chrysanthemum frutescens* of Linnæus.

CHAMÆMELUM CHRYSA'NTHEMUM. The *Buphthalmum germanicum* of Linnæus.

CHAMÆMELUM FŒTIDUM. The *Anthemis cotula* of Linnæus.

Chamæmelum nobile. See *Anthemis nobilis.*

Chamæmelum vulgare. See *Matricaria.*

CHAMÆ'MORUS. (*us, i.* f. Χαμαιμορεα; from χαμαι, on the ground, and μορεα, the mulberry-tree.) The cloud-berry. See *Rubus chamæmorus.*

Chamæmy'rtus. (From χαμαι, on the ground, and μυρτος, myrtle.) Dwarf myrtle. The *Ruscus aculeatus.*

Chamæpeu'ce. (*e, is.* f.; from χαμαι, on the ground, and πευκη, the pine-tree.) See *Camphorosma Monspeliensis.*

Chamæ'pitys. (*ys, yos.* f.; from χαμαι, on the ground, and πιτυς, the pine-tree.) See *Teucrium chamæpitys.*

Chamæpitys moschata. See *Teucrium iva.*

Chamæ'plion. Χαμαιπλιον. See *Erysimum.*

Chamæra'phanus. (From χαμαι, on the ground, and ραφανος, the radish.) 1. The upper part of the root of apium, according to P. Ægineta.

2. The dwarf radish. — *Turton.*

Chamærodode'ndron. (*um, i.* n.; from χαμαι, on the ground, and ροδοδενδρον, the rose laurel.) The *Azalæa pontica* of Linnæus.

Chamæ'rops. (*ops, opis.* f.; from χαμαι, on the ground, and ρωψ, a young shoot.) A species of germander. See *Teucrium.*

Chamæ'rubus. (*us, i.* m. and f.; from χαμαι, on the ground, and *rubus*, the bramble.) See *Rubus chamæmorus.*

Chamæspa'rtium. (*um, ii.* n.; from χαμαι, on the ground, and σπαρτιον, Spanish broom.) See *Genista tinctoria.*

Chamber. See *Camara.*

Chamberlain's restorative pills. A quack medicine, consisting of cinnabar, sulphur, sulphate of lime, and a little gum, or other vegetable matter.

Chamomile. See *Anthemis nobilis.*

Chamomile drops. Alkoholic spirit, flavoured with essential oil of chamomile.

Chamomile, stinking. See *Anthemis cotula.*

Chamomi'lla. (*a, æ.* f.; from χαμαι, on the ground, and μηλον, an apple.) See *Anthemis nobilis.*

Chamomilla nostras. See *Matricaria.*

Chamomilla romana. See *Anthemis.*

Champignon. See *Agaricus pratensis.*

CHA'NCRE. (A word borrowed from the French.) A primary venereal ulcer. Such ulcers, of course, are found most frequently on the genitals; but they may occur on any part of the body to which the venereal poison has been immediately applied. See *Syphilis.*

Channelled. See *Canaliculatus.*

Chaosda. Paracelsus uses this word as an epithet for the plague.

Charabe. See *Carabe.*

Characters, chemical. Various systems of characters or symbols have at different times been introduced into the science of chemistry, for the purposes of concealment or of brevity of expression: they are now generally disused. See *Abbreviation.*

Charantia. See *Momordica elaterium.*

Charcoal. See *Carbon.*

Cha'rdone. The artichoke.

Charistolochia. (*a, æ.* f.; from χαρις, joy, and λοχια, parturition: so named from its supposed usefulness to women, in childbirth.) See *Artemisia vulgaris.*

Cha'rme. (From χαιρω, to rejoice.) *Charmis.* A cordial mentioned by Galen.

Charpie. The French for scraped linen, or lint.

Charr. See *Salmo alpinus.*

CHA'RTA. (*a, æ.* f. Χαρτης.) 1. Paper.

2. The amnio has been called the *charta virginea*, from its likeness to a piece of fine paper.

Chartreux, poudre de. (So called because it was said to have been invented by some friars of the Carthusian order.) A hydrosulphuret of antimony.

Chaste tree. See *Agnus castus.*

Chate. See *Cucumis ægyptia.*

Chay. See *Oldenlandia umbellata.*

Chaya. See *Oldenlandia umbellata.*

Cheek bone. See *Jugale os.*

Cheese. See *Milk.*

Cheiloca'ce. (*e, es.* f.; from χειλος, a lip, and κακον, an evil.) Canker of the mouth.

Cheime'thlon. (Χειμεθλον; from χειμα, winter.) A chilblain. See *Pernio.*

Cheimetlon. Χειμετλον. The same as *Cheimethlon.*

CHEIRA'NTHUS. (*us, i.* m.; probably from χειρ, the hand, and ανθος, a flower; a flower to be borne in the hand.) The name of a genus of plants in the Linnæan system. Class, *Tetradynamia*; Order, *Siliquosa.*

Cheiranthus cheiri. The systematic name of the wall-flower; called also *Leucoium luteum*, and *Viola lutea.* The flowers of this plant, *Cheiranthus — foliis lanceolatis, acutis, glabris; ramis angulatis; caule fruticoso*, of Linnæus, are recommended as possessing nervine and deobstruent virtues. They have a moderately strong, pleasant, smell, and a nauseous, bitter, somewhat pungent taste.

Chei'ri. 1. The wall-flower. See *Cheiranthus Cheiri.*

2. An alchemistical term by which some writers seem to have meant *quicksilver*, others *aurum potabile*, others *antimony*, &c.

Cheiri flores. The flowers of the *Cheiranthus cheiri.*

Cheiria'ter. (From χειρ, the hand, and ιατρος, a physician.) A surgeon, whose office it is to remove maladies by manual operations.

Cheiri'xis. (*is, is.* f.; from χειριζομαι, to labour with the hand.) The art of surgery.

CHEIRO'PTERA. (From χειρ, the hand, and πτερονα, wing.) A family of mammiferous animals, which have the fingers of the hand greatly elongated, and a production of the skin extended between the fingers, and between the hands and the feet, so as to supply the place of wings, and enable the animals to fly small distances. Bats are an example.

CHE'LA. (*a, æ.* f. Χηλη, *forceps*; from χεω, to take.) 1. The claw of a crab.

2. A forked probe, used by the ancients for extracting polypi from the nose.

3. Fissures or chops, such as occur on the hands, feet, parts of generation, &c. were called *Chelæ.* — *Julius Pollux.*

4. The extremities of the eye-lashes were called χηλαι. — *Rufus Ephesius.*

Chelæ cancrorum. Crabs' claws. The large claws of the *cancer pagurus* or black-clawed crab were formerly used medicinally as an ab-

rbent. They consist of carbonate of lime, ith a little phosphate of lime and animal mat- r. They possess no virtues but those of chalk, hich is the form in which carbonate of lime is ow always prescribed.

CHELI'DON. (Χελιδων.) The Greek for swallow. Applied also to the bend of the rm.

CHELIDO'NIUM. (*um, ii.* n.; from χελιδων, the swallow: so named from an opi- ion, that it was pointed out as useful for the yes by swallows, who are said to open the eyes f their young by it; or because it blossoms bout the time when swallows appear.) 1. A enus of plants in the Linnæan system. Class, *olyandria;* Order, *Monogynia.*

2. The herb celandine.

CHELIDONIUM MAJUS. Tetterwort, and great elandine; called, in some Pharmacopœias, *Papaver corniculatum luteum; Curcum.* The erb and root of this plant, *Chelidonium—pe- unculis umbellatis,* of Linnæus, have a faint npleasant smell, and a bitter, acrid, durable ste, which is stronger in the roots than the eaves. They are aperient and diuretic, and commended in icterus, when not accompanied ith inflammatory symptoms. The chelidonium ould be administered with caution, as it is able to irritate the stomach and bowels. Of e dried root, from ℈ss. to ʒj. is a dose; of the esh root, infused in water, or wine, the dose ay be about ℈ss. The decoction of the fresh ot is used in dropsy, cachexy, and cutaneous mplaints. The fresh juice is used to destroy arts, and films in the eyes; but, for the latter rpose, it is diluted with milk.

CHELIDONIUM MINUS. See *Ranunculus fi- ria.*

CHELIDO'NIUS LAPIS. A name formerly given a stone, alleged to be found in the stomach of ung swallows, and believed to possess anti- ileptic virtues.

CHELOI'DES. (From χελυς, a tortoise, and ειδος, resemblance.) A new form of cutaneous sease described by Alibert, consisting of raised tches of integument of a bluish red colour, aversed by white lines, accompanied with in- eased heat, intolerable itching, and sometimes vere and pungent pain.

CHELO'NE. (*e, es.* f. Χελωνη.) 1. The rtoise.

2. An instrument for extending a limb, and called, because, in its slow motions, it repre- nts a tortoise. This instrument is mentioned Oribasius.

CHELO'NIA. An order of reptiles includ- g the various species of tortoise and turtle. See *eptilia.* The most remarkable characteristic the chelonia is their external skeleton which velops the whole body like a suit of armour, aving only the head, neck, feet, and tail un- vered. The superior covering, called *cara- ce,* is formed of the ribs, eight in number on ch side, broadened out, and united by sutures each other, and to plates proceeding from the rsal vertebræ. The inferior covering, or breast- erally of nine pieces. Some of the chelonia habit the sea, and these are called in common language *turtles;* others are terrestrial, and these are called *tortoises.* All these animals are used as the food of man. See *Testudo.*

CHELO'NION. (From χελωνη, the tortoise; and so called from its resemblance to the shell of a tortoise.) A hump, or gibbosity in the back.

CHELSEA PENSIONER. The name of a nostrum for rheumatism. It consists of gum guaiac ʒj. rhubarb ʒij. cream of tartar ℈j., flowers of sulphur ℈j., one nutmeg, and a pound of clarified honey. It is said to have derived its name from the circumstance of a Chelsea pensioner having cured Lord Amherst with it.

CHELTENHAM. A large and populous town, in Gloucestershire, celebrated for its purging waters, which are both saline and chalybeate. The water, when first drawn, is clear and colourless, but somewhat brisk; and has a saline, bitterish, chalybeate taste. It does not keep, nor bear transporting to any distance; the chalybeate part being lost by precipitation of the iron, and in the open air it even turns fetid. The salts, however, remain. Its heat in summer is from 50° to 55° or 59°, when the medium heat of the atmosphere is nearly 15° higher. On evaporation, it is found to contain a calcareous earth, mixed with ochre and a purging salt. There are a number of wells dug at different periods, the waters of which contain different proportions of saline matters, and if there has not been some mistake in the analyses, the waters of the same wells have in a few years undergone considerable changes in this particular. The general analyses of these waters give muriate of soda, sulphate of soda, sulphate of magnesia, muriate of magnesia, muriate of lime, sulphuretted hydrogen, carbonic acid, and oxide of iron. The two first of these ingredients are the most abundant and constant; and are those on which the cathartic power of the water chiefly depends. The oxide of iron, though in minute quantity, is sufficient to give a decidedly chalybeate character to the water. The Cheltenham water when first taken, generally produces a degree of drowsiness, or even headach, which however soon subsides. A moderate dose acts powerfully, and speedily, as a cathartic, without occasioning griping, or leaving that faintness and languor which often follow the action of the rougher cathartics. It is principally on this account, but partly too from the salutary operation of the iron, and perhaps the carbonic acid, that the Cheltenham water may be, in most cases, persevered in without interruption for a considerable length of time; and that, during its use, the appetite is improved, the digestive organs strengthened, and the whole constitution invigorated. A dose of this water, too small to operate directly on the bowels, will generally determine pretty powerfully to the kidneys. As a purge, this water is drunk from one to three pints; in general, from half a pint to a quart is sufficient. Cheltenham water is used, with considerable benefit, in a number of chronic diseases, and especially those in which the functions of the liver are deranged. Persons whose biliary organs have been injured by excess in the pleasures of the table, or by a long

residence in hot climates, and who are suffering under the symptoms, either of excess or deficiency of bile, and an irregularity in its secretion, receive remarkable benefit from a course of this water, judiciously exhibited. Its use may be here continued, even during a considerable degree of debility; and, from the great determination to the bowels, it may be employed with advantage to check the incipient symptoms of dropsy, and general anasarca, which so often proceed from an obstruction of the liver. In scrofulous affections, the sea has the decided preference; in painful affections of the skin, called scorbutic eruptions, which make their appearance at stated intervals, producing a copious discharge of lymph, and an abundant desquamation, this, in common with other saline purgative springs, is found to bring relief; but it requires to be persevered in for a considerable time, keeping up a constant determination to the bowels, and making use of warm bathing. The season for drinking the Cheltenham water is during the whole of the summer months.

Chely'scion. (Χελυσκιον; from χελυς, the breast.) A dry short cough. — *Hippocrates.*

Che'ma. An ancient measure containing two small spoonfuls.

Che'mia. (*a, æ.* f.) See *Chemistry.*

CHE'MICAL. Of or belonging to chemistry.

CHEMISTRY. (*Chemia, æ.* f. Χυμεια, and sometimes χημεια. Some derive this word from χεω, or χυω, to pour; but as we learn from Plutarch, that Egypt was called *Chemia* in the sacred language of the priests, and since the art is doubtless of Egyptian origin, it is probable that the word *chimia*, or chemistry, is also derived from the Egyptian language.) *Chimia, Chymia.* The learned are not yet agreed as to the most proper definition of chemistry. Boerhaave seems to have ranked it among the arts. According to Macquer, it is a science, the object of which is to discover the nature and properties of all bodies by their analysis and combinations. Dr. Black and Fourcroy define it a science which teaches the mutual actions of all natural bodies on each other. "Chemistry," says Jacquin, "is that branch of natural philosophy which unfolds the nature of all material bodies, determines the number and properties of their component parts, and teaches us how those parts are united, and by what means they may be separated and recombined." Mr. Heron defines it, "that science which investigates and explains the laws of that attraction which takes place between the minute component particles of natural bodies." Dr. Ure's definition is, "the science which investigates the composition of material substances, and the permanent changes of constitution which their mutual actions produce." According to Dr. Thomson, "The object of chemistry is to determine the constituents of bodies, and the laws which regulate the combinations and separations of the elementary particles of matter." The objects to which the attention of chemists is directed, comprehend the whole of the substances that compose the globe.

CHEMO'SIS. (*is, eos.* f.; from χαινω, to gape: because it gives the appearance of a gap, or aperture.) Inflammation of the tunica conjunctiva of the eye, in which the white of the eye is distended with blood, and elevated above the margin of the transparent cornea. See *Ophthalmia.*

Cheno'coprus. (From χην, a goose, and κοπρος, dung.) Goose-dung; which was formerly given, when dried, in the dose of half a drachm to a drachm, as a powerful resolvent and diuretic, and particularly against jaundice.

Chenopo'dio-mo'rus. (From *chenopodium*, and *morus*, the mulberry; so called, because it resembles a chenopodium, and has leaves like a mulberry.) The herb mulberry-blight. The *Blitum capitatum* of Linnæus.

CHENOPO'DIUM. (*um, ii.* n.; from χην, a goose, and πους, a foot: so called from its supposed resemblance to a goose's foot.) The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Digynia.* The herb chenopody: goosefoot.

Chenopodium ambrosioides. The systematic name of the Mexican tea-plant. Mexico tea, Spanish tea, and Artemisian botrys. *Botrys Mexicana, Botrys ambrosioides Mexicana, Chenopodium Mexicanum, Botrys Americana.*

Chenopodium — foliis lanceolatis dentatis, racemis foliatis simplicibus, of Linnæus. A decoction of this plant has been recommended in paralytic cases. Formerly the infusion was drunk instead of Chinese tea.

Chenopodium anthelminticum. The seeds of this plant, *Chenopodium — foliis ovato-oblongis dentatis, racemis aphyllis,* of Linnæus, though in great esteem in America, for the cure of worms, are seldom exhibited in this country. They are powdered and made into an electuary, with any proper syrup or conserve.

Chenopodium bonus Henricus. The systematic name of the English mercury. Called also, *Tota bona,* and *Lapathum unctuosum.*

Chenopodium — foliis triangulari-sagittatis, integerrimis, spicis compositis aphyllis axillaribus, of Linnæus. This is an indigenous plant very abundant in waste grounds. It differs little from spinach when cultivated; and in many places the young shoots are eaten in spring like asparagus. The leaves are accounted emollient, and have been made an ingredient in decoctions for glysters. They have also been popular as a vulnerary.

Chenopodium botrys. The systematic name of the Jerusalem oak; called also, *Botrys, Botrys vulgaris, Ambrosia, Artemisia chenopodium, Atriplex odorata,* and *suaveolens. Chenopodium — foliis oblongis sinuatis, racemis nudis multifidis,* of Linnæus. This plant was formerly administered in form of decoction in some diseases of the chest; as humoral asthma, coughs, and catarrhs. It is now fallen into disuse.

Chenopodium fœtidum. See *Chenopodium vulvaria.*

Chenopodium vulvaria. The systematic name for the stinking orach; called, in some Pharmacopœias, *Atriplex fœtida, Atriplex olida, Vulvaria, Garosmum, Raphex, Chenopodium fœtidum,* and *Blitum fœtidum.* The very fetid

smell of this plant, *Chenopodium — foliis integerrimis rhombeo-ovatis, floribus conglomeratis axillaribus*, of Linnæus, induced physicians to exhibit it in hysterical diseases; and it is recommended by some even in the present day as an emmenagogue. Messrs. Chevalier and Lassaigne have detected ammonia in this plant in an uncombined state, which is probably the vehicle of the remarkably nauseous odour which it exhales, strongly resembling that of putrid fish. When the plant is bruised with water, and the liquor expressed, and afterwards distilled, we procure a fluid which contains the subcarbonate of ammonia, and an oily matter, which gives the fluid a milky appearance. If the expressed juice of the chenopodium be evaporated to the consistence of an extract, it is found to be alkaline; there seems to be acetic acid in it. Its basis is said to be of an albuminous nature. It is stated also to contain a small quantity of the substance which the French call osmazome, a little of an aromatic resin, and a bitter matter, soluble both in alkohol and water, as well as several saline bodies.

Che'nopus. The same as chenopodium.

Cherefo'lium. See *Chærophyllum.*

Chermes. See *Kermes.*

Cheronia. See *Chironia.*

Cherry. See *Prunus cerasus.*

Cherry, bay. See *Prunus.*

Cherry-laurel. See *Prunus.*

Cherry, winter. See *Physalis.*

Chervil. See *Scandix cerefolium.*

Chervillum. See *Scandix cerefolium.*

Chesnut. See *Æsculus* and *Fagus.*

Chesnut, horse. See *Æsculus hippocastanum.*

Chesnut, sweet. See *Fagus castanea.*

CHEVA'STER. *Chevastre.* A double-headed roller, which is applied by its middle below the chin; then running on each side, is crossed on the top of the head; then passing to the nape of the neck, is there crossed; it then passes under the chin, where crossing again, it is carried to the top of the head, &c. until it is all taken up.

CHEZANA'NCE. (From χεζω, to go to stool, and αναγκη, necessity.) The name given by Paulus to an ointment which was rubbed on the anus to promote stools, and by Aëtius, to a plaster applied to the navel with the same intention.

Chia terræ. An earth brought from the Isle of Chio. It is in grayish white masses: it was formerly used as an application to burns.

Chi'acus. (From Χιος, the island of Scio.) The epithet of a collyrium, the chief ingredient of which was wine of Chios.

Chi'adus. Paracelsus uses this word to signify a boil.

Chian turpentine. See *Pistachiæ terebinthus.*

Chiasmus. See *Chiastre.*

Chiastos. See *Chiastre.*

CHI'ASTRE. (*Chiasmus, i.* m.; from χιαζω, to form the Greek letter Χ, chi.) *Chiastros.* The name of a bandage for the temporal artery. It is a double-headed roller, the middle of which is applied to the side of the head, opposite to that in which the artery is opened, and, when brought round to the part affected, it is crossed upon the compress that is laid upon the wound, and is then continued over the coronal suture, and under the chin; then crossing on the compress, it is carried as at first, round the head, &c. till the whole roller is taken up.

Chibou. The French name of a spurious species of gum elemi. It is not known in England.

Chibur. Sulphur.

Chica. A fermented liquor used by the Peruvians. It is made from Indian meal and water.

Chichi'na. Contracted from China chinæ. See *Cinchona.*

Chicken-pox. See *Varicella.*

Chick-weed. See *Alsine media.*

Chilblain. See *Pernio.*

Child-bed Fever. See *Puerperal fever.*

Chili, balsamum de. Salmon speaks, but without any proof, of a peculiar balsam brought from Chili. The Barbadoes tar, in which are mixed a few drops of the oil of aniseed, is usually sold for it.

Chiliody'namon. (From χιλιοι, a thousand, and δυναμις, virtue.) The name in Dioscorides for an herb, given on account of its many virtues. It is supposed to be the same with the white behen.

Chiliophy'llon. (From χιλιοι, a thousand, and φυλλον, a leaf, because of the great number of leaflets.) See *Achillea millefolium.*

Chi'lon. (From χειλος, the lip.) An inflamed and swelled lip. — *Vogel.*

Chimethlon. See *Cheimethlon.*

Chi'mia. Chemistry.

Chimiater. See *Chymiater.*

Chimo'lea laxa. The powder which is separated from the flowers of saline minerals. — *Paracelsus.*

Chi'na. (*a, æ.* f.; so named because it comes from China.) See *Smilax China.*

China chinæ. The Peruvian bark.

China occidentalis. American or West Indian China. *China spuria nodosa. Smilax pseudo-China. Smilax Indica spinosa.* This root is chiefly brought from Jamaica, in large round pieces full of knots. In scrofulous disorders, it has been preferred to the Oriental kind. In other cases it is of similar but inferior virtue.

China supposita. See *Senecio pseudo-China.*

Chinchi'na. See *Cinchona.*

Chinchi'na Caribæa. See *Cinchona caribæa.*

Chinchina de Santa Fé. There are several species of bark sent from Santa Fé; but neither their particular natures, nor the trees which afford them, are yet accurately determined.

Chinchina de St. Lucia. See *Cinchona floribunda.*

Chinchina Jamaicensis. See *Cinchona caribæa.*

Chinchina rubra. See *Cinchona oblongifolia.*

Chincough. See *Pertussis.*

Chio turpentine. See *Pistacia terebinthus.*

Chioli. In the writings of Paracelsus it is synonymous with furunculus.

CHI'RAGRA. (*a, æ.* f.; from χειρ, the hand, and αγρα, a seizure.) The gout in the joints of the hands. See *Gout.*

Chiro'nes. (Χειρωνες; from χειρ, the hand.) Small pustules on the hand and feet, enclosed in which is a troublesome worm. — *Turton.*

CHIRO'NIA. (*a*, *æ*. f.; from *Chiron*, the centaur, who discovered its use.) 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Monogynia*.

2. (From χειρ, the hand.) An affection of the hand, where it is troubled with *chirones*.

Chironia centaurium. The systematic name of the officinal centaury: called also, *Centaurium minus vulgare*, *Centaurium parvum*, *Centaurium minus*, and *Libadium*.

Chironia — corollis quinquefidis infundibuliformibus, caule dichotomo, pistillo simplici, of Linnæus. This plant is justly esteemed to be the most efficacious bitter of all the medicinal plants indigenous to this country. It has been recommended, by Cullen, as a substitute for gentian; and by several is thought to be a more useful medicine. The tops of the centaury plant are directed for use by the colleges of London and Edinburgh, and are most commonly given in infusion; but they may also be taken in powder, or prepared into an extract.

Chiro'nius. (From *Chiron*, the centaur, who is said to have been the first who healed it.) The epithet given by Galen. A malignant ulcer, callous on its edges, and difficult to cure.

CHIROTHE'CA. (*a*, *æ*. f.; from χειρ, the hand, and τιθημι, to put.) A glove of the scarfskin, with the nails, which is brought off from the dead subject, after the cuticle is loosened, by putrefaction, from the parts under it.

CHIRU'RGIA. (*a*, *æ*. f.; from χειρ, the hand, and εργον, a work: because surgical operations are performed by the hand.) Chirurgery, or surgery. See *Medicine*.

CHIRU'RGICE. (*e*, *es*. f.; from χειρ, the hand, and εργον, a work.) Surgery.

CHIRU'RGICUS. Surgical: appertaining to surgery.

CHIRU'RGUS. (*us*, *i*. m.; from χειρ, the hand, and εργον, a work, or performance.) A surgeon.

Chi'um vinum. (From Χιος, the island where it was produced.) A wine used by the Greeks and Romans.

Chive. See *Stamen*.

Chliaros. (Χλιαρος, tepid.) Applied by Galen to a fever which is not very intense.

Chlia'sma. (From χλιαινω, to make warm.) A warm fomentation.

Chloral. A compound of chlorine, carbon and oxygen. See *Chlorine*.

Chlora'sma. (From χλωρος, green.) See *Chlorosis*.

CHLO'RATE. (*Chloras, atis*. f.) A compound of chloric acid with a salifiable base. The chlorates of soda and potash, are used in medicine.

Chlorate of lime. *Calcis chloras*. This is best obtained by dissolving carbonate of lime in chloric acid. It has a sharp bitterish taste, and is very soluble and deliquescent.

Chlorate of potash. *Potassæ chloras*. This salt has been long known, and may be procured by receiving chlorine, as it is formed, into a solution of potash. When the solution is saturated, it may be evaporated gently, and the first crystals produced will be the salt desired, this crystallising before the simple muriate, which is produced at the same time with it. Its crystals are in shining hexaëdral laminæ, or rhomboidal plates.

The effects of this salt on inflammable bodies are very powerful. Rub two grains into powder in a mortar, add a grain of sulphur, mix them well by gentle trituration, then collect the powder into a heap, and press upon it suddenly and forcibly with the pestle, a loud detonation will ensue. If the mixture be wrapped in strong paper, and struck with a hammer, the report will be still louder. Five grains of the salt, mixed in the same manner with two and a half of charcoal, will be inflamed by strong trituration, especially if a grain or two of sulphur be added, but without much noise. If a little sugar be mixed with half its weight of the chlorate, and a little strong sulphuric acid poured on it, a sudden and vehement inflammation will ensue; but this experiment requires caution, as well as the following: — To one grain of the powdered salt in a mortar, add half a grain of phosphorus; it will detonate, with a loud report, on the gentlest trituration. In this experiment the hand should be defended by a glove, and great care should be taken that none of the phosphorus get into the eyes. Phosphorus may be inflamed by it under water, putting into a wine-glass one part of phosphorus and two of the chlorate, nearly filling the glass with water, and then pouring in, through a glass tube reaching to the bottom, three or four parts of sulphuric acid. This experiment, too, is very hazardous to the eyes. If olive or linseed oil be taken instead of phosphorus, it may be inflamed by similar means on the surface of the water. This salt should not be kept mixed with sulphur, or perhaps any inflammable substance, as in this state it has been known to detonate spontaneously. As it is the common effect of mixtures of this salt with inflammable substances of every kind, to take fire on being projected into the stronger acids, Chenevix tried the experiment with it, mixed with diamond powder in various proportions, but without success.

Chlorate of soda. *Sodæ chloras*. This may be prepared in the same manner as the chlorate of potash, by substituting soda for potash; but it is not easy to obtain it separate, as it is nearly as soluble as the muriate of soda, requiring only 3 parts of cold water. In its other properties it resembles the chlorate of potash.

CHLO'RIC ACID. *Acidum chloricum*. This acid, formerly called the *hyperoxymuriatic*, was observed by Chenevix, but first obtained in a separate state by Gay-Lussac. It may be obtained by adding to a dilute solution of chlorate of baryta a quantity of weak sulphuric acid, exactly sufficient to saturate the baryta. The insoluble sulphate of baryta is precipitated, and pure chloric acid remains in the liquid. This acid is without colour and smell; its taste is very

acid, and it reddens litmus without destroying the colour. M. Vauquelin says, its taste is not only acid, but astringent; and its odour, when concentrated, is somewhat pungent. It differs from chlorine, in not precipitating gelatine, and in possessing no bleaching qualities.

Chloric acid combines with the bases, and forms the *chlorates*, a set of salts formerly called *hyperoxymuriates*. They may be formed either directly, by saturating the alkali or earth with the chloric acid, or by the old process of transmitting chlorine through the solutions of the bases, in Woolf's bottles. In this case the water is decomposed. Its oxygen unites to one portion of the chlorine, forming chloric acid, while its hydrogen unites to another portion of chlorine, forming muriatic acid; and hence, chlorates and muriates must be contemporaneously generated, and must be afterwards separated by crystallisation, or peculiar methods.

Chloric oxide. The peroxide of chlorine.

CHLO'RIDE. A compound of chlorine with a base.

Chloride of azote. See *Nitrogen.*

Chloride of lime. See *Calcis chloridum.*

Chloride of soda. *Chlorite of soda.* A compound of chlorine and soda, formed by passing chlorine into a cold dilute solution of pure soda, or by decomposing chloride of lime by carbonate of soda. It smells like chlorine, and has similar bleaching properties. When exposed to the air it absorbs carbonic acid and evolves chlorine.

CHLO'RINE. (From χλωρος, green, on account of its colour.) A substance discovered in the year 1770 by Scheele, while investigating the nature of manganese; and he described it under the name of *dephlogisticated marine acid.* The French chemists called it *oxygenised muriatic acid*, a term which was afterwards contracted to *oxy-muriatic acid*, from an opinion proposed by Berthollet, that it is a compound of muriatic acid and oxygen. In 1809, Gay-Lussac and Thenard published an abstract of some experiments upon this substance, which subsequently appeared at length in their *Recherches Physico-Chimiques*, wherein they stated, that oxymuriatic acid might be regarded as a simple body, though they gave the preference to the doctrine advanced by Berthollet. Sir H. Davy engaged in the inquiry about the same time; and after having exposed oxymuriatic acid to the most powerful decomposing agents which chemists possess, without being able to effect its decomposition, he communicated to the Royal Society an essay, in which he denied its compound nature; and he maintained that, according to the true logic of chemistry, it is entitled to rank with simple bodies. This view, which is commonly termed the *new theory of chlorine*, though strongly objected to at the time it was first proposed, is supported by the most powerful analogies, and adequate to the explanation of all chemical phenomena in which chlorine is concerned. It is now therefore almost universally received by chemists.

Chlorine gas is obtained by the action of muriatic acid on peroxide of manganese. The most convenient method of preparing it is by mixing concentrated muriatic acid, contained in a glass flask, with half its weight of finely powdered peroxide of manganese. Effervescence, owing to the escape of chlorine, takes place even in the cold; but the gas is evolved much more freely by the application of a moderate heat. It should be collected in inverted glass bottles, filled with warm water; and when the water is wholly displaced by the gas, the bottles should be closed with a well-ground glass stopper. As some muriatic acid gas commonly passes over with it, the chlorine should not be considered quite pure, till after being transmitted through water.

Before explaining the theory of this process, it may be premised that muriatic acid consists of 35·45 parts or one equivalent of chlorine, and 1 part or one equivalent of hydrogen. Peroxide of manganese is composed of 27·7 parts or one equivalent of manganese, and 16 or two equivalents of oxygen. When these compounds react on each other, one equivalent of each is decomposed. The peroxide of manganese gives one equivalent of oxygen to the hydrogen of the muriatic acid, in consequence of which one equivalent of water is generated, and one equivalent of chlorine disengaged; while the protoxide of manganese unites with an equivalent of undecomposed muriatic acid, and forms an equivalent of muriate of the protoxide of manganese. Consequently, for every 43·7 grains of peroxide of manganese, 72·9 (36·45 × 2) grains of real muriatic acid disappear; and 35·45 parts of chlorine, 9 of water, and 72·15 of protomuriate of manganese, are the products of the decomposition. The affinities which determine these changes are the attraction of oxygen for hydrogen, and of protoxide of manganese for muriatic acid.

When it is an object to prepare chlorine at the cheapest rate, as for the purposes of manufacture, the preceding process is modified in the following manner: — Three parts of sea-salt are intimately mixed with one of peroxide of manganese, and to this mixture two parts of sulphuric acid, diluted with an equal weight of water, are added. By the action of sulphuric acid on sea-salt, muriatic acid is disengaged, which, reacts as in the former case, upon the peroxide of manganese; so that, instead of adding muriatic acid directly to the manganese, the materials for forming it are employed. In this process, however, the protoxide of manganese unites with sulphuric instead of muriatic acid, and the residue is sulphate of manganese and sulphate of soda.

Chlorine (from χλωρος, green) is a yellowish-green coloured gas, which has an astringent taste, and a disagreeable odour. It is one of the most suffocating of the gases, exciting spasm and great irritation of the glottis, even when considerably diluted with air. When strongly and suddenly compressed, it emits both heat and light, — a character which it possesses in common with air and oxygen gas; but Thenard has shown, that though all gases are heated by sudden compression, the temperature in our experiments is never so great as to render the gas

luminous. The light emitted by oxygen and chlorine arises from the heat due to compression, causing the gases to act chemically on the oil with which the compressing vessel is lubricated: when no organic matter is present, no light whatever appears. (*An. de Ch. et Ph.* xliv. 181.) According to Davy 100 cubic inches of dry chlorine, at 30 B. and 60 F. weigh between 76 and 77 grains. Gay-Lussac and Thenard found the density of pure and dry chlorine to be 2·47, which gives 76·599 grains as the weight of 100 cubic inches at 60° F. and 30° B. The estimate of Dr. Thomson, namely 2·5, which gives 77·529 as the weight of 100 cubic inches, differs widely from that of the other observers, and is, it is believed, erroneous. Under the pressure of about four atmospheres it is a limpid liquor, of a bright yellow colour, which does not freeze at the temperature of zero, and which assumes the gaseous form with the appearance of ebullition when the pressure is removed. Mr. Kemp finds that this liquid is a non-conductor of electricity.

In consequence of the extensive range of affinity possessed by chlorine, it is important that its combining proportion should be determined with precision. Recent observations satisfied Dr. Turner that 35·45, inferred from the experiments of Berzelius, is very nearly correct; and that 36, the equivalent which had been formerly adopted by him on the authority of Dr. Thomson, was inexact.

Cold recently boiled water, at the common pressure, absorbs twice its volume of chlorine, and yields it again when heated. The solution, which is made by transmitting a current of chlorine gas through cold water, has the colour, taste, and most of the other properties of the gas itself. When moist chlorine gas is exposed to a cold of 32° F. yellow crystals are formed, which consist of water and chlorine in definite proportions. They are composed, according to Mr. Faraday, of 35·45 parts or one equivalent of chlorine, and 90 or ten equivalents of water.

Chlorine experiences no chemical change from the action of the imponderables. Thus it is not effected chemically by intense heat, by strong shocks of electricity, or by a powerful galvanic battery. Sir H. Davy exposed it also to the action of charcoal heated to whiteness by galvanic electricity, without separating oxygen from it, or in any way affecting its nature. Light does not act on dry chlorine; but if water be present, the chlorine decomposes that liquid, unites with the hydrogen to form muriatic acid, and oxygen gas is set at liberty. This change takes place quickly in sunshine, more slowly in diffused day-light, and not at all when light is wholly excluded. Hence the necessity of keeping moist chlorine gas, or its solution, in a dark place, if it is wished to preserve it for any time.

Chlorine unites with some substances with evolution of heat and light, and is hence termed a supporter of combustion. If a lighted taper be plunged into chlorine gas, it burns for a short time with a small red flame, and emits a large quantity of smoke. Phosphorus takes fire in it spontaneously, and burns with a pale white light. Several of the metals, such as tin, copper, arsenic, antimony, and zinc, when introduced into chlorine in the state of powder or in fine leaves, are suddenly inflamed. In all these cases the combustible substances unite with chlorine.

Chlorine has a very powerful attraction for hydrogen; and many of the chemical phenomena, to which chlorine gives rise, are owing to this property. A striking example is its power of decomposing water by the action of light, or at a red heat; and most compound substances, of which hydrogen is an element, are deprived of that principle, and therefore decomposed in like manner. For the same reason, when chlorine, water, and some other body which has a strong affinity for oxygen, are presented to one another, water is usually resolved into its elements, its hydrogen attaching itself to the chlorine, and its oxygen to the other body. Hence it happens that chlorine is, indirectly, one of the most powerful oxidising agents which we possess.

When any compound of chlorine and an inflammable is exposed to the influence of galvanism, the inflammable body goes over to the negative, and chlorine to the positive pole of the battery. This establishes a close analogy between oxygen and chlorine, both of them being supporters of combustion, and both negative electrics.

Chlorine, though formerly called an acid, possesses no acid properties. It has not a sour taste, does not redden the blue colour of plants, and shows comparatively little disposition to unite with alkalis. Its strong affinity for the metals is sufficient to prove that it is not an acid; for chemists are not acquainted with any instance of an acid combining directly in definite proportion with a metal.

The mutual action of chlorine and the pure alkalis leads to complicated changes. If chlorine gas be passed into a solution of potash till all alkaline reaction cease, a liquid is obtained which has the odour of a solution of chlorine in water. But on applying heat, the chlorine disappears entirely, and the solution is found to contain two neutral salts, chlorate and muriate of potash. The production of the two acids is owing to decomposition of water, the elements of which unite with separate portions of chlorine and form chloric and muriatic acids. The affinities which give rise to this change are the attraction of chlorine for hydrogen, of chlorine for oxygen, and of the two resulting acids for the alkali.

One of the most important properties of chlorine is its bleaching power. All animal and vegetable colours are speedily removed by chlorine; and when the colour is once discharged, it can never be restored. Sir H. Davy proved that chlorine cannot bleach unless water is present. Thus, dry litmus paper suffers no change in dry chlorine; but when water is admitted, the colour speedily disappears. It is well known also that muriatic acid is always generated when chlorine bleaches. From these facts it is inferred that water is decomposed during the process; that its hydrogen unites

with chlorine; and that decomposition of the colouring matter is occasioned by the oxygen which is liberated. The bleaching property of binoxide of hydrogen and of chromic and permanganic acids, of which oxygen is certainly the decolorising principle, leaves little doubt of the accuracy of the foregoing explanation.

Chlorine is useful, likewise, for the purposes of fumigation. The experience of Guyton Morveau is sufficient evidence of its power in destroying the volatile principles given off by putrefying animal matter; and it probably acts in a similar way on contagious effluvia. A peculiar compound of chlorine and soda, the nature of which will be considered in the section on Sodium, has been lately introduced for this purpose by M. Labarraque.

Chlorine is in general easily recognised by its colour and odour. Chemically it may be detected by its bleaching property, added to the circumstance that a solution of nitrate of silver occasions in it a dense white precipitate (a compound of chlorine and metallic silver), which becomes dark on exposure to light, is insoluble in acids, and dissolves completely in pure ammonia. The whole of the chlorine, however, is not thrown down by nitrate of silver; for the oxygen of the oxide of silver unites with a portion of chlorine, and converts it into chloric acid.

Those compounds of chlorine, which are not acid, are termed *chlorides*, or *chlorurets*. The former expression, from the analogy between chlorine and oxygen, is perhaps the more appropriate.

Chlorine unites with hydrogen, forming hydrochloric, or muriatic acid. See *Hydrochloric acid*.

Chlorine forms several compounds with oxygen. The leading character of these compounds is derived from the circumstance, that chlorine and oxygen, the attraction of which for most elementary substances is so energetic, have but a feeble affinity for each other. These principles, consequently, are never met with in nature in a state of combination. Indeed, they cannot be made to combine directly; and when they do unite, very slight causes effect their separation. Chemists are not agreed as to the exact number of the compounds of chlorine and oxygen. The subjoined list contains those which hitherto have been generally admitted; but the existence of the first is very problematical, while some enumerate a fifth under the name of *chlorous acid* : —

	By Weight.		By Volume.	
	Chl.	Oxy.	Chl.	Oxy.
Protoxide of chlorine	35·45	8	2	1
Peroxide of chlorine...	35·45	32	2	4
Chloric acid.....	35·45	40	2	5
Perchloric acid.....	35·45	56	2	7

According to the practice of most British chemists two volumes of chlorine, as also two volumes of hydrogen and of nitrogen, are considered as respectively corresponding to one equivalent or one atom; whereas one volume of oxygen corresponds to one equivalent. Berzelius, with many continental chemists, considering the atoms of all elements to possess the same volume, regard the four preceding compounds as composed of 2 atoms or 1 equivalent of chlorine combined with 1, 4, 5, and 7, atoms or equivalents of oxygen.

Protoxide of Chlorine. — This gas was discovered in 1811 by Davy; and was described by him, in the *Philosophical Transactions* for that year, under the name of *Euchlorine*. It is made by the action of muriatic acid on chlorate of potash; and its production is explicable by the fact, that muriatic and chloric acids mutually decompose each other. When muriatic acid and chlorate of potash are mixed together, part of the muriatic acid unites with the potash of the salt, and thus sets chloric acid free, which instantly reacts on the free muriatic acid. The result of the reaction depends on the relative quantity of the substances. If chlorate of potash be mixed with excess of concentrated muriatic acid, the chloric acid undergoes complete decomposition. For each equivalent of chloric, five equivalents of muriatic acid are decomposed: the five equivalents of oxygen, contained in the former, unite with the hydrogen of the latter, producing five equivalents of water; while the chlorine of both acids is disengaged. If, on the contrary, chlorate of potash is in excess, and the muriatic acid diluted, the chloric acid is deprived of part of its oxygen only; and the products are water, protoxide of chlorine, and chlorine; the two latter escaping in the gaseous form. The best proportion of the ingredients is two parts of chlorate of potash, one of strong muriatic acid, and one of water; and the reaction of the materials should be promoted by heat sufficient to produce moderate effervescence. The gases should be collected over mercury, which combines with the chlorine, and leaves the protoxide of chlorine in a pure state.

Protoxide of chlorine has a yellowish green colour similar to that of chlorine, but considerably more brilliant; which induced Davy to give it the name of *Euchlorine*. Its odour is like that of burned sugar. Water dissolves eight or ten times its volume of the gas, and acquires a colour approaching to orange. It bleaches vegetable substances, but gives the blue colours a tint of red before destroying them. It does not unite with alkalis, and therefore is not an acid.

Protoxide of chlorine is explosive in a high degree. The heat of the hand, or the pressure occasioned in transferring it from one vessel to another, sometimes causes an explosion. This effect is also occasioned by phosphorus, which bursts into flame at the moment of immersion. All burning bodies, by their heat, occasion an explosion, and then burn vividly in the decomposed gas. With hydrogen it forms a mixture which explodes by flame or the electric spark, with production of water and muriatic acid. The best proportion is fifty measures of protoxide of chlorine to eighty of hydrogen.

Protoxide of chlorine is easily analysed by heating a known quantity of it in a strong tube over mercury. An explosion takes place; and 50 measures of the gas expand to 60 measures, of which 20 are oxygen, and 40 chlorine. From this it was considered to contain an equivalent of chlorine and oxygen. But most chemists

have regarded the existence of euchlorine as problematical, suspecting it to be a mere mixture of chlorine with the peroxide of chlorine; and M. Soubeiran, supposing his experiments correct, has lately proved this suspicion to be well-founded. He finds that euclorine itself acts on mercury, and therefore cannot be purified by its means. He effected its purification by transmitting the gas through a tube nearly full of calomel, which absorbed the free chlorine only; and on subsequently exploding the oxide of chlorine thus purified, he obtained one volume of chlorine to two volumes of oxygen, being the precise composition of the peroxide. The confirmation of these results will cause the removal of euchlorine from the list of definite compounds. (*An. de Ch. et Ph.* xlviii. 113.)

Peroxide of Chlorine. — This compound was discovered in 1815 by Sir H. Davy (*Phil. Trans. for* 1815), and soon after by Count Stadion of Vienna. It is formed by the action of sulphuric acid on chlorate of potash. A quantity of this salt, not exceeding 50 or 60 grains, is reduced to powder, and made into a paste by the addition of strong sulphuric acid. The mixture, which acquires a deep yellow colour, is placed in a glass retort, and heated by warm water, the temperature of which is kept under 212° F. A bright yellowish green gas, of a still richer colour than protoxide of chlorine, is disengaged, which has an aromatic odour without any smell of chlorine, is absorbed rapidly by water, to which it communicates its tint, and has no sensible action on mercury. This gas is peroxide of chlorine.

The chemical changes which take place in the process are explained in the following manner: — The sulphuric acid decomposes some of the chlorate of potash, and sets chloric acid at liberty. The chloric acid, at the moment of separation, resolves itself into peroxide of chlorine and oxygen; the last of which, instead of escaping as free oxygen gas, goes over to the acid of some undecomposed chlorate of potash, and converts it into perchloric acid. The whole products are bi-sulphate and perchlorate of potash, and peroxide of chlorine. It is most probable, from the data contained in the preceding table, that every 3 equivalents of chloric acid yield 1 equivalent of perchloric acid and 2 equivalents of peroxide of chlorine.

Peroxide of chlorine does not unite with alkalis. It destroys most vegetable blue colours, without previously reddening them. Phosphorus takes fire when introduced into it, and occasions an explosion. It explodes violently when heated to a temperature of 212° F., emits a strong light, and undergoes a greater expansion than protoxide of chlorine. According to Sir H. Davy, whose result is confirmed by Gay-Lussac, 40 measures of the gas occupy after explosion the space of 60 measures; and of these, 20 are chlorine and 40 oxygen. The peroxide is therefore composed of 35·45 parts or one equivalent of chlorine, united with 32 or four equivalents of oxygen; and its specific gravity must be 2·346. Count Stadion considers the chlorine to be united with 3 instead of 4 equivalents of oxygen; but the late researches of Soubeiran confirm the statement of Davy. For the acid compounds of chlorine and oxygen, see *Chloric acid*, *Perchloric acid*, and *Chlorous acid*.

Chloride of Nitrogen. — The mutual affinity of chlorine and nitrogen is very slight: they do not combine at all if presented to each other in their gaseous form; and when combined, they are easily separated. Chloride of nitrogen is formed by the action of chlorine on some salt of ammonia. Its formation is owing to the decomposition of ammonia (a compound of hydrogen and nitrogen) by chlorine. The hydrogen of the ammonia unites with chlorine, and forms muriatic acid; while the nitrogen of the ammonia, being presented in its nascent state to chlorine dissolved in the solution, enters into combination with it.

A convenient method of preparing chloride of nitrogen is the following: — An ounce of muriate of ammonia is dissolved in twelve or sixteen ounces of hot water; and when the solution has cooled to the temperature of 90° F., a glass bottle with a wide mouth, full of chlorine is inverted in it. The solution gradually absorbs the chlorine, and acquires a yellow colour; and in about twenty minutes or half an hour, minute globules of a yellow fluid are seen floating like oil upon its surface, which, after acquiring the size of a small pea, sink to the bottom of the liquid. The drops of chloride of nitrogen, as they descend, should be collected in a small saucer of lead, placed for that purpose under the mouth of the bottle.

Chloride of nitrogen, discovered in 1811 by Dulong, (*An. de Ch.* lxxxvi.) is one of the most explosive compounds yet known, having been the cause of serious accidents both to its discoverer and to Sir H. Davy. (*Phil. Trans.* 1813.) Its specific gravity is 1·653. It does not congeal in the intense cold produced by a mixture of snow and salt. It may be distilled at 160° F.; but at a temperature between 200° and 212° it explodes. It appears, from the investigation of Messrs. Porrett, Wilson, and Kirk, that its mere contact with some substances of a combustible nature causes detonation even at common temperatures. This result ensues particularly with oils, both volatile and fixed. Dr. Turner has never found olive oil to fail in producing the effect. The products of the explosion are chlorine and nitrogen. (*Nicholson's Journal*, xxxiv.)

Sir H. Davy analysed chloride of nitrogen by means of mercury, which unites with chlorine, and liberates the nitrogen. He inferred from his analysis, that its elements are united in the proportion of four measures of chlorine to one of nitrogen; and it hence follows that, by weight, it consists of 4 equivalents of chlorine, and 1 equivalent of nitrogen.

Compounds of Chlorine and Carbon. — For the knowledge of the compounds of chlorine and carbon, chemists are indebted to the ingenuity of Mr. Faraday. When olefiant gas (a compound of carbon and hydrogen) is mixed with chlorine, combination takes place between them, and an oil-like liquid is generated, which consists of chlorine, carbon, and hydrogen. On

exposing this liquid in a vessel full of chlorine gas to the direct solar rays, the chlorine acts upon and decomposes the liquid; muriatic acid is set free, and the carbon, at the moment of separation, unites with the chlorine. (*Phil. Trans.* 1821.)

Perchloride of Carbon, as this compound is named by Mr. Faraday, is solid at common temperatures, has an aromatic odour approaching to that of camphor, is a non-conductor of electricity, and refracts light very powerfully. Its specific gravity is exactly double that of water. It fuses at 320° F., and after fusion it is colourless and very transparent. It boils at 360°, and may be distilled without change, assuming a crystalline arrangement as it condenses. It is sparingly soluble in water, but dissolves in alkohol and ether, especially by the aid of heat. It is soluble also in fixed and volatile oils.

Perchloride of carbon burns with a red light when held in the flame of a spirit-lamp, giving out acid vapours and smoke; but the combustion ceases as soon as it is withdrawn. It burns vividly in oxygen gas. Alkalis do not act upon it: nor is it changed by the stronger acids, such as the muriatic, nitric, or sulphuric acids, even with the aid of heat. When its vapour, mixed with hydrogen, is transmitted through a red-hot tube, charcoal is separated, and muriatic acid gas evolved. On passing its vapour over the peroxides of metals, such as that of mercury and copper, heated to redness, a chloride of the metal and carbonic acid are generated. Protoxides, under the same treatment, yield carbonic oxide gas and metallic chlorides. Most of the metals decompose it also at the temperature of ignition, uniting with its chlorine, and causing deposition of charcoal.

From the proportions of chlorine and olefiant gas employed in forming perchloride of carbon, and from its analysis, made by passing it over oxide of copper at the temperature of ignition, Mr. Faraday infers, that this compound consists of 106·35 parts or 3 equivalents of chlorine, and 12 parts or 2 equivalents of carbon.

New Chloride of Liebig. — This active chemist has lately described a new substance under the name of *Chloral*, which consists of chlorine, carbon, and oxygen, as will be more fully stated in the latter part of this section. On boiling this substance in a solution of potash, lime, or baryta, a muriate and formate are generated, and the new chloride of carbon passes over in vapour. It is then washed repeatedly with pure water, and obtained quite dry by admixture with strong sulphuric acid, and distillation at 212° F. It may also be more conveniently prepared by distilling, from a capacious retort, a mixture of 1 pound of chloride of lime, 3 pounds of water, and 2 or 3 ounces either of alkohol or pyroacetic spirit.

The new chloride of carbon is a limpid colourless liquid, similar in odour and appearance to the oily fluid which chlorine forms with olefiant gas; though in density, volatility, and composition, it is quite different. Its density is 1·48; and it boils at 141° F. It is but feebly combustible, and is not changed at moderate temperatures either by acids or alkalis.

It is freely dissolved by alkohol and ether, and is precipitated from them by water, in which it is quite insoluble. It may be distilled in contact with potassium, without change. When its vapour is transmitted over metallic copper, charcoal is deposited, no gas whatever appears, and a metallic chloride is formed. From an analysis made by transmitting its vapour over oxide of copper at a red oxide, when chloride of copper and carbonic acid were the sole products, Leibig infers that his new chloride consists of 2 equivalents of carbon and $2\frac{1}{2}$ of chlorine, or of 4 atoms of the former to 5 of the latter. (*An. de Ch. et Ph.* xlix. 146.)

Protochloride of Carbon. — When the vapour of perchloride of carbon is passed through a red-hot glass or porcelain tube, containing fragments of rock crystal to increase the extent of heated surface, partial decomposition takes place; chlorine gas escapes, and a fluid passes over, which Mr. Faraday calls the *protochloride of carbon*.

Protochloride of carbon is a limpid colourless fluid, which does not congeal at zero of Fahrenheit, and at 160° or 170° F. is converted into vapour. It may be distilled repeatedly without change; but when exposed to a red heat, some of it is resolved into its elements. Its specific gravity is 1·5526. In its chemical relations it is very analogous to perchloride of carbon. Mr. Faraday analysed it by transmitting its vapour over ignited oxide of copper; and he infers from the products of its decomposition — carbonic acid and chloride of copper — that it is composed of 35·45 parts or 1 equivalent of chlorine, and 6 parts or 1 equivalent of carbon.

A fourth compound of chlorine and carbon is described in volume xvii. of the *Annals of Philosophy*. It was brought from Sweden by M. Julin; and is said to have been formed, during the distillation of nitric acid, from crude nitre and sulphate of iron. It occurs in small, soft, adhesive fibres of a white colour, which have a peculiar odour, somewhat resembling spermaceti. It fuses on the application of heat; and boils at a temperature between 350° and 450° F. At 250° F. it sublimes slowly, and condenses again in the form of long needles. It is insoluble in water, acids, and alkalis; but is dissolved by hot oil of turpentine or by alkohol, and forms acicular crystals as the solution cools. It burns with a red flame, emitting much smoke and fumes of muriatic acid gas.

The nature of this substance is shown by the following circumstances: — When its vapour is exposed to a red heat, evolution of chlorine gas ensues, and charcoal is deposited. A similar deposition of charcoal is produced by heating it with phosphorus, iron, or tin; and a chloride is formed at the same time. Potassium burns vividly in its vapour with formation of chloride of potassium and separation of charcoal. On detonating a mixture of its vapour with oxygen gas over mercury, a chloride of that metal and carbonic acid are generated. From these facts, the greater part of which were ascertained by Messrs. Phillips and Faraday, it follows that

the substance brought from Sweden by M. Julin is a compound of chlorine and carbon; and the same able chemists conclude, from their analysis, that its elements are united in the ratio of 1 equivalent of chlorine to 2 equivalents of carbon. (*An. of Phil.* xviii. 150.)

Chloride of Sulphur was discovered in the year 1804 by Dr. Thomson, and was afterwards examined by Berthollet. It is most conveniently prepared by passing a current of chlorine gas over flowers of sulphur gently heated, until nearly all the sulphur disappears. Direct combination ensues, and the product, distilled off from uncombined sulphur, is obtained under the form of a liquid which appears red by reflected, and yellowish-green by transmitted light. Its density is 1·687. It is volatile below 200° F., boils at 280°, yielding vapour which has a density of 4·70, and condenses again without change in cooling. When exposed to the air it emits acrid fumes, which irritate the eyes powerfully, and have an odour somewhat resembling sea-weed, but much stronger. Dry litmus paper is not reddened by it, nor does it unite with alkalis. It acts with energy on water: — mutual decomposition ensues, with formation of muriatic and hyposulphurous acids; but as the latter quickly begins to be resolved into sulphur and sulphurous acid, the water is rendered cloudy by a deposit of sulphur. From a recent analysis by Rose, it consists of 35·45 parts or 1 equivalent of chlorine and 16 parts or 1 equivalent of sulphur. (*Pog. Annalen*, xxi. 431.)

Rose maintains, that the preceding is the only chloride of sulphur, arguing that the bi-chloride analysed by Davy was merely chloride of sulphur holding chlorine in solution. Dumas, on the other hand, contends, that when sulphur is acted on by access of chlorine, a bi-chloride of sulphur is really obtained, which is apt to retain traces of the protochloride, and can only be purified by repeated distillation, at about 140° F. This bi-chloride is a liquid of a deep reddish brown tint, and has a density of 1·62. It boils at 147° F.; and the density of its vapour is between 3·67 and 3·70. By decomposition in water it should yield muriatic and sulphurous acids. (*An. de Ch. et Ph.* xlix. 205.)

Compounds of Chlorine and Phosphorus. — There are two definite compounds of chlorine and phosphorus, the nature of which was first satisfactorily explained by Sir H. Davy. (*Elements*, p. 290.) When phosphorus is introduced into a jar of dry chlorine, it inflames; and on the inside of the vessel a white matter collects, which is *Perchloride of Phosphorus*. It is very volatile; a temperature much below 212° F. being sufficient to convert it into vapour. Under pressure it may be fused; and it yields transparent prismatic crystals in cooling.

Water and perchloride of phosphorus mutually decompose each other; and the sole products are muriatic and phosphoric acids. Now in order that these products should be formed, consistently with the constitution of phosphoric acid, the perchloride must consist of 15·7 parts or 1 equivalent of phosphorus, and 88·62 parts or $2\frac{1}{2}$ equivalents of chlorine. One equivalent of the chloride and two and a half of water will then mutually decompose each other without any element being in excess, and yield 1 equivalent of phosphoric, and $2\frac{1}{2}$ equivalents of muriatic acid. This proportion is not far from the truth; for, according to Davy, one grain of phosphorus is united in the perchloride with six of chlorine.

Protochloride of Phosphorus may be made either by heating the perchloride with phosphorus, or by passing the vapour of phosphorus over corrosive sublimate contained in a glass tube. It is a clear liquid like water, of specific gravity 1·45; emits acid fumes when exposed to the air, owing to the decomposition of watery vapour; but when pure it does not redden dry litmus paper. On mixing it with water, mutual decomposition ensues, heat is evolved, and a solution of muriatic and phosphorous acids is obtained. It hence appears to consist of 15·7 parts or 1 equivalent of phosphorus, and 53·17 parts or $1\frac{1}{2}$ equivalent of chlorine.

When sulphuretted hydrogen gas is transmitted through a vessel containing perchloride of phosphorus, muriatic acid is disengaged, and a liquid produced, which Serullas states to be a compound of 3 equivalents of chlorine, 1 of phosphorus, and 1 of sulphur. (*An. de Ch. et Ph.* xlii. 25.)

Chlorocarbonic acid Gas. — This compound was discovered in 1812, by Dr. John Davy, who described it, in the *Philosophical Transactions* for that year, under the name of *Phosgene Gas.* (From φως, light, and γεννειν, to produce.) It is made by exposing a mixture of equal measures of dry chlorine and carbonic oxide gases to sunshine, when rapid but silent combination ensues, and they contract to one half their volume. Diffused day-light also effects their union slowly; but they do not combine at all when the mixture is wholly excluded from light.

Chlorocarbonic acid Gas is colourless, has a strong odour, and reddens dry litmus paper. It combines with four times its volume of ammoniacal gas, forming a white solid salt; so that it possesses the characteristic property of acids. It is decomposed by contact with water. One equivalent of each compound undergoes decomposition; and as the hydrogen of the water unites with chlorine, and its oxygen with carbonic oxide, the products are carbonic and muriatic acids. When tin is heated in chlorocarbonic acid gas, chloride of tin is generated, and carbonic oxide gas set free, which occupies exactly the same space as the chlorocarbonic acid which was employed. A similar change occurs when it is heated in contact with antimony, zinc, or arsenic.

As chlorocarbonic acid gas contains its own volume of each of its constituents, it follows that 100 cubic inches of that gas, at the standard temperature and pressure, must weigh 106·749 grains; namely, 76·599 of chlorine added to 30·15 of carbonic oxide. Its specific gravity is therefore 3·4421; and it consists of 35·45 parts or 1 equivalent of chlorine, and 14 parts or 1 equivalent of carbonic oxide.

Chloral. — This name, derived from the first

syllable of the words *Chlorine* and *Alkohol*, has been applied by Liebig to a new compound of chlorine, carbon, and oxygen, prepared by the mutual action of alkohol and chlorine. The production of the new substance more immediately depends on the union of one portion of chlorine with the hydrogen both of the olefiant gas and some of the water which constitute alkohol, while the corresponding carbon and oxygen unite with another portion of chlorine. A very large quantity of chlorine is therefore required for its production, and a large quantity of muriatic acid is generated. When chlorine is transmitted through common alkohol, the chloral at first formed is retained in solution by the water of the alkohol; but when the liquid becomes charged with muriatic acid, the chloral insoluble in that solution subsides as a liquid of an oily aspect. The method recommended by Liebig is to transmit dry chlorine gas into absolute alkohol. At first the alkohol should be artificially cooled, since otherwise the action is attended with flame; but as soon as muriatic acid begins to accumulate, it is necessary to expel it by a continued gentle heat, since its presence protects the alkohol from decomposition, and thereby prevents the absorption of the chlorine. By acting in this manner for several successive days, Liebig succeeded in decomposing eight ounces of absolute alkohol, and obtained a liquid of syrupy consistence, which after a few days became a soft white crystalline solid. In this state the chloral is united with water as a hydrate of unknown composition, and also contains traces of undecomposed alkohol and muriatic acid. On agitation with strong sulphuric acid it is rendered anhydrous, and rises as a liquid to the surface; and by distillation from unslacked lime or baryta, muriatic acid is entirely separated.

Pure chloral is a colourless transparent liquid, of a penetrating pungent odour; is oily to the touch, and has a density of 1·502. It is nearly tasteless, or at most oily. It boils at 201° F., and may be distilled without change. In water, with the aid of gentle heat, it is freely dissolved without decomposition. Agitated with a few drops of water, it forms a white crystalline mass, which appears to be a hydrate, though its composition is unknown; for when put into water, the chloral appears oily as usual, and by heat a solution having the characteristic odour and character of chloral is obtained. On keeping this crystalline hydrate for a few days, it becomes a very white flocculent matter, which is quite insoluble in water. From the ratio of its ingredients Liebig regards it also as a hydrate, formed of two equivalents, one of water to one of chloral.

Chloral unites with iodine, bromine, and sulphur. It may be distilled from the anhydrous metallic oxides without change; but when its vapour is transmitted over anhydrous baryta, strontia, or lime heated to 212° F., instant decomposition ensues, and the earth becomes incandescent. Carbonic oxide gas escapes at the same time, and a metallic chloride, intermixed with a light charcoal, is generated. Similar products are obtained; but of course more charcoal, when the vapour of chloral is transmitted over iron or copper at a red heat. Chloral is readily decomposed by the alkalies or alkaline earths, in the state of hydrates, or when dissolved in water. During this action the new chloride of carbon, already described, is deposited; and the solution is found to contain muriatic and formic acids; united, of course, with the alkali. To understand the source of these three products, a knowledge of the composition of chloral is necessary. By transmitting its vapour over ignited oxide of copper, Liebig converted it into chloride of copper and carbonic acid; and from the quantities thus obtained, he considers chloral to consist of 9 equivalents of carbon, 6 of chlorine, and four of oxygen. By the action of an alkali, 4 equivalents of carbon take 3 of chlorine, and constitute chloride of carbon; the remaining one equivalent of chlorine, with one equivalent of hydrogen from decomposed water, forms muriatic acid; and the 4 equivalents of oxygen from the chloral with one from decomposed water unite with 5 equivalents of carbon, giving rise to 5 equivalents of carbonic oxide, which, with $2\frac{1}{2}$ equivalents of water, yield $2\frac{1}{2}$ equivalents of formic acid. (*An. de Ch. et Ph.* xlix. 146.)

Chloride of Boron. — Sir H. Davy noticed, that recently prepared boron takes fire spontaneously in an atmosphere of chlorine, and emits a vivid light; but he did not examine the product. Berzelius remarked, that if the boron has been previously heated, whereby it is rendered more compact, the combustion does not take place till heat is applied. This observation led him to expose boron, thus rendered dense, in a glass tube, to a current of dry chlorine; and to heat it gently, as soon as the atmospheric air was completely expelled, in order to commence the combustion. The resulting compound proved to be a colourless gas; and on collecting it over mercury, which absorbed free chlorine, he procured the chloride of boron in a state of purity. This gas is rapidly absorbed by water; but double decomposition takes place at the same instant, giving rise to the production of muriatic and boracic acids. The watery vapour of the atmosphere occasions a similar change, so that when the gas is mixed with air containing hygrometric moisture, a dense white cloud is produced. The specific gravity of the gas, according to Dumas, is 3·942. It is soluble in alkohol, and communicates to it an etherial odour, apparently by the action of muriatic acid. It unites with ammoniacal gas, forming a fluid volatile substance, the nature of which is unknown. — (*Annals of Phil.* xxvi. 129.)

Dumas finds that chloride of boron may be generated by the action of dry chlorine on a mixture of charcoal and boracic acid, heated to redness in a porcelain tube. Despretz also appears to have invented a similar process. — (*Philos. Magazine and Annals*, i. 469.)

The composition of the chloride of boron may be inferred from its action on water. If the constitution of boracic acid, as estimated by Dr. Thomson, is correct, the chloride of boron should consist of 70·9 parts or two equivalents

of chlorine, and 8 parts or one equivalent of boron; for 1 equivalent of such a compound, with 2 of water, will yield 1 of boracic and 2 equivalents of muriatic acid.

Chloro-nitrous Gas. — When fused chloride of sodium, potassium, or calcium, in powder, is treated with as much strong nitric acid as is sufficient to wet it, mutual decomposition ensues, and a new gas, composed of chlorine and binoxide of nitrogen, is generated. Its discoverer, Mr. E. Davy, describes it as a gas of a pale reddish yellow colour, of an odour similar to that of chlorine, though less pungent, and possessed of bleaching properties. It fumes on exposure to the air, and is freely absorbed by water. It is decomposed by sulphur, phosphorus, mercury, and most metals, and by substances in general which have an affinity for chlorine. It consists, according to Mr. Davy, of equal volumes of chlorine and binoxide of nitrogen, united without any condensation.

In the mutual decomposition of chloride of sodium and nitric acid, the products appear to be chloro-nitrous and chlorine gases, and nitrate of soda. Their formation must obviously depend on sodium being oxidised at the expense of nitric acid, while part of the chlorine unites, at the moment of separation from the sodium, with binoxide of nitrogen. (*Phil. Mag.* ix. 355.) Theoretically, it should be mixed with twice its volume of chlorine, the presence of which must materially obscure the properties of the new gas. — *Turner.*

CHLORI'ODATE. (*Chloriodas, atis.* f.) A compound of the chloriodic acid, with a salifiable base.

Chloriodic acid. See *Chlorine.*

Chlo'rium. See *Chlorine.*

Chlorocarbonic acid. See *Chlorine.*

Chlorocyanic acid. (*Acidum chlorocyanicum.*) An acid composed of hydrocyanic acid and chlorine.

CHLOROPHYLLE. (*Chlorophyllum*; from χλωρος, green, and φυλλον, a leaf.) The green matter of the leaves of plants. Supposed by Pelletier and Caventou to be a peculiar proximate principle.

Chloroprussic acid. See *Chlorocyanic acid.*

CHLORO'SIS. (*is, is.* f.; from χλωρος, green.) The green sickness. A disease which principally affects young unmarried females. It is characterised by languor, listlessness, fatigue on the least exercise, palpitations of the heart, pains in the back, loins, and hips, flatulency and acidities in the stomach and bowels, constipation, a preternatural appetite for chalk, lime, and various other absorbents, and other symptoms indicative of loss of tone in the digestive organs, and universal debility. As it advances in its progress, the face becomes pale, and assumes a peculiar greenish hue; the whole body is flaccid, and likewise pale; the feet are affected with œdematous swellings; the breathing is much hurried by any considerable exertion of the body; the pulse is quick, but small; and the patient is apt to be affected with many of the symptoms of hysteria. From the commencement of the disorder, the catamenia are usually pale and scanty, and at length disappear altogether. If the disease be inveterate, various organic affections of the viscera are induced, which bring the case to a fatal termination. On dissection of those who have died of chlorosis, various lesions of the abdominal viscera are frequently detected; but as no one of these seems to have a more particular relation to the symptoms than another, they must be considered merely as the effects or accompaniments of the general morbid state. From the researches of M. Andral, it would appear that chlorosis is attended with a degree of anæmia, or a diminished proportion of the crassamentum to the serum of the blood, a circumstance which sufficiently explains the characteristic change of complexion, and the pale colour of the catamenia. From the circumstance of the menses being deficient in chlorosis, it has been supposed that the symptoms all arise from some peculiar derangement of the generative system incident to females about the age of puberty; that this idea, however, is erroneous, is sufficiently proved by the facts, that great debility of the uterine system and total defect of menstruation are frequently observed in young females who present no symptoms of chlorosis; that chlorosis sometimes occurs in girls before the age of puberty, and in adult and married women, as a consequence of abortion, fever, and other debilitating causes; and, lastly, that the disease is not in reality peculiar to the female sex, but is occasionally met with in young men of a very weakly habit.

The cure of chlorosis is to be attempted by increasing the tone of the system, and exciting the action of the uterine vessels. The first may be effected by a generous diet, with the moderate use of wine; by gentle and daily exercise, particularly on horseback; by agreeable company, to amuse and quiet the mind; and by tonic medicines, especially the preparations of iron, joined with myrrh, &c. Griffith's chalybeate, which is a compound of these, is very generally used, and with great success. See *Mistura ferri composita*, and the *Pillulæ ferri compositæ*. Cold bathing will be found a powerful corroborant, if the temperature of the bath be made gradually lower, as the patient bears it; and sometimes drinking the mineral chalybeate waters may assist. The bowels must be kept regular, and occasionally a gentle emetic will prepare for the tonic plan. The other object of stimulating the uterine vessels may be attained by the exercises of walking and dancing; by frequent friction of the lower extremities; by the pediluvium, hip-bath, &c.; by electric shocks, passed through the region of the uterus; by active purgatives, especially those containing aloes, which act particularly on the rectum, and thence sympathetically on the uterus. These means may be resorted to with more probability of success, when there appear efforts of the system to produce the discharge, the general health having been previously improved. Various remedies have been dignified with the title of emmenagogues, though mostly little to be depended on, as madder, &c. In obstinate cases, the tinctura cantharidis, or savine, may be tried, but with proper caution, as the most likely to avail.

CHLO'ROUS. (*Chlorosus*, from *chlorium*.) Of or belonging to chlorine.

Chlorous acid. *Acidum chlorosum*. The name given by Berzelius to the *peroxide of chlorine*, which, from its being readily absorbed by water, from the strongly acrid taste of the solution, approaching to sour, and its giving a red tint to vegetable blues, is considered as approaching to an acid in its nature.

Chlorous oxide. Protoxide of chlorine. See *Chlorine*.

Cho'ana. (Χοανα, a funnel; from χεω, to pour out.) The part of the brain called *infundibulum*.

Cho'anus. A furnace made like a funnel, for melting metals.

CHOCOLATE. (Dr. Alston says this word is compounded of two Indian words, *choco*, sound, and *atte*, water; because of the noise made in its preparation.) An article of diet prepared from the cacao-nut. See *Theobroma cacao*.

Chocolate tree. See *Theobroma cacao*.

Chœ'nicis. (From χοινικις, the nave of a wheel.) The trepan: so called by Galen and P. Ægineta. Obsolete.

Chœras. p. *Chœrades*. (From χοιρος, a swine.) A Greek name of scrofula.

Chœrado'lethron. (From χοιρος, a swine, and ολεθρος, destruction: so named from its being poisonous to hogs.) Hogbane. A name in Aëtius for the *Xanthium*, or lousebur.

Choke-damp. (*Damp*, from the German *dampff*, a vapour or exhalation.) The name given by miners, in Cornwall and other mining regions, to all irrespirable gases or vapours.

Cho'lades. (From χολη, bile; or from κοιλος, hollow.) The smaller intestines were so called, because they contain bile, or because they are hollow.

Cholago. See *Cholas*.

CHO'LAGOGUE. (*Cholagogus*, *i*. m.; from χολη, bile, and αγω, to drive away.) Applied by the ancients to purgative medicines which brought away a great quantity of bile.

CHO'LAS. (From χολη, bile, or from κοιλος, hollow.) *Cholago*. 1. All the cavity of the hypochondria was so called by the Greeks.

2. The intestine. See *Cholades*.

CHO'LE. (Χολη. *Chole*, *es*. f.) The bile.

CHOLE'DOCHUS. (From χολη, bile, and δεχομαι, to receive.) Receiving or retaining the gall. That which receives the bile: applied to a duct.

Choledochus ductus. *Ductus communis choledochus*. The common biliary duct, which conveys both the cystic and hepatic bile into the duodenum.

Cholegon. See *Cholagogue*.

CHOLERA. (*a*, *æ*. f. According to Celsus, this word is derived from χολη, bile, and ρεω, to flow, thus signifying a flow of bile. According to Alexander of Tralles, it is derived from χολη, the intestine, and ρεω, to flow, signifying intestinal fluid. Others again derive it simply from χολη, bile— χολερα νοσος δια χολης. Vide Zonaræ Lexic. *in voce*. Donnegan derives it from χολερα, a gutter for carrying off the rain from the roof of a house: the conjecture is a very probable one, although most of the Greek lexicographers derive χολερα, a gutter, from χολη, bile.) *Felliflua passio*. *Cholera morbus*. This name is now applied to two diseases utterly dissimilar; to a common bilious disease long known in this and most other countries, and to a malignant disease of recent origin, which commenced in Hindustan, and has since diffused itself epidemically in various directions. It were much to be wished that some more appropriate designation should be agreed upon for the latter. To avoid confusion, we shall call the first common cholera, and the second malignant cholera.

1. *Common Cholera*. This consists in copious vomiting and purging of bilious matter, with violent griping, cramps of the muscles of the abdomen and lower extremities, and great depression of strength. Cullen makes two species of this genus: 1. *Cholera spontanea*, which happens, in hot seasons, without any manifest cause. 2. *Cholera accidentalis*, which occurs after the use of food that digests slowly, and irritates. In warm climates it is met with at all seasons of the year, and its occurrence is very frequent; but in England, and other cold climates, it is apt to be most prevalent in the middle of summer, particularly in the month of August; and the violence of the disease has usually been observed to be greater in proportion to the intenseness of the heat. The spontaneous species is produced by causes which influence the liver, so as to cause a superabundant secretion of bile, mostly of an acrimonious quality, such as suppressed perspiration in very hot weather, from cold or damp incautiously applied to the feet, and by taking cold drinks, especially when the body is considerably heated by exercise. This species is mostly epidemic at the close of summer, or the beginning of autumn. Sydenham says, as certainly as the appearance of swallows in the spring, or cuckoos about the dog-days. At this time the heat of the sun stimulates the liver to an inordinate secretion of bile, so that the alimentary canal becomes overloaded with it, the blood somewhat impregnated, while the liver itself is debilitated by undue action. The accidental species is generally caused by cold and indigestible fruits, as unripe apples and pears, cucumbers, melons, mushrooms; drastic purges, sudden fright, &c. It usually comes on with soreness, pain, distension, and flatulency in the stomach and intestines, succeeded quickly by a severe and frequent vomiting and purging of bilious matter, heat, thirst, a hurried respiration, and frequent but weak and fluttering pulse. When the disease is not violent, these symptoms, after continuing for a day or two, cease gradually, leaving the patient in a debilitated and exhausted state; but where the disease proceeds with much violence, there arises great depression of strength, with cold clammy sweats, considerable anxiety, a hurried and short respiration, and hiccoughs, with a sinking and irregularity of the pulse, which quickly terminate in death; an event that not unfrequently happens within the space of twenty-four hours.

On dissection the bowels are found loaded with bilious matter, and the ducts of the liver relaxed and distended. In the early period of the disease, when the strength is not much exhausted, the object is to lessen the irritation, and facilitate the discharge of the bile, by tepid demulcent liquids, frequently exhibited. It will likewise be useful to foment the abdomen, and to procure a determination to the surface by the pediluvium, or even the warm bath. But where the symptoms are urgent, and the patient appears rapidly sinking from the continued vomiting, violent pain, &c., it is necessary to give opium freely, but in a small bulk; from one to two grains should be given in the solid form, and repeated at intervals of an hour or two till relief be obtained. Sometimes where the stomach could not be got to retain the opium, it has answered in the form of clyster; or a liniment containing it may be rubbed into the abdomen; or a blister, applied over the stomach, may lessen the irritability of that organ. Afterwards the bile may be allowed to evacuate itself downwards; or mild aperients, or clysters given, if necessary, to promote its discharge. When the urgent symptoms are relieved, the strength must be restored by gentle tonics, as the aromatic bitters, calumba, and the like, with a light nutritious diet: strong toast and water is the best drink, or a little burnt brandy may be added if there is much languor. Exposure to cold must be carefully avoided, and the abdomen and feet in particular must be kept warm; and great attention is necessary to regulate the bowels, and procure a regular discharge of bile, lest a relapse should happen. It will also be proper to examine the state of the abdomen, whether pressure give pain at any part, because inflammation in the primæ viæ is very liable to supervene, often in an insidious manner: should that be the case, leeches, blistering the part, and other suitable means, must be promptly resorted to.

2. *Malignant Cholera. Asiatic Cholera. Blue Cholera. Pestilential Cholera. Spasmodic Cholera.* This disease, which is in many respects one of the most remarkable that has ever afflicted mankind, is decidedly of modern origin. Very severe and fatal visitation of epidemic cholera seem to have been known in the East Indies from time immemorial, but the earlier epidemies of this kind, although different from and much more intense than the ordinary bilious cholera, did not, as far as we can judge from the descriptions given of them, possess the peculiar characteristics of the disease now known under the name of malignant cholera. This pestilence is generally supposed to have originated at Jessore in the year 1817. There is reason to believe, however, that partial eruptions of the same malady had occurred before this period; and we have, in particular, one account, by Mr. Curtis, of a disease prevalent in Sir Edward Hughes's squadron in 1782, which was evidently in all respects identical with that which has since occasioned such devastation over the greater part of the globe: this was believed to have arisen from communication with an infected port in Ceylon. It is stated also by Mr. Barnes, who was medical superintendent at Jessore from the year 1810, that the disease had twice made its appearance at this place to a formidable extent previously to 1817; it would likewise appear, from the testimony of Dr. Christie, that it existed in the South of Bengal several months prior to its violent eruption at Jessore in the month of August of that year.

The epidemy, which commenced at Jessore, spread with frightful rapidity over Asia, sweeping away millions of human beings. In 1823 it appeared at Astracan; but did not at that time invade Russia any further. In 1828 it broke out at Orenburg; and raged with great violence in different parts of the Russian dominions in the spring of the ensuing year. In September, 1830, it reached Moscow. It now accompanied the Russian army into Poland. In the following year it diffused itself through various parts of Europe, and reached our own shores. The following account, taken from the papers published by the London Board of Health a short time before its appearance here, gives a good general idea of the malignant cholera as it presented itself in India:

The attack of the disease in extreme cases is so sudden, that, from a state of apparent good health, or with the feeling only of trifling ailment, an individual sustains as rapid a loss of bodily power as if he were suddenly struck down, or placed under the immediate effects of some poison; the countenance assuming a death-like appearance, the skin becoming cold, and giving to the hand (as expressed by some observers) the sensation of coldness and moisture which is perceived on touching a frog; by others represented as the coldness of the skin of a person already dead. The pulse is either feeble, intermitting, fluttering, or lost; a livid circle is observed round the eyelids; the eyes are sunk in their sockets; the tongue is cold, and either clean or covered with a slight white fur; and, in many instances, even the breath is cold. In cases of this severity, the vomiting and purging characteristic of the disease do not commonly take place so early as in milder attacks, but seem to be delayed until the almost overpowered functions of the body make a slight effort at reaction. It is worthy of remark, that, unless death takes place in these extreme cases within a few hours, some effort of the animal power is made to rally the constitution; and this point is insisted upon here, because it will direct the mind of practitioners to the particular moment when bleeding, and certain other parts of practice, recommended in the Indian reports, can be enforced in this country with probable success. Vomiting soon succeeds; first of some of the usual contents of the stomach, next of a turbid fluid, like whey, white of egg, water-gruel, or rice-water; described, perhaps, more accurately as a serous fluid, containing flocculi of coagulated albumen. The lower bowels seem to let go their contents; what happens to be lodged in the rectum is passed more or less in its natural state; the next discharges are similar to those thrown up from the stomach, and are passed with violence, as if squirted with a syringe.

The same similitude may be applied to the vomiting. Spasms, beginning at the toes and fingers, soon follow, and extend, by degrees, to the larger muscles of the legs and arms, and to those of the abdomen. These vary in intensity, but are sometimes so violent as to put on the appearance of tetanus.

In some severe cases the vomiting is slight, in others considerable; and the purging and vomiting precede each other without any known rule: but whichever may be the precursor, a severe burning heat is early felt at the præcordia; there is an invincible desire for cold liquids, particularly water; and, although the skin and tongue are cold to the touch, and the pulse nearly lost, or altogether imperceptible, the patient complains of intense heat, and has an almost insuperable aversion to any application of it to the skin. The spasms increase, sometimes spreading gradually, sometimes suddenly, to the abdomen, as high as the scrobiculus cordis. The next severe symptoms are, an intolerable sense of weight and constriction felt upon the chest, accompanied with anxious breathing, the spasms continuing at the same time; a leaden or bluish appearance of the countenance, the tongue, fingers, and toes, assuming the same colour; the palms of the hands and soles of the feet becoming shrivelled; the fingers and toes giving the appearance of having been corrugated by long immersion in hot water. There is, throughout, a suppression of the secretion of urine, of the secretions of the mouth and nose: no bile is seen in the evacuations; and it may be generally observed, that all the functions employed in carrying on life are suspended, or alarmingly weakened, except that of the brain, — which appears, in these extreme cases, to suffer little, the intellectual powers usually remaining perfect to the last moment of existence. At length a calm succeeds,—and death. The last period is commonly marked by a subsidence of the severe symptoms, without improvement of the pulse or return of natural heat; but, occasionally, it terminates in convulsive spasm. Within an hour or two from the commencement of such a seizure, and sometimes sooner, the pulse may be imperceptible at the wrist, or in the temporal arteries. If it be discoverable, it will usually be found beating from eighty to a hundred strokes in a minute; this, however, is not invariable, the pulse being not unfrequently quicker. The powers of the constitution often yield to such an attack at the end of four hours; and seldom sustain it longer than eight.

We have described the symptoms of the extreme case, in the usual order of their occurrence; but it will be obvious, that in a disease which proceeds so quickly to a fatal termination, medical practitioners will seldom see their patient until the greater number of these symptoms have taken place.

In the less rapid and more ordinary form, sickness at the stomach, slight vomiting, or perhaps two or three loose evacuations of the bowels, which do not attract much attention, mark the commencement of the attack; a sense of burning heat soon felt at the præcordia excites suspicion of the disease; an increased purging and vomiting of the peculiar liquid gives certain indication of its presence if this have not been previously declared by the prostration of strength, and an expression of the countenance not often exhibited, except when death is to be expected within a few hours. The symptoms before described follow each other in similar but slower succession: the spasms of the extremities increase with the vomiting and purging, and particularly in proportion to the constriction of the thorax; and this form of the disease, which creeps on at first insidiously, and is in its progress more slow, by giving a greater opportunity for assistance, is, if treated early, more tractable; but if neglected, equally fatal with the more sudden seizures. Such cases last from twelve to thirty-six hours.

The principal difference consists in the diffusion of the symptoms through a greater space of time; a misfortune, it is true, to the patient, if the disease prove ultimately fatal, but advantageous, by affording an interval for the natural powers of the constitution to rally themselves, and for the employment of the resources of medical art. But there is another remarkable distinction well worthy of attention. It has been observed before, that in the more rapid cases, the intellectual faculties suffer but little; and it may be added here, that the disturbance of them is not delirium, but rather a confusion and hesitation of mind resembling slight intoxication. In those of longer duration, if the individuals, either by the natural vigour of their constitution or medical assistance, sustain the shock beyond the period of twenty-four hours, suffusion of the *tunica conjunctiva* often takes place, not unfrequently delirium, and even coma.

It is remarked, that those who survive seventy-two hours, generally recover — but there are exceptions to this: for although, according to the Reports of the Medical Practitioners in the Presidencies of Bombay and Madras, the recovery from this seizure commonly terminates the disease; or, as is stated in the latter, the sequelæ are those dependent upon some previous ailment of the individual: yet the Bengal Report details a series of subsequent symptoms resembling those of low nervous fever, which, when they proved fatal, usually terminated within eleven days from the commencement of the seizure called Cholera. To complete the outline, an account of these symptoms, extracted from the Bengal Report, will be presently given; and we may observe, that they correspond accurately with the description given by Dr. Keir of the second stage of the disease, as it appeared at Moscow from the beginning of the month of October to the earlier part of the month of March. But we will previously point out the manner in which the recovery from this seizure commonly takes place. The first symptoms are, the abatement of the spasms and difficulty of breathing, a return of heat to the surface of the body, and a restoration of the pulse; these, however, are equivocal, from being often only temporary; and the prognostic from them is very uncertain unless they follow a progressive march of amendment: sleep and warm

perspiration attending it are of more importance and more certain signs of recovery. The return of the secretion and evacuation of urine is reckoned one of the most favourable signs: the next is, the passage of bile by the bowels; and if this be freely established, and accompanied with an improvement of the pulse and of the temperature of the skin, the patient is soon placed in a state of security from the attack: but it will appear, from the following extract from the Bengal Report, that upon this recovery he has often a serious stage of disease to encounter; the description of which is given in the words of the author. Before, however, we proceed to this, we must remark, that the seizure, when not fatal, has three modes of termination; one in immediate convalescence, accompanied only with great weakness; — a second, in which large evacuations of vitiated bile are passed for several days, sometimes attended with blood, and with peculiar pains in the bowels, particularly in the rectum. The third is of a febrile nature, of which the following account is supplied from the information given in the Bengal Report, viz.: —

"The fever, which almost invariably attended this second stage of the disease, * * * partook much of the nature of the common bilious attacks of these latitudes. There was a hot, dry skin, a foul, deeply-furred tongue, parched mouth, thirst, sick stomach, restlessness, watchfulness, and quick variable pulse, sometimes with delirium and stupor, and other marked affections of the brain. Generally, when the disorder proved fatal in this stage, the tongue, from being cream-coloured, became brown, and sometimes black, hard, and more deeply furred; the teeth and lips were covered with sordes, the state of the skin varied, chills alternating with heats, the pulse became extremely quick, weak, and tremulous, hiccough, catching of the breath, great restlessness and deep moaning succeeded, and the patient soon sunk incoherent and insensible under the debilitating effects of low nervous fever, and frequent dark, tarry alvine discharges." It is to be observed, that the able author of the Bengal Report doubts whether these symptoms can be considered as 'forming any integrant or necessary part of the disorder itself,' or whether they belonged to the bilious seizures of the climate. Subsequent experience of the disease has removed this doubt by showing that the febrile stage of cholera has been much more frequent in other climates than in India.

The third report of Drs. Russell and Barry to the Board of Health, describing the disease in Petersburg, may be compared with the above account as illustrative of the modifications which the disease has undergone in its progress westward: —

"The cholera morbus of the north of Europe, to which the Russian peasants have given the name of 'chornaia bolezn,' or *black illness*, like most other diseases, is accompanied by a set of symptoms which may be termed preliminary; by another set which strongly mark the disease in its first, cold, or collapsed stage; and by a third set, which characterise the second stage, that of reaction, heat, and, fever.

"*Preliminary Symptoms.* — We have had but few opportunities of witnessing the presence of all these symptoms, some of which precede the complete seizure by so short an interval, that the utmost diligence is scarcely sufficient to bring the patient and the physician together, after their occurrence, before the disease is fully formed. Diarrhœa, at first feculent, with slight cramps in the legs, nausea, pain or heat about the pit of the stomach, *malaise*, give the longest warning. Indeed, purging, or ordinary diarrhœa, has been frequently known to continue for one, two, or more days, unaccompanied by any other remarkable symptom, until the patient is suddenly struck blue, and nearly lifeless. Often the symptoms just mentioned are arrested by timely judicious treatment, and the disease completely averted. When violent vertigo, sick stomach, nervous agitation, intermittent, slow, or small pulse, cramps beginning at the tips of the fingers and toes, and rapidly approaching the trunk, give the first warning, then there is scarcely an interval.

"*First Stage.* — Vomiting or purging, or both these evacuations, of a liquid like rice-water, or whey, or barley-water, come on; the features become sharp and contracted; the eye sinks; the look is expressive of terror, wildness, and, as it were, a consciousness on the part of the sufferer, that the hand of death is upon him. The lips, the face, the neck, the hands, feet, and even the thighs, arms, and whole surface assume a leaden, blue, purple, black, or deep brown tint, according to the complexion of the individual, varying in shade with the intensity of the attack. The fingers and toes are reduced at least a third in thickness; the skin and soft parts covering them are wrinkled, shrivelled, and folded; the nails put on a bluish pearl white. The larger superficial veins are marked by flat lines of a deeper black; the pulse is either small as a thread, and scarcely vibrating, or else totally extinct. The skin is deadly cold, and often damp; the tongue *always moist*, often white and loaded, but flabby and chilled like a bit of dead flesh. The voice is gone; the respiration quick, irregular, and imperfectly performed. Inspiration appears to be effected by an immense effort of the chest, whilst the *alæ nasi* (in the most hopeless cases and towards the close), instead of expanding, collapse, and stop the ingress of the air. Expiration is quick and convulsive. The patient asks only for water, speaks in a plaintive whisper (the 'vox cholerica,') and only by a word at a time, from not being able to retain air enough in his lungs for a sentence. He tosses incessantly from side to side, and complains of intolerable weight and anguish around his heart. He struggles for breath; and often lays his hand on his stomach and chest, to point out the seat of his agony. The integuments of the belly are sometimes raised into high irregular folds, whilst the belly itself is violently drawn in, the diaphragm upwards, and inwards towards the chest. Sometimes there are tetanic spasms of the legs, thighs, and loins; but we have not seen general tetanus, nor even trismus. There is occasionally a low suffering whine. The secretion of urine

is *always* totally suspended; nor have we observed tears shed under these circumstances. Vomiting and purging, which are far from being the most important or dangerous symptoms, and which in a very great number of cases of the present epidemic have not been profuse, generally cease, or are arrested by medicine early in the attack. Frictions remove the blue colour for a time from the part rubbed, but in other parts, particularly the face, the livor becomes every moment more intense and more general. The lips and cheeks sometimes puff out and flap in expiration, with white froth between them, as in apoplexy. If blood be obtained in this state, it is black, flows by drops, is thick, and feels to the finger colder than natural. Towards the close of this scene the respiration becomes very slow; there is a quivering among the tendons of the wrist. The mind remains entire. The patient is first unable to swallow, then becomes insensible; there never is, however, any rattle in the throat, and he dies quietly, after a long convulsive sob or two.

"The above is a faint description of the very worst kind of case dying in the cold stage, in from six to twenty-four hours after the setting in of the bad symptoms. We have seen many such cases just carried to the hospital from their homes or their barracks. In by far the greater number vomiting had ceased; in some, however, it was still going, and invariably of the true, serous kind. Many confessed that they had concealed a diarrhœa for a day or two. Others had been suddenly seized, generally very early in the morning.

"From the aggravated state which we have just described, but very few indeed recover; particularly if that state have been present even *for four hours* before treatment has commenced. A thread of pulse, however small, is almost always felt at the wrist, where recovery from the blue or cold stage is to be expected. Singular enough to say, hiccup, coming on in the intermediate moments between the threatening of death and the beginning of reaction, is a favourable sign; and generally announces the return of the circulation.

"In less severe cases, the pulse is not wholly extinguished, though much reduced in volume; the respiration is less embarrassed; the oppression and anguish at the chest are not so overwhelming, although the vomiting, the purging, and the cramps, may have been more intense. The coldness and change of colour of the surface; the peculiar alteration of the voice; a greater or less degree of coldness of the tongue; the character of the liquids evacuated, have been invariably well marked in all the degrees of violence of attack which we have hitherto witnessed, in this epidemic. In no case or stage of this disease have we observed shivering, nor have we heard, after inquiry, of more than one case in which this febrile symptom took place.

"*Fever, or Hot Stage.* — After the blue, cold period has lasted from twelve to twenty-four, seldom to forty-eight hours or upwards, the pulse and external heat begin gradually to return; headache is complained of, with noise in the ears; the tongue becomes more loaded, redder at the top and edges, and also dryer. High coloured urine is passed with pain, and in small quantities; the pupil is often dilated; soreness is felt on pressure over the liver, stomach, and belly; bleeding by the lancet or leeches is required; ice to the head gives great relief. In short, the patient is now labouring under a continued fever, not to be distinguished from ordinary fever. A profuse, critical perspiration may come on, from the second or third day, and leave the sufferer convalescent, but much more frequently the quickness of pulse and heat of skin continue; the tongue becomes brown and parched; the eyes are suffused and drowsy; there is a dull flush, with stupor and heaviness, about the countenance much resembling typhus; dark sordes collect about the lips and teeth; sometimes the patient is pale, squalid, and low, with the pulse and heat below natural: but with the typhous stupor delirium supervenes; and death takes place from the fourth to the eighth day, or even later, in the very individual, too, whom the most assiduous attention had barely saved in the first or cold stage. To give a notion of the importance and danger of the cholera fever, a most intelligent physician, Dr. Reimer, of the Merchants' Hospital, informs us, that of twenty cases treated under his own eye, who fell victims to the disease, seven died in the cold stage, and thirteen in the consecutive fever.

"This singular malady is only cognizable, *with certainty*, during its blue, or cold period. After reaction has been established, it cannot be distinguished from an ordinary continued fever, except by the shortness and fatality of its course. The greenish, or dark, and highly bilious discharges produced, in the hot stage, by calomel, are not sufficiently diagnostic; and it is curious, that the persons employed about these typhoid cases, when they are attacked, are never seized with ordinary fever, but with the genuine, cold, blue, cholera. Nothing therefore, is more certain, than that persons may come to the coast of England, apparently labouring under common, feverish indisposition, who really and truly are cases of cholera in the second stage.

The points of difference between the present epidemic and the cholera of India, when the two diseases are closely compared, appear to us to be the following: —

"1st. The evacuations, both upwards and downwards, seem to have been much more profuse and ungovernable in the Indian, than in the present cholera; though the characters of the evacuations are precisely the same.

"2dly. Restoration to health, from the cold stage, without passing through consecutive fever of any kind, was by far more frequent in India than here; nor did the consecutive fever there assume the typhoid, type.

"3dly. The proportion of deaths in the cold stage, compared with those in the hot, was far greater in India, according to Dr. Russell's experience, than here.

"4thly. The number of medical men and hospital attendants attacked with cholera, during the present epidemic, in proportion to the whole employed and to the other classes of society, has

been, beyond all comparison, greater here than in India under similar circumstances. Twenty-five medical men have been already seized; and nine have died out of 264. Four others have died at Cronstadt, out of a very small number residing in that fortress at the time the disease broke out there. Six attendants have been taken ill at a small temporary hospital, behind the Aboucoff, since we wrote last. It is certain, however, that in some cholera hospitals, favourably circumstanced as to site, ventilation, and space, very few of the attendants have suffered."

The phenomena of the disease as since witnessed in other European countries, have not varied in a degree sufficient to render the above inapplicable as a general description. The appearances, observed on dissection by practitioners in the East Indies, varied much in different individuals, and apparently according to the duration of the disease. In those who died within eight or ten hours, the stomach was generally found in a relaxed, dilated state, loaded with the same fluids as had been thrown up during life: sometimes containing food, which had been swallowed and not returned, although the vomiting had been excessive. The internal and peritoneal coats of the stomach were, in these instances, pale and bloodless; the small and great intestines bore the same appearance; the arch of the colon, when the spasms had reached the abdomen before death, was generally so much contracted as to be less in diameter than the duodenum. The same was occasionally observed with respect to the sigmoid flexure. No appearance of bile or feces was found in the intestines. The bladder was generally empty and contracted. The liver, and vessels which pass to the vena cava inferior, were turgid with blood; this turgescence extended to the vena cava superior, to the right side of the heart, and in some instances to the left ventricle: blood was in the same manner stagnant in the lungs, marking a congestion in the whole venous circulation of the larger vessels: the blood in the vessels was unusually *black*, resembling tar in colour and consistence. It is worthy of remark, that this local accumulation of blood was uniformly found in all fatal cases, whether they were of rapid or slower termination; and was particularly evident, as might be expected, in those in which the oppression of the breathing had prevailed with most violence. The gall-bladder was turgid with bile; the gall-duct commonly pervious, but bearing no marks of bile having recently passed.

In cases of longer duration, the same leading appearances were observed; but often with great addition. The vessels of the stomach, in these instances, were found loaded with blood, presenting a surface sometimes of a pale pink hue, sometimes of a deep blue, at others of so dark a tint as to resemble sphacelus of the membrane, from which it could only be distinguished by the firmness of texture, and the appearance of vascular congestion on holding up the stomach between the eye and the light: in other instances the arteries of the stomach presented the appearance of having been penetrated by a vermilion injection; the same was observed in the smaller intestines, very rarely in the larger. In those cases in which coma had existed, serum was found effused, sometimes between the membranes of the brain, sometimes into the ventricles, and in some there was merely congestion of the blood in the vessels. Those who died of the consecutive fever showed no appearances after death different from such as are usually observed in other cases of febrile disease, attended with corresponding symptoms.

Subsequent observations in other parts of the world have not added anything of the least importance to the morbid anatomy of cholera.

The attention of chemists has been directed to the changes which take place in the blood in this disease, and to the nature of the peculiar matter discharged from the stomach and intestines. Nothing very satisfactory, however, appears to have resulted from these investigations. According to Dr. Thomson the blood becomes entirely insusceptible of the ordinary influence of the air; but Dr. O'Shaugnessy found, that when agitated with air it became florid and gave out carbonic acid gas. Dr. Stevens ascribes the state of the blood to deficiency of saline matter; and, on this view, has founded a peculiar mode of treatment. The white fluid which is discharged from the bowels, consists of a large quantity of serum, some fibrin, and the salts of the blood; its composition, therefore, is similar to that of the blood deprived of its colouring matter, and with a larger proportion of serum.

It is scarcely necessary to do more than mention the principal opinions that have been held with respect to the pathology of malignant cholera. Kennedy and Orton suppose, that the morbid cause operates on the nervous system generally; Bell that it operates on the ganglionic system exclusively. Roche and other French writers attribute the disease to inflammation or congestion in the gastro-enteric mucous membrane; and Christie, to inflammation of the mucous surfaces throughout the body. Caspar believes, that a loss of elasticity in the skin is the essential part of the disorder. Dr. Stevens maintains, that the symptoms arise from a deficiency of saline matter in the blood. Those opinions which refer the symptoms of malignant cholera to inflammation or other disease of the mucous membranes, are by no means countenanced by morbid anatomy, which has generally failed to detect any such condition. Dr. Stevens's theory is at first sight plausible, but the experiments of Dr. Christie go to prove that at the commencement of cholera there is no alteration in the blood; and again, the remarkable suddenness with which cholera makes its attack, and the equal suddenness with which the patient sometimes recovers from it, appear highly unfavourable to the notion, that the disease depends on disordered processes of animal chemistry, which can hardly be conceived to be instantaneously effected. If indeed the disease were always ushered in by profuse diarrhœa, it might be reasonably maintained that the salts of the blood being thus purged away along with the serum, a deficiency of saline matter was

produced, but since, in the very worst and most concentrated cases, there is often no diarrhœa at all, the abolition of the salts remains in these cases unaccounted for. Of the opinions offered, that which supposes the nervous system to be in some way primarily affected, has greatly the advantage over the others, inasmuch as it does not come into violent collision with any known facts; it derives support moreover from the striking analogy between pestilential cholera and some of the congestive forms of fever, — which latter disease, notwithstanding the occasional prevalence of hypotheses referring it to local inflammation, has always been regarded by the greater number of pathologists as essentially a disease of the nervous centres. On the whole it is best to acknowledge, that all hitherto advanced as to the proximate cause of cholera is mere conjecture, and that we are in a state of entire ignorance on the subject.

An important question with respect to the disease under consideration is, whether it be contagious or not? It is not deemed necessary to enter upon this question here. Notwithstanding the pertinacity and even acrimony with which the champions of conflicting opinions have maintained the dispute, we conceive that there are hitherto not sufficient data for a philosophical conclusion, at the same time it is but justice to the contagionists to say, that, after the recent experience we have had of the disease in our own country, their doctrine appears to be gaining ground. The analogy between cholera and malignant fever is also favourable to the opinion that the former is contagious.

Such being the obscurity which hangs over the causes and the pathology of this affection, it is not to be expected that there should be much accordance among practitioners as to its treatment, or much success from the use of remedies. The following are the means which have been principally employed: —

1. *Blood-letting.* — This seems to have been more successful than any other remedy in the cholera of the East Indies; and was generally supposed to operate mechanically by unloading the large veins, and thus freeing the circulation. It was found, that where a large quantity of blood could be obtained great benefit resulted, but that where only a few ounces were withdrawn, the debility was increased without alleviation of the symptoms. The general result of experience in Europe has been adverse to blood-letting. In few instances has any striking benefit resulted from it. During the symptoms which precede the stage of collapse, while the pulse yet retains some force, moderate blood-letting has seldom done harm, and has often succeeded in arresting the diarrhœa; in the stage of collapse, the abstraction of blood, where any could be obtained, has almost invariably appeared to hasten the death of the patient.

2. *Emetics.* — These have been found to have a very marked effect in rousing the system from the state of collapse, and restoring the circulation. Unfortunately such beneficial results are often merely temporary, and the patient again sinks; still they have been permanent in a sufficient number of cases to warrant us in considering emetics as among the most valuable remedial means used in the treatment of cholera. The choice of the emetic does not seem to be of much importance, provided it be one which excites immediate and full vomiting. The mustard emetic has been much extolled, and perhaps with reason; although the sulphate of zinc or copper, from their vehement emetic action and astringent qualities appear *à priori* to deserve the preference. Antimony is decidedly objectionable. In mild cases, where the vomiting is frequent and violent, it has been found a very useful practice to keep up this action of the stomach by copious draughts of cold water; for under this simple treatment the patient frequently recovers.

3. *Stimulants.* — The various forms of alkohol, the essential oils, especially those of turpentine and cajeput, volatile alkali, mustard, and other medicines of this class, have been used with unequivocal advantage in many cases. It is necessary, however, to set proper limits to the use of alkohol in the stage of collapse, lest its effects be injuriously felt in the succeeding stage of febrile reaction.

4. *Purgatives.* — These have sometimes been found useful in the early stage; but those of the saline class, or those of an irritating kind, are by no means admissible; a full dose of calomel, from its ordinary effect on the secretions, and rhubarb, on account of its astringent and tonic qualities, appear to be the most eligible. We have said, that irritating purgatives are not admissible, yet, if we are to believe some accounts, croton oil, one of the most violent of this class of medicines, has been used in cholera with great benefit; an anomaly which we pretend not to explain.

5. *Calomel.* — This powerful agent has been given, with a view to its specific effect on the system, in large and in small doses. It has sometimes produced a good effect, but more generally produces no effect of any kind; patients also have been known to die in the collapsed state of cholera while their mouths were actually sore with mercury.

6. *Opium.* — This is very useful in the early stage, but is to be avoided in that of collapse, as tending to increase cerebral congestion. It should be given in full doses, and is best combined with calomel.

7. *Saline medicines.* — These were introduced by Dr. Stevens, in consequence of his peculiar views as to the cause of the disease. The solutions of muriate and carbonate of soda, recommended by that gentleman to be given by the mouth, have altogether failed to realise the expectations at first excited with respect to them; and, in the majority of cases, are found to produce no effect of one kind or another. The injection of saline fluids into the veins, has, however, been productive of much more striking results. In some cases the system has been thus roused from a state of collapse, as if by magic; and the good effect has in several instances been permanent, while in others it has been only temporary. It must be admitted also, that, in some instances, the saline injection has

accelerated the fatal termination, instead of ameliorating the symptoms; and that in others, even where it has rescued the patient from cholera, it has been itself the efficient cause of death, by producing effusion into the ventricles of the brain. It may be reasonably doubted, whether the benefit observed from the use of the saline injection be in reality attributable to its chemical action on the blood; it seems quite as probable that it may act simply as a stimulus applied to the internal membrane of the heart and blood-vessels, rousing them to their wonted action and diluting their inspissated contents. This however is all matter of mere conjecture.

8. *External remedies.* — These are not among the least important of the means used for the cure of cholera. A bath of hot water or heated air, friction on the surface of the body, with stimulating substances, and the application of hot oil of turpentine to the abdomen, have been found powerful auxiliaries.

9. The *Tobacco clyster* has been strongly recommended, on what principle we do not understand; but everything alleged on respectable authority to be useful, should be tried, where it is acknowledged that the means of which we have been hitherto in possession, are altogether inadequate.

Such are some of the principal remedies which have been employed for the cure of cholera, and many more might be added were this at all profitable. It is evident, that of those above alluded to, some are better adapted to one case and some to another; and that, consequently, the treatment most advisable in any individual case must be determined by the judgment of the practitioner. Much need not to be said on the treatment of the fever which is consecutive on the cold stage of cholera. It is a typhoid fever, accompanied with inflammatory affections of the brain, bowels, or lungs. The inflammatory action is usually of the insidious kind which accompanies low fever; and the general character of the affection is that of feeble and irregular arterial action, and venous congestion. In a few cases, however, more decided reaction takes place, and the resulting affection does not differ, in any essential particular, from ordinary continued fever, although there is invariably something in its general physiognomy which marks it as being *sui generis*. In the treatment of these consecutive febrile affections, there is nothing materially different from that of ordinary fevers of a similar character. There is one remark, however, which may be made with respect to the *prognosis* of the choleric fever, namely, that very often when the patient appears to be doing extremely well, he dies from some cause which nobody can understand.

Cholera morbus. See *Cholera.*

Cholera sicca. Flatulent colic. See *Colica.*

CHOLE'RICUS. 1. Appertaining to cholera; as *febris cholerica*, a fever accompanied with symptoms of cholera, or the fever which succeeds to cholera.

2. Bilious; as the choleric or bilious temperament. See *Temperament.*

Cholesteric acid. *Acidum cholestericum.* When cholesterine, or the fat matter of human biliary calculi is treated with nitric acid, a peculiar acid is formed, which is called the cholesteric. It is in crystals of a yellowish white colour; little soluble in water, but abundantly so in boiling alkohol.

CHOLESTERINE. (*Cholesterina, æ.* f.; from χολη, bile, and στερεος, solid.) A pearly substance, found abundantly in human biliary calculi. It consists of 72 carbon, 6·66 oxygen, and 21·33 hydrogen. See *Calculus biliary.*

CHOLOLI'THUS. (*us, i.* m.; from χολη, bile, and λιθος, a stone.) A gall-stone. See *Calculus.*

Cholo'ma. (From χωλος, lame, or maimed.) Any kind of lameness or distortion of a limb.— *Galen.*

CHONDRI'LLA. (*a, æ.* f.; from χονδρον, a grain of any corn: and so called because it emits small particles of gum which resemble grains.) A genus of plants. Class, *Syngenesia;* Order, *Polygamia æqualis.*

Chondroglo'ssus. (From χονδρον, a cartilage, and γλωσση, the tongue.) A muscle so named from its insertion, which is in the basis or cartilaginous part of the tongue. See *Hyoglossus.*

CHONDRO'LOGY. (*Chondrologia. æ.* f.; from χονδρος, a cartilage, and λογος, a discourse.) A discourse on cartilages.

CHONDRO-PHARYNGÆUS. (From χονδρος, a cartilage, and φαρυγξ, the upper part of the fauces.) A muscle so named because it rises in the cartilaginous part of the tongue, and is inserted in the pharynx.

CHO'NDROS. (Χονδρος. *us, i.* m.)

1. A cartilage.
2. A food of the ancients. See *Alica.*
3. A grumous concretion.

CHONDROSYNDE'SMUS. (*us, i.* m.; from χονδρος, a cartilage, and συνδεω, to tie together.) The union of bones by fibro-cartilage. — *Galen.*

Cho'ne. Χωνη. See *Choana.*

Cho'ra. Χωρα. A region. Galen uses this word particularly to signify the cavities of the eyes; but also applies it to any void space.

CHO'RDA. (*a, æ.* f.: from χορδη, which properly signifies an intestine, or gut, and hence also the string of a musical instrument.) 1. A cord, or assemblage of fibres.

2. The tendon of a muscle.

3. A painful erection of the penis in gonorrhœa. See *Chordee.*

Chorda magna. See *Tendo Achillis.*

Chordæ tendineæ. The tendons which connect the *carneæ columnæ* of the ventricles of the heart to the auricular valves.

Chorda tympani. A branch of the seventh pair of nerves. See *Auris.*

Chorda willisii. The small fibres which cross the sinuses of the dura mater. They are so termed, because Willis first described them.

Chordæ. The genitals. — *Paracelsus.*

CHORDA'PSUS. (From χορδη, a cord, and απτω, to knit.) A painful colic, where the intestines appear to be twisted into knots. See *Ileus.*

CHORDEE'. (*Chordé.* French.) A spasmodic erection of the penis, which is a common accompaniment of gonorrhœa. See *Furethritis.*

CHORE'A. (*a, æ. f. Χορεια, from χορος*, a dance.) *Chorea Sancti Viti. Convulsio habitualis.* St. Vitus's dance. Convulsive motions of the limbs occasioning strange and involuntary gesticulations. During the middle ages some extraordinary epidemic diseases occurred in Germany and the Netherlands, consisting in maniacal dancing and raving. The accounts of these are mixed up with the superstitions of the times, and with wonderful stories invented by the priests to serve their own ends. It is related, that in the year 1027 some peasants disturbed the service of the convent church at Kölbig, by dancing and making a noise in the church-yard, whereupon they were cursed by a priest, and doomed to dance and scream for a year without ceasing; which, accordingly, they did. In 1237 upwards of a hundred children were seized with the dancing mania at Erfurt; and in 1278 two hundred fanatics danced upon the bridge at Utrecht till the bridge gave way, and they were all drowned. But the grand eruption of the dancing plague occurred in 1374. In this year "assemblages of men and women were seen at Aix-la-Chapelle who had come out of Germany, and who, united by one common delusion, exhibited to the public both in the streets and in the churches the following strange spectacle: — They formed circles hand in hand, and appearing to have lost all control over their senses, continued dancing, regardless of the bystanders, for hours together, in wild delirium, until at length they fell to the ground in a state of exhaustion. They then complained of extreme oppression, and groaned as if in the agonies of death, until they were swathed in cloths bound tightly round their waists, on which they again recovered, and remained free from complaint until the next attack. This practice of swathing was resorted to on account of the tympany which followed these spasmodic ravings; but patients were frequently relieved in a less artificial manner, by thumping and trampling upon the parts affected. While dancing they neither saw nor heard, being insensible to external impressions through the senses, but were haunted by visions, their fancies conjuring up spirits whose names they shrieked out; and some of them afterwards asserted that they felt as if they had been immersed in a stream of blood, which obliged them to leap so high. Others, during the paroxysm saw the heavens open and the Saviour enthroned with the Virgin Mary, as indeed the religious notions of the age were strangely and variously reflected in their imaginations.

"Where the disease was completely developed, the attack commenced with epileptic convulsions. Those affected fell to the ground senseless, panting and labouring for breath. They foamed at the mouth, and suddenly springing up began their dance amidst strange contortions. Yet the malady doubtless made its appearance very variously, and was modified by temporary, or local circumstances, whereof nonmedical contemporaries but imperfectly noted the essential particulars, accustomed as they were to confound their observation of natural events with their notions of the world of spirits.

"It was but a few months ere this demoniacal disease had spread over the neighbouring Netherlands from Aix-la-Chapelle, where it appeared in July."—(*Hecker on the Epidemics of the Middle Ages. Babington's Translation.*) These singular affections were called *St. John's dance* and *St. Vitus's dance*. It is probable that the former name was derived from the mania originating amid the revels of St. John's day; the latter was derived from the cures effected at the chapels of St Vitus, near Nabern and Rotestein; where the priests, working upon the imagination of the patients, dispossessed them of their infatuations by religious ceremonies. This extraordinary malady continued its visitations at intervals for more than two centuries. At the beginning of the sixteenth century, it diminished greatly; and soon after the close of that century, disappeared altogether. Such is the origin of the name St. Vitus's dance, which is now transferred to a disease very different from that just described, but which may nevertheless be its degenerate descendant.

One of the best general descriptions of chorea, as known in the present day, is the following of Dr. Hamilton, contained in his Treatise on the Utility of Purgatives: — "Chorea Sancti Viti attacks boys and girls indiscriminately; and those chiefly who are of a weak constitution, or whose natural good health and vigour have been impaired by confinement, or by the use of scanty or improper nourishment. It appears most commonly from the eighth to the fourteenth year. I saw it in two young women who were from sixteen to eighteen years of age. The approaches of chorea are slow. A variable and often a ravenous appetite, loss of usual vivacity and playfulness, a swelling and hardness of the lower belly, and, in general, a constipated state of the bowels, aggravated as the disease advances, and slight, irregular, involuntary motions of different muscles, particularly those of the face, which are thought to be the effect of irritation, precede the more violent convulsive motions, which now attract the attention of the friends of the patient.

"These convulsive motions vary. The muscles of the extremities and of the face, those moving the lower jaw, the head, and the trunk of the body, are, at different times, and in different instances, affected by it. In this state, the patient does not walk steadily; his gait resembles a jumping or starting; he sometimes cannot walk at all, and seems palsied; he cannot perform the common and necessary motions with the affected arms. This convulsive motion is more or less violent; and is constant, except during sleep, when, in most instances, it ceases altogether. Although different muscles are sometimes successively convulsed, yet, in general, the muscles affected in the early part of the disease remain so during the course of it. Articulation is now impeded, and is frequently completely suspended. Deglutition is also occasionally performed with difficulty. The eye loses its lustre and intelligence; the countenance is pale, and expressive of vacancy and languor. These circumstances give the patient a fatuous appearance. When the complaint has subsisted

for some time, fatuity to a certain extent interrupts the exercise of the mental faculties."

In some instances, the disease has continued with considerable violence from an early period to old age, without making any inroad whatever on the mind, or even spreading to any other muscles than those at first affected.

There is a singular form of this disease, which has been called by some writers *Malleatio*, consisting in a convulsive action of one or both hands, which strike the knee like a hammer.

The predisponent cause of this disease is an irritability of the nervous system, chiefly dependent upon debility, and particularly a debility of the stomach and its collatitious organs; the ordinary occasional causes being bad nursing, innutritious diet, accumulated feces, worms, or some other intestinal irritant.

About the age of puberty there is another kind of general irritation that pervades the system; and where this change does not take place kindly in females, which is frequently the case in weakly habits, the irritation assumes a morbid character, and is exacerbated by a congestive state of the vessels that constitute its more immediate seat: and chorea takes its rise from this cause.

In effect, where the predisponent cause of an irritable state of the nervous system is very active and predominant, a local or temporary excitement of any organ, and almost at any period of life, producing increased irregularity in the distribution of the nervous energy, will give rise to the convulsive movements of chorea.

From this view of the general nature and origin of the disease, we can be at no loss to account for the great benefit which has been derived from a steady course of brisk purging in recent cases, or those of early life: for this, while it carries off the causal acrimony, or unloads the infarcted viscera, seems at the same time to act the part of a revellent, and to prohibit the return of the paroxysm by a new excitement. It may, perhaps, appear strange to those who have not thought upon the subject, that where the disease has proceeded from intestinal irritation, it should be carried off by intestinal irritation also. But the irritations are of very different kinds: and it is so far from following of necessity that, because one kind of irritation applied to a particular organ excites a particular effect in a remote part, another will do the same; that the converse is more commonly true, and that any other kind of irritation applied to the same organ, by exciting a new action, will be the most effectual way of taking off or preventing such effect.

The principle being a general one, it does not seem of much consequence what purgative is employed, provided it be sufficiently powerful.

There is no malady whatever, perhaps, that calls so peremptorily for stimulating the abdominal viscera into increased action; and as chorea often precedes puberty, or occurs about this period of life, we have another reason for directing an augmented stimulus to the lower regions of the living frame, and rousing into energy the tardy development of the sexual organs.

But it is necessary to attend to the state of the system generally as well as locally; to take off the constitutional weakness and irritability, as well as the topical acrimony, and especially where the disorder has acquired a chronic character. And hence other remedies must be had recourse to as well as purgatives. The use of antispasmodics and sedatives, and especially musk, belladonna, and foxglove, have been strongly recommended with a view of allaying the irregular action. But these, in most cases, will be found merely palliative; and the stimulant tonics and alterants promise a better success.

The metallic salts and oxides have been tried in every form, with apparent benefit in a few individual cases, but without any decided or general success. The most popular of these were at one time the flowers of zinc. When the stomach has reached its full dose of this medicine, it will still bear a full dose of ammoniated copper in conjunction with it, by which means the metallic power may be very much increased. Thus a delicate stomach will rarely bear more than two grains of either of these without nausea; yet it has been found that the same stomach will continue at ease under a mixed powder of two grains of the former, and two and a half of the latter, at a dose.

The preparations of iron have, for the most part, been found too stimulating: but silver, in the form of nitrate, seems to have been radically successful in various well-established cases. It has commonly been given in the form of pills, from one to two grains or more at a dose. But the metal that seems most entitled to credit, according to recent experience, is arsenic; for it is difficult to resist the evidence from various quarters in which it seems not only to have produced benefit, but to have established a perfect cure. It is commonly given in the form of the arsenical solution in doses of six minims to a youth of twelve or fourteen years of age, three times a day, increasing the dose as there may be occasion.

In this disease, however, as in various others, it will often be found, and the remark is well worth attending to, that different remedies are required for different individuals, even where the cause is obviously the same; and that what produces no benefit in one case, is highly advantageous in another. Camphor, in large doses, has succeeded, where the nitrate of silver has completely failed; and a brisk purgative plan has sometimes answered, where all the preceding have proved of no use whatever.

Cold bathing, and sponging the body with cold salt or sea water, is of great service, especially when the disease has become chronic. Electricity has also been recommended.

CHORION. (Probably from $\chi\omega\rho\epsilon\omega$, to separate, depart: because it always escapes from the uterus with the fœtus; but possibly from $\chi\omega\rho\iota\omega\nu$, a castle or fortified place, because it forms the exterior covering or *protection* of the fœtus.) The second or external membrane, or involving membrane of the fœtus. On

the inside it is smooth, and between it and the amnion a gelatinous fluid is interposed. In the earlier months it is much stronger than the amnion, but in an advanced stage it is in contact with it, no fluid being betwixt them: and in proportion as the amnion gains strength to be of essential service in dilating the orifice of the womb during labour, the chorion becomes relatively very thin and weak. On the outside the chorion has a shaggy surface called the *spongy chorion*, consisting of those minute extremities of the vascular system of the ovum which attach to the surface of the womb, or rather to the flocculent membrane which it throws out. The use of this membrane seems to be to convey the maternal supply of blood to the umbilical chord of the fœtus.

CHO'ROID. (*Choroides*: from χοριον, the chorion, and ειδος, resemblance.) Resembling the chorion: applied to a membrane of the eye.

Choroid membrane. *Membrana choroides.* The second tunic of the eye, lying immediately under the sclerotica, to which it is connected by vessels. The true knowledge of this membrane is necessary to a perfect idea of the iris and uvea. The tunica choroides commences at the optic nerve, and passes forwards, with the sclerotic coat, to the beginning of the transparent cornea, where it adheres very firmly to the sclerotic membrane, by means of a whitish circular band, called the *ciliary ligament*. It then recedes from the sclerotica and ciliary circle, directly downwards and inwards, and is drawn into a number of delicate folds, forming a circle round the margin of the crystalline lens and the anterior surface of the vitreous humour. This circle is termed *corpus ciliare*, and the folds of which it is composed are called the *ciliary processes*. The choroid membrane is highly vascular, and its external vessels are disposed like stars, and termed *vasa vorticosa*. The internal surface of this membrane is covered with a black pigment, called the *pigmentum nigrum*.

Choroid plexus. *Plexus choroides.* A plexus of blood vessels, situated in the lateral ventricles of the brain.

Choroid tunic. See *Choroid membrane.*

Chri'sis. (From χριω, to anoint.) An unction, or anointing of any part.

Christmas-rose. See *Helleborus niger.*

CHRO'MAS. (*as, atis.* f.) A chromate, or salt, formed by the union of chromic acid with a salifiable base; as chromate of lead, &c.

CHROMIC ACID. *Acidum chromicum.* This acid is extracted from the red lead ore of Siberia, by treating it with carbonate of potash, and separating the alkali by means of a more powerful acid. In this state it is a red or orange-coloured powder, of a peculiar rough metallic taste, which is more sensible in it than in any other metallic acid. Neither this acid, its oxide, nor any of its combinations, are used medicinally.

CHROMIUM. (*um, i.* n.; from χρωμα, colour: because it is remarkable for giving colour to its combinations.) The name of a metal, which may be extracted either from the native chromate of lead or of iron. It combines with several of the acids, forming insoluble salts, which are of little interest. There are two compounds of chromium and oxygen, besides the acid: a *protoxide* and a *deutoxide*.

CHRO'NIC. (*Chronicus*; from χρονος, time.) Of long continuance: applied to diseases, and used in opposition to the term acute. See *Acute.*

CHRU'PSIA. (*a, æ.* f.; from χροα, colour, and οψις, sight.) *Visus coloratus.* A disease of the eyes, in which the person perceives objects of a different colour from their natural one. This term is used by Beer, but is ill derived.

CHRYSALIS. (*is, is.* f. Χρυσαλις.) The middle state in which all lepidopterous and most other insects remain for some time, between the caterpillar form and their appearance as perfect insects.

CHRYSA'NTHEMUM. (*um, i.* n.; from χρυσος, gold, and ανθεμον, a flower.) 1. The name of a genus of plants in the Linnæan system. Class, *Syngenesia*; Order, *Polygamia.* Sun-flower, or marigold.

2. Many herbs are so called, the flowers of which are of a bright yellow colour.

Chrysanthemum leucanthemum. The systematic name of the great ox-eye daisy, or Maudlin-wort; called also, *Bellis-major*, *Buphthalmum majus*, *Leucanthemum vulgare*, *Bellidioides*, *Consolida media*, and *Oculus bovis.* The *Chrysanthemum — foliis amplexicaulibus, oblongis, supernè serratis, infernè dentatis*, of Linnæus. The flowers and herb were formerly esteemed in asthmatic and phthisical complaints, but have now deservedly fallen into disuse.

Chry'se. (From χρυσος, gold.) A yellow vulnerary plaster, mentioned by Paulus.

Chryseli'ctrum. (From χρυσος, gold, and ηλεκτρον, amber.) Amber, of a golden yellow colour. — *Turton.*

Chrysi'ppea. (From *Chrysippus*, its discoverer.) An herb enumerated by Pliny.

Chrysi'tis. (From χρυσος, gold.) 1. Litharge of gold.

2. An herb mentioned by Pliny, supposed to be the *gnaphalium orientale.*

CHRYSOBA'LANUS. (*us, i.* m.; from χρυσος, gold, and βαλανος, a nut. 1. A fruit mentioned by Galen, which some have supposed to be the nutmeg.

2. The name of a genus of plants in the Linnæan system.

CHRYSOCO'LLA. (*a, æ.* f.; from χρυσος, gold, and κολλη, cement.) Borax. So called because it is used to solder gold.

CHRYSO'COMA. (*a, æ.* f.; from χρυσος, gold, and κομη, hair: so called from its golden, hair-like appearance.) See *Achillea millefolium.*

Chrysogo'nia. (From χρυσος, gold, and γινομαι, to become.) A tincture of gold.

Chrysola'chanon. (From χρυσος, gold, and λαχανον, a pot-herb: so named from its having a yellow leaf.) A species of atriplex, or orach.

Chrysosple'nium. (*um, ii.* n.; from χρυσος, gold, and ασπλενιον, spleenwort.) The name of a genus of plants in the Linnæan system. Class, *Decandria*; Order, *Digynia.* Golden saxifrage.

CHRYSU'LCA. (From χρυσος, gold, and ελκω, to draw.) The aqua regia was so called, because it has the property of dissolving gold.

CHYAZIC ACID. (*Acidum chyazicum.* So called from the initial letters of carbon, hydrogen, and azote.) A name of prussic acid.

CHYLA'RIA. (From χυλος, chyle.) A discharge of a whitish mucous urine, of the colour and consistence of chyle.

CHYLE. (*Chylus, i.* m. ; from χυλὸς, the juice.) The milk-like liquor observed, some hours after eating, in the lacteal vessels of the mesentery, and in the thoracic duct. It is separated by digestion from the chyme, and is that fluid substance from which the blood is formed. See *Digestion.*

The chyle may be studied under two different forms : —

1st. When it is mixed with chyme in the small intestines.

2. Under the liquid form, circulating in the chyliferous vessels, and the thoracic duct.

No person having particularly engaged in the examination of the chyle during its stay in the small intestine, our knowledge on this point is little. The liquid chyle contained in the chyliferous vessels has been examined with great care.

In order to procure it, the best manner consists in giving food to an animal, and, when the digestion is supposed to be in full activity, to strangle it, or cut the spinal marrow behind the occipital bone. The whole length of the breast is cut open ; the hand is thrust in so as to pass a ligature which embraces the aorta, the œsophagus, and the thoracic duct, the nearest to the neck possible ; the ribs of the left side are then twisted or broken, and the thoracic duct is seen, closely adhering to the œsophagus. The upper part is detached, and carefully wiped to absorb the blood ; it is cut, and the chyle flows into the vessel intended to receive it.

The ancients were acquainted with the existence of the chyle, but their ideas of it were very inexact : it was observed anew at the beginning of the seventeenth century ; and being, in certain conditions, of an opake white, it was compared to milk ; the vessels that contain it were even named *lacteal vessels*, a very improper expression, since there is very little other similarity between chyle and milk except the colour.

It is only in modern times, and by the labours of Dupuytren, Vauquelin, Emmert, and Marcet, that positive notions concerning the chyle have been acquired.

If the animal, from which the chyle is extracted, has eaten animal or vegetable substances of a fatty nature, the liquid drawn from the thoracic duct is of a milky white, a little heavier than distilled water, of a strong spermatic odour, of a salt taste, slightly adhering to the tongue, and sensibly alkaline.

Chyle, very soon after it has passed out of the vessel that contained it, becomes firm, and almost solid : after some time it separates into three parts ; the one solid that remains at the bottom, another liquid at the top, and a third that forms a very thin layer at the surface of the liquids. The chyle, at the same time, assumes a vivid rose colour.

When the chyle proceeds from food that contains no fat substance, it presents the same sort of properties, but instead of being opake white, it is opaline, and almost transparent ; the layer which forms at the top is less marked than in the former sort of chyle.

Chyle never takes the hue of the colouring substances mixed in the food, as many authors have pretended.

Animals that were made to eat indigo, saffron, and madder, furnished a chyle the colour of which had no relation to that of the substances.

Of the three substances into which the chyle separates when abandoned to itself, that of the surface of an opake white colour, is a fatty body ; the solid part is formed of fibrin and a little colouring matter ; the liquid is like the serum of the blood.

The proportion of these three parts is variable, according to the nature of the food. There are species of chyle, such as that of sugar, which contain very little fibrin ; others, such as that of flesh, contain more. The same thing happens with the fat matter, which is very abundant when the food contains grease or oil, whilst there is scarcely any seen when the food is nearly deprived of fatty bodies.

The absorption of the chyle has been attributed to the capillarity of the lacteal radicles, to the compression of the chyle by the sides of the small intestine, &c. Latterly, it has been pretended that it takes place by virtue of the proper sensibility of the absorbing mouths, and of the insensible organic contractility that they are supposed to possess. It first enters the threads of the lacteal vessels, it then traverses the mesenteric glands, it arrives at the thoracic duct, and at last enters the subclavian vein.

The causes that determine its motion are, the contractility proper to the chyliferous vessels, the unknown cause of its absorption, the pressure of the abdominal muscles, particularly in the motions of respiration, and, perhaps, the pulsation of the arteries of the abdomen.

If we wish to have a correct idea of the velocity with which the chyle flows into the thoracic duct, we must open this canal in a living animal, at the place where it opens into the subclavian vein. We find that this rapidity is not very great, and that it increases every time that the animal compresses the viscera of the abdomen by the abdominal muscles : a similar effect is produced by compressing the belly with the hand.

However, the rapidity of the circulation of the chyle appears to be in proportion to the quantity formed in the small intestine : this last is in proportion to the quantity of the chyme ; so that if the food is in great abundance, and of easy digestion, the chyle will flow quickly : if, on the contrary, the food is in small quantity, or, which is the same thing, if it is of difficult digestion, as less chyle will be formed, so its progress will be more slow.

It would be difficult to appreciate the quantity of chyle that would be formed during a

given digestion, though it ought to be considerable. In a dog of ordinary size that had eaten animal food at discretion, an incision into the thoracic duct of the neck (the dog being alive) gave about half an ounce of liquid in five minutes, and the running was not suspended during the whole continuance of the formation of the chyle, that is, during several hours.

It is not known whether there is any variation in the rapidity of the motion of the chyle during the same digestion; but supposing it uniform, there would enter six ounces of chyle per hour into the venous system. We may presume that the proportion of chyle is more considerable in man, whose chyliferous organs are more voluminous, and in whom the digestion is, in general, more rapid than in the dog. — *Magendie.*

The chyle is mixed with the lymph in the thoracic duct, which receives it from the lymphatics.

The use of the chyle is to supply the matter from which the blood is formed, and the waste of the living organs repaired. Certain hypothetical notions have also been entertained with respect to it. It has been said, that, by its acescent nature, it restrains a putrescent tendency in the blood; whence the dreadful puridity of the humours from starving; and the utility of milk as a remedy against scurvy. It has also been supposed that by aqueous latex, it prevents the thickening of the fluids, and thus renders them fit for the various secretions. The milk secreted in the female breast has been imagined to be entirely analogous to chyle, to which, however, it bears no sort of resemblance, except in colour.

CHYLIFICA'TION. (*Chylificatio, onis,* f.; from *chylus,* and *fio,* to become.) The process carried on in the small intestines, and principally in the duodenum, by which the chyle is separated from the chyme. See *Digestion.*

Chyli'sma. (From χυλος, juice.) An expressed juice.

CHYLOPOIE'TIC. (*Chylopoieticus;* from χυλος, chyle, and ποιεω, to make.) Concerned in the formation of chyle; thus chylopoietic viscera, chylopoietic vessels, &c.

Chylo'sis. (*is, is,* f.; from χυλος, juice.) Chylification, or the changing the food into chyle.

CHYLOSTA'GMA. (From χυλος, juice, and σαζω, to distil.) The distillation or expression of any juice, or humid part, from the rest.

Chylostagma diaphoreticum. A name given by Mindererus to a distillation of Venice treacle, mithridate, and other alexipharmics with the addition of tormentil, ash bark, and a variety of other ingredients.

Chylus. See *Chyle.*

CHYME. (*Chymus, i.* m.; from χυμος, which signifies humour, or juice.) The infested mass of food that passes from the stomach into the duodenum, and from which the chyle is prepared in the small intestines by the admixture of bile, &c. See *Digestion.*

CHY'MIA. (*a, æ.* f. Χυμια.) *Chimia.* Chemistry.

CHYMIA'TER. (*er, ri.* m.; from χυμια, chemistry, and ιατρος, a physician.) *Chimiater.* A chemical physician. See *Paracelsists.*

CHYMIA'TRIA. (*a, æ.* f.; from χυμια, chemistry, and ιαομαι, to heal.) The art of curing diseases by the application of chemistry to the uses of medicine.

Chymosis. See *Chemosis.*

Chy'nlen radix. A cylindrical root, of the thickness of a goose-quill, brought from China. It has a bitterish taste, and imparts a yellow tinge to the saliva. The Chinese hold it in great estimation as a stomachic, infused in wine.

Chy'tlon. (Χυτλον; from χυω, to pour.) An anointing with oil and water. — *Erotian.*

CIBA'TIO. (*o, onis.* f.; from *cibus,* food.) The taking of food. The term is also used by alchemical writers; but what they understand by it is not very clear. Ruland says it means "*corporatio;*" Ripley "*nutritio materiæ siccæ nostræ;*" and J. Quercetanus "*subtilis ingrossatio et crassi subtiliatio.*"

Ci'bur. *Chybur.* An obsolete term for sulphur.

CICATRISANT. (*Cicatrisans;* from *cicatrizo,* to skin over.) That which disposes wounds and ulcers to dry up and heal, and to be covered with a skin.

CICATRISA'TUS. *Cicatrised.* 1. In *Surgery,* applied to parts formerly ulcerated, on which the skin has formed.

2. In *Botany,* it means scarred.

CICA'TRIX. (*ix, icis.* f.; from *cicatrizo,* to heal up or skin over.) A scar upon the skin after the healing of a wound or ulcer.

CICATRIZATION. (*Cicatrizatio, onis.* f.; from *cicatrizo,* to heal.) That process by which ulcers and sores are healed. See *Abscess.*

Cicely, sweet. See *Scandix odorata.*

CI'CER. (*er, eris.* n.; a plant so called. The *Ciceropes* had their name from this pulse, as the *Pisones* had from the pisum or pea, and the *Lentuli* from the lens or lentil.) 1. The name of a genus of plants in the Linnæan system. Class, *Diadelphia;* Order, *Decandria.* The vetch.

2. The pharmacopœial name of the common cich or ciches.

Cicer arietinum. The systematic name of the cicer plant, which is called *Erebinthus* in some pharmacopœias.

Cicer — foliis serratis, of Linnæus. The seeds have been employed medicinally, but are now fallen into disuse. In some places they are toasted, and used as coffee; and in others ground into a flour for bread. The colour of the arillus of the seed is sometimes white, red, or black; hence the distinction into *cicer album, rubrum,* and *nigrum.*

Ci'cera. (From *cicer,* the vetch.) A small pill of the size of a vetch.

Cicera tartari. A small pill, composed of turpentine and cream of tartar, of the size of a vetch.

CICHO'RIUM. (*um, i.* n.; originally, according to Pliny, an Egyptian name, and adopted by the Greeks. It is written sometimes Κιχορειον: whence Horace has *cichorea, levesque malvæ:* sometimes Κιχοριον, or Κι-

χωριον. It is supposed by some to have this name, παρα το δια των χωριων κιειν, from its creeping through the fields. Others derive it from κιχεω, *invenio*; on account of its being so readily found, or so common.) Succory. 1. The name of a genus of plants in the Linnæan system. Class, *Syngenesia*; Order, *Polygamia æqualis.*

2. The pharmacopœial name of the wild cichory. See *Cichorium intybus.*

Cichorium endivia. The systematic name of the endive.

Cichorium — floribus solitariis, pedunculatis, foliis integris; crenatis, of Linnæus. It is an extremely wholesome salad, possessing bitter and anodyne qualities.

Cichorium intybus. The systematic name of the wild succory; called also, *Pancratium Cichorium, Cichoreum, Cichorium sylvestre, Cichorium officinarum.*

Cichorium — floribus geminis, sessilibus; foliis runcinatis, of Linnæus. It belongs to the same family with the garden endive, and by some botanists has been supposed to be the same plant in its uncultivated state; but the endive commonly used as salad, is an annual, or at most a biennial plant, and its parent is now known to be the *cichorium endivia.* Wild succory, or cichory, abounds with a milky juice, of a penetrating bitterish taste, but no remarkable smell, or flavour: the roots are more bitter than the leaves or stalks, and these much more so than the flowers. By culture in gardens, and by blanching, it loses its bitterness, and may be eaten early in the spring in salads. The roots, if gathered before the stem shoots up, are also eatable, and when dried may be made into bread. The roots and leaves of this plant are stated by Lewis to be very useful aperients, acting mildly and without irritation, tending rather to abate than to increase heat, and which may therefore be given with safety in hectic and inflammatory cases. Taken freely, they keep the bowels open, or produce a gentle diarrhœa; and when thus continued for some time, they have often proved salutary in the commencement of visceral obstruction, in jaundices, cachexies, hypochondriacal and other chronic disorders. A decoction of this herb, with others of the like kind, in whey, and rendered purgative by a suitable addition of polychrest salt, was formerly esteemed as a remedy in cases of biliary calculi, and believed to be useful in many complaints requiring what have been termed attenuants and resolvents. The virtues of succory, like those of dandelion, reside in its milky juice; and we are warranted, says Dr. Woodville, in asserting, that the expressed juice of both these plants, taken in large doses frequently repeated, has been found an efficacious remedy in phthisis pulmonalis, as well as the various other affections above mentioned. The milky juice may be extracted by boiling in water, or by pressure. The wild and the garden sorts are used indifferently. If the root is cut into small pieces, dried and roasted, it resembles coffee; and is sometimes a good substitute for it.

Cichory. See *Cichorium intybus.*

Cichory, wild. See *Cichorium intybus.*

CICINDE'LA. (A diminutive of *candela*, a candle: so called from its light.) The glow-worm. *Lampyris noctiluca.* Formerly thought by some to be anodyne, and lithonthriptic, though probably neither. It is not used in the present day.

Cici'num oleum. (From κικι, the ricinus.) An oil, obtained by boiling the bruised seeds of the *Jatropha curcas* of Linnæus. It is somewhat similar in its properties to castor oil.

Ci'cla. A name for the white-beet.

CICU'TA. *a, æ.* f. The Latin word for hemlock and also for a shepherd's pipe made of the hollow stalks of hemlock. Some confusion has arisen among modern writers from the name cicuta having been sometimes applied to the common hemlock, or *conium maculatum*, and at others to the water hemlock or *cicuta virosa.* 1. Hemlock. See *Conium.*

2. The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Digynia.*

Cicuta aquatica. See *Cicuta virosa.*

Cicuta virosa. The systematic name of the long-leaved water hemlock and cow-bane: called also, *Cicuta aquatica, Cicutaria virosa, Sium majus alterum angustifolium,* and *Sium erucæ folio.* This plant — *Cicuta, umbellis oppositifoliis; petiolis marginatis obtusis,* of Linnæus — is seldom employed medicinally in the present day. It is an active poison, and has occasionally been eaten by mistake for the *Apium graveolens,* of Linnæus; when it produces tremors, vertigo, a violent burning at the stomach, epilepsy, convulsions, spasms of the jaw, a flowing of blood from the ears, tumefaction of the abdomen, and death.

Cicuta'ria. (*a, æ,* f.; from *cicuta*, hemlock.) See *Chærophyllum sylvestre.*

Cicutaria aquatica. See *Phellandrium aquaticum.*

Cicutaria virosa. See *Cicuta virosa.*

Cidonium. See *Pyrus cydonia.*

CILIA (plural of *cilium*). 1. The edges of the eyelids, or the eyelashes growing from them.

2. A species of pubescence of plants which consists of hairs on the margin of a leaf or petal, giving it a fringed appearance.

CI'LIARY. (*Ciliaris*; from *cilium*, the eyelid.) Belonging to the eyelid.

Ciliary ligament. *Ligamentum ciliare.* The circular band that united the iris and sclerotic membrane to the choroid coat. See *Oculus.*

Ciliaris musculus. That part of the musculus orbicularis palpebrarum which lies nearest the cilia, considered by Riolan as a distinct muscle.

Ciliary processes. The folds into which the choroid coat is gathered around the margin of the crystalline lens.

CILIA'TUS. Fringed, bordered: applied to leaves, corollæ, petals, &c.: *folium ciliatum, petala ciliata,* &c. See *Leaf, Corolla, Petalum.* Fimbriated is synonymous with this term.

CI'LIUM. (*um, ii.* n.; from *cilleo*, to move about.) The eyelid or eyelash.

Ci'llo. (From *cilium*, the eyelid.) One who is affected with a spasm or trembling of the eyelids.

CILLO'SIS. (From *cilium*, the eyelid.) A spasmodic trembling of the eyelids.

Cimeter-shaped. See *Leaf.*

CIMEX. (*ex, icis.* m.; from κειμαι, to inhabit: so called because it infests houses.) The name of a genus of insects in the Linnæan system. The wall-louse, or bug.

CIMEX DOMESTICUS. Of this small insect six or seven have been given inwardly to cure the ague, just before the fits come on, and are sometimes effectual, like other things which excite disgust.

CIMO'LIA. (*a, æ.* f.; from Κιμωλος, Cimolus, an island in the Cretan sea, where it is procured.) See *Cimolite.*

CIMOLIA ALBA. See *Cimolite.*

CIMOLIA PURPURESCENS. Fullers' earth.

CIMOLITE. *Cimolia.* Cimolian earth, Fuller's earth, of a greyish white colour, which consists of silex, alumina, oxide of iron, and water. It was formerly used in medicine as an astringent.

CI'NA CINÆ. See *Cinchona.*

CINÆ SEMEN. See *Artemisia santonica.*

CI'NARA. (*a, æ.* f.; from κινεω, to move; *quasi movet ad venerem vel urinam.*) Artichoke. 1. The name of a genus of plants in the Linnæan system. Class, *Syngenesia;* Order, *Polygamia æqualis.*

2. The pharmacopœial name for the common artichoke. See *Cinara scolymus.*

CINARA SCO'LYMUS. The systematic name of the artichoke: called, in the pharmacopœias, *Alcocalum, Agriocinara, Articocalus, Artischocas cæris, Costus nigra, Carduus sativus non spinosus, Cinara hortensis, Scolymus sativus, Carduus domesticus capite majore,* and *Carduus altilis.*

Cinara — foliis subspinosis pinnatis indivisisque, calycinis squamis ovatis, of Linnæus. A native of the southern parts of Europe, but cultivated here for culinary purposes. The leaves are bitter, and afford, by expression, a considerable quantity of juice, which, when strained, and mixed with an equal quantity of white wine, is said to have been given successfully in dropsies, in the dose of three or four table-spoonfuls night and morning; but it is very uncertain in its operation.

CINAROCEPHA'LIÆ. (From κιναρα, the artichoke, and κεφαλη, a head: having a head like the artichoke.) A natural family of plants so called from the shape of their inflorescence; as the thistle, globe thistle, burdock, blue-bottle, &c.

CINCHO'NA. *a, æ.* f. A well-known medicinal bark, the use of which, according to Geoffroy, was first learned from the following circumstance: — Some of the trees being thrown by the winds into a pool of water, by there till the water became so bitter that very body refused to drink it. However, one of the neighbouring inhabitants being seized with a violent paroxysm of fever, and finding no other water to quench his thirst, was forced to drink of this, by which he was perfectly cured. He afterwards related the circumstance to others, and prevailed upon some of his friends, who were ill of fevers, to make use of the same remedy, with whom it proved equally successful. The use of this excellent remedy, however, was very little known till about the year 1638, when a signal cure having been performed by it on the Spanish viceroy's lady, the Countess del Cinchon, at Lima, it came into general use, and hence it was distinguished by the appellation of *cortex cinchonæ*, and *pulvis comitissæ*, or the Countess's powder. On the recovery of the Countess, she distributed a large quantity of the bark to the Jesuits, in whose hands it acquired still greater reputation, and by them it was first introduced into Europe, and thence called *cortex*, or *pulvis jesuiticus, pulvis patrum;* and also Cardinal de Lugo's powder, because that charitable prelate bought a large quantity of it, at a great expense, for the use of the religious poor at Rome.

I. The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Monogynia.* Cinchona, or Peruvian bark-tree.

II. The pharmacopœial name of several kinds of Peruvian barks; which have been called, *Cortex; Cortex Chinæ; Chinchina, Kina kina, Kinkina, Quina quina,* and *Quinquina.* The trees which afford these barks grow wild in the hilly parts of Peru; the bark is stripped from the branches, trunk, and root, and dried. Three kinds of bark are now in use: —

1. *Cortex cinchonæ cordifoliæ.* The plant which affords this species is the *Cinchona cordifolia,* of Zea; the *Cinchona officinalis,* of Linnæus; the *Cinchona macrocarpa,* of Willdenow. Heart-leaved cinchona. The bark of this tree is called *yellow bark,* because it approaches more to that colour than either of the others does. It is in flat pieces, not convoluted like the pale, nor dark-coloured like the red; externally smooth, internally of a light cinnamon colour, friable and fibrous; has no peculiar odour different from the others, but a taste incomparably more bitter, with some degree of astringency. It is from this species of cinchona that a new alkali, called *quina,* has been obtained; which, in combination with sulphuric acid, forms the sulphate of quinine. See *Quinine.*

2. *Cortex cinchonæ lancifoliæ.* This species is obtained from the *Cinchona lancifolia* of Zea. Lance-leaved cinchona. This is the *quilled bark,* which comes in small quilled twigs, breaking close and smooth, friable between the teeth, covered with a rough coat of a brownish colour, internally smooth, and of a light brown; its taste is bitter, and slightly astringent; flavour slightly aromatic, with some degree of mustiness.

3. *Cortex cinchonæ oblongifoliæ.* This kind is procured from *Cinchona oblongifolia* of Zea. Oblong-leaved cinchona. This is the *red bark:* it is in large thick pieces, externally covered with a brown rugged coat, internally more smooth and compact, but fibrous, of a dark red colour; taste and smell similar to that of the *cinchonæ lancifoliæ cortex,* but the taste rather stronger.

From the general analysis of bark, it appears to consist, besides the woody matter which composes the greater part of it, of gum, resin, gallic acid, of very small portions of tannin and essential oil, of a peculiar acid, called the *kinic,* and several salts. Seguin also supposed the

existence of gelatine in it, but without sufficient proof. Cold water infused on pale bark for some hours, acquires a bitter taste, with some share of its odour; when assisted by a moderate heat, the water takes up more of the active matter; by decoction, a fluid, deep coloured, of a bitter styptic taste, is obtained, which, when cold, deposits a precipitate of resinous matter and gallic acid. By long decoction, the virtues of the bark are nearly destroyed, owing to the oxygenation of its active matter. Magnesia enables water to dissolve a larger portion of the principles of bark, as does lime, though in an inferior degree. Alkohol is the most powerful solvent of its active matter. Brandy and other spirits and wines, afford also strong solutions, in proportion to the quantity of alkohol they contain. A saturated solution of ammonia is also a powerful solvent; vinegar is less so even than water. By distillation, water is slightly impregnated with the flavour of bark: it is doubtful whether any essential oil can be obtained.

The action of menstrua on the red bark is nearly the same, the solutions only being considerably stronger, or containing a larger quantity of resinous matter, and of the astringent principle.

The analysis of the yellow bark, shows that its active principles are more concentrated than in either of the others, affording to water, alkohol, &c. tinctures much stronger, both in bitterness and astringency; especially in the former principle.

Vauquelin made infusions of all the varieties of cinchona he could procure, using the same quantities of the barks and water, and leaving the powders infused for the same time. He observed, 1. That certain infusions were precipitated abundantly by infusion of galls, by solution of glue and tartar emetic. 2. That some were precipitated by glue, but not by the two other re-agents; and, 3. That others were, on the contrary, by nut-galls, and tartar emetic, without being affected by glue. 4. And that there were some which yielded no precipitate by nut-galls, tannin, or emetic tartar. The cinchonas that furnished the first infusion were of excellent quality; those that afforded the fourth were not febrifuge; while those that gave the second and third were febrifuge, but in a smaller degree than the first. Besides mucilage, kinate of lime, and woody fibre, he obtained in his analysis a resinous substance, which appears not to be identic in all the species of bark. It is very bitter, very soluble in alkohol, in acids, and alkalies; scarcely soluble in cold water, but more soluble in hot. It is this body which gives to infusions of cinchona the property of yielding precipitates by emetic tartar, galls, gelatine; and in it the febrifuge virtue seems to reside. It is this substance in part which falls down on cooling decoctions of cinchona, and from concentrated infusions. A table of precipitations by glue, tannin, and tartar emetic, from infusions of different barks, has been given by Vauquelin.

Pelletier and Caventou analysed the *Cinchona condaminæa*, gray bark, and found it composed of, 1. cinchonina, united to kinic acid; 2. green fatty matter; 3. red colouring matter, slightly soluble; 4. tannin; 5. yellow colouring matter; 6. kinate of lime; 7. gum; 8. starch; 9. lignine.

The red bark has been considered as superior to the pale; the yellow is represented, apparently with justice, as being more active than either of the others.

The effects of Peruvian bark are those of a powerful and permanent tonic, so slow in its operation that its stimulating property is scarcely perceptible by any alteration in the state of the pulse, or of the temperature of the body. In a large dose, it occasions nausea and headach; in some habits it operates as a laxative; in others it occasions costiveness. It is one of those medicines, the efficacy of which, in removing disease, is much greater than could be expected, *à priori*, from its effects on the system in a healthy state.

Intermittent fever is the disease for the cure of which bark was introduced into practice; and there is still no remedy which equals it in power. The disputes respecting the mode of administering it are now settled. It is given as early as possible, after clearing the stomach and bowels, in the dose of from one scruple to a drachm every second or third hour, during the interval of the paroxysm; some have continued to give it during the hot fit, but this is a very dangerous practice. See *Ague*.

In remittent fever it is given with due caution, even though the remission of the fever may be obscure.

In some forms of continued fever which are connected with debility, as in typhus, cynanche maligna, confluent small-pox, &c., it is regarded as one of the most valuable remedies. It may be prejudicial, however, in those diseases where the brain, or its membranes are inflamed, or where there is much irritation, marked by subsultus tendinum, and convulsive motions of the extremities; and in pure typhus it appears to be less useful in the beginning of the disease, than in the convalescent stage.

Even in fevers of an opposite type, where there are marks of inflammatory action, particularly in acute rheumatism, bark has been found useful after blood-letting. In erysipelas, in gangrene, in extensive suppuration and venereal ulceration, the free use of bark is of the greatest advantage.

In the various forms of passive hæmorrhagy, in many other diseases of chronic debility, dyspepsia, hypochondriasis, paralysis, rickets, scrofula, dropsy, and in a variety of spasmodic affections, epilepsy, chorea, and hysteria, it is administered as a powerful and permanent tonic, either alone, or combined with other remedies suited to the particular case.

The officinal preparations of bark are an infusion, decoction, an extract, a resinous extract, a simple tincture, an ammoniated and a compound tincture, and the sulphate of quinine. The usual dose is half a drachm of the powder. The only inconvenience of a larger dose is its sitting uneasy on the stomach. It may therefore, if necessary, be frequently repeated; and, in

urgent cases, may be taken to the extent of an ounce, or even two ounces, in twenty-four hours.

The sulphate of quinine has the greatest febrifuge power of all the preparations of bark; and next to it the powder, which may be given in wine, in any spirituous liquor, or, if it excite nausea, combined with an aromatic. The cold infusion is the least powerful, but most grateful: the decoction contains much more of the active matter of the bark, and is the preparation generally used when the powder is rejected; its dose is from two to four ounces. The spirituous tincture, though containing still more of the bark, cannot be extensively used on account of the menstruum; but is principally employed, occasionally, and in small doses of two or three drachms, as a stomachic. The extract is a preparation of considerable power, when properly prepared, and is adapted to those cases where the remedy requires to be continued for some time. It is then given in the form of pill, in doses of from five to fifteen grains.

Bark is likewise sometimes given in the form of enema; one scruple of the extract, or two drachms of the powder, being diffused in four ounces of starch mucilage. The decoction is also sometimes applied as a fomentation to ulcers.

Cinchona caribæa. The systematic name of the Caribæan bark-tree. It grows in Jamaica, where it is called the sea-side beech. According to Dr. Wright, the bark of this tree is not less efficacious than that of the cinchona of Peru, for which it will prove an useful substitute; but by the experiments of Dr. Skeete, it appears to have less astringent power.

Cinchona condaminæa. See *Cinchona.*

Cinchona cordifolia. See *Cinchona.*

Cinchona flava. See *Cinchona.*

Cinchona floribunda. The systematic name of the plant which affords the Saint Lucia bark. *Cinchona — floribus paniculatis glabris, capsulis turbinatis lævibus, foliis ellipticis acuminatis glabris* of Linnæus. It has an astringent, bitter taste, somewhat like gentian. It is recommended in intermittents, typhoid dysentery, and dyspepsia: it should always be joined with some aromatic. Dr. Withering considers this bark as greatly inferior to that of the other species of this genus. In its recent state it is considerably emetic and cathartic, properties which it retains in some degree on being dried; so that the stomach does not bear this bark in large doses, and in small ones, its effects are not such as to give it any peculiar recommendation.

Cinchona lancifolia. See *Cinchona.*

Cinchona oblongifolia. See *Cinchona.*

Cinchona officinalis. See *Cinchona.*

Cinchona rubra. See *Cinchona.*

Cinchona Sancta Fé. Several species of cinchona have been lately discovered at Sancta Fé, yielding barks both of the pale and red kind; and which, from their sensible qualities, are likely, upon trial, to become equally useful with those produced in the kingdom of Peru.

Cinchonia. See *Cinchonine.*

Cinchonic acid. See *Kinic acid.*

CINCHONINE. (*Cinchonina, æ.* f.; so called, because obtained from the *cinchona* bark.) Cinchonine is the salifiable base, or alkali, discovered in the *Cinchona condaminæa*, by Pelletier and Caventou. The person, however, who first recognised its existence, though he did not ascertain its alkaline nature, or its combinations with acids, was Gornis of Lisbon. It is obtained from the bark in which it exists, in the same manner as the quinine is obtained from the yellow bark. See *Quinine.*

Cinchonine crystallises in the form of a rhomboidal prism, of 108° and 72°, terminated by a bevelment. It has but little taste, requiring 7000 parts of water for its solution; but when dissolved in alkohol, or an acid, it has the bitter taste of bark. When heated, it does not fuse before decomposition. It consists of oxygene, hydrogene, and carbon; the latter being predominant. It dissolves in only very small quantities in the oils, and in sulphuric ether.

The sulphate is composed of cinchonine, 100; sulphuric acid, 13: whence the prime equivalent would appear to be 38·5.

The muriate is more soluble. It consists of cinchonine, 100; muriatic acid, 7·9.

Gallic, oxalic, and tartaric acids, form neutral salts with cinchonine, which are soluble only with excess of acid. Hence infusion of nut-galls gives, with a decoction of good cinchona, an abundant precipitate of gallate of cinchonine.

Robiquet gives as the composition of a subsulphate of cinchonine of the first crystallisation, sulphuric acid, 11·3; cinchonina, 79·0.

Cinchonine possesses the same medicinal properties as quinine, but in a less powerful degree.

Cinchoninæ sulphas. See *Cinchonine.*

Cinci'nnus. The hair on the temples.

Cincle'sis. (From κιγκλιζω, to move.) *Cinclismus.* An involuntary winking. — *Vogel.*

Cinera'rium. (*um, ii.* n.; from *cinis*, ashes.) The ash-hole of a furnace.

Cineres clavellatæ. See *Clavellatæ cineres.*

Cineres russici. See *Potassa impura.*

CINERI'TIOUS. (*Cineritius;* from *cinis*, ashes.) Of the colour of ashes. The cortical substance of the brain is so called from its ash colour. — See *Encephalon.*

Cineri'tium. (From *cinis*, ashes: so named from its containing the ashes of vegetables or bones.) A cupel.

Cine'rula. A name for spodium.

Cine'tica. (From κινεω, to move.) Diseases affecting the organs of motion, that is the muscles. The third order in the Class *Neurotica* of Mason Good.

CINE'TICUS. (Κινητικος, having the power of motion.) Appertaining to the powers of motion, and consequently the muscles.

Cine'tus. The diaphragm.

Cingula'ria. (From *cingulum*, a girdle; because it grows in that shape.) Most probably the *lycopodium selago* of Linnæus.

Cingulum mercuriale. A mercurial girdle; called also *cingulum sapientiæ*, and *cingulum stultitiæ.* It was an invention of Rulandus's: different directions are given for making it; but the following is one of the neatest: — "Take three drachms of quicksilver;

shake it with two ounces of lemon-juice until the globules disappear; then separate the juice, and mix with the extinguished quicksilver, half the white of an egg; gum-dragon, finely powdered, a scruple; and spread the whole on a belt of flannel." It was used to excite salivation.

Cingulum Sancti Johannis. A name of the *artemisia vulgaris*.

Cinificatum. The same as calcinatum.

CINNABAR. (*Cinnabaris, is.* f.) Pliny says the Indians call by this name a mixture of the blood of the dragon and elephant, and also many substances which resemble it in colour, particularly the minium; but it now denotes the red sulphuret of mercury. An ore of mercury, consisting of that mineral united to sulphur. A native sulphuret of mercury. See *Hydrargyri sulphuretum rubrum*.

2. An artificial compound of mercury and sulphur, called factitious cinnabar, red sulphuret of mercury, and vermilion. See *Hydrargyri sulphuretum rubrum*.

Cinnabarine. *Cinnabarinus.* Of a red lead or cinnabar colour: applied generally in natural history.

Cinnabaris factitia. Factitious cinnabar. See *Hydrargyri sulphuretum rubrum*.

Cinnabaris græcorum. The sanguis draconis and cinnabar.

Cinnabaris nativa. Native cinnabar. See *Hydrargyri sulphuretum rubrum*.

CINNAMOMUM. (*um, i.* n.; from *kinamon*, Arabian.) Cinnamon. See *Laurus cinnamomum*.

CINNAMON. The name of an aromatic bark. See *Laurus cinnamomum*.

Cinquefoil. See *Potentilla reptans*.

CION. (Κιων, a column.) 1. The uvula was formerly so named, from its pyramidal shape.

2. An enlargement of the uvula.

Cionis. (From κιων, the uvula.) An enlargement and painful swelling of the uvula.

CIRCÆA. (*a, æ* f.; from *Circe*, the enchantress: so named from the opinion that it was used by Circe in her magical operations.) 1. The name of a genus of plants in the Linnæan system. Class, *Diandria*; Order, *Monogynia*. Enchanter's nightshade.

2. The name, in some pharmacopœias, for the *Circæa lutetiana*, which is now fallen entirely into disuse.

Circium arvense. The *Serratula arvensis*.

Circocele. See *Cirsocele*.

Circus. (From κιρκος, a circle.) A circular bandage. — *Turton*.

CIRCULATION. (*Circulatio, onis.* f.; from *circulo*, to compass about.) The blood, propelled by the heart and arteries, visits every part of the living system, from the nearest to the most remote, nourishing all the organs and textures, and sustaining their vital activity; it then returns by the veins to the heart. This course is called the *circulation of the blood*, the discovery of which by Harvey formed so important an epoch in the history of physiology and medicine. Attempts have been made to prove that the circulation was known to Galen; this, however, is quite an erroneous idea: he appears, as happens so often in the progress of science, to have stood on the very verge of the discovery without having the smallest notion of the truth. Servetus, who fell a victim to the intolerance and cruelty of Calvin in the year 1553, was the first who made any approach to a knowledge of the circulation. He had evidently a correct idea of the passage of the blood through the lungs, or what may be called the minor circulation. Cæsalpinus and Realdus Columbus, the former of whom died in 1571, and the latter in 1577, both entertained the same ideas; and by their examination of the mechanism of the heart, more immediately prepared the way for the discovery of the general circulation, — the knowledge of which, however, was not in any degree attained by either of them. This greatest of physiological discoveries was made by William Harvey in 1620, after many years of laborious observation and experiment. He delayed the publication of his discovery for eight years, in order to mature it the more perfectly; and finally gave it to the world in a treatise, entitled *Exercitatio Anatomica de Motu Cordis et Sanguinis in Animalibus*, published at Frankfort in 1628. For the following very neat summary of what is at present known on the subject of the circulation, we are indebted to Dr. Alison's Outlines of Physiology and Pathology: —

A regular supply of a nutritious fluid, recently exposed to the air, is a condition essential to the maintenance of the vital phenomena, not only in the moving solids, but in all other parts of living bodies, whether belonging to the organic or animal life, and in all classes of animals. But it is important to bear in mind, that it is only in the higher classes of animals that this essential condition of all vital action is fulfilled by means of a Circulating System; — the nourishment even of complex structures, in the radiated class of animals, being effected, as is believed, simply by imbibition and transudation through porous solids.

The circumstance in the animal economy, which appears chiefly to impose the necessity of a distinct circulating system, is the appropriation of a separate organ to the office of regularly exposing the fluids to the air; and this again is demanded by such occasion for strength and solidity in certain parts of the frame, as precludes the possibility of free admission of air to the fluids in all parts of the body, such as takes place in some of the lower classes. A complex frame, capable of exertions of strength, and of resistance to injury, a separate respiratory organ, and a regular circulating system, are therefore very generally, if not necessarily, combined throughout the animal creation. And in all warm-blooded animals, the circulating system is to be regarded as merely the channel of communication between the capillaries of the lungs, where the blood is prepared by the action of the air, for the maintenance of the different functions of life, and the capillaries of the rest of the body, where it is applied to the support of these different functions. The collection and concentration of the blood at the heart are manifestly intended to subject it to the action of a

strong muscle, and thereby secure its transmission, with adequate force and precision, through the different sets of capillary vessels; and the juxta-position of the two portions of the heart, which move the blood to and from the lungs, appears to be merely a matter of convenience.

In treating of the circulation, we first state the course followed by the blood in the living body, with the evidence by which this course is demonstrated; and then we consider the nature and efficacy of the agents, by which this movement of the blood is produced.

During the living state, all the blood which is contained in very minute and capillary vessels, in every part and in almost every texture of the body, gradually makes its way into veins, and along them, passing from those that are more numerous and smaller, into those that are less numerous and larger, till it reaches the anterior or right auricle of the heart, by the venæ cavæ and coronary vein, and distends that cavity. By the contraction of this auricle it is driven into the right ventricle, and by the contraction of this, into the pulmonary artery, by the numerous branches of which it is distributed among the minute capillaries of the lungs, to be exposed to the air. From these, it again passes along an ascending series of vessels contained in the lungs, until it emerges from them to enter the four pulmonary veins, which lead to the cavity of the posterior or left auricle of the heart. By the contraction of this auricle, simultaneous with that of the right auricle, it is forced into the left ventricle; and by the contraction of this, simultaneous with that of the right ventricle, it is forced into the aorta, by the numerous branches of which it is gradually conveyed into the capillaries, that pervade the various organs and textures of the body.

That this is the real course of the blood, is proved by various facts, but especially by the following: —

1. By the observation of the successive distension of the venæ cavæ near the heart, of the auricles, and of the ventricles, in living and warm-blooded animals, taking place in the order above stated, — and by the observed passage of the blood through these cavities, in those lower animals that have hearts similarly formed (although single) and translucent.

2. By the observed passage of the blood from the minute capillary arteries into the beginnings of the veins, in the translucent textures of different fishes and reptiles, which have a circulating system similarly formed to that of the higher classes, although single.

3. By the structure of the valves, at the heart and in the veins, necessarily prohibiting, or greatly impeding, movement along the vascular system in the opposite direction from that above stated.

4. By the effect of ligatures, and of punctures made above and below ligatures, in the larger arteries and veins; the former swelling out and giving a free jet of blood within the ligatures, and the latter beyond them.

5. By the quantity of blood which may be rapidly discharged from a wound below a ligature on the vein of a limb; which is so great as to demonstrate that the vein must have a continual supply of blood from the arteries of the limb.

6. By the effect of injections into living arteries and veins, making their way readily, and easily filling the vessels, when thrown in the direction of the circulation as described, but strongly resisted when forced in the opposite direction.

The structure and actions of the heart, the chief muscular agent in this process, and the *first* of the powers, by which the movement of the circulating fluids in the adult state are effected, first demand our attention. Its oblique position within the pericardium, in the fore part and left side of the thorax, — its irregular conical form, flattened posteriorly, — its division into two parts by the septum, and the form, size, and relative position of the right or anterior, and of the left or posterior, auricle and ventricle, — the termination of the great veins in the auricles, and origin of the great arteries from the ventricles, — the investment of the muscular texture of the heart by two serous membranes, the external reflected from the inner layer of the pericardium, and the internal continuous with that which lines the bloodvessels, — are all supposed to be made known by the study of anatomy.

The muscular fibres of the auricles of the heart are quite distinct, and easily separable (after long-continued boiling) from those of the ventricles; and the part of the heart which may be regarded as the fixed point or pivot of its movements, is the point between the posterior groove on its surface and the origin of the aorta, where the muscular fibres, constituting the septum of the auricles, are set upon those which form the septum of the ventricles. The contractions, both of auricles and ventricles, tend to bring all other parts of the heart nearer to this fixed point. The texture found at this point is tendinous; and in immediate connection with it, are the tendinous rings (partly bony in some animals) which surround the origin of the aorta and pulmonary artery, and the openings between the auricles and the ventricles. From these tendinous parts most of the fibres, constituting the muscular parietes of the heart, take their origin. Those which go to the parietes of the auricles ascend, form loops around these cavities, of various form and size, and then descend to be inserted into other points of the same tendinous rings, and are encompassed at their lower part by more superficial horizontal layers of fibres. Those which go to the parietes of the ventricles have an oblique course downwards, and appear to be reinforced by others which originate in the muscular texture itself, especially along the anterior and posterior grooves, which lodge some of the coronary vessels. The outermost of them converge towards the apex, and, after making a spiral turn round it, pass inwards and ascend along the interior of the ventricles, forming the columnæ carneæ and part of the septum, and arranging themselves in the reticulated form, which is obvious on opening the heart. Others of the

fibres descending from the tendinous rings merely form loops around the ventricles, and re-ascend to the rings. The obliquity of the direction of the fibres is gradually altered towards the interior of the muscular substance, so that about the centre of the thickness of the parietes, the fibres are wrapped round the ventricles nearly transversely; some surrounding both ventricles, while others detach themselves at the septum, and surround the left ventricle only, making its parietes thicker and stronger than those of the right.

This is a general outline of the disposition of the greater part of the muscular fibres of the heart. At its base the arrangement is more complex, but it is always regular and uniform; and evidently such, that a general contraction of the fibres of the heart shall bring all parts of the heart towards the central point above mentioned, and compress the contents of all the cavities, so as to secure their forcible ejection by the openings there situated.

The valves placed at these openings effectually prevent any reflux of the blood that has been ejected. The structure of the membranous folds, forming the semilunar valves, at the mouths of the great arteries, sufficiently indicates their use; for they are attached to the interior of the vessels by curved edges, the concavity of which is turned from the heart, and they must therefore be raised and stretched across the opening by any fluid passing towards the heart, but are laid down along the sides of the arteries by any fluid passing out of it. The precise object of the structure of the tricuspid and mitral valves, which descend from the tendinous rings surrounding the auriculo-ventricular orifices, into the ventricles, and are attached by tendinous cords to the ends of the columnæ carneæ, is not so perfectly ascertained; it being doubtful whether the membranous parts of the valves always project into the cavities of the ventricles, and are merely pulled together by the contraction of the columnæ carneæ to close the orifices, or whether they are raised and stretched across the orifices by the blood at the time when the ventricles are full, and contract on their contents. In order to decide this question, it would be necessary to ascertain more precisely than has been yet done, whether the contraction of the columnæ carneæ takes place precisely at the same time as that of the other fibres of the ventricles. But either in the one way or the other, these valves are certainly fitted, and intended, to prevent any reflux of blood from the ventricles into the auricles, at the time when the ventricles contract.

When the heart of a living warm-blooded animal is exposed, the simultaneous contractions, first of the two auricles, and then of the two ventricles, may be distinguished; but, in the natural and vigorous state of the circulation, the former movement (always a comparatively slight one), is hardly over before the latter begins; and the longest pause in the visible contractions of the heart is that which succeeds the systole of the ventricles, and precedes that of the auricles.

The successive contractions of the auricles and ventricles are often observed to go on, for a short time, nearly in the usual way, after the heart of a living animal is emptied of its blood, or even removed from the body; so that there is obviously a tendency to the regular succession of these movements, independently of the successive applications of the stimulus of the blood to these parts.

When the ventricles contract, the apex of the heart is not only pulled upwards, but somewhat raised or tilted forwards; hence it is generally, and no doubt justly supposed, that it is during this systole of the ventricles, that the apex of the heart gives the impulse against the parietes of the chest, which is felt, in the natural state, between the fifth and sixth ribs, and which, just perceptibly, precedes the pulse at the wrist. The projection of the apex of the heart on the contraction of the ventricles, is seen even when the heart is removed from the body of a warm-blooded animal before its actions have ceased, and is, perhaps, sufficiently explained by the disposition of its muscular fibres, and particularly by the irregular cone which they form, being *flattened posteriorly*.

When the ear is applied to the human chest, over the situation of the heart, a dull and somewhat prolonged sound is observed to precede and accompany the impulse of the heart against the parietes above mentioned; and this is immediately succeeded by a shorter and sharper sound; after which there is a short pause, before the dull sound and impulse are renewed. A slighter impulse or succession is sometimes observed to accompany the sharper sound likewise. The duller sound, and stronger impulse, are generally ascribed to the contraction of the ventricles, and movement of their fluid contents; and Laennec and others have ascribed the sharper sound and feebler impulse to that of the auricles; but this last opinion is probably erroneous; because the sharper sound certainly immediately *precedes* the longest pause in the sounds of the heart; whereas the contraction of the auricles immediately *succeeds* the longest pause in the visible contractions of the heart; as appears not only from experiments on animals, but also from cases occurring occasionally in the human body, both in health and disease, where the contractions of the right auricle are made obvious by a retrograde impulse, communicated to the blood in the jugular veins.

It is also doubtful, whether the contraction of the columnæ carneæ, in the inside of the ventricles, takes place at the same instant with that of the mass of muscular fibres constituting their parietes. It is obvious, that the contraction of these columnæ cannot aid in lessening, but must elongate and enlarge, the cavities of the ventricles. It has therefore been conjectured, that their contraction may precede, and alternate with the general systole of the ventricles, and pull down and stretch the tricuspid and mitral valves during the diastole of these, and so prepare them for the entrance of the blood from the auricles; and that the second or sharper sounds of the heart is caused by this action of the columnæ and valves, or rather by

the sudden entrance of the blood from the auricles, for which preparation is thus made. Perhaps it may also be supposed, that one stimulus which excites the columnæ to act, is the pressure made on them during the previous contraction of the mass of muscular fibres lying exterior to them, in the systole of the ventricles; and that the contraction thus beginning in those internal columns, is afterwards propagated to that surrounding mass of fibres, many of which are continuous with those in the columnæ themselves. In this manner it seems possible, that the peculiar convoluted form of the muscular fibres of the heart may be concerned in giving the tendency above noticed, to a regular succession of their own contractions.

The contractions of the muscular fibres of the different parts of the heart are clearly sufficient to agitate the blood powerfully, and ultimately to eject it by the arteries with great force. The quantity ejected at each systole of the left ventricle seems to be nearly two ounces in an average-sized man, and the space it must occupy in the aorta nearly eight inches. The calculations of Hales, who states the force exerted by the left ventricle of a human heart as equivalent to 51½ pounds, the velocity of the blood leaving the heart as 149·2 feet per minute, and the quantity of blood passing through the heart every hour as 20 times the whole weight of the blood in the body, — although only approximations to the truth, do not appear to be founded on exaggerated data. The velocity of the circulation is also illustrated by the fact, that in the horse, a fluid injected into one jugular vein has been detected in the opposite vein, and even in the vena saphena, within half a minute.

The diastole, as well as the systole, of the different parts of the heart, especially of the ventricles, is performed with force; the muscular fibres not merely relaxing as the cavities are distended with blood, but springing back directly after their own contraction is over. The tendency thus given to the formation of a vacuum in the auricles, is one cause of motion of the blood towards the heart along the great veins, where it is subject to pressure from various causes.

Although the different parts of the heart have obviously a tendency to regular and successive movements, independently of the stimulus of the blood, yet experiments prove, that the blood, which is in contact with the inner surface of the heart, acts as a powerful stimulus upon it; and we cannot doubt that it is by the constant succession of fresh applications of this stimulus, that the nearly uniform succession of the heart's movements, throughout the whole of life, is maintained.

We can go no farther, in assigning a cause for the natural movements of the heart, than to refer them to the application of this stimulus, and to the property of irritability, in a high and peculiar degree of intensity, resident in its fibres. We cannot ascribe to the heart any feeling or sensation, in the performance of these actions, without altering the meaning of these words; we cannot liken these actions to any voluntary movements, without overlooking the most essential peculiarities of both; and we cannot suppose any action of nerves to be essentially concerned in them, without ascribing to the nerves of the heart endowments, which no experiments or observations show that they possess.

The blood is conveyed from the heart to the capillary vessels all over the body by the arteries; and the properties of these constitute the *second* great agent, by which its motion is effected.

These are flexible and elastic tubes, consisting of three coats, of which the exterior, composed of dense cellular texture, is the most distensible and the toughest: the middle, composed of transverse fibres, denser and lighter coloured than those of muscles, is the thickest, strongest, and most elastic; and the internal, on which the blood moves, is very thin and smooth. The arteries are all to a considerable degree extensible, especially in the longitudinal direction; and are of great strength, the smaller branches even more so than the larger.

Every small portion of artery, by reason of its elasticity, has nearly a cylindrical form, and the blood therefore passes along a series of descending cylinders, on its way from the heart to the capillaries. But the sum of the areas of the whole of the smallest branches into which any artery divides itself, is considerably greater than the area of the artery itself; although the ratio of this difference has been very variously stated.

The arteries are subdivided into small branches to a great but very various degree of minuteness in the different textures. In some parts the smallest branches are so minute as not to admit the red globules of the blood; but various textures appear to be nourished, without so minute a subdivision of their vessels.

The smaller arteries communicate or anastomose freely with one another in all parts of the body; the smallest capillaries the most freely of all; and on this account the characteristic effect of ligatures formerly observed, in emptying the portions of artery beyond them, and distending the portions within them, is only distinctly seen in the larger branches.

The arteries in the living body (with the exception of the smallest branches, in which a greater variety is observed) are always filled, and even somewhat distended with blood, which is moving towards the capillaries. This blood receives a sudden *increase of velocity* from the impulse of each successive jet of blood from the ventricles of the heart; and from the same cause the arteries are slightly *distended*, — and in many parts of the body even somewhat *displaced*. These effects of the systole of the ventricles, constitute what is called the *pulsation* of the arteries; but the two last of these effects, in the healthy and tranquil state of the circulation, are scarcely perceived at any single points; and therefore the pulse in an artery is not distinctly felt, unless the artery is somewhat compressed by the finger, to make the impulse, which its contents receive from the heart, perceptible.

The slight distension which the whole arteries experience, from the impetus of each suc-

cessive jet of blood from the heart, is sufficient to call into action their elasticity, which enables them to react on the blood, in each interval of the heart's pulsation, and gradually to equalise its motion, until it becomes quite uniform and continuous in the capillaries.

There are many and great obstacles to the free motion of the blood along the arteries, — from the friction of their sides, — from their angular and tortuous course and minute subdivisions, — and from their constant tendency to contraction. The effect of these is not, as some have taught, to make the velocity of the blood in the smaller arteries less than in the larger, but to make its velocity, in all the arteries, less than it otherwise would be. As we know that no part of the circulating system in the healthy state is continually becoming fuller of blood, we are sure that the quantity of blood delivered into all the veins in a given time from all the arteries, is equal to that received by them from the heart; and this proves, that the velocity of the blood in the capillaries, on the whole, must be less than that in the aorta, just in the same proportion as the area of the aorta is less than the sum of the areas of all the capillaries.

But although this proportion must hold on the whole, yet many facts inform us, that the velocity of the blood, even in vessels of the same size, in different parts of the system, is habitually different; and that the quantity of blood received into, and its velocity in, the smaller arteries and capillaries of all parts of the body, are liable to much temporary variation. In particular, the blood which enters the brain, as it meets with more of the obstacles above mentioned than that which is sent to most other parts, must have an habitually slower motion. For these varieties in the flow of blood in different parts, and at different times, there is ample provision, in the distensibility of the vessels, and in the possibility of increased velocity in one part compensating for diminished velocity in another, without the general law above stated being perceptibly violated.

Although the ordinary velocity of the blood in different arteries must be very different, it would appear from the experiments of Poiseuille, that the pressure exerted on the blood in different parts of the body (as measured by the column of mercury which the blood in different arteries will sustain), is almost exactly the same.

In attempting to form a judgment on the difficult subject of the efficiency of any action of arteries, in causing, or regulating, the movement of the blood, it is first necessary to consider how far the action of the heart extends, and is efficient as a cause of that movement, throughout the vascular system.

It appears from experiments of different physiologists, and especially of Magendie and Poiseuille, that when the circulation of a limb, in a warm-blooded animal, is confined to the branches of a single artery and corresponding vein, the blood stagnates in the vein, whenever the artery is emptied by ligature; but flows freely along the vein, when the ligature on the artery is removed; and that its flow along the vein is varied by any cause that affects its movement in the artery; which shows, that the action of the capillaries and veins of a limb is insufficient to propel the blood, without the impulse *a tergo*, given by the heart and large arteries. Indeed a little management gives nearly similar results in a common bloodletting.

Farther, the movement of the blood in all the small vessels of a warm-blooded animal, is always speedily arrested when the heart's action ceases; and although there are various examples on record, in which the human fœtus (always imperfect, however, in other respects), has attained a considerable size without a heart, yet every such fœtus has been contained in the same womb, and probably nourished through the same placenta, as another fœtus of the natural structure; and in every such case the heart of the perfect fœtus would, in all probability, be instrumental in maintaining the circulation of the monster. It would appear, therefore, that in warm-blooded animals at least, the heart's action is essential to the support of the circulation in every part of the vascular system.

On the other hand, that the pressure of the coats of arteries may act as a powerful cause of motion in the blood, appears from the effects of an opening made in an artery, in which case a current of blood is established towards the opening, from the artery and anastomosing branches beyond it, as well as from those nearer the heart; and the same is shown by the rapidity with which the portion of an artery beyond a ligature is emptied of its blood.

Dr. Marshall Hall has ascertained, that in some cold-blooded animals, there are arteries which pulsate nearly as a heart does, after the heart has been cut out; and Poiseuille and Guillot have described, in some of the lowest class of animals, which have vessels, but not hearts, movements of these vessels resembling the peristaltic movements of the bowels, and manifestly propelling their contents; but in the arteries of warm-blooded animals, no such unequivocal indications of vital action have ever been observed. In all these animals, the action of arteries on their contents seems to be always of the same *kind* as that which results from the physical property of elasticity called into action by a distending force; but the following facts appear sufficient to prove that they possess the vital power of tonicity, as formerly defined, which will determine a *greater degree* of reaction on their contents, than mere elasticity would occasion: —

1. In experiments made by many physiologists, particularly by Verschuir, Thomson, Giulio and Rossi, Parry, Hastings, and Wedemeyer, it appeared, that by various stimuli applied to arteries, chiefly small arteries, which could not affect their mechanical properties, constriction of those arteries, at the points irritated, lasting some time, and then gradually relaxing, were induced.

2. In experiments made by Wedemeyer, it was found, that when stimulating fluids (such as alkohol or vinegar of a certain strength), are injected into the arteries of living animals, there is great difficulty in pushing them forward into

the veins; whereas mild fluids in the living body, and these irritating fluids in the dead, pass forward readily.

3. In experiments made by Mr. Hunter and Dr. Parry, it appeared distinctly that the arteries of dying animals, especially those dying from hæmorrhage, when emptied of their blood, contract immediately after death, and in some instances before death, to a calibre considerably less than that which they afterwards gradually assume, and then maintain till putrefaction begins: which proves, that the tendency of living arteries to contraction is greater than their merely physical properties can occasion.

4. In experiments made by Poiseuille, where an artery from an animal just killed was distended by water urged by the pressure of a given column of mercury, and then the force of its re-action measured by the height of a column of mercury which the water expelled from it could support, it appeared that the force of re-action, excited by the distention of the recent artery, was greater than the force used to distend it; and greater than an artery could exert some time after death, but before any decomposition of its texture had commenced.

These facts leave no room for doubt that arteries possess, and must occasionally, if not habitually, exert on their contents a truly vital power of contraction.

This being ascertained, we next observe, that various facts show the course of the blood to be variously modified, and probably much promoted on the whole, by causes acting at a distance from the heart; — in modes which the merely physical properties of arteries cannot possibly explain. The most instructive of these facts are the following: —

1. The great amount of the obstacles which oppose the free flow of the blood into and through the small capillaries of the system; and the force therefore found requisite in the dead body to imitate the flow of blood by injection, especially when injection is attempted in an animal just killed, when, as it would appear, the property of tonicity remains in the blood-vessels.

2. The small amount of force found sufficient to stop the flow of blood along the chief artery of a limb, when compared with those obstacles, which the blood, moving along that artery, must encounter in its passage through the smaller vessels.

3. The immediate diminution produced in the flow of blood through the arteries of a limb, by some attacks of palsy, in which the heart's action is unaffected.

4. The greatly increased determination of blood to various organs at particular times, without corresponding alteration of the heart's action; *e. g.* in many cases of partial inflammation or hæmorrhages, — in the case of blushing, and other effects of mental emotion, — in the case of occasional or periodic secretion or nutrition at individual parts, whether natural or morbid, often observed without increase of the heart's action, and contrasting strongly with other instances, where, from mental emotion, exercise, febrile disease, &c., the heart's action is strongly excited, while secretion and nutrition are every where diminished.

5. The alteration which is gradually produced on the arteries of any part of the body, when any cause is applied, which greatly and permanently augments the action going on at *their extremities only*; the influence of which cause is manifestly *retrograde* along the vessels; — *e. g.* the increased size given to the anastomosing branches of a limb, of which the principal artery has been tied, — when contrasted with the shrunk condition of all the arteries of the stump of a limb which has been amputated; — the increased size and tortuous course of the arteries of the uterus during gestation, and of the arteries of any part of the body, where the growth of a tumour has been excited; and again the deficient circulation in, and nourishment of, a limb of which the sensitive nerves are palsied, or which is long kept completely at rest (as by disease of a joint) without palsy.

These facts show, that the flow of blood in the arteries, and especially in the capillaries, of different parts, is in a great measure determined by causes acting at the extremities of the circulation, and bears no fixed relation to the state of the heart's action.

The question that next presents itself is, how far the additional power, which plainly affects the motion of the blood, at a distance from the heart, is referable to the vital contractions of the coats of arteries?

The influence exerted on the circulation by any such action of the *largest* arteries is certainly of no great amount; because the circulation has often been observed to be well maintained, when those arteries had become rigid and inflexible, and lost both their elasticity and vital power. But the vital properties of arteries probably reside chiefly in their *smaller branches*, as would appear from the following facts: —

1. From the coats of the smaller arteries bearing a much larger proportion, on the whole, to their fluid contents than those of the larger.

2. From the fibrous coat of the smaller arteries more nearly resembling muscular texture.

3. From experiments of Mr. Hunter, which show that the smaller arteries contract more at the moment of death than the larger.

4. From many experiments of Bichat, Buniva, Parry, &c., which show that an injection thrown into the arteries immediately after death, while tonicity remains in them, passes by the largest of the arteries that communicate with veins, but does not fill the smaller capillaries; and from the observation of Hunter, that an injection forced into the arteries of an animal just killed, which retain their tonic power, is apt, after a time, to be forced back into the larger.

5. From the observation of Haller and others, that in animals just killed, and of which the hearts have been cut out, the blood in the arteries, as well as the veins, is apt to move chiefly from the smaller to the larger branches.

It cannot, therefore, be doubted, that this vital power of the arteries must, to a certain degree, modify the motion of the blood; but it is more difficult to understand how *an increase* of

this tonic power can, in any case, promote the flow of the blood; and it has therefore been supposed, that it is by a *relaxation* of this kind of contraction, giving additional effect to the impetus from the heart, that local determinations and congestions of blood are effected.

To this opinion there are the following objections: —

1. The amount of the obstacles already noticed to the flow of blood in the arteries, renders it probable, that whatever vital powers affect the motion of the blood at a distance from the heart, must on the whole assist, instead of opposing, the effect of its contractions.

2. If local and occasional congestions of blood resulted simply from diminution of the vital action of the arteries, allowing a fuller effect to the impulses given from the heart, the blood in the capillary arteries of parts where congestion has taken place, might be expected to have always an intermitting motion; which is not the case.

3. The causes which usually excite local congestions of blood, are very generally causes, which, in all other instances, *excite*, instead of depressing or weakening, vital action.

These statements render it probable that vital contractions, chiefly of the smaller arteries, do come in aid of the actions of the heart in maintaining and regulating the circulation; but it must be added, that in the warm-blooded animals, we have no evidence of any powerful action of this kind being habitually exercised; and the following reasons may be given for thinking that causes distinct from any vital contractions of vessels, are concerned in producing the flow of blood in the extreme branches of the arteries; *i. e.* that there is a *third* power concerned in producing and regulating the movement of the blood, besides any mechanical action of the heart and arteries: —

1. The smallest arteries, or true capillaries, in which the greatest variety as to the quantity and velocity of the blood is observed, do not show any fibrous structure; and when the circulation in them is examined with the microscope, in ordinary circumstances, no contractions of their coats are perceptible.

2. Haller and others have described varying movements of globules of blood in living animals, such as do not appear to be explicable by mechanical laws, seen under the microscope, especially when these globules had escaped from the blood-vessels into surrounding textures.

3. Movements of other fluids contained within living textures, and even currents in fluids placed in contact with living textures, have been observed, which cannot be traced to the influence of any contractions of solids.

4. On minute examination of the progressive development of parts in the fœtal state of different animals, it appears that various parts are in progress of organisation (implying regulated movements in the fluids) before the heart acts, or the arteries are distinctly formed.

5. When the blood has been delivered into the capillary vessels of any living part, although still influenced by the contractions of the heart and arteries, it must be supposed to come likewise under the dominion of the laws, whatever these be, by which the movements of the nourishing fluid are effected, in those animals that have no circulating system, and in vegetables. In particular, it may fairly be presumed, that the *vital affinities*, which regulate the chemical changes that are wrought on the blood in the capillaries, must likewise be a cause of its movement there. To this we should probably refer the striking fact (to be afterwards more fully considered), that when the chemical changes at the lungs are arrested, by obstruction to the access of air thither, the contractions of the right ventricle and pulmonary artery, although continuing vigorous for a time, fail of their wonted effect; and the blood stagnates in the capillaries of the lungs and right side of the heart; but its motion is instantly resumed, if, within a short interval of time, the access of air to the blood be again permitted.

It must, however, be observed, that the experiments of Magendie and of Poiseuille, already noticed, as they prove that the flow of blood along veins is dependent on, and continually modified by, the flow along the arteries communicating with these veins, sufficiently demonstrate that the powers residing in the capillaries, although they may promote the movement, and determine the distribution, of the blood in them, are inadequate to the propulsion of masses of blood along the larger veins.

Since it has been ascertained that galvanism, transmitted through a fluid, is a cause, not only of its decomposition, but of its movement, through any porous substance, from the positive towards the negative side of the apparatus, it has been conjectured that the electrical relations of arterial and venous blood (the first of which is, in a slight degree, positively, and the last negatively, electrified), may be an important cause of the motion of the blood in the capillaries. But if this be a cause which promotes, as has been stated, the flow of blood in the capillaries throughout the body, where the arterial blood becomes venous, it ought to retard its motion in the capillaries of the lungs, where the venous blood becomes arterial. Yet we know, from the fact above stated, that the change of the blood from venous to arterial at the lungs, is a very powerful cause of its motion there.

The power or property, by which various fluids attract others with unequal force, through the intervention of any porous substance, lately described by Dutrochet and others under the names of endosmose and exosmose (in whatever way it is to be explained), must certainly operate as a cause of motion in the fluids in different parts of the animal system. But neither this, nor any other principle, which is found to apply equally to dead matter, can suffice for the explanation of the *variations*, especially of the sudden and partial variations observed in the motion of the blood in the capillaries in different parts, and in different circumstances of the body; for example, of those which result from mental acts or feelings. Whether the auxiliary powers, residing in the

small arteries, consist merely in contractions of solids, or partly (as is more probable) in *peculiar attractions* of solids and fluids, we cannot doubt that they are in a great measure truly *vital*.

No termination of arteries has ever been distinctly demonstrated, except that in veins. This is seen on microscopical examination, in the translucent parts of various living animals, and may be traced, after injection, in different textures of the human body. The capillary arteries, which are turned backwards and form veins, vary considerably in size, some admitting three or four globules of blood abreast, and others probably not admitting one. It appears, however, from the microscopical observations of Dr. M. Hall, that in most parts of animals there is a numerous set of minute vessels, of nearly equal calibre and anastomosing freely, in which most of the smaller arteries terminate abruptly, in which the motion of the blood is much slower than in the gradually tapering arteries, and from which nearly all the veins originate. These are strictly the capillary vessels.

The veins become gradually, though not uniformly, larger when traced towards the heart, and terminate ultimately in the venæ cavæ and coronary vein. Those which are of sufficient size to be examined, are found to consist only of two coats, corresponding to the outermost and innermost of the coats of arteries, but possessed of greater strength. Hence they are thinner and less elastic, but more distensible and tougher, than the arteries. Near the heart, and in various other parts of the larger veins, thin irregular layers of fibres, more or less resembling those of muscles, are interposed between their coats.

The veins in the extremities, and generally in muscular parts of the body, are provided with valves, constructed nearly in the same manner as those at the mouth of the aorta, with their free edges towards the heart.

There are two important singularities in the venous system; *first*, the sinuses within the cranium, formed by separation of the laminæ of the dura mater, into which the veins of the pia mater open obliquely in a direction opposite to the current of the blood, the effect of which is to lessen the effect on the vessels of the brain, of any stagnation and congestion of blood in the great veins near the heart; *secondly*, the distribution of vena portæ, (which is of great size and strength, and collects the blood from the stomach, intestines, pancreas, and spleen), through the substance of the liver, after the manner of an artery. In many of the lower animals, the venous blood from the lower extremities is, in like manner, diffused through the kidneys.

Besides being more distensible, the veins are considerably more numerous and more capacious than the arteries, and their larger branches anastomose much more freely. Hence the quantity of blood in the veins is always much greater, and is liable to greater variations, both locally and generally, than that in the arteries.

From the smaller capacity of the arteries, and from the pretty uniform distention, on the whole, of all parts of the vascular system, it follows, that the velocity of the blood in the veins must, on the whole, and in the same proportion, be less than that in the arteries. And from the sum of the smallest veins of the body having a much larger capacity than the venæ cavæ, it follows, that the velocity of the blood in these smallest veins must, on the whole, and in the same proportion, be less than that in the venæ cavæ. But the circumstances stated as to the structure of veins, admit of greater local and temporary variations of the velocity of the blood in them, without perceptible deviation from these generel laws, than can occur in the case of the arteries. Absolute stagnation, and even retrograde movement, for a time, of blood in individual veins, have often been observed in experiments on animals.

The ordinary motion of the blood in the veins is continuous, with these exceptions; *first*, that, in a state of great weakness, when the arteries are very little distended by the stroke of the heart, the blood in the smallest of the veins retains somewhat of the intermitting motion; *secondly*, that the flow of blood in the great veins, even independently of disease, is slightly retarded at each systole of the auricles, and accelerated on their diastole; *thirdly*, that the flow of blood in the great veins is somewhat retarded by each act of expiration, and accelerated by each inspiration; the natural effect of the enlargement of the shut cavity of the chest, in inspiration, being to draw towards it, (*i. e.* to cause the pressure of the atmosphere to urge towards it,) not only air by the trachea, but also blood by the great veins. This last is the respiratory pulse of Haller and others, which is distinctly seen to communicate a movement to the brain and spinal cord, when they are exposed.

The motion of the blood in the veins is manifestly determined by various causes: —

1. Probably the most efficacious is the impulse *a tergo* communicated by the heart and arteries, the effect of which is unequivocally shown by the experiments previously mentioned. But when we consider the great distensibility of the veins, and the very moderate degree of distension observed in them in the healthy state, we cannot doubt, that the motion of the blood along them must be much aided by causes acting in this part of the circulation itself.

2. The experiments of several physiologists, particularly Verschuir, Hastings, and Beclard, seem sufficiently to indicate a vital power of tonicity in the veins, similar to that which we ascribed to the arteries. But in several parts of the body, as in the interior of bones, and in the substance of the liver, where the coats of the veins form the internal lining of unyielding canals, it is obvious that this power cannot be exerted; and in any individual part, it is probably a feeble power.

3. Gravitation manifestly affects the flow of blood in the veins, especially of the extremities; but cannot materially, on the whole, promote the flow towards the heart.

4. The action of neighbouring muscles, and probably the pressure of other adjacent and especially elastic textures, such as the skin, aided

by the effect of the valves, frequently and greatly promote the flow of blood in many veins, chiefly of the extremities.

5. It appears that the "suction influence" of the diastole of the auricles of the heart, promotes the flow of blood along the veins somewhat more than their systole retards it. But the rapid distention of a vein below a ligature, where this cause cannot act, shows that the other causes of the motion in the veins are much more powerful.

6. It appears from the experiments of Dr. Barry, that the motion of the blood along the veins is promoted also, in animals of which the respiration is similar to the human, by the 'suction influence' of the acts of inspiration above mentioned. But, besides what was observed in the last paragraph, the facility with which circulation is carried on in the fœtus, which does not breathe; in animals, of which the pericardium has been opened, and the heart exposed to the air (so that no influence of this kind can affect the motion of the blood); and even in cases of artificial respiration, where no such influence can be exerted by the chest — sufficiently demonstrates that this cause likewise is of comparatively inconsiderable amount.

The effect of the more violent respiratory actions on the flow of blood in the veins, and particularly the retardation of the blood's motion, and congestion in the great veins, from forced or prolonged expiration, accompanied by muscular effort, are very important in pathology. Muscular exertion, especially of the respiratory muscles, has the additional effect of accelerating the flow of blood in the arteries, which will be considered afterwards.

The pulmonary artery and its branches are similar to the other arteries of the body, and the pulmonary veins to other internal veins. The termination of the smallest branches of the artery in the capillary veins of the lungs, has been ascertained as distinctly, and in the same manner, as in other textures; and the smallest branches of the bronchial arteries, which bring arterial blood from the aorta, have been found to inosculate with those of the pulmonary artery.

As the whole of the pulmonary circulation is carried on within the cavity of the chest, it cannot derive any aid, on the principle of suction, from the movements of the chest. But the motion of the lungs in inspiration and expiration promotes the flow of blood through their substance, for reasons which will appear afterwards.

The fibrous middle coat found in the pulmonary artery and its branches, as well as in the aorta, is probably chiefly useful by resisting the strong and variable impulse given by the heart's contractions, and thus preventing morbid dilatation of the arteries. And it is with the same intention, no doubt, that the great veins are strengthened by muscular fibres near their termination, where they are exposed to the retrograde impulse from the stroke of the auricles.

According to the most probable estimates, the whole quantity of blood in the body may be in general about one-fifth of the weight of the whole body; and of this, it is generally thought that about one-fourth may be in the arterial, and three-fourths in the venous system.

Circula'tor. (From *circulo*, to compass about.) An itinerant practitioner of medicine. A mountebank.

Circulato'rium. (From *circulo*, to move round.) A chemical digesting vessel, so contrived that the fluid within it is made to perform a circulatory motion.

Ci'rculus. (Diminutive of *circus*, a circle.) A circle or ring. 1. Applied in *Anatomy* to circular parts; as the *circulus osseus* of the temporal bone of the fœtus, or any part of the body which is of an annular shape, as *circulus oculi, iridis*, &c.

2. To an iron instrument used by the old chemists for dividing glass. See *Ruland, Lexicon Alchemiæ.*

3. To several circular instruments used by the older surgeons.

Circulus arteriosus i'ridis. The artery which runs round the iris, and forms a circle, is so termed. See *Oculus.*

Circulus ciliaris. See *Ciliary circle.*

Circulus osseus. *Annulus osseus.* A ring-like bone in the ear of the fœtus. It is placed at the bottom of the cartilaginous meatus externus, and supports the membrana tympani. In the adult it is united with the meatus.

Circulus qua'druplex. A kind of bandage used by the old surgeons.

Circumcalua'lis. A name that has been given to the tunica conjunctiva of the eye. See *Oculus.*

CIRCUMCI'SION. (*Circumcisio, onis.* f.; from *circumcido*, to cut about.) The removal of the prepuce from the glans penis. This is a religious rite among the Jews and Mahommedans. It is also practised by surgeons in some cases of phymosis.

Circumductionis opifex. An epithet applied by Vesalius to the superior oblique muscle of the eye.

Circumflexa anterior. *Articularis anterior.* The name of a branch of the humeral artery dispersed upon the muscles covering the anterior part of the shoulder joint.

Circumflexa externa. An artery usually arising from the *profunda femoris*, but sometimes from the common femoral. It is distributed to the muscles of the hip and thigh.

Circumflexa ili'aca. *Circumflexa ossis ilii. Iliaca anterior.* An artery which rises nearly opposite the epigastric, from the external iliac artery immediately before it passes under Poupart's ligament. It runs along the crest of the ilium between the transversalis and internal oblique muscles to the loins. It gives blood to the abdominal psoas iliac and sartorial muscles and inosculates with the epigastric inferior intercostal and lumbar arteries.

Circumflexa interna. An artery of the thigh, given off from the profunda or femoral opposite the external circumflex. It turns round the inner part of the neck of the thigh bone, and supplies the hip joint and muscles surrounding it.

Circumflexa posterior. *Articularis posterior.* A branch of the humeral artery, larg

than the circumflexa anterior, passing to the back of the shoulder joint, and dispersed chiefly on the deltoid muscle.

CIRCUMFLE'XUS. *Circumflex.* An epithet given by anatomists to objects which wind round others. Thus there is an anterior and posterior circumflex artery around the shoulder joint, a circumflex muscle of the palate, &c.

CIRCUMFLEXUS PALATI. A muscle of the palate. *Tensor palati*, of Innes. *Circumflexus palati mollis*, of Albinus. *Spheno-salpingo-staphilinus, seu staphilinus externus*, of Winslow. *Musculus tubæ novæ*, of Valsalva. *Palato-salpingeus*, of Douglas. *Pterigo-staphilinus*, of Cowper. It arises from the spinous process of the sphenoid bone, behind the foramen ovale, and from the Eustachian tube, not far from its osseous part; it then runs down along the pterygoideus internus, passes over the hook of the internal plate of the pterygoid process by a round tendon, which soon spreads into a broad membrane. It is inserted into the velum pendulum palati, and the semilunar edge of the os palati, and extends as far as the suture which joins the two bones. Generally some of its posterior fibres join with the constrictor pharyngis superior, and palato-pharyngæus. Its use is to stretch the velum, to draw it downwards, and to the side towards the hook. It has little effect upon the tube, being chiefly connected to its osseous part.

CIRCUMFORA'NEUS. Wandering. A Latin adjective, applied to an itinerant quack or mountebank. It has been made into a substantive.

CIRCUMLI'TIO. (From *circumlino*, to anoint around.) A liniment; especially one applied to the eyelids.

CIRCUMOSSA'LIS MEMBRANA. The periosteum.

CIRCUMSCI'SUS. (From *circumscindo*, to cut round about.) Circumcised. Applied to a membraneous capsule, separating into two parts by a complete circular fissure.

CIRRO'SUS. Cirrose: having a cirrus or tendril. Applied to a leaf tipped with a tendril; as in *Gloriosa* and *Hagellaria*.

CIR'RUS. (*us, i.* m.; from κερας, a horn, because it is twisted like a horn.) *Cirrhus. Clavicula.* A clasper or tendril. One of the *Fulcra* or props of plants. A long, cylindrical, slender, spiral body, issuing from various parts of plants.

From its origin, a cirrus is distinguished into,

1. *Foliar*, when a continuation of the midrib of a simple leaf; as in *Fumaria claviculata*, *Mimosa scandens*, and *Gloriosa superba*.

2. *Petiolar*, when terminating the common petiole of a compound leaf; as in *Pisum sativum*. This is sometimes distinguished by the number of leaflets which grow under it: hence *cirri diphylli — tetraphylli*, and *polyphylli*.

3. *Peduncular*, when it proceeds from the peduncle; as in *Vitis vinifera*.

4. *Axillary*, when it arises from the stem or branches in the axillæ of the leaves; as in *Passiflora incarnata*.

5. *Subaxillary*, when it originates below the leaf.

6. *Lateral*, when at the side of it; as in *Bryonia*.

From the division of its apex, a *cirrus* is,

1. *Simple*, consisting of one undivided piece; as in *Momordica balsamina*, *Passiflora quadrangularis*, and *Bryonia dioica*.

2. *Compound*, consisting of a stalk, variously branched or divided.

3. *Bifid*, when it has two divisions; as in *Vitis vinifera*, *Lathyrus palustris*, *Ervum tetraspermum*, &c.

4. *Trifid*, when there are three; as in *Bignonia unguis*, and *Lathyrus hirsutus*.

5. *Multifid*, or *branched*, when the divisions are more numerous; as in *Lathyrus latifolius*, and *Cobea scandens*.

From its *convolution* into,

1. *Convolute*, when all the gyrations are regular in the same direction; as in *Hedera quinquefolia*.

2. *Revolute*, winding itself irregularly, sometimes on one side, sometimes on the other; as in *Passiflora incarnata*.

CI'RSIUM. (From κιρσος, a varix, which this herb was supposed to cure.) The herb sawwort. See *Serratula*.

CIRSOCE'LE. (*e, es.* f. Κιρσοκηλη; from κιρσος, *varix*, or a dilatation of a vein, and κηλη, a tumour.) A varicose enlargement of the spermatic veins: it is most frequently confined to that part of the spermatic cord which is below the opening in the abdominal tendon; and the vessels generally become rather larger as they approach the testes. It bears some resemblance to a number of earthworms coiled up. It occasions pain from the distension of the vessels, and is attended also with pain, or a sense of weight in the loins. Cirsocele may be mistaken for an omental hernia, but they are easily distinguished in the following manner: place the patient in an horizontal posture, and empty the swelling by pressure upon the scrotum; then put the fingers firmly upon the upper part of the abdominal ring, and desire the patient to rise: if it be a hernia, the tumour cannot re-appear, as long as the pressure is continued at the ring; but if a cirsocele, the swelling returns with increased size, on account of the return of blood into the abdomen being prevented by the pressure. This affection can seldom be entirely cured. When the vessels are more than usually tumid, leeches should be applied, and followed by saturnine lotions to the cord and testicle. The bowels should be kept free; the testicle supported by a bag-truss, and the patient confined to the horizontal posture.

CIRSOI'DES. (From κιρσος, a varix, and ειδος, likeness.) Resembling a varix: an epithet applied by Rufus Ephesius to the upper part of the brain, and also to the spermatic veins.

CIRSO'MPHALOS. (From κιρσος, a varix, and ομφαλος, the navel.) A varicose state of the veins, or an aneurismal varix around the navel.

CIRSOPHTHA'LMIA. (*a, æ.* f.; from κιρσος, *varix*, and οφθαλμος, the eye.) A varicose state of the vessels of the eye.

CIRCOS. Κιρσος. The Greek for a *varix*.

CI'SSA. *Citta.* Κισσα. Κιττα. The Greek word for a magpie, and also for the disease called *pica*. See *Pica*.

CISSA'MPELOS. (*Cissampelos, i.* f.;

from κισσος, ivy, and αμπελος, the vine.) 1. The Greek name of a species of convolvulus.

2. The name of a genus of plants in the Linnæan system. Class, *Diœcia;* Order, *Monodelphia.* Wild vine. Velvet leaf.

Cissampelos caapeba. This species is held by the Brazilians to be a specific against the bite of serpents. The root was formerly esteemed as a linthontriptic.

Cissampelos pareira. The systematic name of the *Pareira brava;* called also, *Parcyra, Abuta, Ambutua, Butua,* and *Overo butua.* The root of this plant — *Cissampelos, foliis peltatis cordatis emarginatis,* of Linnæus — a native of South America and the West Indies; has no remarkable smell, but a sweet bitter, and somewhat austere taste. It has been extolled in nephritic and calculous complaints; but is not used in this country. The dose is from ℈j. to ℈ij. of the powder; or an infusion may be made with ℥iij. of the root to ℔j. of water, the third part of this being taken at once.

Ci'ssarus. See *Cistus creticus.*

Cissi'num. Κισσινον. The name of a plaster prescribed by Paulus Ægineta for wounds of the tendons. Its name is derived from κισσος, ivy; but ivy is not mentioned as an ingredient in it.

CISTE'RNA. (*a, æ.* f.; a cistern.) The fourth ventricle of the brain has been so called.

Cisterna chyli. *Cisterna lumbaris.* The receptaculum chyli.

Cisterna lumbaris. See *Cisterna chyli.*

Ci'sthorus. See *Cistus creticus.*

Cistic. See *Cystic.*

CI'STUS. (*us, i.* m. Κιστος.) The name of a genus of plants in the Linnæan system. Class, *Polyandria;* Order, *Monogynia.* The Cistus.

Cistus creticus. The systematic name of the plant from which the ladanum of the shops is obtained. It has also been named *Cisthorus, Cissarus,* and *Dorycinium.*

Cistus — arborescens extipulatus, foliis spatulato-ovatis petiolatis enerviis scabris, calycinis lanceolatis, of Linnæus. This plant is a native of Syria, and the islands of the Archipelago. The gum resin, called ladanum, exudes upon the leaves of this plant. It is collected by lightly rubbing the leaves with leather, and afterwards scraping it off, and forming it into irregular masses for exportation. Three sorts of ladanum have been described by authors, but only two are to be met with in the shops. The best, which is very rare, is in dark-coloured masses, of the consistence of a soft plaster, and growing still softer on being handled; the other is in long rolls, coiled up, much harder than the preceding, and not so dark. The first has commonly a small, and the last a large admixture of fine sand; the dust blown on the plant by winds, from the loose sands among which it grows, being retained by the tenacious juice. The soft kind has an agreeable smell, and a lightly pungent bitterish taste: the hard is much weaker. Ladanum was formerly much employed internally as a pectoral and astringent in catarrhal affections, dysenteries, and several other diseases; at present, however, it is never used, except as an ingredient in the stomachic plaster, *emplastrum ladani.*

Cistus ladani'ferus. This species grows in Spain, Portugal, and Provence. Its young branches afford, by boiling in water, a substance analogous to the ladanum of Crete.

Cistus laurifolius. This grows in the South of France, and also affords a kind of ladanum.

Cistus ledon. See *Ledum palustre.*

Ci'tharus. (From κιθαρα, a harp.) The breast is sometimes so named from its shape. — *Turton.*

Citra'go. (From *citrus,* a citron; so called from its citron-like smell.) Baum. See *Melissa.*

CI'TRATE. (*Citras, atis.* f.; from *citrus,* the lemon.) A salt formed by the union of the citric acid, or acid of lemons, with the salifiable bases.

Citrate of potash. This salt is used medicinally, in the form of the common effervescing saline draught. A scruple of carbonate of potash, dissolved in a little water, is neutralised with the juice of one common-sized lemon, or with fifteen grains of crystallised citric acid. It is extremely useful in allaying irritability of the stomach and vomiting; and is an excellent light diaphoretic. Its action on the skin is rendered much more certain by the addition of a few drops of antimonial wine.

Citrate of soda. A scruple of carbonate of soda, neutralised by a sufficient quantity of lemon-juice or ten grains of citric acid, forms an effervescing draught, which has nearly the same effects as that made with citrate of potash.

Ci'trea. See *Citrus medica.*

Ci'treum. (From *citrus.*) The citron-tree. See *Citrus medica.*

CI'TRIC. (*Citricus,* from *citrus,* the lemon.) Of or belonging to the lemon.

Citric acid. *Acidum citricum.* On account of the mucilaginous matter with which lemon-juice is mixed, it is very soon altered by spontaneous decomposition. Various methods have been contrived to prevent this effect from taking place, in order that this wholesome and agreeable acid might be preserved for use in long voyages, or for domestic purposes. The juice may be kept in bottles under a thin stratum of oil, which indeed prevents, or greatly retards, its total decomposition; though the original fresh taste soon gives place to one which is much less grateful. In the East Indies, it is evaporated to the consistence of a thick extract. If this operation be carefully performed by a very gentle heat, it is found to be very effectual. When the juice is thus heated the mucilage thickens, and separates in the form of flocks, part of which subside, and part rise to the surface: these must be taken out. The vapours which arise are not acid. If the evaporation be not carried so far as to deprive the liquid of its fluidity, it may be long preserved in well-closed bottles; in which, after some weeks' standing, a farther portion of mucilage is separated, without any perceptible change in the acid.

Of all the methods of preserving lemon-juice, that of concentrating it by frost appears to be the best, though in the warmer climates it cannot conveniently be practised. Lemon-juice,

exposed to the air in a temperature between 50° and 60°, deposits in a few hours a white semi-transparent mucilaginous matter, which leaves the fluid, after decantation and filtration, much less alterable than before. This mucilage is not of a gummy nature, but resembles the gluten of wheat in its properties: it is not soluble in water when dried. More mucilage is separated from lemon-juice by standing in closed vessels. If this depurated lemon-juice be exposed to a degree of cold of about seven or eight degrees below the freezing point, the aqueous part will freeze, and the ice may be taken away as it forms; and if the process be continued until the ice begins to exhibit signs of acidity, the remaining acid will be found to be reduced to about one eighth of its original quantity, at the same time that its acidity will be eight times as intense, as is proved by its requiring eight times the quantity of alkali to saturate an equal portion of it. This concentrated acid may be kept for use, or, if preferred, it may be made into a dry lemonade, by adding six times its weight of fine loaf sugar, in powder.

The above processes may be used when the acid of lemons is wanted for domestic purposes, because they leave it in possession of the oils, or other principles, on which its flavour peculiarly depends; but in chemical researches, and where the acid itself is required to be had in the utmost purity, a more elaborate process must be used. Boiling lemon-juice is to be saturated with powdered chalk, the weight of which is to be noted, and the powder must be stirred up from the bottom, or the vessel shaken from time to time. The neutral saline compound is scarcely soluble in water; it therefore falls to the bottom, while the mucilage remains suspended in the watery fluid, which must be decanted off; the remaining precipitate must then be washed with warm water, until it comes off clear. To the powder, thus edulcorated, a quantity of sulphuric acid, equal to the chalk in weight, and diluted with ten parts of water, must be added, and the mixture boiled a few minutes. The sulphuric acid combines with the earth, and forms sulphate of lime, which remains behind when the cold liquor is filtered, while the disengaged acid of lemons remains dissolved in the fluid. This last must be evaporated to the consistence of a thin syrup, which yields the pure citric acid in little needle-like crystals. It is necessary that the sulphuric acid should be rather in excess, because the presence of a small quantity of lime will prevent the crystallisation. This excess is allowed for above.

Its taste is extremely sharp, so as to appear caustic. It is, of the vegetable acids, the one which most powerfully resists decomposition by fire. In a dry and warm air it effloresces; but it absorbs moisture when the air is damp, and at length loses its crystalline form. A hundred parts of this acid are soluble in seventy-five of water, at 60°. Though it is less alterable than most other solutions of vegetable acids, it will undergo decomposition when long kept.

Crystallised citric acid contains, according to Berzelius, 21 *per cent.* of water. This may be expelled by heat. The anhydrous acid, as analysed by the same chemist, consists of oxygen 54·831, carbon 41·369, hydrogen 3·800. The crystallised acid deposited from its saturated solution, consists of

	Dumas.	Brout.	Ure.
Carbon	36·28	34·28	33·00
Hydrogen	4·45	4·76	4·63
Oxygen	59·27	60·96	62·37
	100·00	100·00	100·00

The crystals, obtained by spontaneous evaporation at common temperatures, differ from the above in containing more water.

The saline compounds are called *citrates*. Those used medicinally are,

1. *C. of potash.* See *Citrate of potash.*
2. *C. of soda.* See *Citrate of soda.*
3. *C. of Ammonia.* See *Citrate of Ammonia* in the Supplement.
4. *C. of morphia.* See *Morphia.*

All the citrates are decomposed by the powerful acids, which do not form a precipitate with them, as with the oxalates and tartrates. The oxalic and tartaric acids decompose them, and form crystallised or insoluble precipitates in their solutions. All afford traces of acetic acid, or a product of the same nature, on being exposed to distillation: this character exists particularly in the metallic citrates. Placed on burning coals, they melt, swell up, emit an empyreumatic smell of acetic acid, and leave a light coal. All of them, if dissolved in water, and left to stand for a time, undergo decomposition, deposit a flocculent mucus, which grows black, and leaves their bases combined with carbonic acid; one of the products of the decomposition. Before they are completely decomposed, they appear to pass to the state of acetates.

The citric acid is found in many fruits united with the malic acid.

Citric acid being more costly than tartaric, may be occasionally adulterated with it. This fraud is discovered by adding slowly to the acid, dissolved in water, a solution of subcarbonate of potash, which will give a white pulverulent precipitate of tartar, if the citrate be contaminated with the tartaric acid. When one part of citric acid is dissolved in 19 of water, the solution may be used as a substitute for lemon-juice. If before solution the crystals be triturated with a little sugar and a few drops of the oil of lemons, the resemblance to the native juice will be complete. It is an antidote against sea-scurvy; but the admixture of mucilage and other vegetable matter in the recent fruit of the lemon, has been supposed to render it preferable to the pure acid of the chemist.

Citrina'tio. An alchemical term, signifying *complete digestion*, or, according to Ruland, *resuscitation.*

Citri'nula. (*a, æ.* f.; a diminutive of *citrus.*) A small citron or lemon.

Citri'nulus. *Citrinolus. Citrinus.* A kind of crystal, which Paracelsus called saxifragus; and believed to be lithontriptic.

Ci'trinus. Citrine. Lemon-coloured.

Citrinum unguentum. See *Unguentum citrinum.*

Citron. See *Citrus medica.*

Citrul, Sicilian. See *Cucurbita citrullus.*

Citrul'lus. (*us, i.* f.) See *Cucurbita citrullus.*

CI'TRUS. (*us, i.* f. Κιτρος.) 1. The name of a genus of plants in the Linnæan system. Class, *Polyadelphia;* Order, *Icosandria.*

2. The name of the lemon. See *Citrus medica.*

CITRUS AURANTIUM. The systematic name of the orange-tree and fruit; called also, *Aurantium, Aurantium Hispalense, Aurantium Chinense, Malus aurantia major, Malus aurantia, Aurantium vulgare, Malus aurantia vulgaris, Mala aurea, Chrysomelia, Nerantia, Martianum pomum,* and *Poma aurantia.* The China and Seville orange are both only varieties of the same species: *Citrus — petiolis alatis foliis acuminatis,* of Linnæus. The latter is specified in our pharmacopœias; and the *flowers, leaves, yellow rind,* and *juice,* are made use of for different medical purposes.

The flowers, *flores naphæ,* are highly odoriferous, and are used as a perfume; they are bitter to the taste; they give their taste and smell both to water and to spirit, but most perfectly to rectified spirit of wine. The water which is distilled from these flowers is called *aqua florum naphæ.* In distillation, they yield a small quantity of essential oil, which is called *oleum* vel *essentia neroli:* they are brought from Italy and France. Orange flowers were once thought to possess considerable antispasmodic powers; and the water distilled from them is still prescribed on the continent. See *Aqua florum aurantii.*

The *leaves* have a bitterish taste; and yield, by distillation, an essential oil: when rubbed between the fingers, they give out a fragrant odour. They have been applied for the same purposes as the flowers, but without success.

The *yellow rind* of the fruit, freed from the white pithy part, has a grateful aromatic flavour, and a warm, bitterish taste. Infused in boiling water, it gives out nearly all its smell and taste: cold water extracts the bitter, but very little of the flavour. In distillation, a light, fragrant, essential oil rises, without the bitter. Its qualities are those of an aromatic and bitter. It has been employed to restore the tone of the stomach, and is a very common addition to combinations of bitters, used in dyspepsia. It has been given in intermittents, in doses of a drachm, twice or thrice a day, and has also been much celebrated as a remedy in menorrhagia, and immoderate uterine evacuations.

The *juice* of Seville oranges is a grateful acid, which, by allaying heat, quenching thirst, promoting various excretions, and diminishing the action of the sanguiferous system, proves extremely useful in both ardent and putrid fevers: though the China orange-juice, as impregnated with a larger proportion of sugar, becomes more agreeable, and may be taken in larger quantities. The Seville orange-juice is particularly serviceable as an antiscorbutic, and alone will prevent or cure scurvy in the most apparently desperate circumstances. In dyspepsia, from putrid bile in the stomach, both lemon and orange-juice are highly useful.

CITRUS MEDICA. The systematic name of the lemon-tree; called also, *Limon, Limonia mala, Malus medica, Malus limonia acida, Citrea malus,* and *Citrus.* The tree which affords the lemon is the *Citrus — petiolis linearibus,* of Linnæus; a native of the upper part of Asia, but cultivated in Spain, Portugal, and France. The juice, which is much more acid than that of the orange, possesses similar virtues. It is always preferred where a strong vegetable acid is required. As an antiscorbutic, lemon-juice has been often taken on board ships destined for long voyages; but even when well depurated of its mucilaginous parts, it is found to spoil by long keeping. To preserve it in purity for a considerable length of time, it is necessary that it should be brought to a highly concentrated state; and, for this purpose, it has been recommended to expose the juice to a degree of cold sufficient to congeal the aqueous and mucilaginous parts. After a crust of ice is formed, the juice is poured into another vessel: and, by repeating this process several times, the remaining juice, it is said, has been concentrated to eight times its original strength, and kept, without suffering any material change, for several years. See *Citric acid.*

Whytt found the juice of lemon to allay hysterical palpitations of the heart, after various other medicines had been experienced ineffectual; and this juice, or that of oranges, taken to the quantity of four or six ounces in a day, has sometimes been found a remedy in the jaundice. The exterior rind of the lemon is a very grateful aromatic bitter, not so hot as orange-peel, and yielding in distillation a less quantity of oil, which is extremely light, almost colourless, and generally brought from the southern parts of Europe, under the name of Essence of Lemons. The lemon-peel, though less warm, is similar in its qualities to that of the orange, and is employed with the same intentions. The pharmacopœias direct a syrup of the juice *syrupus limonis,* and the peel enters into some vinous and aqueous bitter infusions; it is also ordered to be candied; and the essential oil is an ingredient in some formulæ.

The citron-tree is also considered as belonging to the same species, — the *Citrus medica* of Linnæus. Its fruit is called *Cedromela,* which is larger and less succulent than the lemon; but in all other respects the citron and lemon-trees agree. The citron-juice, when sweetened with sugar, is called by the Italians *Agro di cedro.*

The *Citrus mella rosa* of Lamarck, is another variety of the *Citrus medica* of Linnæus. It was produced, at first, casually, by an Italian's grafting a citron on a stock of a bergamot pear-tree; whence the fruit produced by this union participated both of the citron-tree and the pear-tree. The essence prepared from this fruit is called essence of bergamotte, and *Essentia de cedra.*

Ci'tta. See *Cissa.*

CITTARA. A place in the Isle of Ischia, where there are thermal waters, of 100° Fahr. They contain carbonate and sulphate of lime, and muriate of soda.

Civet-cat. See *Viverra.*

CIVE'TTA. (*a, æ.* f.; from *sebet*, Arabic.) *Zibethum.* Civet; an unctuous odoriferous drug, derived from more than one species of viverra. See *Viverra.*

Cladonia islandica. See *Cetraria islandica*, in the Supplement.

CLAP. (So called from the old French word *clapises*, which were public shops, kept and inhabited by single prostitutes; and generally confined to a particular quarter of the town.) See *Urethritis.*

CLA'RET. *Claretum.* A light French wine, drunk in this country chiefly in summer. Claret is an excellent drink in typhoid fevers.

CLARE'TUM. (*um, i.* n.; from *clareo*, to be clear.) 1. The wine called *claret.* See *Claret.*

2. A name formerly given to several factitious wines.

CLARETUM LAXATIVUM. *Vinum Hippocraticum.* Wine impregnated with senna, mechoacanna, turbith, and aromatics. It was given to purge melancholy and pituitous humours.

CLARETUM PURGATORIUM. *Vinum Hippocraticum antimoniale.* A vinous solution of glass of antimony with cinnamon-water and sugar. It was emetic and purgative.

CLARIFICA'TION. (*Clarificatio, onis.* f.; from *clarus*, clear, pure, and *facio*, to make.) The depuration of any thing, or process of freeing a fluid from heterogeneous matter, or feculencies.

Clary. See *Salvia.*

Clasper. See *Cirrus.*

CLASSY. A place near Laon, in Picardy, where there are chalybeate waters.

CLAUDI'ACON. Κλαυδιακον. The epithet of a collyrium described by Paulus Ægineta.

CLAUDICATION. Lameness.

CLAU'STRUM. (*um, i.* n.; a barrier, from *claudo*, to shut.) Formerly applied in anatomy, as *claustrum gutturis*, the opening of the pharynx; *claustrum virginitatis*, the hymen.

CLAUSU'RA. (*a, æ.* f.; from *claudo*, to shut.) An imperforation of any canal or cavity of the body. Thus *clausura uteri* is a preternatural imperforation of the uterus; *clausura tubarum Fallopiarum*, a morbid imperforation of the Fallopian tubes, mentioned by Ruysch as one cause of infecundity.

Clava rugosa. See *Acorus calamus.*

CLAVA'RIA. (*a, æ.* f.; from *clava*, a club.) The name of a genus of plants. Class, *Cryptogamia*; Order, *Fungi.* Club-shaped fungus.

CLAVARIA CINEREA. Grey goat's beard. This and the *clavaria coralloides* are sometimes eaten. Their flesh is cottony; and they have little flavour.

CLAVARIA COROLLOI'DES. The systematic name of the *Fungus corolloides* of old writers; called also *crotelus.* It is sometimes eaten. See *Clavaria cinerea.* It was once used as a corroborant and astringent.

CLAVA'TIO. (From *clavus*, a nail.) A sort of articulation without motion, where one bone is driven into another like a nail. It is synonymous with *Gomphosis*, which see.

CLAVA'TUS. Clubbed; club-shaped; applied to parts of plants; as the stigma of the *Cunipi.*

CLAVELLA'TI CI'NERES. The wood ashes from which potash is prepared have been so called, because the wood, previously to burning, is cut into slips, *clavæ.*

Clavicle. See *Clavicula.*

CLAVI'CULA. (*a, æ.* f.; from *clavis*, a key, on account of some resemblance to the keys used by the ancients.) I. In *Anatomy*, the clavicle, or collar-bone. The clavicle is placed at the root of the neck, and at the upper part of the breast. It extends across, from the tip of the shoulder to the upper part of the sternum; it is a round bone, a little flattened towards the end, which joins the scapula; it is curved like an Italic *f*, having one curve turned out towards the breast: it is useful as an arch, supporting the shoulders, preventing them from falling forwards upon the breast, and making the hands strong antagonists to each other; which, without this steadying, they could not have been.

The thoracic end, that next the sternum, or what may be called the inner head of the clavicle, is round and flat, or button-like; and it is received into a suitable hollow on the upper piece of the sternum. It is not only like other joints surrounded by a capsule or purse; it is further provided with a small moveable cartilage, which, like a friction-wheel in machinery, saves the parts and facilitates the motions, and moves continually as the clavicle moves.

The outward end of the clavicle is flattened, as it approaches the scapula, and the edge of that flatness is turned to the edge of the flattened acromion, so that they touch but in one single point. This outer end of the clavicle, and the corresponding point of the acromion, are flattened and covered with a layer of cartilage; but the motion here is very slight, and quite insensible: they are tied firmly by strong ligaments; and we may consider this as almost a fixed point, for there is little motion of the scapula upon the clavicle: but there is much motion of the clavicle upon the breast, for the clavicle serves as a shaft, or axis, firmly tied to the scapula, upon which the scapula moves and turns, being connected with the trunk only by this single point, viz. the articulation of the clavicle with the breast-bone.

II. A tendril. See *Cirrus.*

CLAVI'CULUS. The clavicle.

CLA'VIS. (*is, is.* f.; a key. The clavicle.

CLA'VUS. (*us, i.* m.; a nail.) 1. A corn, so called from its resemblance to the head of a nail. It is a roundish, horny, cutaneous extuberance, with a central nucleus, sensible at its base; found chiefly on the toes, from the pressure of tight shoes.

2. An intense pain in some part of the head, limited to a very small space, and causing a sensation as if a nail were being driven into the head. It is most frequently connected with hysteria; and is then called *clavus hystericus.*

3. A tubercle on the white of the eye; so called from its shape. — *Celsus.*

4. Condylomata of the uterus have been called *clavi.*

CLAVUS HYSTERICUS. See *Clavus.*

Clavus oculi. This name has been given by some to staphyloma.

Clavus secali'nus. A name of the *Secale cornutum*.

Clay. See *Alumina*.

CLEAVAGE. This term is applied to the mechanical division of crystals; by showing the direction in which their *laminæ* can separate, it enables us to determine the mutual inclination of these *laminæ*. The cleavage affords an important character of many minerals. In the interior of some minerals, the direction of the cleavage may be frequently seen, without using any mechanical violence.

Cleavers. See *Galium aparine*.

Clei'dion. Κλειδιον. Clidion. The name of an astringent pastil described by Galen and Paulus; also the name of an astringent epithem described by Aëtius.

Cleidomastoide'us. (From κλεις, the clavicle, and μαστοειδης, the mastoid process.) Albinus gives this name to the posterior part of the *sternocleido-mastoideus*, which he makes a separate muscle.

CLEI'SAGRA. (*a*, *æ*. f.; from κλεις, the clavicle, and αγρα, a prey.) A name given by Ambroise Paré to gout affecting the articulation of the clavicle.

Clei'thron. (Κλειθρον; from κλειω, to shut.) See *Claustrum*.

CLE'MATIS. (*tis*, *idis*. f.; from κλημα, a tendril: so named from its climbing up trees, or any thing it can fasten upon with its tendrils.) The name of a genus of plants in the Linnæan system. Class, *Polyandria*; Order, *Polygynia*.

Clematis daphnoi'des. The name given by Bauhin to the herb perwinkle. — *Vinca minor* of Linnæus.

Clematis passiflo'ra. The passion-flower. See *Passiflora*.

Clematis recta. The name of the upright virgin's bower: called also, *Flammula Jovis*. *Clematis — foliis pinnatis, foliolis ovato lanceolatis integerrimis, caule erecto, floribus pentapetalis tetrapetalisque*, of Linnæus. The same virtues are attributed to this plant as to the *clematis vitalba*.

Clematis vitalba. The systematic name of the traveller's joy: called also, *Vitalba*, *Atragene*, *Viorna*. The *Clematis arthragene* of Theophrastus. This plant is common in our hedges, and is the *Clematis — foliis pinnatis, foliolis cordatis scandentibus*, of Linnæus. Its leaves, when fresh, produce a warmth on the tongue, and if the chewing is continued, blisters arise. They also vesicate and ulcerate the skin when rubbed in it. The plant has been administered internally to cure lues venerea, scrofula, and rheumatism. An infusion of two or three drachms of the leaves in a pound of boiling water, may be taken in the course of the four and twenty hours. In France, the young sprouts are eaten, when boiled, as hoptops are in this country.

Clemati'tis. The same as clematis.

Cleo'nis collyrium. The name of a collyrium, of which Celsus describes several forms.

Clepsy'dra, or Cle'psydra. (From κλεπτω, to conceal, and ὑδωρ, water.) The name of an instrument used by the ancients to measure time by the dropping of water through a hole, from one vessel to another; also a chemical vessel, perforated in the same manner; and an instrument mentioned by Paracelsus, contrived to convey fumigations to the uterus in hysterical cases.

Clermont ferrand. A town in the department of Puy de Dôme. It has acidulous springs.

Cle'ves. A city of Westphalia. It has mineral waters, containing carbonate and sulphate of iron.

Cli'banus. A portable furnace, made of iron, copper, or earthen-ware.

CLIMACTERIC. (*Climactericus*, from κλιμαξ, a gradation.) A term applied to certain years in the life of man, which have been supposed to mark a certain degree in the scale of his existence; and to a particular disease observed in persons advanced in life. See *Climacteric disease*.

Climacteric disease. The ordinary duration of life seems to have undergone little or no change from the Mosaic age, in which, as in the present day, it varied from threescore and ten to fourscore years. In passing through this term, however, we meet with particular epochs at which the body is peculiarly affected, and suffers a considerable alteration. These epochs the Greek physiologists contemplated as five; and, from the word climax, which signifies a gradation, they denominated them climacterics. They begin with the seventh year, which forms the first climacteric; and are afterwards regulated by a multiplication of the figures three, seven, and nine, into each other; as, the twenty-first year being the result of three times seven; the forty-ninth, produced by seven times seven; the sixty-third, or nine times seven; and the eighty-first, or nine times nine. A more perfect scale might, perhaps, have been laid down; but there is some truth in the general principle, and as we do not possess sufficient knowledge to improve on its application, it is not worth while to attempt it. The two last were called grand climacterics, or climacterics emphatically so denominated, as being those in which the life of man was supposed to have consummated itself, and beyond which there is no prospect but that of dissolution.

The change which frequently strikes our attention as taking place about the fourth, or in the interval between the fourth and fifth, is of two distinct and opposite kinds; and it is necessary to notice each.

We sometimes find the system, at the period before us, exhibiting unexpectedly a very extraordinary renovation of powers. Persons who have been deaf for twenty years, suddenly recover their hearing, so as in some cases to hear very acutely: others as suddenly recover their sight, and throw away their spectacles, which had been in habitual employment for as long a period; others return to the process of dentition, and reproduce a smaller or larger number of teeth to supply vacuities progressively produced in earlier life; and examples are given of entire sets of teeth cut at this period. That the hair should evince a similar regeneration, of which instances are also adduced, is

perhaps, less surprising; since this has been known to grow again, and even to change its colour after death.

On the other hand, instead of a renovation of powers at the period before us, we sometimes perceive as sudden and extraordinary a decline. We behold a man apparently in good health, without any perceptible cause, abruptly sinking into a general decay. His strength, his spirits, his appetite, his sleep fail equally; his flesh falls away; and his constitution appears to be breaking up. In many instances this is, perhaps, the real fact; and no human wisdom or vigilance can save him from the tomb. But in many instances, also, it is an actual disease, in which medical aid and kindly attention may be of essential service; and upon an application of which we behold the powers of life, as in other diseases, rally; the general strength return; the flesh grow fuller and firmer, the complexion brighten; the muscles become once more broad and elastic; and the whole occasionally succeeded by some of those extraordinary renovations of lost powers, or even lost organs.

The subject is obscure; and it is as difficult, perhaps, to account for either of these extremes — for the sudden and unexpected decline, as for the sudden and singular restoration. That the decline, however, is a real malady, and not a natural or constitutional decay, is perfectly obvious from the recovery. And hence, in reference to the period in which it occurs, and by which, no doubt, it is influenced, it is emphatically denominated the *Climacteric disease*.

The patient falls away in flesh and strength before he complains of any loss of appetite, or has any dyspeptic symptoms; which only appear to take place afterwards by sympathy. And that the mesentery and lacteals are not paralysed and obliterated, as in the atrophy of old age, is incontrovertible from the renovation of power and reproduction of bulk that form an occasional termination of the disease.

In watching carefully the symptoms of this malady, when totally unconnected with any concomitant source of irritation, either mental or bodily, we shall often perceive that it creeps on so gradually and insensibly, that the patient himself is hardly aware of its commencement. "He perceives," to adopt the language of Sir Henry Halford, "that he is tired sooner than usual, and that he is thinner than he was; but yet he has nothing material to complain of. In process of time his appetite becomes seriously impaired; his nights are sleepless, or, if he get sleep, he is not refreshed by it. His face becomes visibly extenuated, or perhaps acquires a bloated look. His tongue is white, and he suspects that he has fever. If he ask advice, his pulse is found quicker than it should be, and he acknowledges that he has felt pains in his head and chest, and that his legs are disposed to swell; yet there is no deficiency in the quantity of his urine, nor any other sensible failure in the action of the abdominal viscera, except that the bowels are more sluggish than they used to be."

Sometimes he feels pains shooting over different parts of the body, conceived to be rheumatic, but without the proper character of rheumatism; and sometimes the headach is accompanied with vertigo. Towards the close of the disease, when it terminates fatally, the stomach seems to lose all its powers; the frame becomes more and more emaciated; the cellular membrane in the lower limbs is laden with fluid; there is an insurmountable restlessness by day, and a total want of sleep at night; the mind grows torpid and indifferent to what formerly interested it; and the patient sinks at last; seeming rather to cease to live than to die of a mortal distemper.

In the progress of this disease, medicine will generally be found to accomplish but little. The constitutional debility must be met by tonics, cordials, and a generous diet; and a scrupulous attention should be paid to such contingencies of body or mind as may form an exciting cause, or aggravate the morbid diathesis if already in a state of activity. Congestions must be removed where they exist, and every organ have room for the little play that the rigidity of advanced life allows to it: and where aperients are necessary, they should consist principally of the warm and bitter roots or resins, as rhubarb, guaiacum, and aloes. In many instances the Bath water, and in a few that of Cheltenham, will be also found of collateral use; and especially where there is reason to hope that a beneficial impression has been made on the disease, and that the system is about to recover it.

Climacteric years. See *Annus climactericus*, and *Climacteric disease*.

CLIMATE. (From κλιμα, a region.) The prevailing constitution of the atmosphere of any region with respect to heat, cold, moisture, winds, and impregnation with extraneous matters, is called the *climate* of that region. The climate of any place depends on some causes, the operation of which is sufficiently manifest; as latitude elevation above the level of the sea, insular or continental position, presence or absence of mountains, forests, rivers, lakes, marshes, &c.: there are other causes which may have their influence on climate, although we are less able to estimate the degree or nature of that influence; such are electricity, subterranean fire, peculiar states of the earth's surface which may be supposed to obtain in volcanic regions, and various astronomical causes. Under the influence of these causes, remarkable changes of climate are continually taking place. There is little doubt that the climates of European countries were more severe in ancient times than they are at present. Cæsar says, that the vine could not be cultivated in Gaul, on account of its winter-cold. The rein-deer, now found only in the frozen zone, was then an inhabitant of the Pyrenees. The Tiber was frequently frozen over, and the ground about Rome covered with snow for several weeks together, which hardly ever happens in our times. The Rhine and the Danube, in the reign of Augustus, were generally frozen over for several months of winter. The barbarians who overran the Roman empire, a few centuries afterwards, transported

their armies and waggons across the ice of these rivers. The improvement that is continually taking place in the climate of America, proves that the power of man extends to phænomena, which, from the magnitude and variety of their causes, seemed entirely beyond his controul. At Guiana, in South America, within five degrees of the line, the inhabitants living amid immense forests, a century ago, were obliged to alleviate the severity of the cold by evening fires. Even the duration of the rainy season has been shortened by the clearing of the country, and the warmth is so increased, that a fire now would be deemed an annoyance. It thunders continually in the woods, rarely in the cultivated parts.

Drainage of the ground, and removal of forests, however, cannot be reckoned among the sources of the increased warmth of the Italian winters; and in this, as in many other instances, we must acknowledge our incompetency to explain the causes by which even the most considerable changes of climate are brought about.

The subject of climate is one of the highest interest to the naturalist, the physiologist, and the physician. Climate exerts a very sensible influence on the animal and vegetable kingdoms in different parts of the globe: it is one of the causes which determine the physical and moral peculiarities of different races of mankind; and it has a marked influence in modifying the characters of disease, the operation of remedies, and the whole practice of medicine. The following sketch of the principal climates in the world, and their respective adaptation to the preservation or restoration of health, is taken from the excellent work of Dr. James Clark; to which we refer the reader for fuller information: —

English climates. — The great desideratum in this country is to find a mild climate and sheltered residence for our pulmonary and other delicate invalids during the winter and spring.

Our warmest winter residences in England are mostly found on the southern and south-western shores; indeed it is their vicinity to the sea which in a great degree renders them warmer than the inland parts in their respective vicinities.

The mild region of England admits of a natural division into four districts or groups, each having some peculiar features in its climate which characterise it and distinguish it from the others, both as regards its physical and medical qualities. These are —

1. The south coast, comprehending the tract of coast between Hastings and Portland Island, including the Isle of Wight.

The superiority of the climate of this district exists chiefly during the months of December, January, and February. In March the temperature of this coast, and that of the interior, is nearly the same. In April and May, the temperature of the interior rises above that of the coast and continues higher, though in a less ratio, through the summer months. In October the mean temperatures are again equal, and in November that of the coast begins to exceed the interior. The only places on the south coast which we consider deserving of particular notice, are, Undercliff in the Isle of Wight, and Hastings and Brighton, on the coast of Sussex.

Undercliff is decidedly the most sheltered and warmest of these places, and it has moreover this convenience over most of our other winter residences, that it also affords a good summer climate.

Hastings follows Undercliff in point of shelter and warmth during the winter and spring months. Its situation at the base of a range of steep hills, which protect it in a considerable degree from the north and north-east winds, render it a milder and more sheltered residence during this season than the other parts of the coast of Sussex.

Brighton differs materially in the character of its climate from both these places. It is more exposed to northerly winds, but the atmosphere is drier and more bracing. While inferior to Undercliff and Hastings as a residence in diseases of the respiratory organs accompanied with much irritation, it offers advantages over both to invalids of a relaxed and nervous habit who are not very excitable. Autumn is the season during which the climate of this place possesses the greatest advantages; and even to the end of December it is one of the mildest climates in our island, and most favourable for a large class of invalids; more especially for cases in which a relaxed state of the system is a leading feature.

Invalids who select the coast of Sussex as their winter residence, might find it advantageous to pass the autumn at Brighton and the winter at Hastings.

2. South-west coast. — The winter climate of the south coast of Devon has long been noted for its mildness. The temperature of its more sheltered spots during the months of November, December, and January (when the difference is greatest), is, in the average, about five degrees higher than that of London during the same period; whereas, on the south coast, the difference scarcely exceeds two degrees. This superiority of temperature over London at both places, occurs chiefly during the night; though the days are proportionally warmer, and the temperature more steady on the south-west than on the south coast.

Various places on the coast of Devonshire are held in repute on account of the beneficial effects of their climate, more especially in pulmonary diseases. The principal of these are *Torquay*, *Dawlish*, *Sidmouth*, and *Exmouth*. Salcombe, the Montpellier of Huxham, is unquestionably one of the warmest spots in our island during the winter. At Torquay the invalid has the advantage of a considerable tract of sheltered country, some part or other of which will afford a protected ride or walk, in whatever direction the wind blows. Torquay is superior in this respect to every place in our island. Its position also on the southern declivity of a range of pretty steep hills, composed chiefly of calcareous rocks, renders it comparatively dry. Hence, while Torquay possesses all the advantages of the climate of this coast,

its chief disadvantage (humidity) is felt in a less degree than elsewhere.

3. Land's-End. — The only place in this district deserving particular notice is *Penzance*, which has long been frequented by invalids on account of the mildness of its winters. Penzance has a very peculiar climate, which depends on its almost peninsular situation at the south-western extremity of the island. A remarkable equality in the distribution of the temperature throughout the year, and throughout the day and night, is a striking character of this place. In this respect, indeed, the climate of Penzance is superior to that of the south of Europe; and the only climate which we have examined that excels it is that of Madeira. This peculiarity of the climate of Penzance will be shown at once by comparing it with that of London, where the difference between the warmest and coldest months is 26°, while at Penzance it is only 18°.

In other respects the climate of the Land's-End does not stand so high in a medical point of view. It is very humid; the quantity of rain which falls annually at Penzance being nearly double that which falls in London, and the number of rainy days much greater. This district is also proverbial for the frequency and violence of its gales; and Penzance, owing to its total want of shelter from the northerly and easterly winds, is colder during the spring than either Torquay or Undercliff. Hence it is, that although Penzance possesses a decided superiority over all the other situations in our island, in the mildness and equability of its winter climate, its humidity, exposed situation, and liability to winds, render it inferior to several other places as a residence for invalids.

Flushing, a small village in the vicinity of Falmouth, is the only other place in this district deserving notice. The position of Flushing differs from that of Penzance only in being somewhat protected from the north and east winds by a low range of hills which rises immediately behind it.

Before quitting the south-west coast and Land's-End, it is proper to remark, that, though varying somewhat in degree at different places, the predominant character of the climate is that of softness and humidity; on the system generally, it has a soothing but relaxing influence.

From this character of the climate of the whole south-western coast of our island, it will be at once understood that it is most suitable for the irritable and inflammatory habit, and least so for the relaxed nervous constitution; that in the dry, irritated conditions of the mucous membranes, with a parched state of the skin, it will prove beneficial; while in the morbid states of the same membranes, accompanied with copious secretion, or when there exists a disposition to profuse discharges of any kind, it will prove injurious. Even many of those cases which are benefited by a temporary sojourn, would be injured by a permanent residence in this district. The climate, indeed, possesses qualities of so marked a kind, that when it ceases to do good, it generally begins to do harm; hence it will seldom be prudent, much less advantageous, for the invalid who has passed the winter and spring on this coast, to prolong his residence through the summer; he will in general do well to betake himself to a drier and more bracing air, especially if he intends to return the succeeding winter.

4. West of England. — *Clifton*, the only place in the western district which we deem it necessary to notice, has several local advantages, and possesses the best climate in the part of the country where it is situated. Compared with that of the south-west coast, it is more exciting, more bracing, and drier, but not so mild. It is therefore less suited for pulmonary and other diseases, accompanied with much irritation, and with a tendency to inflammation. On the other hand, it is better adapted to invalids of a relaxed, languid habit; and it is also very beneficial in many cases of dyspepsia, in affections of the mucous membranes with much secretion, and in the scrofulous affections of young persons.

Before commencing our review of foreign climates, the islands of *Guernsey* and *Jersey* require some notice, as they are occasionally resorted to by invalids from this country. The climate of these islands resembles in its general characters that of the coast of Devonshire; it is somewhat warmer, but not more steady; and is more exposed to high winds. Those from the south-west prevail during the autumn and winter, while those from the north-east often continue for weeks together during the spring, producing the same unpleasant effects on invalids which arise from them in this country. The climate is found by experience to be beneficial in the same diseases, and in constitutions of a similar character, as that of our south-west coast; the observations therefore formerly made relative to the class of invalids that may expect to derive advantage from the latter, apply equally to persons who may be sent to Jersey, which, of the two islands, is in all respects the best suited for invalids. The summer climate of these islands is delightful.

Foreign Climates. — The climate of the *South of France* has long been held in repute, but all the southern provinces of that country are far from possessing the same climate; those situated on the eastern frontier being very different in this respect from those on the western. It is highly important, as we shall presently show, to attend to this distinction in recommending the south of France as a place of residence for invalids.

South-west of France. — We comprehend under this division the tract of country which extends from Bourdeaux and Bayonne to Toulouse.

The transition from the climate of the south-western shores of our own island to that of the south-west of France is easy and natural, inasmuch as they exhibit a striking similarity in their general characters. Taking the south-west of France generally, the mean annual temperature is only about 4° higher than that of the south-west of England. Both climates are soft and rather humid, and agree and disagree, generally speaking, with diseases of the same character.

Pau is the only place in this district of France which we deem it necessary to notice particularly. This little town, which has been a good deal frequented of late years by invalids from this country, is pleasantly situated at the base of the Pyrenees; and when its close vicinity to that range of lofty mountains is considered, it certainly possesses a far milder winter and spring climate, and is much less subject to high winds and extensive transitions of temperature, than might be expected. One remarkable circumstance in the character of its climate is the mildness of the spring, and its comparative exemption from sharp cold winds during that season. In this respect it bears a very favourable comparison with the climates of the south of Italy. While Pau is 6° colder than Rome during the winter, it is only $2\frac{1}{2}$° colder in the spring. Compared with the warmest parts of England, the same superiority of its spring climate holds good. Penzance during the winter months is 3° *higher* than Pau, but 5° *lower* in the spring. This mild character of the spring constitutes the great advantage of the climate. Pau is also very free from fogs, and possesses a dry soil. Its chief fault is the unsteadiness of its temperature. It may however be considered, upon the whole, the most favourable residence for invalids in the south-west of France, as far as we have had the means of judging. The difference between the climate of Pau and that of the best situations in England is not great. It is drier and warmer in the spring; and the northerly winds are much less trying to invalids than in this country. One advantage possessed by it, is its vicinity to the delightful watering-places among the higher Pyrenees, which offer to the invalid who has passed the winter at Pau a healthy summer climate, without the inconvenience of a long journey.

South-east of France. — Under this division we include that extensive tract of country which stretches along the shores of the Mediterranean, from Montepllier to the banks of the Var, the boundary stream between France and Piedmont. The climate of this district is warmer and drier, but more irritating and exciting than that of the south-west. It is also subject to sudden vicissitudes of temperature, and to frequent harsh, cold winds. This great liability to cold piercing winds, more especially the north-west *(mistral)*, which often continues to blow with considerable force for many days together, renders the whole of this country an improper residence for patients suffering under, or peculiarly disposed to inflammation or irritation of the respiratory organs. We consider the custom, therefore, which has long prevailed, of sending consumptive patients to the south of France, a grievous error; an error which the obvious character of the climate, and the result of ample experience of its effects, should have long since corrected. There may be constitutions, having a tendency to tuberculous disease, which might even derive some benefit from a temporary residence in this climate; but when tubercles already exist in the lungs, it will certainly prove injurious.

After this account of the climate and its effects on phthisical patients (the cases which have been chiefly sent thither), it will be unnecessary to say much of the different places in this district which have been most frequented by invalids. We shall, however, notice the principal of these briefly.

Montpellier. — This place has now so completely lost the character which it once possessed as a mild climate, that it may suffice to remark here, that a more improper residence could scarcely be selected for a person disposed to pulmonary disease. Its high, exposed situation, renders it liable to all the evils of this climate in a remarkable degree; and it is, moreover, well ascertained that pulmonary inflammation and phthisis are among the most prevailing diseases of the place.

Marseilles. — Although less exposed than Montpellier, this is an equally improper residence for consumptive invalids. From the manner in which the environs of Marseilles are divided into small properties, surrounded with high walls, the invalid has no means of taking proper exercise, or of breathing country air; and without these, consumptive invalids can derive little advantage from any climate. For cases likely to benefit by a dry sharp air, Marseilles forms a good winter residence. It is said to prove particularly favourable to persons who have suffered from intermittent fever.

Hyères possesses the mildest climate in the whole of this district, and this advantage it owes chiefly to its sheltered situation at the base of a range of hills which protect it, in a considerable degree, from northerly winds. The country also around this little town differs in its character from that of Provence generally, (which comprehends the larger portion of the district now under consideration.) The hills here present the appearance of verdure, being covered with shrubs, many of them evergreens, affording a pleasing contrast to the bare and rugged mountain masses which form so striking a feature, and compose so large a portion of Provence. The extensive orange gardens which flourish under the immediate shelter of Hyères, and the verdure of its hills, afford evident proofs of the amenity of its climate; while, by experience, it is known to be one of the most favourable residences for invalids in this part of France, — certainly the best with which we are acquainted.

Nice. — This place has long been celebrated for the mildness of its climate; and continues to form the favourite resort of a numerous class of invalids, both from this and other northern countries. Although situated in the same line of coast as Provence, Nice is superior to it in several respects. In the general qualities of its climate it certainly resembles that of the south-east of France; but it has some important local advantages over the best part of that country. By its steep and lofty range of mountains it is protected from the northerly winds, and especially from the mistral, which we have stated to be so prevalent, and which experience proves to be so injurious to delicate invalids, in Provence. This circumstance

gives a comparative degree of softness to the climate; but it is still rather exciting. Nice is not exempt from cold winds, especially during the spring; indeed, the prevalence of these constitutes one of the principal objections to the climate of this place in pulmonary diseases generally. For consumption, even in its earlier stages, we consider Nice an unfavourable situation, in a very large proportion of cases. In bronchial diseases of the dry irritable character, it is also prejudicial; and in dyspepsia, depending on an irritated or inflammatory condition of the mucous membrane of the stomach, it is equally so. So decidedly, indeed, is this the case, that when such a state of the digestive organs exists, the invalid will derive little benefit from a residence at Nice, whatever may be his disease. Though warm and dry, the climate is ill suited to irritable habits. With languid, torpid constitutions, on the other hand, it agrees well. In the scrofulous affections of young persons possessing this character of constitution, it produces the best effects; as it does in chronic bronchial disease, accompanied with copious expectoration, and in what has been termed humoral asthma. In chronic rheumatism it is found very beneficial; and in deranged health from various causes, in which a dry, warm, and rather exciting climate is indicated, advantage will be derived from a winter spent at Nice; provided always that the state of the digestive organs which we have adverted to does not exist. In consequence of the tendency of the climate to aggravate and even excite gastric irritation, a more abstemious diet is requisite for invalids than in England. The summer at Nice is too hot for any class of invalids.

Italy. — The climate of the south of Italy differs little in actual temperature from that of Provence and Nice, but it is softer, more humid, and less exciting. On the other hand the sirocco, which is scarcely felt at the latter places, forms an objection to the Italian climate, though this objection is not of much weight during the winter.

The only places which we consider deserving of notice as winter climates in Italy, are *Pisa*, *Rome*, and *Naples*.

The climates of Pisa and Rome resemble each other in their general qualities. Rome is somewhat warmer in the winter. It is also drier than Pisa, though more humid than Nice and the parching climate of Provence. About one-third more rain falls at Rome than in the latter country; and the number of rainy days is considerably greater. Taking into account all the qualities of the climate of Rome, we consider it one of the best of Italy: to the invalid capable of taking exercise in the open air, it affords advantages over both Naples and Pisa. Patients, on the other hand, who can bear little exposure to the air, and who must therefore confine themselves to the most sheltered situations, will find in the Lung'Arno in Pisa a residence possessing advantages, perhaps, over every other place in Italy.

Naples differs somewhat in the character of its climate from both the last named places. Independently of the effect which its immediate vicinity to the sea may have in modifying the climate, it is more subject to winds; and the air is more exciting than that of Pisa or Rome. As a residence for invalids labouring under pulmonary irritation, or chronic rheumatism, it is inferior to both; nor are we aware of any cases in which it ought to be considered a more favourable climate. The beauty of the scenery around Naples, however, and the gaiety and excitement of the place and climate altogether, prove very attractive to strangers generally; and render it a very agreeable winter residence for persons who visit Italy rather as a recreation than for the removal of actual disease.

The diseases in which the climate of Italy proves most beneficial, are chronic bronchitis and rheumatism. We have, in particular, observed many decided examples of the beneficial effects of a residence at Rome in both these diseases. But it is still more in the numerous cases of deranged health which scarcely admit of being defined, though well known to the medical practitioner, that a tour and winter spent in Italy will prove beneficial. Such persons need not be limited to any particular situation, but may, with proper caution, visit the different places frequented by strangers in the south of Italy, and that even with greater advantage to their health than if they had remained stationary at any one of them.

These observations have reference to the climate of Italy during the winter and spring, that is, from October till May or June. To such as are under the necessity of remaining in that country through the summer, the baths of Lucca, Sienna, and the vicinity of Naples, afford the coolest residences.

There may be several situations on the shores of the Mediterranean which have climates equal, and perhaps superior, to those which have been mentioned. Malaga has been particularly mentioned to us as possessing a very mild winter climate; but our information respecting the south of Spain is too imperfect to enable us to speak positively on this subject: and the want of proper accommodations forms an insuperable objection to it as a residence for invalids.

The Mediterranean Islands do not merit much notice. Some parts of the coast of Sicily afford a pretty good winter climate; but here again the difficulty of obtaining the necessary comforts, and even conveniences of life, renders them almost useless to English invalids.

This objection, however, cannot be made to *Malta*, the only island in the Mediterranean belonging to this country. All the wants of the invalid may be supplied here, and the packets which are established between this place and England afford the means of reaching it conveniently. But, unfortunately, the climate of Malta has little to recommend it to any class of invalids, and least of all to such as suffer from pulmonary affections. The arid nature of the soil, the quantity of impalpable dust which is suspended in the atmosphere

whenever the weather is dry, the currents of cold air to which the capital (the residence of invalids) is subject during the winter, and the frequent and heavy rains which prevail during the same season, render it an unsuitable residence for patients of this class. It may not be irrelevant to mention also that phthisis carries off a large proportion of the inhabitants of Malta, constituting nearly one-tenth of the whole mortality, according to Dr. Hennen. Indeed, the full and satisfactory information respecting the medical topography of Malta, supplied by this gentleman, affords more than sufficient grounds for excluding it from the list of climates which promise any advantage to phthisical patients. We are not, indeed, aware of any class of invalids likely to derive much advantage from the winter climate of Malta, and we are not acquainted with any to whom its summer climate would not prove injurious.

Atlantic climate. — The climate of the Northern Atlantic in the temperate latitudes is more steady than that of the Mediterranean, and imparts a similar character to the climate of its islands. Various groups of islands scattered over this ocean, between the 28th and 38th degrees of latitude, having been praised for the excellence of their climate, and occasionally frequented by invalids in consequence, deserve some notice in this place. The Azores, the Madeiras, and the Canary Islands in the Eastern, and the Bermudas and the Bahamas in the Western Atlantic, have all been recommended as suitable residences for persons requiring a mild and equable climate, and more especially for consumptive invalids.

Madeira. — The minute and careful observations of the late Dr. Heineken and of Dr. Renton, for a series of years, have afforded us sufficient data to form an accurate estimate of the climate of this island; and although our materials for enabling us to judge of the other Atlantic islands are much less complete, they leave little doubt in our minds that Madeira is superior to any of them; while it affords conveniences in other respects as a residence for invalids possessed by none of them. The height of the central ridge of mountains which compose the greater part of this island, although it may detract somewhat from its warmth during the winter, contributes greatly to temper the heat of its summer. It gives Madeira the advantage of a cool land-breeze during the night, which, alternating with a refreshing sea-breeze in the day, moderates the summer heat in a very material degree; while the trade-winds which prevail at this season in the latitude of Madeira, contribute also to its coolness and salubrity. The invalid, moreover, by choosing for his summer residence an elevated situation in the interior, finds a climate considerably cooler than that of Funchal, which is situated on the sea-shore and affords the best winter residence.

Comparing Madeira with the south-east of France and Italy, we find that, although its mean annual temperature is only about six degrees higher than that of these places, this temperature is very differently distributed throughout the year, the range being far less at Madeira than in the most favoured spots in the south of Europe. Thus, while the winter is twelve degrees warmer than in Italy and France, the summer is five degrees *cooler*; and while the mean annual range at Madeira is only fourteen degrees, it is nearly double this at Pisa, Rome, Naples, and Nice. In the equable distribution of heat throughout the year, it possesses a similar superiority over the same places; for example, while the mean difference of temperature of successive months at Madeira is only two degrees, at Rome and Nice it is four, and at Pisa and Naples five degrees.

In the progression of temperature during the day, it maintains the same superiority; the mean range for twenty-four hours being ten degrees by the *register* thermometer, while at Nice it is nine degrees, at Rome ten degrees, and at Naples thirteen degrees, by the *common* thermometer. In steadiness of temperature from day to day (a very important quality in a climate), Madeira excels all those places greatly. There is also a considerable difference in respect to the dryness of the two climates. Nearly the same quantity of rain falls at Madeira as at Rome; but there are only seventy-three days on which any rain falls, while at Rome there are one hundred and seventeen days. The rain at Madeira also falls at more regular seasons, chiefly in the autumn, the atmosphere being generally dry and clear for the remainder of the year.

The annual range of atmospheric pressure is very small, which is the case also at Rome and Naples.

From this comparison, the superiority of the climate of Madeira over that of the south of Europe will be at once seen.

Canary Islands. — These rank next to Madeira in point of climate. They are somewhat warmer; the mean annual temperature of Funchal, the capital of Madeira, being 65°, while that of Santa Cruz, the capital of Teneriffe, is nearly 71°. This excess of temperature, however, is not equally distributed over the whole year, the difference between the winter temperatures at these two places being considerably less than between their summer temperatures; while Santa Cruz is 7° warmer than Funchal in summer, it is only 5° warmer in winter. The temperature is also more equable throughout the year at Madeira than at Teneriffe; the difference between the mean temperature of summer and winter being 9° at the former place, while it is 12° at the latter. The want of sufficient materials prevents us from comparing the climate of Teneriffe more minutely with that of Madeira. It seems probable, however, that when we are better acquainted with the climate and topography of Teneriffe, we may find it a favourable winter residence. But whatever may be the merits of its climate, it is at present very deficient in the other requisites necessary to render it a suitable abode for delicate invalids.

The Azores, or Western Islands, as they are sometimes called, lie about 5° north of Madeira, and considerably more to the west-

ward. In their external characters these islands resemble Madeira and the Canaries. We have not had the means of making ourselves sufficiently acquainted with the temperature of the Azores to speak very positively on the subject. The climate appears to be mild and somewhat humid; less warm than Madeira during the winter, and more oppressive during the summer. They certainly possess no advantages in point of climate over Madeira, while they afford few of the conveniences which that island offers to invalids.

Bermudas. — This numerous cluster of small islands is in the same latitude as Madeira, and differs little from it in the mildness of its winter climate. From the stormy character of the Western Atlantic, however, these islands are much more liable to high winds in the winter than Madeira, while their low character and arid rocky soil render them extremely hot during the summer, and quite improper at this season for the residence of such invalids as are likely to be sent from this country.

Bahamas. — This is another and much more extensive group of low islands, further south than any of those which have been mentioned, being only just beyond the limit of the tropics. The climate of the Bahamas has not much to recommend it. The winter and spring are considerably cooler than the same seasons in the West Indies, while the temperature of the summer and autumn is nearly the same as in those islands. During the winter the temperature is subject to rapid and considerable vicissitudes; and cold, harsh, northerly winds are not unfrequent. The close vicinity of the Bahamas to the North American continent no doubt has the effect of rendering the climate less equable than it otherwise would be, judging from what we know of insular climates generally in the same latitudes.

West Indies. — The mean annual temperature of the West India Islands, near the level of the sea, is about 80°, and during the six months which include the winter season the temperature is only 2° lower. Now it will be readily admitted that few invalids are likely to be benefited by so high a temperature, more particularly when continued, almost without sensible variation, night and day. The extreme annual range in the West Indies does not exceed 20°, while the mean daily range throughout the year is only 6°. But it is not so much the actual degree of temperature of a tropical climate, as its unceasing and unvarying character, which oppresses and exhausts the invalid, more especially in cases where there exists a disposition to symptomatic fever.

From this brief account of the climate of the West Indies, it is evidently an improper one, generally speaking, for consumptive invalids, who, nevertheless, are frequently sent thither. The uniformly high temperature, and most cloudless skies, which afford no shelter from the direct rays of a tropical sun, preclude invalids from taking exercise in the open air, the principal object for which they are generally sent abroad. There is no twilight to compensate for the heat and glare of the day, and the nights are too hot to admit of refreshing repose. When we add to the foregoing evils of climate the many privations, discomforts, and annoyances, which are almost inseparable from a temporary residence in these islands, and the still more weighty objection derived from the experience of medical men who have resided there, we may consider the question of the propriety of sending patients labouring under consumption to the West Indies as finally set at rest. The concurrent testimony of all the medical men whom we have consulted on the subject, and whose opportunities of judging were ample, establishes the fact, that consumptive cases, sent thither from this country, proceed much more rapidly to a fatal termination than in temperate climates.

Calculous disorders are extremely rare in the West Indies, a circumstance which probably depends, in a great degree, on the abundance of the cutaneous secretion, by which the largest proportion of fluid is discharged from the system, and along with it some of those saline principles which constitute the chief ingredients of which urinary calculi are composed. A well known case has been recorded of an officer who was about to undergo the operation of lithotomy in this country: he was suddenly ordered to Jamaica, and after some time no calculus could be discovered in the bladder, nor were there any symptoms of the existence of one. Aneurisms and diseases of the heart and large vessels are also rare, and the osseous deposits, which are so generally found in the coats of the larger arteries in persons who die at an advanced age in cold climates, are said to be rarely met with in those who die at a similar age in the West Indies. Gout is not common, and rheumatism neither frequent nor severe.

Scrofula is a very rare disease in the West India islands; and there are many cases of scrofula in this country which we have little doubt would be greatly benefited, if not cured, by a temporary residence in that climate. The cases in which we should expect the greatest benefit are those in which the disease exists chiefly in the lymphatic glands in torpid constitutions.

The diseases on which Dr. Clark comments, as chiefly benefited by a change of climate, are,

1. *Pulmonary Consumption.* — Concerning this Dr. Clark observes, with great justice, that, if change of climate is to be productive of any real benefit, it must be tried at a much earlier period of the disease than it generally is, and before the actual development of tubercles in the lungs. The climates best adapted to consumptive patients are those of Madeira, Rome, Pisa, Torquay, and Undercliff. It is chiefly in winter, however, that a residence in these places is useful. Italy, during the summer, is decidedly injurious to the phthisical invalid; and those who have passed the winter in the milder climates of England, should in general seek a more bracing air in summer; and during the course of this season they may advantageously change the air frequently, taking care not to visit any place the climate of which is hostile to their particular state of health.

2. *Chronic bronchitis.* — The morbid conditions

of the mucous lining of the larynx, trachea, and bronchi are greatly influenced by climate; and the change from a cold and moist to a mild and dry air seldom fails to relieve, and occasionally removes them. The situations which have been mentioned as most favourable in phthisis are best suited also to bronchial diseases generally. Of the continental climates, those of Rome and Pisa are the most beneficial in cases attended with an irritable state of the affected parts, without much secretion; and that of Nice in cases attended with less sensibility, a more copious expectoration, and a relaxed state of the system generally. Madeira, as far as our experience goes, has proved more beneficial in the former class of cases than in the latter. In England, Torquay and Undercliff afford the best climates in the first class of cases, and Clifton in the latter, in which Brighton also is a very favourable residence during the autumn.

3. *Asthma* is often greatly relieved, and occasionally ceases, under the influence of a mild climate, more especially when complicated with disease of the bronchial membrane, as it almost always is when of some duration. In what has been termed humoral asthma, Nice is the best residence; but Rome is preferable when this disease is accompanied with an irritated state of the digestive organs, a complication which is exceedingly common.

4. *Chronic rheumatism.*—Climate produces the most decidedly beneficial effects in this disease, and that often with surprising rapidity, even in cases of long standing, which have resisted the best directed medical treatment. We would particularise Rome and Nice as the best residences for invalids suffering from this complaint. The preference to be accorded to the one or the other place will depend upon the character of the patient's constitution, and the state of his digestive organs. When there exists an irritable state of these, we have already remarked that the climate of Nice will generally disagree, whatever may be the more prominent disease.

5. *Gout* is remarkably alleviated by a warm climate. In the selection of a residence for the gouty invalid, we must be guided by the particular state of his constitution, and the effects of the different climates which have been already pointed out. Genoa is rather remarkable for the rare occurrence of the disease among its inhabitants. But a warmer climate than any part of Italy would in many cases, we have no doubt, prove still more effectual in removing gout. We have already remarked the effects of the West Indian climate in this disease.

6. *Scrofula.* — Strumous affections, especially when seated in the skin and lymphatic glands, are frequently cured, and the general health is greatly improved, by a mild climate. In such cases Nice and Rome have appeared to us the most favourable residences; but in giving a preference to either, in this and all other complaints in which a residence in these places is useful, the practitioner must always keep in view the characteristic peculiarities of these climates formerly pointed out. There are cases of this disease in which the climate of the West Indies, as already remarked, would prove more effectual than any European climate; those, namely, of an indolent character, with little disposition to febrile excitement.

7. *Dyspepsia.* — Different forms of dyspepsia, hypochondriasis, and other nervous affections, intimately connected with a disordered state of the digestive organs, all of which are aggravated by a cold and humid atmosphere, are much mitigated by a winter's residence in the south of Europe, if aided by proper regimen. Attention to the diet is particularly necessary in changing from a cold to a warm climate, and in no class of cases is this more requisite than in those of which we are now treating. (See Dyspepsia.)

Besides the above mentioned, there are several other morbid states of the system which are remarkably benefited by change of climate. Such are irritable states of the mucous membranes generally, and irritable cutaneous affections. At those periods of life, also, which are attended with rapid development or critical changes in the constitution, the influence of change of climate is very beneficial. In weakly childhood, and puberty, and in climacteric decay, a new climate, if well adapted to the individual, has frequently succeeded in improving, and permanently establishing, the health.

CLI'MAX. (κλιμαξ, a gradation.) A name of some medicines, which, in regular proportion, increased or diminished the ingredients of which they were composed; e. g. ℞. *Chamædryos* ℥ij. *Centaurii* ℥ij. *Hyperici* ℥j.

Climbing. See *Scandens.*

Climbing bithwort. See *Aristolochia.*

CLINANTHUS. (*us, i.* m.; from κλινη, a bed, and ανθος, a flower.) *Clinanthium.* The enlarged and flattened top of a common peduncle which supports several sessile flowers, as in *scabiosa* and *dorstenia.*

2. Mirbel gives this name to the part which supports the perichetium, vaginula, and pedicel of mosses.

CLI'NICAL. (*Clinicus;* from κλινη, a bed.) Relating to a bed: thus clinical lectures, lectures delivered at the bedside of the patient,—clinical notes, notes taken at the bedside, &c.

CLI'NOID. (*Clinoides*; from κλινη, a bed, and ειδος, resemblance.) Resembling a bed. The four processes surrounding the sella turcica of the sphenoid bone are so called, of which two are anterior and two posterior.

Clinomastoide'us. A corruption of cleido-mastoideus. See *Sterno-cleido-mastoideus.*

CLINOPO'DIUM. (*um. i.* n.; from κλινη, a bed, and πους, a foot, because its leaves are said to resemble the feet of a bed.)

Clinopo'dium vulgare. Wild basil. This plant, which is indigenous in this country, was formerly in esteem against the bite of serpents, and to facilitate labour; it was also given in strangury, and as an astringent in diarrhœa. It is now disused.

Clisio'meter. (*Cliscometrum, i.* n.; from κλισις, inclination, and μετρον, a measure.) An instrument invented by Stein, and described by Osiander, for measuring the degree of inclination of the female pelvis, or, in other words,

the angle which the axis of the pelvis makes with that of the body.

Cli'ssus. See *Clyssus.*

Clito'ridis musculus. See *Erector clitoridis.*

CLITORIS. (*is, idis.* f. κλειτορις; from κλειω, to inclose, or hide: because it is hidden by the labia pudendorum.) *Columella.* A small glandiform body, like a penis in miniature, and, like it, covered with a prepuce, or foreskin. It is situated above the nymphæ, and before the opening of the urinary passage of women. Anatomy has discovered, that the clitoris is composed, like the penis, of a cavernous substance, and of a glans, which has no perforation, but is, like that of the penis, exquisitely sensible. The clitoris is the principal seat of sexual pleasure: during coition it is distended with blood, and after the venereal orgasm it becomes flaccid and falls. Instances have occurred, where the clitoris was so enlarged as to enable the female to have venereal commerce with other women; and, in Paris, this fact was made a public exhibition of to the faculty. Women thus formed, appear to partake, in their general form, less of the female character, and have been called hermaphrodites. The clitoris in children is larger, in proportion, than after the age of puberty: it often projects beyond the external labia at birth.

CLOA'CA. (*a, æ.* f.; Latin for a common sewer.) A cavity formed by the extremity of the intestinal canal in birds, fish, reptiles, and the monotrematous animals. It forms a common cavity in which the intestines and ureters terminate in both sexes, and the vagina also in the female.

CLO'NIC. (*Clonicus;* from κλονος, agitation, commotion.) A spasm which is not of long duration, though it may be repeated in rapid succession; such are the spasms which affect the muscles in epilepsy. *Clonic* is opposed to *tonic* spasm. See *Tonic* and *Spasmus.*

Clono'des. (Κλονωδες; from κλονεω, to agitate.) A term applied by Galen to that kind of pulse which we call a *vibratory pulse.* See *Pulsus.*

Cloporte ordinaire. The French name of the *oniscus asellus.* See *Oniscus asellus.*

Cloporte preparé. See *Armadillo.*

Clove. See *Eugenia caryophyllata.*

Clove bark. See *Myrtus caryophyllata.*

Clove gilliflower. See *Dianthus.*

Clove pink. See *Dianthus caryophyllus.*

Cloven. See *Fissus.*

Club-foot. A name given to different kinds of congenital distortion of the feet. See *Feet, distortion of the.*

Club-shaped. See *Clavatus.*

Clune'sia. (*a, æ.* f.; from *clunes,* the buttocks.) An inflammation of the buttocks. — *Vogel.*

CLU'PEA. (*a, æ.* f. Latin for a shad.) The name of a genus of fishes.

Clupea alo'sa. The shad or chad, the flesh of which has been recommended as a restorative.

Clupea encrasi'colus. The anchovy, a little fish, found in great abundance about the island of Gorgona, near Leghorn. It is prepared for sale, by salting and pickling. It is supposed the ancient Greeks and Romans prepared a kind of garum for the table from this fish. It has a very fine and peculiar flavour, and is eaten as a delicacy all over Europe; but its principal use is for making the sauce called anchovy sauce.

Clupea harengus. The common herring; a fish of great importance to a large proportion of the population of Europe. When broiled or boiled, they are an agreeable article of food, but they do not generally agree well with delicate stomachs. When salted, either wet or dry, they are still difficult of digestion. Dry salted, and smoked, they constitute what are called *red herrings.* The Dutch prepare the herring by salting or pickling in a way peculiar to themselves. The fish thus prepared are called *Dutch herrings,* and are by many esteemed as a great delicacy.

Clupea la'tulus. Whitebait. A very small fish, extremely abundant in the river Thames. When fried it is esteemed a great delicacy.

Clupea pilchardus. The pilchard. This is smaller than our herring. It is found on the coast of Cornwall, and in the Mediterranean, and is eaten like the common herring. The young fish are substituted for anchovies.

Clupea sinensis. This very much resembles our herring. It is found on the China coast, and eaten in the same way.

Clupea sprattus. The sprat. These little fish come to our shores in vast abundance in the winter, and are a great delicacy to the poorer classes, who broil them, and eat plentifully of them. They are too strong for weak stomachs. Sprats are pickled in the northern parts of Europe, and exported as a delicacy: they are also fraudulently substituted for the anchovy.

CLU'SIA. (*a, æ.* f.; so called in memory of Charles Clusius, an eminent botanist.) The name of a genus of plants in the Linnæan system. Class, *Polygamia;* Order, *Monœcia.* The species composing it, which are nearly confined to South America, exude several kinds of gum-resins, used for different purposes by the natives.

Cluster. See *Racemus,* and *Thyrsus.*

CLU'TIA. (*a, æ.* f.; named after Cluyt, and sometimes spelt *cluytia.*) The name of a genus of plants in the Linnæan system. Class, *Dioecia;* Order, *Gynandria. Clutia collina* is a poisonous species; and *C. Spinosa* (now referred to the genus *Brodelia*) is astringent, and used in India as an anthelmintic for cattle.

Cluy'tia. See *Clutia.*

CLY'DON. (Κλυδων, a wave.) Fluctuation of the contents of the abdomen; flatulence. — *Galen.*

Clypea'lis cartila'go. (*Clypealis,* from *clypeus* a shield.) The thyroid cartilage.

Clys'ma. (Κλυσμα; from κλυζω, to wash.) In medical language, a clyster.

Cly'ssus. An old chemical term that was very variously applied. Sometimes it meant a compound of various chemical products of the same substance; sometimes the quintessence of any thing; but most generally the product of the detonation of nitre with any other substance: thus nitre, deflagrated with charcoal, formed the *Clyssus nitri;* with antimony, the *Clyssus antimonii;* and with sulphur, the *Clyssus sulphuris.*

CLYSTER. (*er, eris.* m.; from κλυζω, to wash.) See *Enema.*

CNEMODACTYLÆ'US. (From κνημη, the tibia, and δακτυλος, a finger, or toe.) See *Extensor longus digitorum pedis.*

CNEORUM TRICOCCUM. Mezereon. See *Daphne mezereum.*

CNICILÆ'ON. (From κνικος, *cnicus*, and ελαιον, oil.) Oil made of the seeds of the *cnicus* or carthamus tinctorius.

CNI'CUS. (*us, i.* f. κνικος.) 1. The ancient name of the *carthamus tinctorius.*

2. The name of a genus of plants, Class, *Syngenesia*; Order, *Polygamia æqualis.*

CNICUS CERNUUS. The nodding cnicus, the tender stalks of which, boiled and peeled, are eaten by the Siberians.

CNICUS LANATUS. *Chamæleon verum.* The distaff thistle. Formerly used as a depurator, but now forgotten.

CNICUS OLERACEUS. Round-leaved meadow thistle. The leaves of this plant are boiled in the northern parts of Europe, and eaten like cabbage.

Cnicus sylvestris. See *Centaurea.*

Cnidii grana. See *Daphne mezereum.*

CNIDO'SIS. (Κνιδωσις; from κνιδη, the nettle.) A pungent itching, such as that produced by the sting of a nettle. — *Hippocrates.*

CNI'POTES. (Κνιποτης. A dry itching.) Some consider this word, as used by Hippocrates, to be synonymous with *Xerophthalmia*, or dry ophthalmia. — *Galen.*

COADUNA'TÆ. The name given by Linnæus to a natural family of plants, which have a number of flowers clustered together so as to resemble a single flower.

COA'GULABLE. *Coagulabilis.* Susceptible of coagulation.

Coagulable lymph. See *Sanguis.*

Coagulating lymph. See *Sanguis.*

COA'GULANT. (*Coagulans*; from *coagulo*, to incrassate, or curdle.) Having the power of coagulating. Formerly applied to medicines which were supposed to render the blood more coagulable.

COAGULA'TION. (*Coagulatio*; from *coagulo*, to curdle.) The sudden conversion of a liquid into a soft solid mass, as when the white of an egg is consolidated by heat; or the separation of the denser particles from a fluid, as in the coagulation of the blood.

COA'GULUM (*um, i.* n.) The tenacious substance formed from a fluid by coagulation.

COAGULUM ALU'MINIS. This is made by beating the white of eggs with a little alum, until a coagulum is formed. It has been recommended as an efficacious application in a relaxed state of the conjuctive membrane of the eye.

Coal-fish. See *Gadus carbonarius.*

COALTE'RNA FEBRIS. (From *con*, and *alternus*, alternate.) The name given by Bellini to a double intermittent.

COAPTA'TIO. (*o, onis.* f.; from *con*, and *apto*, to fit.) Coaptation. An old surgical term for what is now called the *reduction* of a dislocation or fracture.

COARCTA'TION. (*Coarctatio*; from *coarcto*, to straiten.) Applied in medical language to the contraction or lessening of the diameter of a canal, as the intestinal canal, or the urethra.

COARCTA'TUS. Crowded: applied, in *botany*, to a panicle which is dense, compact, or crowded; as in *Phleum paniculatum*, the inflorescence of which looks, at first sight, like a cylindrical spike; but when bent to either side, separates into branched lobes, constituting a real panicle.

COARTICULA'TIO. (From *con*, and *articulatio*, an articulation.) Synonymous with *diarthrosis*, which see.

CO'BALT. (*Cobaltum, i.* n.) The name of a metal. A mineral called *cobalt* was used to tinge glass blue, long before the peculiar metal now designated by that name was known to chemists. The name is derived from an old German superstition. The mines of that country were believed to be haunted by certain mischievous demons called *kobolden*, and those ores which appeared rich to the eye, but afforded nothing of any value, were believed by the miners to be manufactured by these spirits, and were called after them *kobold*; the ores of the metal in question were supposed to be of this useless kind, and hence got the name of *cobalt.*

Cobalt is met with in the earth chiefly in combination with arsenic, constituting an ore from which all the cobalt of commerce is derived. It is a constant ingredient of meteoric iron; at least Professor Stromeyer states that he has analysed several varieties, in every one of which he has detected the presence of cobalt.

When native arseniuret of cobalt is broken into small pieces, and exposed in a reverberatory furnace to the united action of heat and air, its elements are oxidised, most of the arsenious acid is expelled in the form of vapour, and an impure oxide of cobalt, called *zaffre*, remains. On heating this substance with a mixture of sand and potash, a beautiful blue coloured glass is obtained, which, when reduced to powder, is known by the name of *smalt.*

Metallic cobalt may be obtained by dissolving zaffre in muriatic acid, and transmitting through the solution a current of sulphuretted hydrogen gas, until the arsenious acid is completely separated in the form of sulphuret of arsenic. The filtered liquid is then boiled with a little nitric acid, in order to convert the protoxide into peroxide of iron, and an excess of carbonate of potash is added. The precipitate, consisting of peroxide of iron and carbonate of cobalt, after being well washed with water, is digested in a solution of oxalic acid, which dissolves the iron, and leaves the cobalt in the form of an insoluble oxalate. (Laugier.) On heating the oxalate of cobalt in a retort from which atmospheric air is excluded, a large quantity of carbonic acid is evolved, and a black powder, metallic cobalt, is left. (Thomson, in *Annals of Philosophy*, N. S. i.) The pure metal is easily procured, also, by passing a current of dry hydrogen gas over oxide of cobalt, heated to redness in a tube of porcelain. In this state it is porous, and if formed at a low temperature it inflames spontaneously.

A solution of cobalt may also be made by

acting on the native arseniuret with sulphuric, mixed with a fourth part of nitric acid, separating as much arsenious acid as possible by evaporation, and conducting the remainder of the process as above described. The arseniuret from Tünaberg should be preferred for this purpose, as it is in general free from nickel, which always accompanies the cobalt ores of Germany.

Cobalt is a brittle metal, of a reddish-gray colour, and weak metallic lustre. Its density, according to Dr. Turner, is 7·834. It fuses at about 130° of Wedgwood, and when slowly cooled it crystallises. It is attracted by the magnet, and is susceptible of being rendered permanently magnetic. It undergoes little change in the air, but absorbs oxygen when heated in open vessels. It is not easily acted on by sulphuric or muriatic acid, but is readily oxidised by means of nitric acid. Like iron, and the other metals of this order, it decomposes water at a red heat, with disengagement of hydrogen gas. — *Despretz.*

Oxides of Cobalt. — Chemists are acquainted with two oxides of cobalt, the oxygen of which is in the ratio of 1 to 1·5. According to the experiments of Rothoff (*Ann. of Phil.* iii. 356.), the protoxide is composed of 29·5 parts or one equivalent of cobalt, and eight parts of oxygen. Dr. Thomson infers, from his analysis of sulphate of cobalt, that twenty-six is the equivalent of this metal; but the inference from this and various other analyses of Dr. Thomson is vitiated by his error in the equivalent of barium. The estimate of Rothoff is, therefore, to be preferred, and the equivalents of the oxides of cobalt may be considered respectively as 37·5 and 41·5.

The protoxide is of an ash-gray colour, and is the basis of the salts of cobalt, most of which are of a pink hue. When heated to redness in open vessels it absorbs oxygen, and is converted into the peroxide. It may be prepared by decomposing carbonate of cobalt by heat, in a vessel from which atmospheric air is excluded. It is easily recognised by giving a blue tint to borax when melted with it; and is employed in the arts, in the form of smalt, for communicating a similar colour to glass, earthenware, and porcelain.

Protoxide of cobalt is precipitated from its salts by pure potash as a blue hydrate, which absorbs oxygen from the air, and gradually becomes black. Pure ammonia likewise causes a blue precipitate, which is redissolved by the alkali if in excess. It is thrown down as a pale pink carbonate by carbonate of potash, soda, or ammonia; but an excess of the last redissolves it with facility. Sulphuretted hydrogen produces no change, unless the solution is quite neutral, or the oxide is combined with a weak acid. Alkaline hydrosulphurets always precipitate it as black sulphuret of cobalt.

Muriate of cobalt is celebrated as a sympathetic ink. When diluted with water so as to form a pale pink solution, and then employed as ink, the letters, which are invisible in the cold, become blue if gently heated.

Peroxide of cobalt is of a black colour, and is easily formed from the protoxide in the way already mentioned. It does not unite with acids; and when digested in muriatic acid, the protomuriate of cobalt is generated, with disengagement of chlorine. When strongly heated in close vessels, it gives off oxygen, and is converted into the protoxide.

When a salt of cobalt is treated with pure ammonia in close vessels, part of the cobalt is dissolved, and part subsides in form of a blue powder. On admitting atmospheric air, this substance passes to a higher state of oxidation, and is gradually dissolved. If nitrate of cobalt is used, a double salt may be obtained in crystals, which L. Gmelin, to whom we are indebted for these remarks, believes to consist of nitrate and *cobaltate* of ammonia. The existence of this acid, however, has not yet been satisfactorily established.

Cobalt appears to unite with sulphur in three proportions; the first being a protosulphuret, the second a sesquisulphuret, and the third a bisulphuret. The protosulphuret has a gray colour, a metallic lustre, and a crystalline texture. It may be formed in the dry way, either by throwing fragments of sulphur on red-hot cobalt, or by igniting oxide of cobalt with sulphur; and it is thrown down as a black precipitate from the salts of cobalt by alkaline hydrosulphurets, or even by sulphuretted hydrogen gas, if the salt is quite neutral, or the oxide united with any of the feebler acids.

Arfwedson has observed, that when hydrogen gas is transmitted over sulphate of cobalt, heated to redness, water and sulphurous acid are evolved, and a compound remains, called an *oxysulphuret*, consisting of oxide of cobalt united with sulphuret of cobalt. When this substance is exposed to sulphuretted hydrogen gas, at a red heat, the oxide is decomposed, and a sesquisulphuret is formed.

The bisulphuret is prepared, according to Setterberg, by heating carbonate of cobalt in a state of intimate mixture with one and a half of its weight of sulphur. The process is conducted in a glass retort, and the heat continued as long as sulphur is expelled; but the temperature should not be suffered to reach that of redness.

The compounds of cobalt with the other non-metallic bodies have hitherto been little examined. — *Turner.*

Cobham. The name of a town in Surrey, in the neighbourhood of which is weak, saline, purging, water.

Co'bra de cape'llo. The Portuguese name of the hooded snake. See *Naja.*

Cobweb. See *Aranea.*

Cocoa-nut. See *Cocos nucifera.*

Cocca cnidia. See *Daphne mezereum.*

Cocca'rium. A very small pill.

Coccine'lla. (*a, æ.* f.; diminutive of *coccus*, a berry: from its resemblance to a berry.)

1. The cochineal insect. See *Coccus cacti.*

2. The name of a numerous genus of coleopterous insects. The lady-bird. *Cocinella bipunctata*, and *septem punctata*, have been in vogue as remedies for the toothach, the insect being bruised, and applied to the affected tooth.

Co'cco-ba'lsamum. The fruit of the *Amyris gile densis.*

Coccogni'dia. See *Daphne mezereum.*

CO'CCULUS. (*us, i.* m.; diminutive of κοκκος, a berry.) 1. A little berry.

2. The name of a genus of plants constituted by Decandolle. Natural order *Menispermiæ.* Class, *Diœcia;* Order, *Dodecandria* of the Linnæan system.

Cocculus Indi aromaticus. Jamaica pepper. See *Myrtus pimenta.*

Cocculus indicus. See *Menispermum cocculus.*

Cocculus palma'tus. *Menispermum palmatum.* The plant which produces the calumba root.

This species of cocculus is a native of the eastern part of Southern Africa, growing in great abundance in the forests of Mozambique, between Oibo and Mozambo. The roots are dug up by the natives in the month of March, and transported to Tranquebar, where it is a staple article of export with the Portuguese. The root was formerly erroneously supposed to be named from the principal town in the island of Ceylon, which was regarded as its place of export. An entire root was taken to Madras by Mons. Fortin, in 1805, and a plant raised from it there by Dr. Anderson, from a drawing of which it was ascertained to belong to the natural order Menispermeæ; but, as it was a male plant only, the genus and species were undetermined until they were fixed by De Candolle. In 1825, both male and female plants were obtained by Captain Fitzwilliam Owen, from Oibo, and carried to the Mauritius, Bombay, and the Seychilles Archipelago. Dr. Berry drew up the following character of the male plant, which has been adopted by De Candolle; but the female plant is yet undescribed. The root is perennial, ramose, and bears fusiform tubers. The stems are annual, withering at the end of seven months, voluble, simple, round, hairy, about the thickness of a goosequill, bearing distant, alternate, five-lobed, five-nerved, leaves, with entire acuminate lobes; and supported on round hairy petioles, shorter than the leaves. The male flowers are in axillary, solitary, compound, racemes, hairy, and shorter than the leaves, bearing partial, alternate, peduncles, with sessile flowers, and lanceolate, ciliated, deciduous bractes. The calyx is hexaphyllous, with three exterior leaflets, and three interior, equal, oblong, obtuse, and glabrous. The corolla consists of six minute, oblong, wedge-shaped, concave, fleshy, obtuse, petals. The stamens are six, a little longer than the corolla; the anthers four-lobed and four-celled: there is no pistillum. The roots are dug up in March; but the offsets only are taken; each offset being a sessile tuber. In the female plant, the racemes are solitary, axillary, patent, and shorter than those of the male. The calyx and petals resemble those of the male. The pistils are three, free, of which two are abortive: they are ovate, accuminate, glanduloso-pilose, and contain one ovule. The style is short, the stigmas patent, the fruit drupaceous, the seed subreniform, black, striated.

The dried root is brought to this country packed in bags, and sometimes in cases. It is in transverse sections, generally about one third of an inch in thickness, and one or two inches in diameter. The bark is thick, and easily detached, internally bright yellow, and covered with a wrinkled olive-brown cuticle. The interior part of the root is of a pale brownish colour, and has a spongy texture, with darker converging rays, which are the remains of sap-vessels. The pieces are frequently much perforated, evidently by worms, and not, as has been supposed, by stringing to facilitate its drying. Those pieces which have the fewest wormholes, the brightest colour, and are solid and heavy, are the best. It is said that the root of white bryony, tinged yellow with the tincture of calumba, has been fraudulently substituted for this root.

Calumba root has a very slight aromatic odour, and a bitter taste. It breaks with a starchy fracture, and is easily pulverised. Water at 212° takes up one third of its weight; and the infusion has all the sensible qualities of the root. These are also extracted by alkohol; but proof spirit is its best menstruum. The infusion is not altered by solutions of sulphate of iron, nitrate of silver, muriate of mercury, and tartarized antimony; but a copious precipitate is produced by the infusion of galls and yellow cinchona bark, by acetate and superacetate of lead, oxymuriate of mercury, and limewater. Hence calumba root was erroneously supposed to contain cinchonia. M. Planche found it to contain a large proportion of a peculiar animal substance; a yellow, bitter, resinous matter, and one third of its weight of starch. By repeated distillation, he also obtained a volatile oil; and, from the residue, malate of lime and sulphate of lime. By treating calumba root with alkohol of 0·835, then reducing the tincture by distillation to one third, allowing the residue to stand until crystals form in it, and afterwards purifying these, Mr. Wittstock of Berlin procured a new salt, to which he gave the name of *colombin*, and which he supposes to be the active principle of calumba root. It is inodorous, extremely bitter, neither acid nor alkaline, forms in quadrilateral, transparent, acicular, crystals, scarcely soluble in water or in cold alkohol. The acetic acid is its proper menstruum; but it is also taken up by alkaline solutions.

Medical properties and uses. — Calumba root is a useful antiseptic and tonic. It was first brought into notice by Fr. Rede, in 1685. It is frequently employed with much advantage in diarrhœas arising from a redundant secretion of bile, and in bilious remittent fever, and cholera, in which it generally checks the vomiting. It also allays the nausea and vomiting which accompany pregnancy; and, according to Percival, it is equally serviceable in stopping the severe diarrhœa and vomiting which sometimes attend dentition. Denman found it more useful than the cinchona in the low stage of puerperal fever. As a tonic, unaccompanied with astringency, and possessing little stimulus, it has been recommended in phthisis and hectic fever, to allay irritability and strengthen the digestive organs; and in dys-

pepsia. It may be given combined with aromatics, orange-peel, opiates, and alkaline or neutral salts, as circumstances require. We have found the powder, in combination with rhubarb and sulphate of potassa, exceedingly serviceable in mesenteric fever.

The dose of the powdered root is from grs. xv. to ʒss., repeated three or four times a day. — *A. T. Thomson.*

Officinal preparations. — *Infusum calumbæ*, L. E. *Infusum Columbæ*, D. *Tinctura Calumbæ*, L. E. D.

CO'CCUM. (*um*, *i.* n.) A species of seed-vessel, which Gœrtner distinguishes from a capsule: he defines it to be a dry seed-vessel, more or less aggregate, not solitary, the sides of which are elastic, projecting the seeds with great force, as in the *Euphorbia*.

Co'ccum ba'phicum. A name of the kermes berry. See *Coccus infectorius*.

CO'CCUS. (Κοκκος. *us. i.* m.) 1. In *Botany*, a cell or capsule: when two are joined together, it is termed *dicoccous*; and where there are three, *tricoccous*, &c. See *Capsula*.

2. In *Entomology*, the name of an order of hemipterous insects.

Coccus cacti. The systematic name of the cochineal insect; which has also been called, *Coccinella*, *Coccinilla*, *Ficus Indiæ grana*, *Scarabæolus hemisphæricus*, *Cochinelifera cochinilla*, *Coccus Americanus*, *Cochinella*, and *Coccus Indicus tinctorius*. Cochineal, so highly prized for its valuable properties in producing the dye which bears its name, is a native of South America. It comes to us in the form of a reddish grain, covered with a white powder or bloom, and feeds on various species of Cactus or Indian fig. In Mexico, where the insect is domesticated, and reared with the greatest care, the plant is called Nopal, and has been generally supposed to be the *Cactus cochinilifer*, but, according to Humboldt, is unquestionably a distinct species, to which he has given the name of C. *Bonplandii*. The female, which alone is valuable for its dye, is about one eighth of an inch in length; the body is depressed, downy, transversely rugose, of a purplish red colour, flat below and convex above; the head is furnished with a rostrum rising from the breast, with a vagina and setæ; the legs are six in number, short and black. The male is a very small fly, with long filiform antennæ, and two erect wings; the body is of a deep red colour, with two very long setæ proceeding from the apex of the abdomen. No good figure and description of this interesting species has yet been published.

Cochineal is chiefly cultivated in the intendency of Oaxaca; and some plantations contain 50 or 60,000 nopals in lines, each being kept about four feet high, for more easy access in collecting the dye. The cultivators prefer the most prickly varieties of the plant, as affording protection to the cochineal from insects; to prevent which from depositing their eggs in the flower or fruit, both are carefully cut off. The greatest quantity, however, of cochineal employed in commerce, is produced in small nopaleries belonging to Indians of extreme poverty, called *Nopaleros*. They plant their nopaleries in cleared ground, on the slopes of mountains or ravines, two or three leagues distant from the villages; and, when properly cleaned, the plants are in a condition to maintain the cochineal in the third year. As a stock, the proprietor in April or May purchases branches or joints of the *Tuna de Castilla*, laden with small cochineal insects recently hatched (*Semilla*). These branches, which may be bought in the market of Oaxaca for about three francs (2*s.* 6*d.*) the hundred, are kept for twenty days in the interior of their huts, and then exposed to the open air under a shed, where, from their succulency, they continue to live for several months. In August and September the mother cochineal insects, now big with young, are placed in nests made of a species of *Tillandsia* called *Pastle*, which are distributed upon the nopals. In about four months, the first gathering, yielding twelve for one, may be made, which in the course of the year is succeeded by two more profitable harvests. This period of sowing and harvest refers chiefly to the districts of Sola and Zimatlin. In colder climates, the semilla is not placed upon the nopals until October or even December, when it is necessary to shelter the young insects by covering the nopals with rush mats; and the harvests are proportionably later and unproductive. In the immediate vicinity of the town of Oaxaca, the Nopaleros feed their cochineal insects in the plains from October to April, and at the beginning of the remaining months, during which it rains in the plains, transport them to their plantations of nopals in the neighbouring mountains, where the weather is more favourable.

Much care is necessary in the tedious operation of gathering the cochineal from the nopals, which is performed with a squirrel's or stag's tail by the Indian women, who for this purpose squat down for hours together beside one plant; and, notwithstanding the high price of the cochineal, it is to be doubted if the cultivation would be profitable were the value of the labour more considerable.

The cochineal insects are killed either by throwing them into boiling water, by exposing them in heaps to the sun, or by placing them in ovens (*Temazcalli*), used for vapour baths. The last of these methods, though least in use, preserves the whitish powder on the body of the cochineal, which, being then less subject to the adulterations so often practised by the Indians, bears a higher price both in America and Europe.

The quantity at present annually exported from South America is said by Humboldt to be 32,000 arrobas, estimated at 2,400,000 piastres, about 500,000*l.* sterling.

Cochineal has a faint, disagreeable, bitter, and austere taste. According to MM. Pelletier and Caventou, the colouring matter, which composes the principal part of the cochineal, is mixed with a peculiar animal matter, a fatty matter, phosphate and carbonate of lime, and muriate and phosphate of potass. The colouring matter, which they have named *carminium*, is soluble in water, alkohol, and solutions of

pure alkalis. Carmine is prepared by precipitating the colouring matter from its solution in water, by means of alum or oxide of tin.

Cochineal has been recommended as an antispasmodic and anodyne in hooping cough; but its principal use is to impart a fine colour to tinctures and other preparations. It is sometimes adulterated with an admixture of a manufactured imitation, composed of coloured dough. The fraud may be very easily detected by the action of boiling water, which dissolves the spurious grains, while it has little action upon the genuine insect. — *Stephenson.*

Coccus infecto'rius. *Coccus baphicus. Coccus ilicis. Coccus quercus coccifera.* The insect which produces the kermes grains, or kermes berries. The tree which these insects inhabit (*Quercus coccifera*) grows in the South of France, in Spain, and in the islands of the Archipelago. The insect has the appearance of a little reddish-brown berry, covered with a grayish powder: it used to be esteemed aphrodisiac, analeptic, &c.; but is now only used to colour syrups red.

Coccus lacca. Lac is the produce of an insect formerly supposed to be a kind of ant or bee, but now ascertained to be a species of coccus; and is collected from various trees in the East Indies, where it is found so abundantly, that, were the consumption ten times greater than it is, it could be readily supplied. This substance is made use of in that country in the manufacture of beads, rings, and other female ornaments. Mixed with sand, it forms grindstones; and added to lamp or ivory-black, being first dissolved in water, with the addition of a little borax, it composes an ink, not easily acted upon when dry by damp or water. In this country, where it is distinguished by the names *stick-lac* when in its native state, unseparated from the twigs to which it adheres; *seed-lac* when separated, pounded, and the greater part of the colouring matter extracted by water; *lump-lac* when melted and made into cakes; and *shell-lac* when strained and formed into transparent laminæ; it has hitherto been chiefly employed in the composition of varnishes, japanned ware, and sealing wax: but within these few years it has been applied to a still more important purpose, originally suggested by Dr. Roxburgh, that of a substitute for cochineal in dying scarlet. — *Stephenson.*

Coccus polo'nicus. This is found on the roots of the *Polygonum coccifera* and other plants. It is used as a red dye.

COCCYGE'US. (*Coccygeus*; from κοκκυξ: because it is inserted into the coccyx.) A muscle of the os coccygis, situated within the pelvis. It arises, tendinous and fleshy, from the spinous process of the ischium, and covers the inside of the sacro-ischiatic ligament; from this narrow beginning it gradually increases to form a thin fleshy belly, interspersed with tendinous fibres. It is inserted into the extremity of the os sacrum, and nearly the whole length of the os coccygis, laterally. Its use is to support and move the os coccygis forwards.

COCCY'GIS OS. (*Coccyx, ῠ̄gis*, f.; from κοκκυξ, the cuckoo, the bill of which bird it is said to represent.) *Cauda. Ossis sacri acumen.* This bone is a small appendage to the end of the sacrum, terminating in a point. It is found in very different conditions in the several stages of life. In the child, it is merely cartilage, and we can find no point of bone: during youth, it is ossifying into distinct bones, which continue moveable upon each other till manhood: then the separate bones gradually unite with each other, so as to form one conical bone, with bulgings and marks of the pieces of which it was originally composed; but still the last bone continues to move upon the joint of the sacrum, till, in advanced life, it becomes firmly united: this takes place later in women than in men. The coccyx is of a roundish form, convex without, and concave inwards; forming, with the sacrum, the lowest part of the pelvis behind. It has no holes, like the sacrum; has no communication with the spinal canal, and transmits no nerves; but points forward to support the lower part of the rectum: thus it contracts the lower opening of the pelvis, so as to support effectually the rectum, bladder, and womb; and yet continues so moveable in women, as to recede in time of labour, allowing the head of the child to pass.

CO'CCYX. (Κοκκυξ, the cuckoo.) The *Os coccygis.* See *Coccygis os.*

Coccinellin. *Carminium.* The colouring principle of cochineal. See *Coccus cacti.*

Co'chia. (Κοκκια; from κοκκος, a berry.) *Coccia.* An ancient name of some officinal pills. The pill of cochia of the shops, in the present day, is the compound colocynth pill.

Cochineal. See *Coccus cacti.*

Cochinella Germanica. See *Coccus Polonica.*

CO'CHLEA. (*Cochlea*, a snail's shell.) A cavity of the internal ear, so called from its shape. See *Auris.*

Cochlea terrestris. See *Limax.*

COCHLE'ARE. (*Cochleare, is.* n.; from *cochlea*, a cockle, the shell of which its bowl resembles.) A spoon. *Cochleare amplum*, or *magnum*, is a table-spoon, calculated to hold half a fluid ounce; *cochleare medium*, is a dessert or pap-spoon, supposed to hold two tea-spoonsful; and *cochleare minimum*, a tea-spoon, which holds about one fluid drachm.

COCHLEA'RIA. (*a, æ.* f.; from *cochleare*, a spoon: so called from the shape of its leaves.) The name of a genus of plants in the Linnæan system. Class, *Tetradynamia*; Order, *Siliculosa.*

Cochlearia armoracia. The systematic name of the horseradish; called also, *Raphanus rusticanus, Armoracia, Raphanus marinus*, and *Raphanus sylvestris.*

Cochlearia foliis radicalibus lanceolatis crenatis caulinis incisis, of Linnæus. The root of this plant has long been received into the materia medica, and is also well known at our tables. It affects the organs both of taste and smell with a quick penetrating pungency; nevertheless it contains in certain vessels a sweet juice which sometimes exudes in little drops upon the surface. Its pungent matter is of a very volatile kind, being totally dissipated in drying

and carried of in evaporation, or distillation by water; as the pungency exhales, the sweet matter of the root becomes more sensible, though this, also, is, in a great measure, dissipated or destroyed. It impregnates both water and spirit by infusion, or by distillation, very richly with its active matters. In distillation with water, it yields a small quantity of essential oil, exceedingly penetrating and pungent."

Dr. Cullen has mentioned every thing necessary to be known respecting the medicinal virtues of horseradish; we shall, therefore, transcribe all that the ingenious professor has written on this subject: — "The root of this plant only is employed; and it affords one of the most acrid substances of this order (*Siliculosa*), and therefore proves a powerful stimulant, whether externally or internally employed. Externally, it readily inflames the skin, and proves a rubefacient that may be employed with advantage in palsy and rheumatism; and, if its application be long continued, it produces blisters. Taken internally, it may be so managed as to relieve hoarseness, by acting on the fauces. Received into the stomach, it stimulates this, and promotes digestion; and therefore is properly employed as a condiment with our animal food. If it be infused in water, and a portion of this infusion be taken with a large draught of warm water, it readily proves emetic, and may either be employed by itself to excite vomiting, or to assist the operation of other emetics. Infused in water, and taken into the stomach, it proves stimulant to the nervous system, and is thereby useful in palsy, and, if employed in large quantity, it proves heating to the whole body; and thereby it proves often useful in chronic rheumatism, whether arising from scurvy or other causes. Bergius has given us a particular method of exhibiting this root, which is, by cutting it down, without bruising, into small pieces; and these, if swallowed without chewing, may be taken down in large quantities, so that of a table-spoonful. And the author alleges, that, in this way, taken in the morning for a month together, this root has been extremely useful in arthritic cases; which, however, I suppose to have been of the rheumatic kind. It would seem, in this manner employed, analogous to the use of unbruised mustard-seed; it gives out in the stomach its subtile volatile parts, that stimulate considerably, without inflaming. The matter of horseradish, like the same matter of the other siliquose plants, carried into the blood-vessels, passes readily into the kidneys, and proves a powerful diuretic, and is therefore useful in dropsy; and we need not say, that, in this manner, by promoting both urine and perspiration, it has been long known as one of the most powerful antiscorbutics."

Cochlearia hortensis. See *Cochlearia officinalis.*

Cochlearia officinalis. The systematic name of the lemon scurvy-grass. *Cochlearia hortensis; Cochlearia — foliis radicalibus cordato rotundis; caulinis oblongis subsinuatis,* of Linnæus. This indigenous plant is cultivated in gardens for its medicinal qualities. Its expressed juice has been held in great estimation as an antiscorbutic.

Cochlea'tus. Spiral, like the winding of a shell. Applied, in *Botany*, to leaves, pods, seeds, &c.; as *legumen cochleatum*, seen in *Medicago polymorpha*, and the seeds of the *Salsola*.

Cocho'ne. (Κοχωνη. Κοχωνον.) Galen explains this to be the juncture of the ischium, near the seat or breech; whence, says he, all the adjacent parts about the seat are called by the same name. Hesychius says, that *cochone* is the part of the spine which is adjacent to the os sacrum.

Cocilio. A weight of eleven ounces. — *Ruland.*

Cockle. See *Cardium edule.*

Cocoa. See *Theobroma cacao.*

Cocola'ta. Chocolate. See *Theobroma cacao.*

Co'cos. (*os, i.* f. Contracted from the Portuguese *macoco*, or *macaco*, a monkey; the three holes at the end of the cocoa-nut shell giving it some resemblance to a monkey's head.) The name of a genus of plants in the Linnæan system. Class, *Monœcia;* Order, *Hexandria.*

Cocos butyra'cea. The systematic name of the plant which affords the palm oil; *Cocos — inermis, frondibus pinnatis; foliolis simplicibus,* of Linnæus. The *oleum palmæ* is produced chiefly by bruising and dissolving the kernels of the fruit in water, without the aid of heat, by which the oil is separated, and rises to the surface, and, on being washed two or three times, is rendered fit for use. When brought into this country, it is of the consistence of an ointment, and of an orange-yellow colour, with little taste, and a strong, though not disagreeable, smell. It is used as an emollient in emulsions, and externally as a liniment for sprains, &c. It seems to possess no advantage over any other bland oil.

Cocos maldi'vicus. *Coccus de Maldiva. Nux Medica. Maldiva Nut.* The fruit of a species of palm which grows in the Maldive Islands. It was formerly in esteem as an alexipharmic, but is not now used.

Cocos nuci'fera. The systematic name of the plant, the fruit of which is the cocoa-nut. Within the nut is found a hollow kernel of a sweet and very agreeable flavour, and within this a large quantity of liquor resembling milk, which the Indians drink greedily before the fruit is ripe, it being then pleasant; but, when the nut is mature, the liquor becomes sour. Some full-grown nuts contain a pint or more of this milk, the frequent drinking of which seems to have no bad effects upon the Indians; yet Europeans should be cautious of making too free with it at first; for when Lionel Wafer was at a small island in the South Sea, where the tree grew in plenty, some of his men were so delighted with it, that, at parting, they were resolved to drink their fill, which they did; but their appetites had like to have cost them their lives; for, though they were not drunk, yet they were so chilled and benumbed that they could not stand, and were obliged to be carried aboard by those who had more prudence than themselves; and it was many days before they recovered. The milk of the cocoa-nut, when fermented, affords a kind of wine. The shells

of these nuts being hard, and capable of receiving a polish, they are often cut transversely, when, being mounted on stands, and having their edges silvered, or gilt, or otherwise ornamented, they serve the purpose of drinking-cups. The leaves of the tree are used for thatching, for brooms, baskets, and other utensils; and of the reticular web, growing at their base, the Indian women, make nets for the hair, and aprons.

CO'CTION. (*Coctio, onis.* f.; from *coquo*, to boil.) Concoction. 1. The digestion of the food in the stomach. See *Digestion.*

2. A boiling or decoction. See *Decoction.*

3. In medical language it was formerly used to signify that alteration, whatever it might be, which was supposed to take place in the crude matter of a distemper, whereby it was either fitted for a discharge, or rendered harmless to the body. This was conceived to be brought about by nature; that is, by the vis vitæ, or the disposition or natural tendency of the matter itself; or else by proper remedies, which so altered its bulk, figure, and cohesion, or gave it such a particular determination, as to prevent any farther ill effects, or drive it quite out of the body. That period of a disease wherein this action was imagined to be going on was called its state of coction.

Cod. See *Gadus morhua.*

Codaga-pala. See *Nerium antidysentericum.*

Codeia. An alkaline substance which exists in opium. See *Papaver somniferum.*

Codese'lla. An Italian name of the pestilential carbuncle. See *Anthrax and Pestis.*

Co'dia. Κωδια. A poppy head.

Codoce'le. (From κωδια, a bulb, and κηλη, a tumour.) A bubo.

Cœca'lis. (From *cæcum*, the blind gut.) Cæcal: of or belonging to the cæcum.

CŒ'CUM. From *cæcus*, blind. The blind gut. See *Intestines.*

CŒ'LIA. (Κοιλια, or κοιλιη; from κοιλος, hollow.) A cavity in any part of the body; especially the lower belly.

CŒ'LIAC. (*Cœliacus*, belonging to the belly; from κοιλια, the belly.) Appertaining to the belly.

Cœliac artery. *Arteria cœliaca.* The first branch given off from the aorta in the cavity of the abdomen. It arises from the aorta immediately after the emergence of the latter from between the crura of the diaphragm, or nearly opposite the eleventh dorsal vertebra. The cœliac artery is a very thick short trunk, and runs little more than an inch and a half before it divides into the great branches, viz. the *Hepatic*, the *Coronaria ventriculi*, and the *Splenic.*

Cœliac passion. (*Passio cœliaca*, from κοιλια, the belly.) This term has been variously understood by different writers. Sauvages says it is a chronic flux, in which the aliment is discharged half digested. Dr. Cullen considers it as a species of diarrhœa, under the name of *diarrhœa cœliaca.* See *Diarrhœa.*

Cœliaca urina'lis. The name given by some writers to a disease in which chyle is passed along with the urine, or instead of urine. No such disease, however, exists.

Cœliac plexus. The solar plexus.

CŒLI'ACA. The first class of diseases in Dr. Good's Nosology, embracing diseases of the digestive organs.

Cœliaca chylosa. A name of the cœliac passion.

Cœliaca lactea. A name of the cœliac passion.

Cœliacus. See *Cœliac.*

Cœliacus fluxus. The cœliac passion.

Cœliacus morbus. The cœliac passion.

Cœlo'ma. (From κοιλος, hollow.) A large, round, and not very deep ulcer in the cornea of the eye.

CŒNOLO'GIA. (*a, æ.* f.; from κοινος, common, and λογος, discourse.) A consultation.

Cœruleus lapis. The sulphate of copper. See *Cupri sulphas.*

Cœruleus Morbus. See *Morbus Cœruleus.*

CO'FFEA. (*a, æ.* f.). The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Monogynia.* The coffee-tree.

Coffea arabica. The plant which affords coffee; called also *Jasminum Arabicum, Chouva, Bon*, and *Ban. Coffea Arabica — floribus quinquefidis, dispermis*, of Linnæus.

The coffee, properly so called, is the seed of this tree, which is cultivated in Arabia, Persia, the East Indies, the Isle of Bourbon, and several parts of America. Good Turkey coffee, when not too strong, is a nutritious and sufficiently wholesome beverage: it is too heating, however, for many constitutions, and, when habitually taken too strong, it produces bad effects in all, impairing the digestion, and inducing nervous irritability. It possesses nervine and astringent qualities, and may be drunk with advantage at all times, except when there is a redundance of bile. It is said to be a good antidote against an overdose of opium, and to relieve obstinate spasmodic asthmas. For the latter purpose, the coffee ought to be of the best Mocha, newly burnt, and made very strong, immediately after grinding it. Sir John Pringle commonly ordered one ounce for a dose; which is to be repeated fresh after the interval of a quarter or half an hour; and which he directed to be taken without milk or sugar.

Besides the peculiar bitter principle which is described under the head *Caffein*, coffee contains several other vegetable products. According to Cadet, 64 parts of raw coffee consist of 8 gum, 1 resin, 1 extractive and bitter principle, 3·5 gallic acid, 0·14 albumen, 43·5 fibrous insoluble matter, and 6·86 loss. Hermann found in 1920 grains of

	Levant Coffee.	Mart. Coffee.
Resin,	74	68
Extractive matter,	320	340
Gum,	130	144
Fibrous matter,	1335	1386
Loss,	61	12
	1920	1920

The nature of the volatile fragrant principle, developed in coffee by roasting, has not been ascertained. The Dutch, in Surinam, improve the flavour of their coffee by suspending bags of it, for two years, in a dry atmosphere. They never use new coffee.

Various farinaceous substances are prepared as substitutes for coffee; but none of them bear much resemblance to it, either in flavour or effects.

Cohabitation. The habit of dwelling together. Writers on legal medicine use this word in the sense of copulation, or coition.

COHE'SION. (*Cohæsio, onis.*; from *con*, and *hæreo*, to stick together.) That power by which the particles of bodies are held together. See *Attraction*.

Cohob. *Cohoph.* A barbarous term, forged by Paracelsus, the general meaning of which appears to be *iteration*: thus, to pour a fluid again and again on the same substance from which it has been abstracted, he calls *cohobare*, or *affundere per cohob*; the same terms are also applied by this eccentric author to the repetition of any medicine in the course of a disease.

Cohoba'tio. A term invented by Paracelsus to signify the redistillation of a fluid, poured afresh upon a substance of the same kind as that from which it has been before distilled, this process being repeated again and again.

Co'hol. *Kohol.* An Arabic name of antimony, with the powder of which the Eastern women pencil the inside of their eyelids, to give lustre to their eyes.

Coi'lima. (From κοιλια, the bowels.) A sudden swelling of the belly from flatulence. — *Turton.*

Coi'ndicans. (From *con*, and *indico*, to indicate.) Coindicant. A symptom is called coindicant, when it is accompanied by others indicating the same thing.

CO'ITUS. (*us, ûs.* m.; from *coeo*, to go together.) 1. The conjunction of the male and female in the act of procreation.

2. *Coitus humoris* means a conflux of fluids, or gathering of humours.

Coke. Charred coal.

Colato'ria la'ctea. Certain vesiculo-vascular bodies in the internal tunic of the uterus described by Astruc. He says they were formerly considered as glands.

Colato'rium. (*um, i.* n.; from *colo*, to strain.) A strainer of any kind.

Colatu'ra. (*a, æ.* f.; from *colo*, to strain.) A filtered or strained liquor.

Colchester. A seaport town of Essex, near which is a purging mineral water. *Aqua Colcestrencis*, resembling that of Epsom, but less powerful.

CO'LCHICUM. (*um. i.* n.; from *Colchis*, a country of Asia, where this plant is supposed to have been common.) 1. The name of a genus of plants in the Linnæan system. Class, *Hexandria*; Order, *Trigynia*. Meadow-saffron.

2. The pharmacopœial name of the meadow-saffron. See *Colchicum autumnale.*

Colchicum autumnale. The systematic name of the common meadow-saffron. *Colchicum — foliis planis lanceolatis erectis*, of Linnæus. This is an indigenous perennial plant, generally found, in many parts of Europe, growing in moist rich meadow grounds, and flowering in September. The bulb is solid, egg-shaped, and covered with a brown membranous coat. The leaves, which appear in spring, are radical and spear-shaped, about five inches long, and half an inch broad at the base. They wither away entirely before the end of summer, and are, nevertheless, preceded by the flower, which appears in autumn without any leaves. It is, however, proper to state, that the bulb from which the flowers spring is the offset of that from which the leaves have decayed. There is no calyx. The corolla, which is of a pale, pinkish, lilac colour, springs directly from the bulb, and consists of a tube about five inches long, two thirds of which are sunk in the ground, and a limb divided into six lanceolate keeled segments. The filaments are half the length of the segments of the corolla, subulate, united to the upper part of the tube, and supporting yellow erect anthers. The stigmas are revolute. The fruit is a three-lobed, three-celled, capsule, on a thick, short, peduncle. The impregnated germen remains under ground, close to the bulb, till the following spring, when it rises in its capsular form above the surface, accompanied by the leaves. The seeds are ripe about the end of June.

The thick old bulb begins to decay after the flower is perfectly expanded; and the new bulbs, of which there are always two on each old bulb, are perfected in the following June, from which time until the middle of August they may be taken up for medicinal use. The bulbs, when mature, on being cut transversely, yield a milky-looking acrid juice, which produces a beautiful cerulean blue colour, if rubbed with the alcoholic solution of guaiacum. To preserve the virtues of the plant, the bulb, as soon as possible after it is dug up, should be cut into transverse slices, not thicker than one eighth of an inch, and dried by placing the slices on clean, white, bibulous paper, distinct from one another, without heat, or at a very low temperature. The test of the drug being good and properly dried is the appearance of the blue colour, on rubbing it with a little distilled vinegar and the alkoholic solution of guaiacum. The slices also should not appear deeply notched or panduriform, as this is the mark of the bulb having begun to empty itself for the nourishment of the young bulbs; and, consequently, to suffer in its medicinal powers, from the chemical change which, at this period, its contents must necessarily undergo for the nourishment of the offsets. The slices should be preserved in well stopped bottles.

The *seeds* of colchicum should be collected in July and August. They are nearly round, in size about one eighth of an inch, and of a reddish-brown colour. Their active properties reside in the testa; they do not spoil by being kept.

Qualities. — The recent bulb of this plant has scarcely any odour, but the little it has is *hircine*. When it is dug up at a proper season of the year, the taste is bitter, hot, and acrid, occasioning a warm sensation in the stomach, even when taken in a small quantity. At other seasons, however, and in some soils and situations, it possesses very little acrimony, and thence the contradictory opinions which authors

have given of it. Its acrimony is said to reside in veratria, which can be separated from the other principles: this is the opinion of MM. Pelletier and Caventou, who discovered it in 1819; but Hesse and Geiger assert that it is a different alkaloid, which they have named *colchicia*. It is procured in slender acicular crystals, is inodorous, has a bitter biting taste, but is less acrid than veratria, from which it differs in being soluble in water, and forming crystallisable salts with acids. The other components of the bulb are the following: a fatty matter, malic acid, a yellow colouring matter, gum, starch, inulin in great abundance, and lignin. Vinegar and wine are the best menstrua for extracting the active qualities of the bulb. A deposit forms in the wine, which Sir E. Home says is extremely acrid, exciting nausea and griping, and ought to be removed, as its removal does not alter the virtues of the medicine. The seeds contain *colchicia*, and yield it up to wine, vinegar, and alkohol.

Medical properties and uses. — Meadow-saffron possesses diuretic, purgative, and narcotic properties. It is supposed by some to be the *hermo dactylon* of the ancients. On the Continent, where it was recommended to notice by Baron Stoerck, it is a favourite remedy in dropsy, particularly hydrothorax, and in humoral asthma. But as it does not differ in its mode of action from squill, and is more uncertain in its operation, it has not been much used in that complaint in this country. In gout, rheumatism, and other diseases of excitement, however, its efficacy has been fully ascertained; and, in allaying the pain of gout, it may be almost said to possess a specific property. It operates on the bowels chiefly, stimulating the orifice of the common gall-duct in the duodenum, so as to produce copious bilious evacuations; and acting on the nerves, it diminishes the action of the arterial system. The petals of the flower, and the seed, possess the same medicinal properties as the bulb. In the seed the veratria exists in the testa or husk, and, consequently, the seeds should not be bruised in preparing the wine or tincture with them. When colchicum is overdosed it operates as a powerful poison; causing severe diarrhœa, and the most dangerous collapse.

The dose in substance is from grs. iij. to grs. ix. of the dried bulb; and of the saturated vinous infusions, made by macerating ʒ jss. of the dried bulb, or ʒ j. of the dried petals, or of the seed, in f ʒ xij. of white wine, from ♏ xx. to ♏ lx. may be taken whenever the patient is in pain. — *A. T. Thomson.*

Officinal preparations. — *Acetum Colchici*, L. *Oxymel Colchici*, D. *Syrupus Colchici autumnalis*, E. *Vinum Colchici*, L. *Tinctura Seminum Colchici*, D.

Colchicum illyricum. The plant supposed by some to afford the root called hermodactyl. See *Hermodactylus.*

Colchicum zeylanicum. See *Zedoaria.*

COLCO'THAR. *Chalcitis; Colcothar vitrioli.* The brown-red oxide of iron, which remains after the distillation of the acid from sulphate of iron.

Colcothar vitrioli. See *Colcothar.*

Cold. 1. See *Frigus.*

2. A popular name for a catarrh. See *Catarrh.*

Cold Affusion. See *Affusion.*

COLEO'PTERA. (From κολεος, a sheath, and πτερον, a wing.) An order of insects furnished with elytra, or sheaths to their wings, as beetles, &c.

Co'les. *Colis.* The penis.

Colewort. See *Brassica.*

Colic. See *Colica.*

Colic of Poitou. See *Colica.*

Colic, lead. See *Colica.*

Colic, painter's. See *Colica.*

CO'LICA. (*a*, *æ*. f.; from κωλον, colon, the name of a portion of the intestines.) The colic or bellyache. The appellation colic is commonly given to all severe griping pains in the abdomen, not primarily dependent on inflammation; but, from the different causes and circumstances of this disorder, it is variously denominated, and several species have been distinguished by nosologists. When its principal symptoms are sharp and spasmodic pains, it is called *spasmodic colic;* and when with the pain there is constipation, and accumulation of fæcal matter, *stercoraceous colic;* when from indigestible food, *accidental colic.* When the pain is accompanied with vomiting of bile, it is called *bilious colic:* if flatus causes the pain, that is, if there be temporary distension, relieved by the discharge of wind, it takes the name of *flatulent* or *windy colic;* when accompanied with heat and a degree of inflammation, it takes the name of *inflammatory colic.* When colic arises to a violent height, and is attended with obstinate costiveness, and an evacuation of fæces by the mouth, it is called *passio iliaca*, or iliac passion.

1. *Of the spasmodic colic.*

This species is attended with pain about the navel, and a retraction of the parietes of the belly. The pain goes and returns, and moves about as in other kinds of colic, but there are more perfect periods of ease. When the belly is soft, the intestines are often felt in lumps, which move about under the hand, or wholly vanish for a time. These are its essential characters, and establish the purely spasmodic affection when there is no flatulency, nor any of the distinctive symptoms of the other species.

Spasmodic colic occurs in highly nervous and hysterical constitutions, and is relieved by stimulating fomentations, warm glysters, and carminatives, especially the compound spirit of sulphuric ether with camphire. If these do not remove the spasms, opium is an almost infallible remedy.

2. *Of the stercoraceous colic.*

The griping pains are severe, and the bowels are constipated, and there is often nausea and vomiting. When this happens, as it sometimes does, to infants very soon after birth, before the *meconium* has passed away from the intestines, the disease is called *colica meconialis.* Both the colica stercorea, or fæcosa, as it has been termed, and the meconialis, are the result of a superabundant action of the absorbents, or of a deficiency in the peristaltic power of the intestina

tube: in consequence of which, from the length of time the confined materials occupy in completing their descent, the meconium, in infants, becomes so viscid as not to be urged downward, and remains in the intestines till it grows acrid from acidity or putrescency; and, in older subjects, the fæces, deprived of moisture, harden into one solid mass, possessing the figure of the intestine; or formed in the sacculi of the colon, or separating into smaller pieces, appear, when discharged, in the shape of balls or buttons, like sheeps' dung, often as hard as sun-burnt clay, and have been called scybala. Great quantities of such indurated fæces are eliminated in some cases. There is a variety or form of stercoraceous colic, in which the quantity of fæcal matter that is discharged is enormous; apparently far beyond the quantity that is taken into the stomach. These evacuations are in weight very light, and are probably formed into the large masses that are eliminated by an intestinal fermentation peculiar to the disease.

This species of colic requires powerful cathartics, as submuriate of mercury, colocynth, aloes, camboge, senna, and jalap; and these often in conjunction with purgative salts, as sulphate of soda and magnesia.

3. *Of the bilious colic.*

The pain is seldom continued, or so severe as in the purely spasmodic species; it is more transient, and is accompanied by constipation, nausea, and vomiting; and great relief is obtained by pressure on the belly. That which passes from the stomach is bilious; and, when the bowels are opened, the fæcal discharge is very bilious, and the fæces often very dark coloured and offensive.

The remedies for this kind of colic are submuriate of mercury, with colocynth, aloetic and saline purges in active doses, and the use of fomentations.

4. *Of the flatulent colic.*

The colic pains are here accompanied by costiveness and collections of gas, which distend the bowels irregularly, and cause a rumbling noise. It is often produced by crude and flatulent fruits, by depressing passions of the mind, and long fasting. Those who are subject to it, as many women are as they advance in life, have it easily produced by flatulent vegetables and slops, as spinach, and all the oleraceous tribe, weak tea, gruels, and the like. It is often accompanied by great costiveness, from the spasmodic actions, which extend irregularly, and in a greater or less degree, through the whole of the intestinal canal, and considerably add to the torture, and produce tumefaction and tenderness of the belly.

In attending to the means of cure, we may here proceed with some degree of boldness, since, notwithstanding the degree of pain, it is not often that inflammation is to be apprehended, at least in the commencement; and hence the warmest carminates, and even brandy, may be had recourse to; for whatever will carry off the flatulency will carry off the pain and costiveness. A full dose of pure tincture of rhubarb is here an excellent medicine; and, if the bowels do not operate, the extractum colocynthidis compositum, with essential oil of cloves, cinnamon, cassia, peppermint, or carraway, are best calculated to answer the intention. Fomentations, the warm bath, and warm embrocations will assist, and also a carminative glyster of fennel, rue, and cumin: thus, —

℞. Confectionis rutæ, ℥j.; aquæ carui, f. ℥x. Solve pro enemate tepide injiciendo.

℞. Seminum fœniculi contusorum, ℥j.
Seminum carui contusorum, ʒij.
Aquæ ferventis, Oj.
Macera per horam deni cola, et adde
Spiritûs carui, f. ℥j. Fiat enema, tepide utatur.

5. *Of the accidental colic.*

This is produced by indigestible foods and poisons. It is characterised by pains about the navel, costiveness, perhaps vomiting, which cease when the bowels are unloaded of their undigested contents, which are mostly salted meats, pork, salmon, and high gravies.

6. *Of the colica pictonum.*

This is called from the place where it is endemial, the Poictou, the Surinam, the Devonshire colic; from its victims, the plumber's and the painter's colic; from its symptoms, the dry bellyache. It has been attributed to the poison of lead; and this is undoubtedly the cause when it occurs to glaziers, painters, and those employed in lead-works, but, though this is one, it is by no means the only cause. In Devonshire, it certainly arises more frequently from the early cider, made of harsh unripe fruit, and in the West Indies from new rum. The characteristics of this disease are obstinate costiveness, with a vomiting of an acrid or porraceous bile, pains about the region of the navel, shooting from thence to each side with excessive violence, strong convulsive spasms in the intestines, and a tendency to a paralysis of the extremities. Its accessory causes are long continued costiveness; an accumulation of acrid bile; cold applied either to the extremities, or to the belly itself; a free use of unripe fruits, and great irregularity in the mode of living. From its occurring frequently in Devonshire, and other cider countries, it has been supposed to arise from an impregnation of lead, received into the stomach along with that beverage; but it is also a very prevalent disease in the West Indies, where no cider is made, and where there is only a very small quantity of lead in the mills employed to extract the juice from the sugar-canes. The truth is, the cause of the endemic prevalence of this disease in certain districts is entirely unknown.

The disease comes on gradually, with a pain at the pit of the stomach, extending downwards to the intestines, accompanied with eructations, slight sickness at the stomach, thirst, anxiety, obstinate costiveness, and a quick contracted pulse. After a short time, the pains increase considerably in violence; the whole region of the belly is highly painful to the touch; the muscles of the abdomen are contracted into hard irregular knots or lumps; the intestines themselves exhibit symptoms of violent spasm, insomuch that a glyster can hardly be injected, from the powerful contraction of the sphincter

ani; and there is constant restlessness, with a frequent vomiting of an acrid or porraceous matter, but more particularly after taking either food or medicine.

Upon a farther increase of the symptoms, or their not being quickly alleviated, the spasms become more frequent, as well as violent; the costiveness proves invincible, and an inflammation of the intestines ensues, which soon destroys the patient by gangrene. In an advanced stage of the disease, it is no uncommon occurrence for dysuria to take place, in a very high degree.

The dry bellyache is always attended with some degree of danger; but which is ever in proportion to the violence of the symptoms, and the duration of the disease. Even when it does not prove fatal, it is too apt to terminate in palsy, and to leave behind it contractions of the hands and feet, with an inability in their muscles to perform their office; and in this miserable state of existence the patient lingers out many wretched years.

The medical treatment of this species is nearly the same with that of spasmodic colic; but the narcotics should always be combined with castor oil, purgatives, fomentations, and soothing clysters. After the free evacuation of the bowels, there is nothing better than oleaginous aperients, in combination with small doses of opium, if the pain has not vanished and assumes a spasmodic character.

Peritoneal inflammation is more apt to accompany this than the other species; and when this is apprehended, from the continued pain in the abdomen and general tenderness, the lancet and baths must be resorted to.

A very common effect of colic from lead, whether taken into the stomach by painters, plumbers, or lead manufacturers, in the way of their business, from improper attention to cleanliness, or taken by others in cider, white wines, or other ways, is a subparalytic state of the fingers and hands. This remains for a long time, but often yields at last to the internal treatment, and topical stimulants, applicable to local palsy.

Colic is frequently a symptomatic affection, occurring in most organic diseases of the abdominal viscera, especially strictures, and when abscesses, or cysts, expel their contents into the bowels. It arises also from the irritation of worms, and biliary calculi.

The colic is distinguished from inflammation of the intestines by the pain being *wringing*, and not of a burning kind; by the *spasmodic contraction* of the abdominal muscles; by the *absence* or *trifling* degree of fever; by the *state* of the pulse; and by the pain being relieved by pressure, which increases it in enteritis. Inflammation, however, is not unfrequently superadded to colic, and this is known by the pain becoming fixed and permanent, the abdomen tender on pressure, and the pulse quick and feverish.

The colic should be distinguished from a fit of the gravel; stones passing through the ureters; rheumatic pains in the muscles of the belly; a beginning dysentery; the blind piles; and from a stone passing through the gall-duct. Gravel in the kidneys often produces pains, not easily distinguishable from colic; but when stones pass through the ureters, the testicle on that side is often retracted, the leg is benumbed, a pain shoots down the inside of the thigh; symptoms occasioned by the stone passing through the ureter over the spermatic chord, or the sacrosciatic nerve. Rheumatic pains in the muscles of the belly, rarely affect so accurately the umbilical region, but dart in various directions to the chest, or to the pelvis, and are attended with soreness, not confined to the abdomen. A beginning dysentery differs little from colic. The pain from the blind piles is confined to the rectum; and that from a stone in the gall-duct is felt in the pit of the stomach, occasionally shooting through the body to the back.

The great liability of this complaint to return, renders it necessary, for some time after, carefully to regulate the diet, to attend to the state of the bowels, as well as of the liver, to avoid the several causes, especially cold, maintaining the functions of the skin by suitable clothing, exercise, &c.

Colica dextra. A branch of the superior mesenteric artery, distributed to the ascending portion of the colon — *arteria colica dextra;* there is a corresponding vein called *vena colica dextra.*

Colica media. A branch of the superior mesenteric artery which supplies the transverse arch of the colon — *arteria colica media.*

Colica pictonum. See *Colica.*

Colica sinistra. A branch of the inferior mesenteric artery distributed to the left side and sigmoid flexure of the colon — *arteria colica sinistra;* the corresponding vein is called vena colica sinistra.

Co'lice. The colic.

Colifo'rmis. (From *cola*, a strainer, and *forma*, resemblance; so called from its having many perforations, like a strainer.) Strainer-like, or resembling a strainer. The ethmoid bone has been called *os coliforme.*

Coli'phium. *Colliphium.* A kind of fine wheaten bread, given to wrestlers.

Co'lis. See *Coles.*

Coli'tis. Inflammation of the mucous membrane of the colon. — *Broussais.*

Colla piscium. See *Ichthiocolla.*

COLLA'PSUS. (From *collabor*, to shrink down.) Collapse. An entire prostration of the vital powers, such as occurs in adynamic fever, pestilential cholera, &c.

Colla're miserico'rdiæ. A kind of bandage, formerly used to assist in securing the patient during the operation of lithotomy.

Collate'nna. A vulnerary specific, mentioned by Paracelsus.

Collati'tium. The flesh of a chicken, or a capon, boiled or roasted, pounded in a mortar, mixed with broth made of wether mutton, and flavoured with verjuice or lemon juice. It was used as a diet for the sick. — *Blancard.*

Colle'ticus. (From κολλα, glue.) Conglutinating.

Colli'cle. (From *colligo*, to collect.) The union of the ducts, which convey the tears from the puncta lachrymalia to the cavity of the nose.

COLLI'CULUS. (Diminutive of *collis*, a hill.) A term applied in anatomy to several small eminences.

COLLICULUS NERVI ÆTHMOIDALIS. The *corpus striatum*.

COLLICULUS NERVI OPTICI. The *optic thalamus*.

COLLIGA'MEN. (*en, inis.* n.; from *colligo*, to tie together.) A ligament.

COLLIQUAME'NTUM. (*um, i.* n.; from *colliquco*, to melt.) The pellucid fluid in which the first rudiments of the embryo are formed. — *Harvey.*

COLLI'QUATIVE. (*Colliquativus*; from *colliquco*, to melt.) A term applied to any excessive evacuation, which rapidly wastes the frame: thus we speak of *colliquative perspiration, colliquative diarrhœa*, &c.

COLLI'SUS. (From *collido*, to knock together.) Contused; *collisa vulnera*, contused wounds. See *Vulnus.*

COLLISIO. (*o, onis.* f.; from *collido*, to knock together.) In medical language, a contusion.

CO'LLIX. Κολλιξ. A pastil, troch, or lozenge. Also a kind of bread.

CO'LLUM. (*um, i.* n.) The neck, or properly its anterior part, as opposed to *cervix*, the back part of the neck.

COLLU'TIO. (*o, onis.* f.) A washing; applied especially to gargling the mouth.

COLLUTO'RIUM. (*um, i.* n.; from *colluo*, to wash.) A gargarism, or a wash for the mouth.

CO'LLYRA. (*a, æ.* f.; from κολλυρα, a little round cake: so called from its likeness to a cake.) *Collyris.* A bump, or knob, which rises after a blow.

COLLY'RIUM. (*um, ii.* n.; from κωλυω, to check, and ῥεω, to flow, because it stops defluxions.) The more ancient Greek writers, as Hippocrates and Galen, used this term to designate a kind of balanus, or suppository, of whatever composition, which was introduced into the anus, uterus, nose, ear, &c.; they also applied it to a solid or liquid medicament for the eyes. The later Greek and Roman writers use it in the latter sense only: in the modern language of medicine it is restricted to liquid applications for the eyes, or *eye-waters.*

COLOBO'MA. Κολοβωμα. 1. A deficiency of any part of the body. — *Galen.*

2. The term has been particularly applied by some modern authors to congenital fissures of the upper eyelids, iris, choroid coat, or retina.

COLOCA'SIA. Κολοκασια. See *Nymphæa nelumbo.*

COLOCY'NTHIS. (*is, idis.* f.; κολοκυνθις; from κολοκυνθα, a gourd.) See *Cucumis colocynthis.*

Colombo. See *Calumba.*

CO'LON. (*on, i* n. Κωλον, quasi κοιλον; from κοιλος, hollow: so named, from its capacity.) The greater portion of the large intestine so called. See *Intestine.*

COLOPHO'NIA. (*a, æ.* f. Κολοφωνια; from Κολοφων, the city whence it was first brought.) *Pix Græca. Resina nigra.* Colophony. The dark-coloured resin which remains in the retort after distilling rough turpentine without water.

Galen mentions another kind of colophony, from Chio, which was a soft kind of mastiche — most likely the same substance with our Chian turpentine.

Coloquintida. See *Cucumis colocynthis.*

COLORA'TUS. Coloured: applied to a leaf, calyx, seed, &c., to express any colour besides green, as in *Arum bicolor*; or to any part thereof when of another colour than green, as in *Amaranthus tricolor.*

COLO'STRUM. (*um, i.* n.) 1. A name given by the Romans to the first milk secreted in the breasts after childbirth. The word was also used as an expression of endearment, in which sense it occurs in Plautus. The derivation is not known: some derive it from κολον, food, but this is not likely, because the Greek word for the colostrum is τροφαλις, from τρεφω, to nourish; and, if the Latins had borrowed their word from the Greek, they would probably have adopted the Greek word, or taken it from the same root. Others derive colostrum from κολλᾶμαι, to glue together; the only objection to which is, that the fluid in question is not in the least glutinous, but quite thin and serous. It was thought by the Romans to be unwholesome, for Pliny speaks of a disease called *collostratio*, arising from sucking this milk, and children suffering under this affection were called *collostrati infantes.* It has been a general belief, and is so at the present time, that this early milk is purgative, and destined to carry off the meconium; an opinion which rests on no sufficient evidence, and is probably erroneous.

2. An emulsion prepared with turpentine and yolk of egg.

COLOUR. (*Color* vel *colos, oris.* m.) A correct nomenclature of colours, one which would express all their compound tints and shades, has been long wanted. Some naturalists have proposed to ground one on the colours of minerals, which change less than other substances do; and others have formed one from the colours of the most familiar plants.

The primary colours were considered by Sir Isaac Newton as seven; *red, orange, yellow, green, blue, indigo*, and *violet.* Dr. Wollaston reduces them to four; *red, green, blue*, and *violet.* The following is the nomenclature of colours generally adopted by modern naturalists: —

1. *Æruginosus.* Æruginous: a bluish green, like verdigris, or the leaves of some pine trees.
2. *Albidus.* A stone colour.
3. *Albus.* White.
4. *Atrovirens.* Dark green.
5. *Ater.* Deepest black.
6. *Atropurpureus.* Very dark reddish purple; as in the *Scabiosa atropurpurea.*
7. *Atrorubens.* Dark red; as in the *Amaranthus hypochondriacus.*
8. *Aurantiacus.* Orange colour; as the flowers of the marigold and nasturtium.
9. *Aureus.* Golden yellow; as that of the dandelion and sunflower.
10. *Azureus.* Azure blue; like ultramarine. This colour is brighter than *cæruleus.* The

pure light blue flowers of the *Cynoglossum omphalodes* are a good example.

11. *Badius.* Nearly the same as liver colour, but browner.

12. *Brunneus.* A deep dark brown.

13. *Cæsius.* A dull, light, blue grey.

14. *Castaneus.* Chesnut; a sort of orange brown.

15. *Carneus.* A flesh colour; as the pale blossom of the *Hesperis matronalis.*

16. *Cinereus.* Ash colour.

17. *Cinnabarinus.* Like red lead, or cinnabar, and the gay light red of the *Papaver orientalis.*

18. *Coccineus.* High crimson, or bright scarlet; as the flower of the *Salvia coccinea.*

19. *Cæruleus.* Sky blue; like the flower of borage, and the *Veronica chamædrys.*

20. *Croceus.* Deep yellow.

21. *Cyaneus.* Deep blue, like Prussian blue; as the flower of the *Gentiana acaulis.*

22. *Flavovirens.* Yellowish green.

23. *Flavus.* Yellow; as in the early daffodil.

24. *Flavescens.* Yellowish, or pale whitish yellow.

25. *Ferrugineus.* Yellowish brown; as the rust of iron.

26. *Fuscus.* Greyish brown.

27. *Glaucus.* Sea-green, bordering on grey.

28. *Griseus* Lively grey, and, when hoary, *canus.*

29. *Hepaticus.* Liver coloured.

30. *Hyalinus.* Transparent, and like glass.

31. *Lacteus.* Milk white.

32. *Liliacinus.* Lilac; as in the *Syringa vulgaris.*

33. *Lividus.* Dark greyish violet.

34. *Luteus.* A deep yellow; as the outside of the petals of saffron, and the flower of the *Cystus helianthemum.*

35. *Miniatus.* Dull red.

36. *Niger.* Black.

37. *Ochraceous.* Yellow, striped with brown; like yellow ochre, or the feathers on the upper parts of the *Strix flammula,* or white owl.

38. *Olivaceus.* Olive colour.

39. *Phœniceus.* Crimson; as the flower of the *Pæony.*

40. *Puniceus.* Fine bright red or carmine; as in *Lobelia fulgens.*

41. *Purpureus.* Purple.

42. *Prasinus.* Grass green; like the colour of the fresh meadows, before there is any mixture of yellow or other colours.

43. *Ruber.* Red.

44. *Rufus.* Carrot colour, or brownish-red orange.

45. *Roseus.* Rose colour, or red pink: *pallide roseus,* pale pink.

46. *Sanguineus.* Blood colour.

47. *Smaragdus.* Pure green.

48. *Sulphureus.* Bright but pale yellow, without the slightest orange tinge.

49. *Violaceus.* Violet, or deep bluish purple; as in *Viola odorata.*

50. *Vitellinus.* Yellow, verging to orange; as in pale marigold.

Coloured leaf. See *Leaf.*

COLPOCE'LE. (*e, es.* f.; from κολπος, the vagina, and κηλη, a tumour.) A hernia, o tumour, situated in the vagina. See *Hernia vaginalis.*

COLPOPTO'SIS. (*is, is.* f.; from κολπος, the vagina, and πιπτω, to fall down.) A prolapsus, or falling down, of the vagina.

Colt's-foot. See *Tussilago.*

Co'luber. See *Vipera.*

Colubrina virginiana. See *Aristolochia serpentaria.*

COLUBRI'NUM LIGNUM. This name has been given to a variety of woods, supposed, in the countries which produce them, to be specific against the bite of serpents. See *Dracontium pertusum, Rhamnus colubrinus,* and *Strychnos colubrina.*

CO'LUM. (*um, i.* n.; a filter, or strainer.) The secretory organs of the living body have been called *cola,* or strainers.

COLU'MBA. 1. The name of a plant. See *Calumba.*

2. The name of a genus of birds, the dove, the flesh of which is eaten indifferently with the common pigeon.

COLU'MBATE. (*Columbas, atis.* f.) A salt, formed by the union of the columbic acid with a base.

COLU'MBIC ACID. *Acidum columbicum.* An acid obtained from the ore of *columbium.* Neither the acid nor its salts are used in medicine.

Columbine. See *Aquilegia.*

COLU'MBIUM. (*um, i.* n.) A metal, so called, because it was found by Mr. Hatchett in a mineral brought from North America. The mineral discovered by M. Ekeberg in the ores of tantalum, and called by him *tantalite,* has been ascertained by Dr. Wollaston to be identical with columbium.

COLUME'LLA. (*a, æ.* f.; diminutive of *columna,* a column.) 1. A column or little pillar.

2. The central column, or filament, which unites the partitions of the capsule of plants. The seeds are usually attached to it.

COLUMELLA'RES DENTES. The canine teeth: so called from their shape. — *Varro.*

COLU'MNA. (*a, æ.* f.) A column, or pillar. Many parts of the body, which in their shape or office resemble columns, are so named; as *columnæ carneæ* of the heart.

COLUMNÆ CARNEÆ. See *Heart.*

COLUMNA NASI. The fleshy part of the nose, which forms the termination of the septum.

COLUMNA ORIS. The uvula.

COLUMNÆ RECTÆ MORGAGNI. The longitudinal plicæ of the rectum.

COLUMNA VERTEBRALIS. The vertebral column. See *Vertebræ.*

COLUMNI'FERÆ. The name of an order of plants in Linnæus's Fragments of a Natural Method, consisting of plants, the stamina and pistil of which have the appearance of a pillar in the centre of the flower.

Columni'lla. See *Columnula.*

COLU'MNULA. (*a, æ.* f.) A little column. The name given by botanists to the filament which passes through the middle of the capsule of frondose mosses, to which the seeds are connected; also called *Sphrongidium.*

COLUTEA. The name of a genus of plants of the Class *Diadelphia*, and Order *Decandria*.

Colutea arborescens. The bladder senna, or bastard senna, the leaves of which are laxative, and sometimes fraudulently mixed with those of true senna.

Colutea. See *Colutea*.

Colymbades. Κολυμβαδες. A kind of olive mentioned by Dioscorides. It was bruised, and applied to burns to prevent vesication.

CO'MA. (*a, atis.* n.; from κω, for κειμαι, to lie down.) A morbid state resembling sound sleep, produced by compression of the brain and various other causes. Some authors make *carus* the most profound degree of morbid sleep, and *coma* a minor; but the term *coma* is now generally used to designate any state of morbid sleep from which the patient cannot be roused, or not without difficulty.

CO'MA. (*a, æ.* f.; a mane.) In *Botany*, 1. A comb or fasciculus of leaves on the top of a stem or stipe. It is said to be,

a. *Foliose*, when formed of leaves; as in *Bromelia ananas*.

b. *Frondose*, when proceeding from the frond at the apex of the stipe; as in *Palms*.

c. *Bracteal*, formed of floral leaves; as in *Lavendula stœchas*.

2. Gærtner applies this term to the feathery crown of seeds furnished with a capsule.

Coma somnolentum. A state of profound and morbid sleep, when awakened from which the patient immediately relapses. See *Lethargus*.

Coma vigil. See *Agrypnocoma*.

Coma aurea. See *Chrysocoma*.

Co'mata. (The plural of *coma*.) An order of the class *Neuroses* of Cullen's Nosology, embracing diseases that are characterised by a diminution of the powers of voluntary motion, with sleep, and torpor of the senses.

CO'MATOSE. *Comatosus.* Affected with coma.

COMBINATION, CHEMICAL. Chemical combination is the result of that kind of attraction which is usually denominated chemical affinity. The general laws of chemical combination have been explained in the article *Attraction*. It is there stated that some substances can combine with each other in all proportions; others in all proportions up to a certain mark, but no further; others again in only one proportion; and lastly, others in several proportions, but these proportions fixed and definite, so that the substances concerned cannot combine except in some one of them. From the observation of the two last mentioned modes of combination, have arisen the *doctrine of definite proportions*; the *doctrine of chemical equivalents*; and the *atomic theory*. Considerable difficulties have arisen to the student of chemistry from the atomic theory having been mixed up with, and considered inseparable from, the two former doctrines. Another source of perplexity has been the employment of the same term in several different acceptations. In order to divest the subject of these sources of obscurity we may observe — 1. That the doctrine of definite proportions is merely the general expression of certain facts concerning which there is no doubt; and the doctrine of chemical equivalents merely a practical inference from those facts: and that the validity of either is in no degree dependent on the truth of the atomic theory.

2. That the terms *atom, equivalent, proportion, atomic weight, combining weight, chemical equivalent, prime equivalent*, and *proportional*, are all used by different writers to signify *the same thing*.

We proceed to consider, —

1. The *Doctrine of Definite Proportions*. Sometimes, as observed above, two bodies can only combine in one proportion: thus one measure of chlorine gas, and one of hydrogen gas, unite to form hydrochloric acid; but they cannot, under any circumstances, be made to combine in any other proportion, or to form any other product.

In other instances two bodies can combine in several proportions: thus, 100 parts of manganese is known to unite with fourteen parts of oxygen, to form *protoxide of manganese;* with twenty-eight parts of oxygen, to form *sesquioxide of manganese;* with forty-two parts of oxygen, to form *peroxide of manganese;* with fifty-six parts of oxygen, to form *manganesic acid:* but these substances can only combine in some one of these four proportions, and can only constitute by their union some one of the substances above enumerated. Now, with respect to these instances in which two bodies combine in several proportions, a very important law has been observed, namely, that *whatever be the smallest quantity of one of the bodies which combines with a given quantity of the other, all the rest of the proportions in which it combines with it will be simple multiples of that smallest quantity:* thus, in the instance just cited, 14 being the number denoting the smallest quantity, 28 is a multiple of it by 2, 42 by 3, and 64 by 4. It sometimes happens that the several proportions are multiples of the smallest quantity by $1\frac{1}{2}$, $2\frac{1}{2}$, &c.: thus, twenty-eight parts of iron with eight of oxygen, form *protoxide of iron;* and with twelve of oxygen *peroxide of iron;* that is, the proportion of iron in the peroxide is a multiple by $1\frac{1}{2}$ of that in the protoxide, or in other words bears to it the ratio of 2 to 3.

The above law has been called the *law of multiples*, or of *multiple proportions*.

II. The *Doctrine of Chemical Equivalents*. The general law on which this doctrine rests is, that *whatever be the proportion by weight in which any one body combines with another, it preserves the same relative proportion in its combinations with all other bodies.* In order to illustrate this law it is necessary to fix on some substance as the standard. British chemists are generally agreed in adopting *hydrogen* as the standard, and making it represent *unity*. If we take the instance of water as one of the compounds of hydrogen, we find that this fluid consists of 11·1 hydrogen and 88·9 oxygen; then, taking hydrogen as unity 11·1 : 88·9 :: 1 : 8·009; or the hydrogen is to the oxygen very nearly as 1 to 8. We therefore set down 1 as the prime

equivalent of hydrogen, and 8 as that of oxygen. From these data we may easily arrive, by a series of comparisons, at the equivalent of any substance of which we have a known compound. Thus hydrochloric acid consists by weight of 1 hydrogen and 36 chlorine; 36, therefore, is the equivalent of chlorine. Again, soda consists of 25 oxygen and 75 sodium, but we have already the equivalent of oxygen as 8: now 25 : 75 :: 8 : 24; hence 24 is the equivalent of sodium. We have thus the equivalents of four substances; and, since these combine with other substances always in the same proportion, we can hence deduce the equivalents of those other substances, and so on without limit.

The great advantage of assuming hydrogen as an unit of comparison, arises from its being the lightest of known substances, whence the numbers representing the equivalents of other bodies are multiples of its equivalent, and may, for all ordinary purposes, be represented by whole numbers. Wollaston, Thomson, and Berzelius, however, have adopted *oxygen;* the first making it 10, the second 1, and the third 100. This discrepancy is much to be regretted. Dr. Wollaston has invented a scale of chemical equivalents on the principle of Gunter's scale, by which the equivalents of substances, the relative proportion of the ingredients of compound bodies, and other matters of interest to the theoretical and practical chemist, are immediately ascertained without the trouble of calculation. This instrument needs not to be described here, as it is in every body's hands, and will be much better understood by inspection. Before quitting the subject of chemical equivalents, it is proper to state that the term *equivalent* has been used in three senses. The most common, and that to which it ought to be entirely restricted, is that in which we have just considered it, namely, as meaning *that weight of a body which enters into combination with any other body, referred to a common standard.* Another sense in which it has been used, is to designate the comparative quantity of two bodies which are necessary to produce the same effect, as of two alkalis, to neutralise an acid. Lastly, the term equivalent has been used to signify the quantity of any body necessary for the complete decomposition of a compound.

III. *The Atomic Theory.* The law of definite proportions appears to have first suggested itself to Richter, of Berlin, about the year 1792. The law of multiple proportions was first announced by Mr. Higgins, in his "Comparative View of the Phlogistic and Antiphlogistic Theories" in 1789; in the same work, the general principle of the atomic theory is maintained. The merit of the full development and extensive application of this theory is, however, universally conceded to Mr. Dalton. The atomic theory is briefly this: — Combination is supposed to take place only between the *atoms* of bodies. When bodies combine only in one definite proportion, it is conceived that there are an equal number of atoms of each body; thus, when one part by weight of hydrogen combines with eight of oxygen, the *one* part of hydrogen contains exactly the same number of atoms as the *eight* parts of oxygen, and they combine atom to atom. When bodies unite in more than one definite proportion, *one* atom of the one body is united to *one* of the other in the first proportion, and to *two*, *three*, *four*, or more atoms, in the succeeding proportions. The atoms of different bodies differ in weight: thus, if a quantity of hydrogen weighing 1, contains as many atoms as a quantity of oxygen weighing 8, then each atom of oxygen must weigh eight times as much as an atom of hydrogen; and hence, also, if the relative weights of the atoms of bodies be referred to the same standard as those of their chemical equivalents, they will be represented by the same numbers, and the expression, *atomic weight*, becomes merely a theoretical synonyme of *equivalent*, or *combining proportion.*

The definite combinations of the atoms of bodies are called by Dalton, *binary*, when the bodies combine *one* atom to *one; ternary*, when they combine *one* atom to *two; quaternary*, when they combine one atom to *three*, and so on. In those cases in which *one* equivalent of one body unites with *one and a half*, *two and a half*, &c. of another, we have to get rid of the absurdity of *half an atom*, an atom being in its nature indivisible; in such cases, therefore, we multiply the proportionals by two, and it is presumed that we have *two* atoms combined with *three* or with *five*. Such are the principles of Dalton's atomic theory. Many arguments have been advanced for and against its truth, but into these it is not incumbent upon us to enter. The theory affords a happy illustration of the doctrine of definite proportions, and that of chemical equivalents: still, however, it is merely a theory; and, as before observed, the practical doctrines would stand, though the atomic theory were overthrown.

Comb-like. See *Pectinatus.*

COMBUSTIBLE. Susceptible of combustion. See *Combustion.*

COMBUSTION. (*Combustio;* from *comburo*, to burn.) 1. A burn, or scald. See *Burn.*

2. Burning. The process of decomposition by fire. Among the various operations of chemistry, none is of greater importance than combustion; and in proportion to its utility in the art, the necessity of thoroughly investigating its nature and mode of action becomes more obvious to the philosophical chemist.

Lavoisier's Theory is founded upon the absorbtion of oxygen by a combustible body.

Taking this for granted, it follows that combustion is only the play of affinity between oxygen, the matter of heat, and a combustible body.

When an *incombustible* body (a brick for instance) is heated, it undergoes no change, except an augmentation of bulk and temperature; and when left to itself, it soon regains its former state. But when a *combustible* body is heated to a certain degree, in the open air, it becomes on a sudden intensely hot, and at last emits a copious stream of caloric and light to the surrounding bodies. During this emission, the burning body gradually wastes away. It either disappears entirely, or its physical pro-

perties become totally altered. The principal change it suffers, is that of being no longer capable of combustion. If either of these phenomena, namely, the emission of heat and light, and the waste of substance, be wanting, we do not say that a body is undergoing combustion, or that it is burning. It follows, therefore, that every theory of combustion ought to explain the following facts: —

1. Why a burning body is consumed, and its individuality destroyed.

2. Why, during the progress of this alteration, heat and light are emitted.

For the elucidation of these objects, Lavoisier's theory has laid down the following laws: —

1. Combustion cannot take place without the presence of oxygen, and is more rapid in proportion to the quantity of this agent in contact with the inflamed body.

2. In every act of combustion, the oxygen present is consumed.

3. The weight of the products of every body after combustion corresponds with the weight of the body before combustion, *plus* that of the oxygen consumed.

4. The oxygen absorbed by the combustible body may be recovered from the compound formed, and the weight regained will be equal to the weight which disappeared during the combustion.

5. In every instance of combustion, light and heat, or fire, are liberated.

6. In a limited quantity of air, only a certain quantity of the combustible body can be burnt.

7. The air, wherein a body has been burnt, is rendered unfit for continuing combustion, or supporting animal life.

Though every case of combustion requires that light and heat should be evolved, yet this process is variously modified under different circumstances: hence the terms *ignition*, or glowing heat; *inflammation*, or accension; and *detonation*, or explosion.

Ignition takes place when the combustible body does not readily assume the aëriform state. Charcoal, pyrophorus, &c. furnish instances of this kind.

It seems as if the phenomenon of glowing was peculiar to those bodies which require a considerable quantity of caloric to become converted into the gaseous state.

The disengagement of caloric and light is rendered more evident to the senses in the act of *Inflammation*, or accension. Here the combustible substances are more easily converted into an elastic or aëriform state. Flame, therefore, consists of the inflammable matter in the act of combustion in the gaseous state. When all circumstances are favourable to the complete combustion of the products, the flame is perfect; if this is not the case, part of the combustible body, capable of being converted into the gaseous state, passes through the luminous flame unburnt, and exhibits the appearance of smoke. Soot, therefore, always indicates an imperfect combustion. Hence a common lamp smokes, an Argand's lamp yields no smoke.

This degree of combustion is very accurately exemplified in the *Flame of candles.* — When a candle is first lighted, which must be done by the application of actual flame, a degree of heat is given to the wick, sufficient to destroy the affinity of its constituent parts; part of the tallow is instantly melted, volatilised, and burnt. As this is destroyed by combustion, another portion melts, rises, and supplies its place, and undergoes a like change. In this way combustion is maintained. The tallow is liquefied as it comes into the vicinity of the flame, and is, by the capillary attraction of the wick, drawn up to supply the place of what is burnt; the unmelted tallow, by this means, forms a kind of cup.

The congeries of capillary tubes which form the wick is black, because the charcoal of the cotton becomes predominant, the circumambient air is defended by the flame from oxydising it; it therefore remains, for a considerable time, in its natural state; but when the wick, by the continual consumption of tallow, becomes too long to support itself in a perpendicular position, its upper extremity projects nearly out of the cone of the flame, and there forms a support for an accumulation of soot, which is produced by the imperfect combustion. A candle, in this situation, affords scarcely one tenth of the light it can otherwise give; and tallow candles, on this account, require continual snuffing.

But if the candle be made of wax, the wick does not long occupy its place in the middle of the flame; its thinness makes it bend on one side, when its length is too great for its vertical position; its extremity comes then into contact with the air, and is completely burnt, or decomposed, except so much of it as is defended by the continual afflux of the melted wax. This small wick, therefore, performs the office of snuffing itself. The difficult fusibility of wax enables us to use a thinner wick for it than can be used for tallow, which is more fusible. But wax being a substance which contains much more oxygen than tallow or oil, the light it affords is not so luminous.

Detonation is an instantaneous combustion, accompanied with a loud report; it takes place in general when the compounds resulting from the union of two or more bodies occupy much more or less space than the substances did before their union; a great impulse is therefore given to the surrounding air, or else a vacuum is formed, and the air rushing in from all sides to fill it up is the cause of the report.

A mixture of oxygen and hydrogen gases detonates very loud. Gunpowder, fulminating gold, silver, and mercury; oxygenated muriate of potash; and various other explosive compounds, are capable of producing very loud detonations.

With respect to the disengagement of light and caloric. —

By the older chemists, it was universally supposed that the light and heat emitted during combustion, proceeded from the inflammable body; and this opinion would indeed appear unquestionable, while the composition of the atmosphere was imperfectly known. The burning body appeared luminous, and felt hot, and no other agent was supposed to be concerned;

the conclusion that the light and heat were evolved from the burning substance, was, therefore, unavoidable. But when the nature of the atmosphere was ascertained, and when it became evident that part of the air was absorbed during combustion, the former conclusion fell to the ground: for when two bodies exert a mutual action on each other, it becomes *à priori* equally probable that the products may be derived from either of them; consequently, the light and heat evolved might proceed either from the one or the other. Whether they proceed from the atmosphere, or from the combustible body, they must be separated at the part where the combination takes place; that is, upon the surface of the burning body itself; and consequently it appeared luminous and heated, while the air, being invisible, escaped observation.

When the laws of heat became known, at least when it was ascertained that bodies contain at the same temperature, and in equal quantities, either of mass or bulk, unequal quantities of heat, the conclusion became probable, that the caloric evolved in combustion proceeded rather from the oxygen gas of the atmosphere, than from the combustible body; since the former contains a much larger quantity than the latter. The caloric evolved was therefore supposed to be derived from the *condensation* of the oxygen gas in the new combination into which it entered.

Though *approaching* to the truth, this explanation is not strictly true. It is not merely from the oxygen gas being *condensed* that the caloric is evolved, because, in many cases of combustion, the product still exists in the gaseous state; and in others, the quantity of caloric evolved bears no proportion to the degree of condensation. Philosophers ascribed this to a change of capacity; for, in different bodies, the difference in the proportion of the capacities before and after combustion is by no means uniform; and hence the difference in the quantities of caloric extricated in various cases of combustion.

This being premised, it remains to explain the origin of the light emitted during combustion; for, although we take it for granted that the caloric is evolved from the oxygen gas, we cannot infer that the light has the same origin.

It is very probable that light is a constituent part of inflammable bodies; for it is frequently evolved in combinations when the oxygen is merely *transferred* from one inflammable substance to another. In those cases it must proceed from the inflammable body. The accension of oils by the affusion of acids, the combustion of metals in the same way, furnish instances of the kind.

It seems, therefore, probable that the light is derived from the inflammable substance; and that the oxygen, combining with the bases of these substances, disengages the light.

It may be concluded, then, that light enters into the composition of all combustible bodies; but as we are unable to separate the light, so as to obtain these bodies pure, we treat of them as simple bodies.

According to this theory, the combustion of phosphorus in oxygen gas, is, therefore, the effect of a double affinity. The basis of the oxygen gas unites with the phosphorus, to form phosphoric acid; and the light disengaged from the phosphorus, together with the heat of the oxygen gas, produces the vivid flame.

The quantity of light emitted by different bodies is supposed to depend on the quantity contained in them, and on the proportion in which it is united to caloric.

Such is the theory of combustion of Lavoisier, modified by Gren, Leonardi, and Richter.

Thomson's Theory. Though the preceding theory of combustion is simple and beautiful, it appears, from what we are now going to state, to be by no means completely satisfactory.

It has misled chemists, by confining the term combustion to the act of oxygenation, and considering that all bodies, during their combustion, combine with oxygen, without at the same time recollecting that this latter effect may take place without any of the phenomena usually attendant on combustion; and that, though certainly all combustion presupposes the combination of oxygen with a base, yet this combination may be, and repeatedly is, effected where no combustion can possibly take place. Nothing can be more evident than the difference which, in numberless instances, prevails between the act of oxygenation in bodies and that of combustion, inasmuch as neither the phenomena attending on, nor the results arising from them are the same. That a distinction, therefore, should be made between these processes is obvious; and it is on this account that Dr. Thomson has offered a theory, which considers this subject in a new point of view, and which bids fair to enable us to estimate the phenomena of combustion much better than has hitherto been done.

According to Dr. Thomson's theory, all the bodies concerned in combustion are either, — 1. *Combustibles.* — 2. *Supporters of Combustion.* — 3. *Incombustibles.*

1. Combustible bodies are those substances which are said, in common language, to *burn*. During the combustion, they appear to emit light and heat, and, at the same time, gradually waste away. When this change has reached its *maximum*, the process of combustion is at an end.

The class of combustibles is very numerous; but all the bodies belonging to it may be subdivided into three sets: namely, —

1. Simple combustibles. 2. Compound combustibles. 3. Combustible oxides, &c.

Simple Combustibles.

1. Sulphur.
2. Phosphorus.
3. Carbon.
4. Hydrogen gas.
5. All the metals.
6. Boron.

Compound Combustibles.

The *compound combustibles* consist of compounds, formed by the simple combustible uniting together, and are of course much more numerous than the simple combustibles. They may be arranged under the five following heads: —

1. Sulphurets. 3. Carburets.
2. Phosphurets. 4. Alloys.
5. Sulphuretted, phosphuretted, and carburetted hydrogen.

The *combustible oxides* are either simple, having a single base, or compound, having more than one base. All the simple combustible oxides are, by combustion, converted into acids.

The compound combustible oxides are by far the most numerous.

II. The SUPPORTERS OF COMBUSTION are bodies which are not of themselves, strictly speaking, capable of undergoing combustion, but which are absolutely necessary for the process; for no combustible body can burn unless some one or other of them be present. Whenever they are excluded, combustion ceases. All the supporters of combustion known at present are oxygen, chlorine, iodine, and the compounds which these form with each other, and with azote.

There are, indeed, certain substances besides these, which possess nearly the same properties; these shall be afterwards enumerated under the title of *partial supporters*.

III. The INCOMBUSTIBLE BODIES are neither capable of undergoing combustion themselves, nor of supporting the combustion of those bodies that are: they are, therefore, not immediately connected with combustion; though most of them appear to be the results of that process. Azote, the alkalis, earths, &c. come under this division.

Some of the alkalis and earths possess certain properties in common with combustibles, and are capable of exhibiting phenomena somewhat analogous to combustion; which will be described afterwards, under the title of *semi-combustion*.

In every case of combustion there must, therefore, be present a *combustible* body, and a *supporter* of combustion. During combustion, the combustible always unites with the supporter. *It is this combination which occasions the apparent waste and alteration of the combustible.* The new compound thus formed is a *product of combustion*. Every product of combustion is either, 1. *an acid*, or, 2. *an oxide*, &c. It is true, indeed, that other bodies sometimes make their appearance during combustion, but these will be found, upon examination, not to be products, nor to have undergone combustion.

Thus one of the two characteristic marks which distinguish combustion, namely, the apparent *waste and alteration of the combustible body*, has been fully explained. For the explanation of it we are indebted to Lavoisier, as stated before.

But though the combination of the combustible with oxygen, or other supporter, be a constant part of combustion, yet the facility with which combustibles burn is not proportional to their apparent affinity for oxygen.

Phosphorus, for instance, burns more readily than charcoal; yet charcoal is capable of abstracting oxygen from phosphorus, and of course has a greater affinity for it. Some of the combustible oxides take fire more readily than some of the simple combustibles; alkohol, ether, and oils are exceedingly combustible, whereas all the metals require very high temperatures when the supporter is air.

This great combustibility of combustible oxides is probably owing to the weaker affinity by which their particles are united. Hence they are more easily separated than homogeneous particles, and of course combine more readily with oxygen; those simple combustibles which melt easily, or which are in the state of elastic fluids, are also very combustible, because the cohesion between their particles is easily overcome.

It is owing to the same inferiority in the cohesion of heterogeneous particles, that some of the compound supporters occasion combustion in circumstances when the combustibles would not be acted on by simple supporters.

Thus phosphorus burns in air at the common temperature; but it does not burn in oxygen gas, unless its temperature be raised. Thus, also, oils burn rapidly when mixed with nitric acid. Nitrous gas and nitrous oxide constitute exceptions to this rule.

None of the *products* of combustion are combustible, according to the definition of combustion here given. This want of combustibility is not owing to their being saturated with oxygen; for several of them are capable of combining with an *additional dose* of it. But, during this combination, no caloric or light is ever emitted; and the compound formed differs essentially from a *product* of combustion; for by this additional dose of oxygen, the *product* is converted into a *supporter*. *Hence we see that combustion ought not to be confounded with the combination of a body with oxygen*, as was done formerly.

Combustion, indeed, cannot take place without the combination of oxygen or other supporter; but oxygen may combine with bodies in different proportions without the phenomena of combustion; and the *product obtained* by combustion is capable of becoming converted into a *supporter* of *combustion*: for instance, if lead be melted, and kept so for some time, it becomes covered with a grey pellicle, or *oxide of lead*, a product consisting of oxygen and lead; but if this oxide is suffered to be heated longer, it absorbs an additional quantity of oxygen, and becomes converted into a yellow powder, called *yellow oxide of lead*. If this yellow oxide be again exposed to heat, it absorbs still more oxygen, and becomes converted into *red oxide of lead*. When the *supporters* thus formed by the combination of oxygen with *products*, are made to support combustion, they do not lose all their oxygen, but only the additional dose which constituted them supporters. Of course they are again reduced to their original state of products of combustion. Hence it follows, that they owe their properties as supporters, not to the *whole* of the oxygen which they contain, but to the *additional dose* which constituted them supporters. We may, therefore, call them *partial supporters*, indicating by the term that part only of their oxygen is capable of supporting combustion, and not the whole.

All the partial supporters with which we are acquainted, contain a metallic basis; for metallic

oxides are the only products at present known, capable of combining with an additional dose of oxygen. It is a circumstance highly deserving attention, that when metals are capable of combining with several doses of oxygen, the product, or oxide formed by combustion, is seldom or never that which contains a *maximum* of oxygen.

Thus it is evident that several of the products of combustion are capable of combining with oxygen. *The incombustibility of products, therefore, is not owing to their want of affinity for oxygen*, but to some other cause.

No product of combustion is capable of *supporting* combustion. This is not occasioned by any want of affinity to combustible bodies; for several of them are capable of combining with an additional dose of their basis. But by this combination, they *lose* their properties as products, and are converted into *combustibles*. The process, therefore, differs essentially from combustion. Thus phosphoric acid, a product of combustion, is capable of combining with an additional dose of phosphorus, and forming *phosphorous* acid, a combustible body. When this last acid is heated in contact with a supporter, it undergoes combustion; but it is only the additional dose of the combustible which burns, and the whole is converted into phosphoric acid. Hence we see that it is not the whole basis of these compounds which is combustible, but merely the additional dose. The compounds, therefore, formed by the union of a product and combustible, may be termed *partial combustibles*; indicating, by the name, that a part only of the base is capable of undergoing combustion. Since the products of combustion are capable of combining with oxygen, but never exhibit the phenomena of combustion, except when they are in the state of partial combustibles, combustible bodies must contain a substance which they lose in burning, and to which they owe their combustibility; for after they have lost it, they unite to oxygen *without* exhibiting the phenomena of combustion.

Though the products of combustion are not capable of supporting combustion, they not unfrequently part with their oxygen, just as supporters do, give it out to combustibles, and convert them into products; but, during this process, no heat nor light is ever evolved. Water, for instance, gives out its oxygen to iron, and converts it into the *black oxide*, a product. Thus we see that the oxygen of products is capable of converting combustibles into products, just as the oxygen of supporters; but during the combination of the last only, are heat and light emitted. The oxygen of supporters then contains something which the oxygen of products wants.

Whenever the whole of the oxygen is abstracted from products, the combustibility of their base is restored as completely as before combustion; but no substance is capable of abstracting the whole of the oxygene, except a *combustible*, or a *partial combustible*. Water, for instance, is a product of combustion, whose base is hydrogen. To restore the combustibility of the hydrogen, we have only to mix water with iron or zinc filings, and an acid: the metal is oxidised, and the hydrogen gas is evolved as combustible as ever. But no substance, except a combustible, is capable of separating hydrogen gas from water, by combining with its oxygen. Thus we see that combustibles are capable of restoring the combustibility of the bases of products; but they themselves lose their combustibility by the process, and are converted into products. Combustibility, therefore, may be thrown at pleasure from one body to another.

From these facts it is obvious, that the products of combustion may be formed without combustion; but in these cases a new combustible is always evolved. The process is merely an interchange of combustibility; for the combustible is converted into a product only by means of a product. Both the oxygen and the base of the product, having undergone combustion, have lost something which is essential to combustion. The process is merely a double decomposition. The product yields its oxygen to the combustible, while at the same time the combustible gives out something to the base of the product; the combustibility of that base then is restored by the loss of its oxygen, and by the restoration of something which it receives from the other combustible thus converted into a product.

There is, indeed, another method of forming the products of combustion without actual combustion in certain cases; but the phenomena are much more complicated. This method is to expose them to the action of some of the supporters dissolved in water; especially nitric acid. Thus most of the metallic oxides may be formed without combustion by the action of that acid on the metals. But, in that case, a new supporter is always evolved, namely, nitrous gas; ammonia, a new combustible, is also usually formed; and, not unfrequently, the *product* is converted into a *partial supporter*.

No *supporter* can be produced by combustion, or by any equivalent process. As several of the supporters consist of oxygen combined with a base, it follows, as a consequence, that oxygen may combine with a base without losing that ingredient which occasions combustion. The act of combination of oxygen with a base, therefore, is by no means the same with combustion. If we take a view of the different supporters, we shall find that all of them which can be obtained artificially are procured either from other supporters, or by the agency of electricity.

I. *Oxygen gas* may be procured from nitric acid, and from several of the partial supporters as the black oxide of manganese, the red oxides of lead and of mercury. The action of heat is always necessary; but the process is very different from combustion.

II. *Air*, as far as is known at present, cannot be formed artificially. The gas, indeed, which comes over during part of the usual distillation of nitrate of potash and sulphuric acid to obtain nitric acid resembles air very closely. But it is obtained from a supporter.

III. *Nitrous oxide* has hitherto been only procured from nitrous gas and nitric acid (i

nitrate of ammonia), both of which are supporters.

IV. *Nitrous gas* can only be procured by the decomposition of nitric acid, a supporter.

V. *Chlorine gas* can be formed by the action of muriatic acid on the black oxide of manganese, the red oxides of lead, iron, or mercury; all of which are partial supporters.

VI. *Nitric acid* is formed spontaneously upon the surface of the earth, by processes with which we are but imperfectly acquainted, but which certainly have no resemblance to combustion. Its oxygen is probably furnished by the *air*, which is a supporter; at least, it has been observed, that nitrogen and oxygen, at high temperatures, are capable of forming nitric acid.

This formation of nitric acid by means of electricity, has been considered as a combustion, but for what reason it is not easy to say: the substance acted upon is not a combustible with a supporter, but a supporter alone. Electricity is so far from being equivalent to combustion, that it sometimes acts in a manner diametrically opposite; *unburning*, if we may use the expression, a substance which has already undergone combustion, and converting a *product* into a *combustible* and a *supporter*. Thus it decomposes water, and converts it into oxygen and hydrogen gas; therefore it must be capable of supplying the substances which the oxygen and combustible lose when they combine by combustion, and form a product.

Several of the supporters and partial supporters are capable of combining with combustibles without undergoing decomposition, or exhibiting the phenomena of combustion. In this manner, the yellow oxide of gold combines with ammonia; the red oxide of mercury with oxalic acid; and oxymuriatic acid with ammonia. Thus also nitrate of potash may be combined, or, at least, intimately mixed with several combustible bodies, as in gunpowder, fulminating powder, &c. In all these compounds, the oxygen of the supporter and the combustible retain the ingredients which render them susceptible of combustion: hence the compound is still combustible. And in consequence of the intimate combination of the component parts, the least alteration is apt to destroy the equilibrium which subsists between them; the consequence is combustion, and the formation of a new compound. Hence these compounds burn with amazing facility, not only when heated, but when triturated, or struck smartly with a hammer. They have, therefore, received the name of *detonating* or *fulminating* bodies. Thus we have fulminating gold, fulminating mercury, fulminating powder, &c.

Such are the properties of the combustibles, the supporters, and the products; and such the phenomena which they exhibit when made to act upon each other.

If we compare together the *supporters* and the *products*, we shall find that they resemble each other in many respects. Both of them contain oxygen, or other supporter, as an essential constituent part: both are capable of converting combustibles into products; and several of both combine with combustibles and with additional doses of oxygen. But they differ from each other in their effects on combustibles. The former only produce combustion; whereas the products convert combustibles into products without combustion. Now, as the ultimate change produced upon combustibles by both these sets of bodies is the same, and as the substance which combines with the combustibles is in both cases the same, oxygen, for instance, we must conclude that this oxygen in the supporters contains something which the oxygen of the products wants, something which separates during the passage of the oxygen from the product to the combustible, and occasions the combustion, or emission of fire, which accompanies this passage. The oxygen of supporters then contains some ingredient which the oxygen of products wants. Many circumstances concur to render it probable that this ingredient is *caloric*.

The *combustibles* and the *products* also resemble each other. Both of them contain the same or a similar base; both frequently combine with combustibles, and likewise with oxygen; but they differ essentially in the phænomena which accompany their combination with oxygen. In the one case, *fire is emitted*; in the other, not. If we recollect that no substance but a combustible is capable of restoring combustibility to the base of a product, and that at its doing so it always loses its own combustibility; and, if we recollect farther, that the base of a product does not exhibit the phenomena of combustion, even when it combines with oxygen, we cannot avoid concluding, that all combustibles contain an ingredient which they lose when converted into products, and that this loss contributes to the fire which makes its appearance during the conversion. Many circumstances contribute to render it probable that this ingredient is *light*.

If we suppose that the oxygen of supporters contains caloric as an essential ingredient, and that light is a component part of all combustibles, the phenomena of combustion above enumerated, numerous and intricate as they are, admit of an easy and obvious explanation. The component parts of the oxygen of supporters are two; namely, 1. a base; 2. caloric. The component parts of combustibles are likewise two; namely, 1. a base; 2. light. During combustion, the base of the oxygen combines with the base of the combustible, and forms the product; while, at the same time, the caloric of the oxygen combines with the light of the combustible, and the compound flies off in the form of fire. Thus combustion is a double decomposition; the oxygen and combustible divide themselves each into two portions, which combine in pairs; the one compound is the *product*, and the other the *fire*, which escapes.

Hence the reason that the oxygen of products is unfit for combustion. It wants its caloric. Hence the reason that combustion does not take place when oxygen combines with products, or with the base or supporters. These bodies contain no light. The caloric of the oxygen of course is not separated, and no fire appears. And this oxygen, still retaining its caloric, is capable of producing combustion whenever a body is presented which contains light, and whose base

has an affinity for oxygen. Hence also the reason why a combustible alone can restore combustibility to the base of a product. In all such cases, a double decomposition takes place. The oxygen of the product combines with the base of the combustible, while the light of the combustible combines with the base of the product.

But the application of this theory to all the different phenomena described above, is so obvious, that it is needless to give any more examples. Let us rather inquire, with the author, into the evidences which can be brought forward in its support.

As caloric and light are always emitted during combustion, it follows that they must have previously existed in the combustible, the supporter, or in both.

That the oxygen of the supporters contains either one or both of these substances, follows incontrovertibly from a fact already mentioned, namely, that the oxygen of products will not support combustion, while that of supporters will. Hence the oxygen of supporters must contain something which the oxygen of the products wants, and this something must be caloric, or light, or both.

That the oxygen of some of the supporters at least contains caloric, as an ingredient, has been proved, in a satisfactory manner, by the experiments of Crawford, Lavoisier, and La Place. Thus the temperature of hot-blooded animals is maintained by the decomposition of *air*. Now if the oxygen of one supporter contains caloric, the same ingredient must exist in the oxygen of every supporter, because all of them are obviously in the same state. Hence we conclude that the oxygen of every supporter contains caloric as an essential ingredient.

The light emitted during combustion must either proceed from the combustible or the supporter. That it proceeds from the combustible must appear pretty obvious, if we recollect that the colour of the light emitted during combustion varies, and that this variation usually depends, not upon the supporter, but upon the combustible. Thus charcoal burns with a red flame, sulphur with a blue or violet, zinc with a greenish white, &c.

The formation of combustibles in plants obviously requires the presence and agency of light. The leaves of plants emit oxygen gas, when exposed to the sun's rays, but never in the shade, or in the dark.

Besides vegetation, we are acquainted with two other methods of *unburning* products, or of converting them into products and combustibles, by exposing them, in certain circumstances, to the agency of *fire*, or of *electricity*. The oxides of gold, mercury, &c. when heated to redness, are decomposed, oxygen gas is emitted, and the pure metal remains behind. In this case the necessary caloric and light must be furnished by the fire; a circumstance which explains why such reductions always require a red heat. When carbonic acid is made to pass repeatedly over red-hot charcoal, it combines with a portion of charcoal, and is converted into gaseous oxide of carbon. If this gas be a combustible oxide, the base of the carbonic acid and its oxygen must have been supplied with light and caloric from the fire; but if it be a *partial combustible*, it is merely a compound of carbonic acid and charcoal: which of the two it is, remains still to be ascertained.

Electricity decomposes water, and converts it into oxygen gas and hydrogen gas; it must, therefore, supply the heat and the light which these bodies lost when converted into a product.

These facts, together with the exact correspondence of the theory given above with the phenomena of combustion, render it so probable, that Dr. Thomson has ventured to propose it as an additional step towards a full explanation of the theory of combustion. Every additional experiment has served to confirm it more and more. It even throws light upon the curious experiments of the accension of metals with sulphur, which succeed *in vacuo*, under mercury, in nitrogen gas, &c.

Dr. Thomson has noticed, that the same emission of caloric and light, or of *fire*, takes place when melted sulphur is made to combine with potash, or with lime, in a crucible or glass tube, and likewise when melted phosphorus is made to combine with lime heated to redness. He supposes that, in all probability, barytes and strontia exhibit the same phenomenon when combined with melted sulphur or phosphorus; and perhaps some of the metals when combined with phosphorus.

The phenomena Dr. Thomson explains thus: — The sulphur and phosphorus are in the melted state, and therefore contain caloric as an ingredient; the alkalies, earths, and metals which produce the phenomenon in question, contain light as an essential ingredient. The sulphur, or phosphorus, combines with the base of the metal, earth, or alkali; while, at the same time, the *caloric*, to which the sulphur or phosphorus owed its fluidity, combines with the *light* of the metal, earth, or alkali; and the compound flies off under the form of *fire*.

Thus the process is exactly the same with combustion, excepting as far as regards the product. The melted sulphur, or phosphorus, acts the part of the *supporter*, while the metal, earth, or alkali, occupies the place of the *combustible*. The first furnishes caloric, the second light, while the base of each combines together. Hence we see that the base of sulphurets and phosphurets resembles the base of products in being destitute of light; the formation of these bodies exhibiting the separation of fire like *combustion*, but the product differing from a product of combustion in being destitute of oxygen, Dr. Thomson distinguishes the process by the title of *semi-combustion*; indicating by the term, that it possesses one half of the characteristic marks of combustion, but is destitute of the other half.

The only part of this theory which requires proof is, that light is a component part of the earths, and alkalis. But as potash and lime are the only bodies of that nature, which we are certain to be capable of exhibiting the phenomena of semi-combustion, the proofs must of necessity be confined to them. That *lime* contains light as a component part, has been long known. Meyer and Pelletier observed long ago, that

when water is poured upon lime, not only heat but light is emitted. Light is emitted also abundantly, when sulphuric acid is poured upon magnesia, or upon lime, potash, or soda, freed from the water of crystallisation. In all these cases, a *semi-combustion* takes place. The water and the acid being solidified, give out *caloric*, while the lime or potash gives out *light*.

That lime, during its burning, combines with light, and that light is a component part of lime, is demonstrated by the following experiment, for which we are indebted to Scheele: —

Fluor spar (fluate of lime) has the property of phosphorescing strongly when heated, but the experiment does not succeed twice with the same specimen. After it has been once heated sufficiently, no subsequent heat will cause it to phosphoresce. Now phosphorescence is merely the emission of light; light of course is a component part of fluor spar, and heat has the property of separating it. But the phosphorescing quality of the spar may be again recovered to it, or, which is the same thing, the light which the spar had lost may be restored by the following process: —

Decompose the fluate of lime by sulphuric acid, and preserve the fluoric acid separate. Boil the sulphate of lime thus formed with a sufficient quantity of carbonate of soda; a double decomposition takes place; sulphate of soda remains in solution, and carbonate of lime precipitates. Ignite this precipitate in a crucible, till it is reduced to lime, and combine it with the fluoric acid to which it was formerly united. The fluor spar, thus regenerated, phosphoresces as at first. Hence the lime, during its ignition, must have combined with light.

That potash contains light, may be proved in the same manner as the existence of that body in lime. Now as potash is deprived of its carbonic acid by lime, the doctor supposes that the process must be a double decomposition; namely, that the base of the lime combines with carbonic acid, while its light combines with the potash.

These remarks on semi-combustion might easily be much enlarged upon; for it is obvious, that whenever a liquid combines with a solid containing light, and the product is a solid body, something analogous to semi-combustion must take place.

Combustion, spontaneous. Every case in which combustion ensues from the chemical action of bodies on each other, without the direct application of fire, may be called an instance of spontaneous combustion; but the term is generally applied to the destruction of the human body by a process altogether peculiar in its phenomena and products, and which has been supposed, though in all probability erroneously, to arise without any extraneous cause of ignition. For some time the accounts given of this spontaneous combustion of the body were regarded with much incredulity. The number of cases now on record is, however, so considerable as to leave no doubt of the reality of some process of igneous decomposition commencing during life, under circumstances quite different from those of ordinary combustion from the application of fire. Little is distinctly known concerning these mysterious cases; for it is a remarkable fact, that, in no instance, has any witness been present at the precise moment when the patient took fire — the remains of the body only having been generally found after the fatal mischief had occurred: in one instance, indeed, quoted by Foderé and other writers from an Italian Journal, the individual, a priest named Bertholi, was found alive, and survived several days; but the account given by him throws no further light on the origin of the disaster than to render it probable that it was connected with some electrical cause.

What gives credibility to the accounts of this peculiar kind of combustion, is the fact that there are certain remarkable circumstances in which such of them as are respectably authenticated agree. It would appear from the observations hitherto made on this subject, — 1. That the individuals who have been consumed were habitually addicted to the use of alkoholic liquors. 2. That they have been generally advanced in years. 3. That they have most frequently been females. 4. That some burning substance has been found to have come in contact with the body, or to have been in the apartment at the time; or that there has been some reason to attribute the origin of the combustion to an electrical cause. 5. That the extremities have generally escaped the combustion. 6. That the clothes, or other combustible bodies about the person, have been little injured, and sometimes not at all; it has also been observed that, in some instances, the affusion of water, instead of extinguishing the flame, has increased its activity. 7. That the product of the combustion is peculiar, consisting of greasy, and very fetid ashes, the quantity of which is small compared with that of the animal matter decomposed.

The phenomenon in question is evidently quite distinct from common combustion. The flame does not seize upon ordinary combustible matters; it is not always extinguished by water; and it speedily reduces the body to ashes; whereas, it is well known, that to effect the incineration of a human body by ordinary combustion, is an exceedingly long and difficult process. The term *spontaneous combustion* does not appear to be properly applicable, since we have no evidence that the source of ignition has originated, in any instance, in the body itself: the case appears rather to be one of preternatural combustibility. We are entirely in the dark as to the real nature of the chemical changes which give rise to this state; but it seems reasonable to infer that they are, in some way or other, connected with the long continued use of alkohol.

Spontaneous combustion has been named *Catacausis* by Dr. Young; and Dr. Good has adopted the generic name, adding a specific one referring to its cause, and calling the disease, or rather catastrophe, *Catacausis ebriosa*.

Comedo'nes. (*Comedo*, a glutton.) A sort of worms which eat into the skin and devour the flesh. — *Turton*.

Comet. Half a drop. — *Ruland*.

Comfrey. See *Symphytum*.

Comisdi. The gum-arabic. — *James*.

Comitia'lis morbus. Epilepsy. So called because if any one were seized with this disease in the *comitia* or great assemblies of the people, the assembly was dissolved.

Comitissæ pulvis. (*Comitissa, æ.* f.; a countess.) 1. The Peruvian bark was called *Pulvis comitissæ.* See *Cinchona.*

2. An old alexipharmic medicine, was called *Pulvis comitissæ de Cantia*, or *Pulvis Cantianus.* See *Cantianus pulvis.*

Commiage'num. (From *Comagena*, a district of Syria, whence it was brought.) A name given by Galen to a calefacient and relaxing ointment; called also Syriac ointment.

Commanduca'tio. (From *commanduco*, to eat.) The act of mastication, or chewing.

Comma'nsum. (From *con* and *mando*, to chew.) A masticatory. A medicine put into the mouth and chewed, to promote a discharge of saliva.

Commeli'neæ. A natural family of plants, of which the genus *Commelina* is the type.

Commi. Κομμι. The Greek for gum.

COMMINUTED. (*Comminutus*, from *comminuo*, to break down.) Broken into pieces: applied to fractures.

COMMISSU'RA. (*a, æ.* f.; from *committo*, to join together.) A juncture, or point of union. Applied, in *Anatomy*, to the corners of the lips, where they meet together; and also to certain parts of the brain, where its fibres cross and join one hemisphere to the other.

Commissura anterior cerebri. The anterior commissure of the brain. See *Encephalos.*

Commissura magna cerebri. The *corpus callosum* of the brain. See *Encephalos.*

Commissura posterior cerebri. The posterior commissure of the brain. See *Encephalos.*

Commotion. *Commotio.* Synonymous with concussion.

Commu'nicans. (From *communico*, to communicate.) A term applied by Bellini to intermittent fevers, wherein the paroxysms succeed each other so rapidly that one has no sooner ceased than another commences.

Communicans arteria. The branch by which the posterior cerebral artery is connected on each of the bases of the brain with the internal carotid, is called the *arteria communicans.* The short transverse branch which connects the two anterior cerebral arteries, is sometimes called *arteria communicans anterior.*

COMPARATIVE ANATOMY. The anatomy of all organised bodies, whether animal or vegetable, compared with a view to illustrate the general principles of organisation. Comparative anatomy is the only true basis of physiology.

Co'mpeba. Κομπεβα. Cubebs. — *Actuarius.*

Co'mpeper. Κομπεπερ. Cubebs. — *Nic. Myrepsus.*

Complete. See *Perfect.*

COMPLEXION. In common language this term is applied merely to the colour of the face. See *Physiognomy.* But it is used by some writers to signify all the external and sensible peculiarities of an individual.

COMPLE'XUS. (From *complector*, to embrace.) *Complexus seu biventer cervicis* of Albinus. A muscle situated on each side of the back part of the neck. When one of the muscles only acts, it draws the head backwards and to one side. When both act, they draw the head directly backwards. It arises from the transverse processes of the seven superior vertebræ of the back, and four inferior of the neck, by as many distinct tendinous origins; in its ascent, it receives a fleshy slip from the spinous process of the first vertebra of the back; from these different origins it runs upwards, and is every where intermixed with tendinous fibres. It is inserted, tendinous and fleshy, into the inferior edge of the protuberance in the middle of the os occipitis, and into a part of the curved line that runs forward from that protuberance. It draws the head backwards.

Complexus minor. See *Trachelo-mastoideus.*

Complication. In medical language any disease which is co-existent with and modifies another without being in its nature inseparable from it, is called a complication.

COMPO'SITUS. Compound. Applied to that which is made up of two or more different things. It stands opposed to simple. In *Botany*, applied to leaves and flowers. See *Flos* and *Folium.*

Compound. See *Compositus.*

Compound affinity. See *Attraction.*

CO'MPRESS. (*Compressa, æ.* f.; from *comprimo*, to press together.) Soft linen, lint, or other substances, folded together into a sort of pad, for the purpose of being placed over parts which require pressure.

COMPRE'SSION. (*Compressio, onis.* f.; from *comprimo*, to press together.) A diseased state of the body, or of a part, the effect of something pressing upon it. *Compression of the brain* gives rise to symptoms which it is of great importance to distinguish from those of concussion and other morbid states. See *Concussion, Apoplexy*, and *Encephalitis.*

COMPRE'SSOR. (From *comprimo*, to press together.) A name given to those muscles which press together the parts on which they act. Also to a surgical instrument.

Compressor of dupuytren. *Compresseur de Dupuytren.* An instrument invented by M. Dupuytren for compressing the femoral artery. It consists of a semicircle of steel having a pad at each end, and which, pressing only upon the vessel and the opposite point of the thigh, has the advantage of not impeding the collateral circulation like the common tourniquet.

Compressor naris. *Rinæus vel nasalis* of Douglas. *Transversalis vel myrtiformis*, of Winslow. *Dilatores alarum nasi*, of Cowper. A muscle of the nose, that compresses the ala towards the septum nasi, particularly when we want to smell acutely. It also corrugates the nose, and assists in expressing certain passions. It arises, by a narrow beginning, from the root of the ala nasi externally and spreads into a number of thin separate fibres, which run up along the cartilage in an oblique manner towards the dorsum of the nose, where it joins with its fellow, and is inserted into the narrow extremity of the os nasi, and nasal process of the superior maxillary bone.

Compressor of Nuck. *Constrictor of Nuck.*

An instrument invented by Nuck for compressing the urethra in cases of incontinence of urine.

COMPRESSOR PROSTATÆ. The anterior fibres of the levator ani, which embrace the prostate gland, are thus named by Albinus.

COMPRESSUS. Compressed; flattened laterally: applied to leaves. See *Leaf.*

COMPTO'NIA. A genus of plants. Class, *Monœcia*; Order, *Triandria*. It contains only one species, *C. Asplenifolius*, which grows in South America. Its leaves are used as an astringent against diarrhœa.

CONA'RIUM. (*um, ii.* n.; from κωνος: so named from its conical shape.) The Pineal gland.

CONCAU'SA. *Concaussa.* (From *con*, with, and *causa*, a cause.) A cause which co-operates with another in the production of a disease.

CO'NCAVUS. Concave; depressed in the middle. Applied to leaves, petals, &c. depressed in their centre, owing, as it were, to a tightness in some part of the circumference; as in *Cyanus nelumbo*, and the petals of the *Galanthus nivalis.*

CONCENTRA'NTIA. A name given by some writers to absorbents and ant-acids.

CONCENTRA'TION. (*Concentratio, onis.* f.; from *con*, and *centrum*, a centre.) The volatilisation of part of the water of fluids, in order to increase their strength. The matter to be concentrated, therefore, must be of greater fixity than water. This operation is performed on some acids, particularly the sulphuric and phosphoric, also on solutions of alkalis and neutral salts.

CONCE'NTRIC. *Concentricus.* Applied in botany to bulbs consisting of many layers one within the other: thus the bulb of the onion is a concentric bulb.

CONCEPTA'CULUM. (*um, i.* n.) The vessel which contains the reproductive corpuscles of cryptogamic plants. It is variously named in different tribes.

CONCE'PTION. (*Conceptio, onis.* f.; from *concipio*, to conceive.) Conceptus. The impregnation of the ovulum in the female ovarium, by the semen virile. See *Generation.*

CONCE'PTUS. The first rudiments of the fœtus have been so called by some writers. Others apply the term to the act of conception. See *Conceptio.*

CO'NCHA. (*a, æ.* f. Κογχη, a bivalve shell, as an oyster or scallop.) 1. A Greek measure of about half an ounce.

2. Applied in anatomy and natural history to various objects from their shape.

CONCHA AURIS. *Concha auriculæ.* The outer ear. See *Auris.*

Concha margaritifera. See *Avicula*, in the Supplement.

CONCHÆ NARIUM. The turbinated portion of the ethmoid bone, and the inferior spongy bones of the nose, which are covered by the Schneiderian membrane, have been so termed.

CONCHOI'DES. (From κογχη, a shell, and ειδος, resemblance.) Conchoid: shell-like.

CO'NCHUS. (*us, i.* m.; from κογχη, a shell: so named, from their likeness to a shell.) 1. The cranium.

2. The cavity of the eye.

CONCIDE'NTIA. (From *concido*, to fall down.) Synonymous with *Collapsus*, which see.

CONCOAGULA'TIO. (From *con*, and *coagulo*, to coagulate.) Coagulation, concretion, or crystallisation.

CONCO'CTION. (*Concoctio, onis.* f.; from *concoquo*, to digest.) Digestion. 1. The alteration which the food undergoes in the primæ viæ.

2. That operation of nature upon morbid matter which renders it fit to be separated from the healthy fluids.

CONCREMA'TIO. (From *con*, and *cremo*, to burn together.) Calcination.

CONCRE'TION. (*Concretio*; from *concresco*, to grow together.) 1. The growing together of parts which, in a natural state, are separate; as the fingers and toes.

2. The condensation of any fluid or other substance to a more solid consistence: hence bilious and urinary concretions.

Concretion, biliary. See *Calculus biliar.*

Concretion, intestinal. See *Enterolithus.*

CONCU'SSION. (*Concussio, onis.* f.; from *concutio*, to shake.) *Concussio cerebri.* Concussion of the brain. Various alarming symptoms, followed sometimes by the most fatal consequences, are found to attend great violence offered to the head; and upon the strictest examination, both of the living and the dead, neither fissure, fracture, nor extravasation of any kind can be discovered. The same symptoms, and the same events are met with, when the head has received no injury at all *ab externo*, but has only been violently shaken; nay, when only the body, or general frame, has seemed to have sustained the violence. The symptoms attending a concussion are generally in proportion to the degree of violence which the brain itself has sustained; and which, indeed, is cognisable only by the symptoms. If the concussion be very great, all sense and power of motion are immediately abolished, and death follows soon; but between this degree and that slight confusion (or stunning, as it is called,) which attends most violenses done to the head, there are many shades. The following is Abernethy's description of the symptoms of concussion, which he is of opinion may be divided into three stages: —

The *first* is that state of insensibility and derangement of the bodily powers which immediately succeeds the accident. While it lasts, the patient scarcely feels any injury that may be inflicted on him. His breathing is difficult, but in general without stertor; his pulse intermitting, and his extremities cold. But such a state cannot last long; it goes off gradually, and is succeeded by another, which is considered as the *second* stage of concussion. In this, the pulse and respiration become better; and though not regularly performed, are sufficient to maintain life, and to diffuse warmth over the extreme parts of the body. The feeling of the patient is now so far restored, that he is sensible if his skin be pinched; but he lies stupid and inattentive to slight external impressions. As the effects of concussion diminish, he becomes capable of replying to questions put to him in a loud tone of voice, especially when they refer to

his chief suffering at the time, as pain in the head, &c.; otherwise he answers incoherently, and as if his attention was occupied by something else. As long as the stupor remains, the inflammation of the brain seems to be moderate; but as the former abates, the latter seldom fails to increase; and this constitutes the *third* stage, which is the most important of the series of effects proceeding from a concussion.

These several stages vary considerably in their degree and duration; but more or less of each will be found to take place in every instance where the brain has been violently shaken. Whether they bear any certain proportion to each other or not, is not known; indeed this will depend upon such a variety of circumstances in the constitution, the injury, and the after-treatment, that it must be difficult to determine.

To distinguish between an extravasation and a concussion by the symptoms only, Mr. Pott says, is frequently a very difficult matter; sometimes an impossible one. The similarity of the effects, in some cases, and the very small space of time which may intervene between the going off of the one and accession of the other, render this a very nice exercise of the judgment. The first stunning or deprivation of sense, whether total or partial, may be from either, and no man can tell from which; but when these first symptoms have been removed, or have spontaneously disappeared, if such patient is again oppressed with drowsiness, or stupidity, or total or partial loss of sense, it then becomes probable that the first complaints were from concussion, and that the latter are from extravasation; and the greater the distance of time between the two, the greater is the probability not only that an extravasation is the cause, but that the extravasation is of the limpid kind, made gradatim, and within the brain.

Whoever seriously reflects on the nature of these two causes of evil within the cranium, and considers them as liable to frequent combination in the same subject, and at the same time considers that, in many instances, no degree of information can be obtained from the only person capable of giving it (the patient), will immediately be sensible how very difficult a part a practitioner has to act in many of these cases, and how very unjust it must be to call that ignorance which is only a just diffidence arising from the obscurity of the subject, and the absence of data on which to form a clear judgment.

Mr. Abernethy observes, that in cases of simple concussion, the insensibility is not so great as where compression exists, the pupils are more contracted, the muscles less relaxed, little or no stertor attends, but the pulse is very intermitting, and in slight cases there is often considerable sickness.

Very different modes of treating these accidents have been practised, and no doubt the same means should not be pursued indiscriminately. Much must depend on the state of the patient when he received the injury, the degree of this, the time which has elapsed since, and other circumstances. Abernethy considers, that in the first stage little should be done; that the stimulants often employed may be even injurious; but more especially so in the second stage, increasing the tendency to inflammation; and where this has come on, that the antiphlogistic plan must be actively pursued. However, a moderate abstraction of blood, general or topical, will be commonly proper at first, where the habit will allow it, as congestion may be suspected, and to obviate inflammation, especially where the person was intoxicated at the time of the accident; and the effect of this measure may influence the subsequent treatment. If the pulse rise after it, and the patient become more sensible, we should be led to pursue the evacuating plan, taking perhaps more blood, exhibiting active cathartics, as the bowels will be found very torpid, applying cold lotions to the head, &c. These means, however, will be especially called for, when marks of inflammation appear. Sometimes brisk emetics have been very beneficial, as sulphate of zinc, &c.: they are particularly recommended, where the person was under the influence of anger, or the stomach full, when the accident happened; but they are liable to objection, where there are marks of congestion, or increased action in the vessels of the head. If bleeding should lower the pulse, and render the patient worse, evacuations must not be pursued; it may be better generally to wait the gradual return of sensibility, unless the torpor be alarming, and resemble syncope; in which case, or if it continue very long, stimulants appear warrantable, as ammonia, or others of transient operation, with a blister to the head, to restore some degree of sensibility. If in the sequel marks of irritation appear, as spasms or convulsions, opium joined with antimony, or in the form of Dover's powder, will probably be useful, the necessary evacuations being premised, and the warm bath. In all cases the head should be kept quiet; as the patient is convalescent, tonics and the shower-bath may be employed with advantage; and it will be particularly necessary to avoid great bodily exertion, stimulating liquors, &c. Should paralytic symptoms remain, stimulants general or local may be required.

Condensa'ntia. Medicines were so called which were supposed to possess the power of thickening the humours of the body.

CONDENSA'TION. (*Condensatio, onis*; from *condenso*, to make thick.) The approximation of the particles of which a substance is composed, so that a given weight of it occupies less space than before. In *anatomy* and *pathology*, this term is applied to the texture of parts when it is denser or more solid than is usual in other parts: thus we speak of condensation of the cellular membrane; of the parenchyma of a viscus, &c. In chemistry the condensation of bodies gives rise to various remarkable phenomena. See *Caloric* and *Gas*.

CONDIME'NTUM. (*um*, *i.* n.; from *condio*, to season.) Condiment. A spice, pickle or other material used to season articles of food.

Co'nditum. An old name applied generally to any article of diet or medicine, rendered grateful by the addition of spices.

Conditu'ra. (*a*, *æ*. f.;) 1. The same as

ondimentum. 2. The embalming of a dead ody. See *Embalming.*

Condu'cio. (From *Conduco*, to draw along.) A spasm or convulsion. *Cœlius Aurelianus.*

CONDU'CTOR. (*or, oris.* m.; from *conduco*, to lead or guide.) 1. In *Surgery*, an nstrument, the use of which is to direct the nife in certain operations. It is more commonly called a director. 2. In *Electricity.* A ody which has the property of transmitting the lectric energy, as opposed to a *non-conductor*, body which has not that property. See *Electricity.*

CONDUPLICA'TUS. Folded or doubled ogether. Applied to leaves which are doubled ongitudinally so that the margins are applied atly to each other; as in *Roscœa purpurea*, nd the bases of sword-shaped leaves. See *Leaf.*

CO'NDYLE. (*Condylus.* Κονδυλος, the joint of finger, a tubercle or knot.) A process of a bone n the shape of a flattened head or eminence.

Condyloid process. A condyle. See *Condyle.*

CONDYLO'MA. (*a, atis*, n.; Κονδυλωμα; om κονδυλος, a tubercle or knot.) A soft, art-like excrescence, that appears about the ius and pudenda. There are several species condylomata, which have received names om their appearance; as *ficus, crista, thymus,* om their resemblance to a fig, &c.

Cone. See *Strobilus.*

Co'neine. Cicutine. The active principle the *Conium maculatum.* It is alkaline, but s properties have yet been little investigated. Half a grain produces headach and slight vergo.

Conei'on. See *Conium.*

Coné'ssi cortex. See *Nerium.*

CONFE'CTIO. (*onis*, f.; from *conficio*, to nake up.) A confection. In general it means ny thing made up with sugar. The term, in ne later London Pharmacopœias, includes those rticles which were formerly called electuaries nd conserves, between which there appears to e no sufficient ground of distinction.

Confectio alkermes. See *Alkermes.*

Confectio amygdalarum. Confection of monds. Take of sweet almonds, eight ounces; cacia gum powdered, an ounce; refined sugar, ur ounces. The almonds having been previously macerated in water, and their external oat removed, beat the whole together, until ey are thoroughly incorporated. It has been jected to the almond mixture, which is an rticle of very general use, that it requires conderable time for its extemporaneous preparion, and that it spoils and cannot be kept when is made: this is obviated by the confection, hich will keep for a considerable length of me, and can be immediately rubbed down with ater into an almond mixture.

Confectio aromatica. This preparation was rmerly called *Confectio cardiaca*, and *Confectio Raleighana.* Take of cinnamon bark, nutegs, of each two ounces; cloves, an ounce; rdamom seeds, half an ounce; saffron dried, vo ounces; prepared chalk, sixteen ounces; fined sugar powdered, two pounds; water, a nt. Reduce the dry substances, mixed toether, to very fine powder; then add the water gradually, and mix the whole, until it is incorporated. This preparation is now much simplified by the London college. It is an excellent medicine, possessing stimulant, antispasmodic, and astringent virtues; and is exhibited with these views to children and adults, mixed with other medicines. It may be given in doses of from 10 grs. to a drachm.

Confectio aurantii. *Confectio Aurantiorum. Conserva flavedinis aurantiorum. Conserva corticis exterioris aurantii hispalensis. Conserva flavedinis corticum aurantiorum.* Take of fresh external rind of oranges, separated by rasping, a pound; refined sugar, three pounds. Bruise the rind with a wooden pestle, in a stone mortar; then, after adding the sugar, bruise it again, until the whole is thoroughly incorporated. This is well calculated to form the basis of a tonic and stomachic confection, and may be given alone in doses of from two to five drachms, twice or three times a day.

Confectio cardiaca. See *Confectio aromatica.*

Confectio cassiæ. *Electuarium cassiæ. Electuarium è cassiâ. Diacasia cum manna.* Confection of cassia. Take of fresh cassia pulp, half a pound; manna, two ounces; tamarind pulp, an ounce; syrup of roses, half a pint. Bruise the manna; melt it in the syrup by a water-bath; then mix in the pulps, and evaporate down to a proper consistence. This is a very elegant, pleasant, and mild aperient for the feeble, and for children. Dose from two drachms to an ounce.

Confectio de santalis. An old astringent confection, made with sandal wood, red coral, bole, kermes berries, and other ingredients.

Confectio damocratis. See *Mithridatium.*

Confectio hamec. (So named after an Arabian physician.) A confection made of the bark of the yellow myrobalan or black miforum robalans, violets, polypody of the oak absynthium, rhubarb, diagridium, canella, ginger, and other ingredients made up with honey.

Confectio hyacinthi. Hyacinth confection. The *Electuaire de safran* used in France was formerly made with the addition of hyacinth, and took its name from that ingredient.

Confectio opii. *Confectio opiata. Philonium Londinense. Philonium Romanum. Electuarium Opiatum. Electuarium Thebaicum.* Confection of opium. Take of hard opium powdered, six drachms; long pepper, an ounce; ginger root, two ounces; carraway seeds, three ounces; tragacanth, powdered, two drachms; syrup, a pint. Rub together the opium and the syrup previously heated; then add the remaining articles reduced to powder, and mix. This confection is a simplification of the Mithridate and Theriaca of the old Pharmacopœias. The effect of opium is considerably modified by combination with aromatics, and the opiate confection affords a convenient mode of exhibiting it. The confection is given in atonic gout, flatulent colic, diarrhœa unattended with inflammatory symptoms, and other cases. The dose is from grs. 10 to ʒss. The confectio aromatica of the London and Dublin Pharmacopœias contains one grain of opium in thirty-six, whereas the *Electuarium opiatum*, the corresponding preparation in the

Edinburgh pharmacopœia, contains one grain in forty-three.

Confectio piperis nigri. Confection of black pepper. Take of black pepper, elecampagne, of each a pound; fennel seeds, three pounds; honey, refined sugar, of each two pounds. Rub the dry ingredients together so as to reduce them to a very fine powder; then, having added the honey, rub them again so that the whole may incorporate. This confection is given internally in a relaxed condition of the extremity of the rectum, producing partial prolapse, and in piles occasioned by debility. A similar compound has been long celebrated under the name of Ward's paste.

Confectio Raleighana. See *Confectio aromatica.*

Confectio rosæ caninæ. *Conserva cynosbati. Conserva fructus cynosbati.* Conserve of hips. Confection of dog-rose. Take of dog-rose pulp, a pound; refined sugar, powdered, twenty ounces. Expose the pulp in a water-bath to a gentle heat; then add the sugar gradually, and rub them together until they are thoroughly incorporated. This preparation is slightly astringent; but it is only used to form other more active medicines into pills and electuaries.

Confectio rosæ gallicæ. *Conserva rosæ. Conserva rosarum rubrarum.* Conserve of red rose. Take of the petals of the red rose, before it is expanded, and without the claws, a pound; refined sugar, three pounds. Bruise the petals in a stone mortar; then, having added the sugar, beat them again together, until they are thoroughly incorporated. This is a good gentle astringent. Rubbed down with water, and acidulated with lemon juice, it forms an excellent drink, in hæmorrhagic complaints; it may also be given with vitriolated zinc, in the form of an electuary.

Confectio rutæ. *Electuarium è baccis lauri.* Confection of rue. Take of rue leaves dried, carraway seeds, bay berries, of each an ounce and a half; sagapenum, half an ounce; black pepper, two drachms; clarified honey, sixteen ounces. Rub the dry articles together, into a very fine powder; then add the honey, and mix the whole. This is an antispasmodic preparation but its use is confined to clysters.

Confectio scammoneæ. *Electuarium scammonii. Electuarium e scammonio. Electuarium caryocostinum.* Confection of scammony. Take of scammony powdered, an ounce and a half; cloves bruised, ginger root powdered, of each six drachms; oil of carraway, half a drachm; syrup of roses, as much as may be sufficient. Rub the dry articles together into very fine powder, and preserve them; then whenever the confection is to be used, the syrup being gradually poured in, rub again; lastly, the oil of carraway being added, mix them all. This is a strong stimulating cathartic, and calculated to remove worms from the primæ viæ. It is not much used. Dose from ʒ ss. to ʒ j.

Confectio sennæ. *Electuarium sennæ. Electuarium lenitivum.* Confection of senna. Lenitive electuary. Take of senna leaves, eight ounces; figs, a pound; tamarind pulp, pulp of prunes, cassia pulp, of each half a pound; coriander seeds, four ounces; liquorice root, three ounces; refined sugar, two pounds and a half; water three pints. Powder the senna leaves with the coriander seeds, and separate, by sifting, ten ounces of the mixed powder. Boil down the water with the figs and liquorice root to half, then press out the liquor and strain it. Evaporate the liquor in a water-bath, until a pint and a half only remains of the whole; then add the sugar, to make syrup. Lastly, mix the pulps gradually with the syrup, and, having added the sifted powder, mix the whole together. This is a mild and elegant aperient, but is seldom found properly prepared in the shops. Dose, ʒ ss. to ℥ ss.

Confectio Fracastorii. See *Diascordium.*

CONFERTUS. Clustered, or crowded together: applied to leaves. See *Leaf.*

CONFE'RVA. (*a, æ.* f.; from *conferveo,* to knit together or heal.) 1. Under this name Pliny mentions a plant growing near alpine rivers, which was applied to heal the wounds inflicted on trees in pruning them, and was also supposed to favour the union of broken bones.

2. The tribe of cryptogamic plants, comprehending the jointed algæ or water-weeds, are called *Confervæ.* The confervæ are chiefly fresh water plants, but many are marine. They are composed of capillary jointed tubes, the joints of which differ in length. The tubes contain granules variously arranged, and the plants grow by the addition of one tube to the end of another, and multiply by means of the granules contained in the tubes. Some genera of confervæ, especially the *oscillatoria,* have afforded matter of much interesting speculation to physiologists from the near approach which they make to the character of animals. The species of oscillatoria are well known to be endowed with a power of motion which appears spontaneous. When in an active state their tubes are seen to unite and twine together, like a bundle of worms. When burnt, they afford a very fetid charcoal, the odour of which resembles that of decomposing animal matter. Dr. Priestly made some very curious observations on this subject. He found that the green matter produced in organic infusions, by exposure to light, was at first a mass of animalcules; that it was then resolved into green globules which concreted into *confervæ;* and lastly, after the solution of these, that it was again converted into infusory animals and vegetables. These observations, confirmed by those of Ingenhouz and Treviranus, have given encouragement to speculations relative to the spontaneous generation of animals, and the convertibility of animal and vegetable life. (See *Generation, equivocal.*) The recent researches of Ehrenberg, however, have thrown great doubt on the accuracy of these observations; nor is there any thing hitherto known which can warrant us in detaching the confervæ from the vegetable kingdom.

Conferva dichotoma. See *Fucus helminthocorton.*

Conferva helminthocortos. See *Fucus helminthocorton.*

Conferva rivalis. This indigenous plant

called Crow silk and Hairy river weed, — *Conferva; filamentis simplicissimus æqualibus longissimis*, of Linnæus,—is green and fibrous, and found in stagnant waters. It has a marshy smell, and is used as a vermifuge by the country people. It has also been recommended in cases of spasmodic asthma, phthisis, &c. It is very difficult to burn; and adheres firmly to glass or paper. This is supposed to be the conferva of the ancients.

Conferva rupestris. *Muscus marinus.* See *Fucus helminthocorton.*

Confirma'ntia. Synonymous with *Roborantia.*

CO'NFLUENT. *Confluens.* Running together. 1. In *Pathology*, applied to eruptions, especially that of smallpox. See *Variola.*

2. In *Botany*, to leaves which run together at their base.

Confluent smallpox. See *Variola.*

Conflue'ntia. *Confœderatio.* A term used by Paracelsus. The consent or concord of the microcosm with the stars, or of a disease with remedies.

Conflu'xio. The Latin translators of Hippocrates render his ξυρροια by this word. It signifies that consent or sympathy of the different parts of the living frame, by which the actions of life are sustained.

Confœderatio. See *Confluentia.*

Conforta'ntia. Cordials.

Confortati'va. The same.

Confu'sæ febres. A name given by Bellini to irregular agues. See *Ague.*

CONFU'SIO. (From *confundo*, to mix together.) A disorder of the eyes, proceeding from a rupture of the membranes which include the humours, by which means they are all confounded together. — *Galen.*

CONGELA'TION. (*Congelatio, onis.* f. from *congelo*, to freeze.) 1. In *Chemistry*, the conversion of a liquid body into a solid.

2. In *Physiology*, it is sometimes used synonymously with coagulation.

3. In *Pathology*, it was formerly employed to designate those diseases which are attended with stupor and numbness, as *catalepsy, paralysis*, &c.

Congelati'va. The same as *conglutinantia.*

Congela'tus. (From *congelo*, to freeze.) *Congelaticus.* A person afflicted with ecstacy or catalepsy, was formerly so called.

CO'NGENER. (*er, eris.* adj.; from *con*, and *genus*, kind.) Applied — 1. In *Natural History*, to genera nearly allied, or to species of the same genus.

2. In *Anatomy*, to muscles which concur in the same action.

CONGE'NITAL. *Congenitus.* Applied to that which pertains to an individual from his birth: thus, a *congenital disease* is one which existed at birth; a *congenital deformity*, a deformity which existed at birth.

Congenital hernia. See *Hernia.*

CONGE'STION. (*Congestio, onis.* f.; from *congero*, to amass.) A preternatural accumulation of blood, bile, or other fluids in their proper vessels: thus we say a congestion of blood in the vessels, when they are over-distended, and the motion of the blood is slow; a congestion of bile in the biliary ducts, &c.

Congestive diseases. Diseases arising from congestion.

Congestive fever. See *Febris.*

Congia'rius. The same as *Congius.*

Co'ngius. *Congiarius.* (*us, i. m.*) An ancient measure nearly equal to a gallon. In modern latinity it signifies a gallon.

CO'NGLOBATE. (*Conglobatus;* from *conglobo*, to gather into a ball.) 1. A term applied to a gland, *Glandula conglobata*, which is formed of a contortion of lymphatic vessels, connected together by cellular structure, having neither a cavity nor an excretory duct: such are the mesenteric, inguinal, axillary glands, &c. See *Gland.*

2. A conglobate *flower* is a compound one growing in the form of a sphere or globe.

CONGLO'MERATE. (*Conglomeratus;* from *conglomero*, to heap upon.) 1. In *Anatomy*, applied to a gland, *Glandula conglomerata*, which consists of a number of smaller glomerate glands, the excretory ducts of which all unite into one common duct, as the salivary glands.

2. In *Botany*, applied to flowers which are closely compacted together on a footstalk, to which they are irregularly, but closely connected. See *Panicula.*

Conglutina'ntia. (From *conglutino*, to glue together.) The same as *agglutinantia.* See *Agglutinans.*

Congrega'tæ gla'ndulæ. Glands which are clustered together, but each distinct from the rest, and having its own duct: the term is especially applied to the glands which are formed in clusters on the inner surface of the intestines.

Conicæ Papillæ. See *Conicus.*

CO'NICUS. Conical: applied — 1. In *Botany*, to leaves, nectaries, receptacles, &c. from their shape; as to the nectary of *Utricularia foliosa*, and the receptacle of *Anthemis arvensis*, and *Matricaria chamomilla.*

2. In *Anatomy* to the lenticular papillæ of the tongue. *Conicæ Papillæ.*

CONI'FERÆ. The cone-bearing tribe of dicotyledonous plants. It includes the pines, firs, &c.

Conia. Κονια. A word used by the Greek writers to signify, 1. A lixivium. 2. Lime. 3. Ashes. 4. A wine prepared by fermenting must on liquid pitch previously washed with sea-water. *Dioscorides.*

Conicinc. See *Concine.*

Conio'des. (Κονιωδες; from κονια, a *lixivium.*) An epithet applied by Hippocrates to a certain condition of the urine — ουρα κονιωδεα.

Co'nis. (*is, cos.* f.; Κονις.) Dust; fine powder; ashes; a nit in the hair; scurf on the head.

CONISTE'RIUM. (*um*, i. n.; Κονιστηριον; from κονιζω, to sprinkle with dust.) An apartment in the ancient gymnasia, where the athletæ were sprinkled with dust after being anointed with oil.

CONI'UM. (*um, ii.* n.: κωνειον; κονιον; Hemlock.

1. The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Digynia*.

2. The pharmacopœial name of the officinal hemlock. See *Conium maculatum*.

CONIUM MACULATUM. The systematic name for the *conium* and *cicuta* of the Pharmacopœias. Hemlock.

Cicuta major fœtida. Conium — seminibus striatis, of Linnæus. Hemlock is found in every part of England, and is distinguished from those plants which bear some resemblance to it, by the spotted stem. It is a very active poison. In a moderate dose it is apt to occasion sickness and vertigo; in a larger quantity it produces anxiety, cardialgia, vomiting, convulsions, coma, and death. Baron Stoerck was the first who brought hemlock into repute as a medicine of extraordinary efficacy: and although we have not in this country any direct facts, like those mentioned by Stoerck, proving that inveterate scirrhuses, cancers, and many other diseases hitherto deemed irremediable, are to be completely cured by the cicuta; we have, nevertheless, the testimony of several eminent physicians, showing that some complaints which had resisted other powerful remedies, yielded to hemlock; and that even some disorders, which, if not really cancerous, were at least suspected to be of that tendency, were greatly benefited by this remedy. It has, unquestionably, great efficacy in allaying the irritability and improving the appearance of ill-conditioned sores. In chronic rheumatisms, some glandular swellings, and in various fixed and periodical pains, the cicuta is now very generally employed; and from daily experience, it appears in such cases to be a very efficacious remedy. It has also been of singular use in the hooping-cough. Nor is it less efficacious when applied externally; a poultice made of oatmeal and the expressed juice, (or a decoction of the extract, when the other cannot be obtained,) allays the pain of ulcerated cancers, and gives a better aspect to irritable and unhealthy sores.

The narcotic power of hemlock resides in an alkaline principle, the properties of which require further investigation. It has been called *Conicine* and *Cicutine*. See *Conicine*.

The proper method of administering conium internally, is to begin with two or three grains of the powder or inspissated juice twice or thrice a day, and gradually to increase the dose. A slight giddiness and sickness, with a sensation as if the eyeballs were strained, are the first indications of an overdose. When any of these symptoms are experienced, the dose should be kept stationary for several days, until they have ceased, and then after a few days the dose may be increased; for little advantage can be expected but by a continuance of the greatest quantity the patient can bear. Occasionally, however, the effect is too powerful, and it is necessary to suspend the use of the medicine altogether. In some constitutions even small doses greatly offend, occasioning spasms, heat, and thirst; in such instances it will be of no service.

The powder of the dried leaves has been thought to act with more certainty than the extract, but the latter, if well prepared and not injured by keeping, is perfectly to be depended on. The following directions should be observed in the preparation: — Gather the plant about the end of June, when it is in flower; pick off the little leaves, and throw away the leaf-stalks: dry the small selected leaves in a hot sun, or in a tin or pewter dish before the fire. Preserve them in bags made of strong brown paper, or powder them and keep the powder in glass phials where the light is excluded; for light dissipates the beautiful green colour very soon, and thus the medicine loses its appearance, if not its efficacy: this mode is recommended by Dr. Withering. The extract should also be made of the plant gathered at this period.

CONJUGA'TUS. Conjugate or yoked; applied to a winged leaf with only one pair of leaflets; as in the *Mimosa*.

Conjunctiva membrana. See *Conjunctiva tunica*.

CONJUNCTIVA TUNICA. *Membrana conjunctiva. Tunica adnata.* One of the membranes or coats of the eye. See *Oculus*.

CONJU'NCTUS. Conjoined. Applied — 1. In *Botany*, to tubera, which are in immediate contact with one another, as in many of the *orchides*.

2. In *Pathology*, *conjuncta causa* means a proximate cause. See *Ætiologia*; *conjuncta signa* mean inseparable or pathognomic symptoms; *conjuncti morbi* are diseases which are either co-existent, or consecutive one on the other.

CONNA'TUS. (From *con*, and *nascor* to grow.) 1. In *Pathology*, born with a person; the same with *congenitus*.

2. In *Botany*, applied to leaves which are united at their base; as in *Chlora perfoliata*.

Connexion. See *Articulation*.

CO'NNIVENS. (From *conniveo*, to wink.) Connivent. Applied — 1. In *Botany*, to petals of flowers, as those of the *Rumex*, and to the receptacle of the fig, which the fruit really is, being a fleshy connivent receptacle, enclosing and hiding the florets.

2. In *Anatomy*, to the folds on the mucous surface of the small intestines; which are called *valvulæ conniventes*, from their converging or approaching one another.

CONNUTRI'TUS. (From *con*, and *nutrior*, to be nourished.) Applied to a disease which is either congenital, or originates from something connected with the nutrition of the individual in early life, as sucking an unhealthy nurse. The term is obsolete.

CONQUASSA'TIO. Conquassation. In *Pharmacy*, the bruising of recent vegetables, fruits, the softer parts of animals, &c. with a pestle, till they are reduced to a soft pulp.

Consent of parts. See *Sympathy*.

CONSE'RVA. (*a*, *æ*. f.; from *conservo*, to keep.) A conserve. A composition of some recent vegetable and sugar, beat together into an uniform mass of the consistence of honey; as conserve of hips, orange-peel, &c. Conserves

are called confections in the later editions of the London Pharmacopœia. See *Confectio.*

Conserva absinthii maritimi. Conserve of wormwood. This was formerly celebrated for the cure of dropsies. It was given in the dose of ℥ ss. before meals.

Conserva ari. See *Arum maculatum.*

Conserva aurantii Hispalensis. See *Confectio aurantiorum.*

Conserva cynosbati. See *Confectio rosæ caninæ.*

Conserva lu'julæ. Confection of wood sorrel. It is gratefully acid to the taste, and was formerly used to allay thirst in fevers.

Conserva menthæ. Conserve of mint. This preparation of mint is given occasionally as a stomachic, in sickness and weakness of the stomach. See *Mentha viridis.*

Conserva pruni sylvestris. Conserve of sloes. Astringent virtues are ascribed to this medicine, which, however, is now seldom used. See *Prunus sylvestris.*

Conserva rosæ. Conserve of roses. This conserve, rubbed down with water, and acidulated with lemon juice, forms an excellent drink in hæmorrhagic complaints. See *Confectio rosæ Gallicæ.*

Conserva scillæ. Conserve of squill. This is an uncertain and nauseous preparation, and has been for some time expunged from the Pharmacopœias.

Consili'go. A plant mentioned by Pliny. According to Caspar Bauhin, it is the green hellebore; according to others, a species of aconite.

Consiste'ntia. (From *consisto*, to stand still.) This word has been sometimes used to designate the acme of a disease. See *Acme.*

CONSO'LIDA. (*a*, *æ*. f. So called, *quia consolidandi et conglutinandi vi pollet;* from its power in agglutinating and joining together things broken.) Consound. See *Symphytum.*

Consolida aurea. See *Solidago virgaurea.*

Consolida major. See *Symphytum.*

Consolida media. See *Ajuga.*

Consolida minor. See *Prunella.*

Consolida regalis. See *Delphinium.*

Consolida saracenica. See *Solidago.*

Consolida'ntia. A term formerly applied o medicines which were supposed to give firmness to parts recently healed.

Consommé. (*Consummatum*, low Latin.) The French word for a strong broth made with any gelatinous meat, so that it becomes solid on cooling.

Consound. See *Consolida.*

Consound, middle. See *Ajuga pyramidalis.*

Conspersio. See *Catapasma.*

Constella'tum ungue'ntum. An ointment composed of the powder of dried earth worms, and the fat of the bear or wild boar. It was formerly used to promote the cicatrisation of wounds, aud to cure the toothach.

CONSTIPA'TION. (*Constipatio, onis.* f.; from *constipo*, to crowd together.) *Coprostasis. Copostasia. Obstipatio.* Costiveness.

Costiveness and obstipation are sometimes used synonymously: the former, however, is generally applied to that state in which the bowels act, though tardily; and the latter, to that in which there is no alvine evacuation. Costiveness is not always a disease; for many people in robust health, and especially the poorer and hard-working classes are not accustomed to have their bowels emptied oftener than twice a week. In its simple and constitutional form, this sluggishness of the bowels is rather troublesome than dangerous. Costiveness may be caused by an undue activity of the absorbents of the bowels, whereby the fæcal matter is deprived of all moisture, and becomes indurated. This increased action of the absorbents is often produced by hard exercise, under which the skin is kept regularly perspiring; by a stimulating diet, and such as tends to constringe the bowels; and perhaps also by too small a quantity of fluids, compared with the solid substance.

As the fæces are forced forward by the peristaltic action of the intestines, it follows that whenever this action is weakened, there must be an accumulation of fæces. This sluggishness or torpitude of the bowels may be produced by various causes: for sometimes the food is not sufficiently stimulating, sometimes there is a deficiency or depraved condition of the bile, which is a natural stimulus to the bowels. In other instances there is a defect of tone in the muscular fibres of the bowels themselves, so that they are not sufficiently affected by natural and healthy stimuli.

The medical treatment of constipation consists in adopting a diet free from all astringents, taking care especially that there is no alum in the bread, and using a coarser kind, with oleraceous vegetables, and supplying proper stimulants when the peristaltic motion is enfeebled. In most cases laxative articles of diet, such as stewed fruits, and the frequent use of gentle laxatives, will be found more effectual than the stronger cathartics. Where costiveness occurs in persons of a plethoric habit, the moderate use of venesection will often prove the most effectual laxative. In all cases emollient and laxative enemata are an useful auxiliary, and in many are alone sufficient to restore the healthy action of the bowels.

In the more aggravated state, or that in which the disease is called obstipation, rather than costiveness, there is generally sluggishness of the bowels from defect of tone in their fibres, and the patients are weakly, and prone to sedentary habits: the fæces, therefore, become indurated and form into hard balls, called *scybala.* In these obstinate cases the more powerful cathartics, as the croton oil and elaterium, must be had recourse to and conjoined with stimulating clysters. It will be preferable, however, to try a number of different cathartics in succession, than to persevere in violent doses of any one of them; for owing to peculiarity of constitution, it sometimes happens that obstipation which has resisted the most drastic medicines will yield readily to a few grains of aloes, a moderate quantity of Epsom salts largely diluted, or something equally simple.

CONSTITUTION. *Constitutio.* The general condition of the body, as evinced by the peculiarities in the performance of its functions: such are, the peculiar predisposition to certain diseases, or liability of particular organs to

disease; the varieties in digestion, in muscular power and motion, in sleep, in the appetite, &c. Some marked peculiarities of constitution are observed to be accompanied with certain external characters, such as a particular colour and texture of the skin and of the hair, and also with a peculiarity of form and disposition of mind; all of which have been observed from the earliest time, and divided into classes; and which received names, during the prevalence of the humeral pathology, which they still retain. See *Temperament*.

Constricti'vus. (From *constringo*, to bind together.) Constrictive: styptic.

CONSTRI'CTOR. (*or, oris.* m.; from *constringo*, to bind together.) A name given to a muscle which contracts any opening of the body.

Constrictor alæ nasi. See *Depressor labii superioris alæque nasi.*

Constrictor ani. See *Sphincter ani.*

Constrictor isthmi faucium. *Glossostaphilinus* of Winslow, Douglas, and Cowper. A muscle situated at the side of the opening of the fauces, that draws the *velum pendulum palati* towards the root of the tongue, which it raises at the same time, and, with its fellow, contracts the passage between the two arches, by which it shuts the opening of the fauces.

Constrictor labiorum. See *Orbicularis oris.*

Constrictor oris. See *Orbicularis oris.*

Constrictor palpebrarum. See *Orbicularis palpebrarum.*

Constrictor pharyngis inferior. *Crico pharyngeus; Thyro-pharyngeus*, of Douglas and Winslow. A muscle situated on the posterior part of the pharynx. It arises from the side of the thyroid cartilage, near the attachment of the sternohyoideus and thyrohyoideus muscles; and from the cricoid cartilage, near the crico-thyroideus. It is inserted into the white line, where it joins with its fellow, the superior fibres running obliquely upwards, covering nearly one-half of the middle constrictor, and terminating in a point: the inferior fibres run more transversely, and cover the beginning of the œsophagus. Its use is to compress that part of the pharynx which it covers, and to raise it with the larynx a little upwards.

Constrictor pharyngis medius. *Hyopharyngeus* and *cephalo-pharyngeus*, of Douglas and Winslow. *Chondro-pharyngeus*, of Douglas. *Syndesmo-pharyngeus*, of Winslow. *Cephalo-pharyngeus*, of Winslow and Douglas. A muscle situated on the posterior part of the pharynx. It arises from the appendix of the os hyoides, from the cornu of that bone, and from the ligament which connects it to the thyroid cartilage; the fibres of the superior part running obliquely upwards, and covering a considerable part of the superior constrictor, terminate in a point; and it is inserted into the middle of the cuneiform process of the os occipitis, before the foramen magnum, and joined to its fellow at a white line in the middle part of the pharynx. This muscle compresses that part of the pharynx which it covers, and draws it and the os hyoides upwards.

Constrictor pharyngis superior. *Glosso-pharyngeus; Mylo-pharyngeus; Pterygo-pharyngeus*, of Douglas and Winslow. A muscle situated on the posterior part of the pharynx. It arises from the cuneiform process of the os occipitis, before the foramen magnum, from the pterygoid process of the sphenoid bone, from the upper and under jaw, near the last dentes molares, and is also connected with the buccinator muscle, with the root of the tongue, and with the palate. It is inserted in the middle of the pharynx. Its use is to compress the upper part of the pharynx, and to draw it forwards and upwards.

Constrictor vesicæ urinariæ. See *Detrusor urinæ.*

Constrin'gens. (From *constringo*, to bind together.) See *Astringent.*

Consumma'tum. A low Latin word, which, according to Blancard, properly signifies a dish made by cutting a hen into small pieces, removing the head, feet, and fat, and digesting it without any addition, in a well-covered vessel, by the heat of a water bath, so as to extract the juice. It was afterwards applied to any gelatinous broth. See *Consommé.*

CONSUMPTION. (*Consumptio*; from *consumo*, to waste away.) See *Phthisis.*

Consu'mtio. (*o, onis.* f.) Consumption. See *Phthisis.*

Contabesce'ntia. (From *contabesco*, to pine or waste away.) An atrophy; or wasting of the body.

CONTAGION. (*Contagio, onis*, f.; from *con* and *tango*, to touch.) The term contagion has been used in several acceptations. 1. It has been employed to signify the communication of a disease by personal contact with the sick. 2. It has been employed to signify the communication of a disease, either by personal contact with the sick, or by an effluvium evolved from the body of the sick. 3. It has been employed as a generic term, embracing all atmospheric and morbid poisons; all the effluvia, miasmata, infections, and poisons that cause fevers, of whatever kind; and those poisons which uniformly excite the diseases which give birth to them, as the venereal disease, the itch, tinea capitis, &c. The second of these senses is the one in which it is now generally employed. Attempts have been made to distinguish between *contagion* and *infection*, the former being restricted to the communication of disease by direct contact, and the latter to that by effluvia arising from the body of the sick, and communicated through the medium of the atmosphere; but this distinction is now properly discarded by the majority of practical writers, and the two words are considered as synonymous.

Let it be understood, then, that *contagion* or *infection* means *the communication of a disease by personal contact with the sick, or by means of an effluvium arising from the body of the sick.*

It is well known that some contagious diseases, as *typhus*, frequently originate in the animal body when subjected to the action of certain external causes, among which the more obvious are confinement in crowded and ill-ventilated places, deficient or unwholesome food, intemperance, excessive fatigue, long-continued exposure

cold and moisture, and depressing passions of the mind. Such diseases are also occasionally observed to arise sporadically, without the intervention of the causes above alluded to, and, to all appearance, independently of contagion. There is, however, a class of contagious diseases which have never yet been proved to arise sporadically, and are generally believed never to do so: the contagions which produce these are therefore called *specific contagions;* such are those of syphilis, measles, small-pox, cow-pox, hooping-cough, scarlatina, &c. Whether the majority of pathologists are in the right in denying the occasional spontaneous origin of specific contagions, is much too large a question to be entered upon here; nor have we, in truth, sufficient data for its philosophical determination. The following are the best known contagions to which the human body is subject: —

1. The contagion of *typhus.*
2. ——————— of *hooping-cough.*
3. ——————— of *mumps.*
4. ——————— of *purulent ophthalmia.*
5. ——————— of *small-pox.*
6. ——————— of *cow-pox.*
7. ——————— of *measles.*
8. ——————— of *scarlet fever.*
9. ——————— of *varicella.*
10. ——————— of *erysipelas.*
11. ——————— of *dysentery.*
12. ——————— of *yaws.*
13. ——————— of the *venereal disease.*
14. ——————— of *scald head.*
15. ——————— of the *itch.*
16. ——————— of *hydrophobia.*

Among contagious poisons, some exist in the form of a liquid virus, by the insertion of which beneath the cuticle of a healthy individual, or its simple application to any part where the cuticle is very thin, the disease is communicated; such are the *variolous* and *syphilitic* poisons: the matter of other contagions again entirely eludes our senses; thus, the contagion of typhus is known to us only by its effects. Of liquid contagious poisons, some do not necessarily extend their action beyond the part to which they are immediately applied; thus, venereal matter may produce a chancre and nothing further; others, again, produce a local effect, the *necessary* consequence of which is a peculiar febrile excitement of the system, and the elimination of a contagious matter similar to that inserted by inoculation; such is the virus of small-pox and that of cow-pox.

The poisons of small-pox, chicken-pox, measles, and hooping-cough, produce such a change in the susceptibility of the system, when once they have influenced it, as to prevent the recurrence of the disease, except in a very small number of instances which merely form exceptions to a general rule. Other contagions again fortify the system to a considerable degree against any future infection of the same kind, but not nearly to the same degree as those above-mentioned; thus, scarlet fever generally occurs only once in a person's life-time, but still it often occurs two or three times. Lastly, many contagions confer no immunity from the future effects of the same poison; thus, having once laboured under syphilis, is no protection against a future invasion of that disease.

Further information concerning the peculiarities of the individual morbid poisons, will be found under the heads of the diseases to which they give rise.

There is an interesting fact connected with the origin of contagions, namely, that certain diseases which do not generally evince any contagious disposition, may become contagious under particular circumstances. This seems to be the case with common continued fever, which sometimes under unfavourable circumstances assumes a malignant and contagious form. Erysipelas has sometimes prevailed as a formidable epidemy, and, even when sporadic, frequently assumes a disposition to spread by contagion: nor is this confined to the idiopathic form of the disease; experience sufficiently attests that erysipelas supervening on wounds may also become contagious, especially in hospitals. Catarrh and pneumonia have frequently presented themselves in an epidemic, and probably a contagious form.

It is also worthy of remark, that a vast variety of diseases have at different times occurred as complications of contagious fever, and formed characteristic features of particular epidemies: so great indeed has been their number, that we may almost conclude, with Sennert, "nihil fere symptomatum et malorum est quod non cum peste et malignis ac pestilentibus febribus interdum conjungatur." (*De Feb.* lib. iv. c. xviii.) It would seem, therefore, that there is nothing in the nature of such affections incompatible with their communication by contagion; since, in the instances alluded to, they are so influenced by the causes of contagion as to become communicable along with the fever they accompany. These considerations point to the possibility that a contagious principle may, under certain circumstances, be superadded to many diseases, and may sometimes operate in determining their frequency, when its presence is very little suspected.

An important subject connected with contagion is that of *fomites.* It is found that the effluvia by which contagious diseases are communicated, are absorbed more or less by all porous bodies, and may, through the medium of these, be transported to distant places, and preserved in full activity for a length of time. The substances which thus convey contagion are called *fomites.* Wool, hair, cotton, feathers, woollen and cotton cloths, and other similar substances most readily imbibe and retain the contagious miasmata. (See *Pestis.*) It has been a point of discussion, whether a dead body can communicate contagion. Now, as the contagious matter of disease is the result of disordered vital actions, no further production of it can take place after death; but are there no porous substances about the dead body which may act as *fomites?* Is the hair of a dead human body, for instance, a worse fomes than any other hair? If not, we cannot perceive on what ground the capacity of the dead body to communicate contagion can be denied, unless it be supposed that the body, when dead, has an active power of neutralising the miasmata it

evolved when living, — a supposition too improbable to be maintained.

Conti'nens febris. A continued fever as opposed to a remittent or intermittent. See *Febris.*

Conti'nua febris. A continued fever. *Continued fever.* See *Febris.*

Contorta'. (Twisted.) The name of an order in Linnæus's Fragments of a Natural Method, consisting of plants which have a single petal that is twisted or bent towards the side; as *Nerium*, *Vinca*, &c.

CONTO'RTUS. (From *con*, and *torqueo*, to twist.) Twisted: applied to the seed-vessels of plants; as the *legumen contortum* of the *Medicago sativa.*

CO'NTRA-APERTU'RA. (From *contra*, against, and *aperio*, to open.) A counter-opening. An opening made to give exit to matter where one, which already exists, is insufficient for that purpose.

CONTRACTILITY. *Contractilitas.* That property of the living fibre by which it contracts on the application of a stimulus. Contractility is generally said by physiologists to depend on the organic property of sensibility. On this subject the following remark of M. Broussais is worthy of attention: — "Sensibility and contractility have been attributed to the living fibre; but if the real meaning of these two words reduces itself to the affirmation, that the fibre contracts because some cause determines it to do so; it is clear, that the former of these two properties is necessarily involved in the latter. In effect, if the sensibility of the fibre is manifested only by its contractions, to say that it is sensible, is merely to say that it contracts."

CONTRACTION. (*Contractio*, *onis.* f.; from *contraho*, to draw together.) 1. In *Physiology*, the action arising from excited *contractility*; that is, the shortening of a living fibre on the application of a stimulus.

2. In *Pathology*, the shortening of a muscle from some morbid cause.

CONTRACTU'RA. (*a*, *æ.* f.; from *contraho*, to draw together.) Cullen has made *contractura* a genus of disease in his class *Locales*, and order *Dyscinesiæ.* The species are,

1. *Contractura primaria*, from a rigid contraction of the muscles, called also obstipitas; a word that, with any other annexed, distinguishes the variety of the contraction. Of this species he forms four varieties. 1. *Contractura ab inflammatione*, when it arises from inflammation. 2. *Contractura à spasmo*, called also tonic spasm and cramp, when it depends upon spasm. 3. *Contractura ob antagonistas paraliticos*, from the antagonist muscles losing their action. 4. *Contractura ab acrimoniâ irritante*, which is induced by some irritating cause.

2. *Contractura articularis*, originating from a disease in the joint.

CONTRAFISSU'RA. (*a*, *æ.* f.; from *contra*, against, and *findo*, to cleave.) Counter-fissure. *Contrecoup* of French writers. A fracture in a part distant from that in which the blow is received; as when the frontal bone is broken by a fall on the occiput, the bone in the latter region remaining sound. Counter-fissures are not confined to the cranium, but occur also in other bones.

Contrahe'ntia. A term applied to medicines which produce contraction; they include *astringents* and *styptics.*

CONTRA-INDICATION. (*Contra-indicatio*, *onis.* f.; from *contra*, against, and *indico*, to show.) A symptom which forbids the use of a remedy which might otherwise be employed: for instance, it is usual to bleed in inflammation of the lungs; but if it be accompanied with highly typhoid symptoms and great sinking of the vital powers, these form *contra-indications* to the use of the lancet.

Contra-luna'ris. (From *contra*, and *luna*, the moon.) An epithet given by Dietericus to a woman who conceives during menstruation.

CONTRAYE'RVA. (*a*, *æ.* f.; from *contra*, against, and *yerba*, an herb, Span.; because this herb was given as an antidote *against* poisons.) See *Dorstenia.*

Contrayerva alba. *Contrayerva Germanorum.* See *Asclepias vincetoxicum.*

Contrayerva nova. The Mexican contrayerva. See *Psoralea pentaphylla.*

Contrayerva virginiana. See *Aristolochia serpentaria.*

Contre-coup. See *contrafissura.*

Contrexeville. A village in the department of Vosges in France. It has mineral waters containing carbonates of iron and lime, muriate of lime, and a matter which appears to be bituminous. This water is used in diseases of the urinary organs, and is much esteemed as a lithontriptic. It is also used in obstructions of the glands and cutaneous diseases.

CONTUSION. (*Contusio*, *onis.* f.; from *contundo*, to knock together.) A bruise.

CO'NUS. (*us*, *i.* m.; Κωνος.) A cone. In *Botany*, a particular kind of fructification. See *Strobilus.*

Conus fusorius. *Pyramis.* A conical-shaped crucible of iron, or other metal, used by the old chemists to separate metals from the scoriæ.

CONVALESCENCE. (*Convalescentia*, *æ* f.; from *convalesco*, to get well.) The recovery of health after the cure of a disease. The period of convalescence is that space from the departure of a disease to the recovery of the strength lost by it.

CONVALESCENT. Recovering, or returning to a state of health after the cure of a disease. The word is frequently used as a substantive.

CONVALLA'RIA. (*a*, *æ.* f.; from *con vallis*, a valley: named from its abounding in valleys.) The name of a genus of plants in the Linnæan system. Class, *Hexandria*; Order *Monogynia.*

Convallaria majalis. The lily of the valley. May-lily. *Convallaria*, *Lilium convallium*, *Maianthemum.* The flowers of this plant *Convallaria — scapo nudo* of Linnæus, have a penetrating bitter taste. A water distilled from them is much used in Germany and the north of Europe as a nervine. When dried and powdered, they are purgative and errhine. Watery or spirituous extracts made from them

given in doses of from a scruple to a drachm, act as gentle stimulating aperients and laxatives. The root possesses the same properties as the flowers.

Convallaria polygonatum. The Solomon's seal. *Sigillum Salomonis; Convallaria —foliis alternis amplexicaulibus, caule ancipiti, pedunculis axillaribus subunifloris,* of Linnæus. The roots have been used externally as astringents, and internally as corroborants.

Convoluta ossa. See *Spongiosa ossa.*

Convolutions of the Brain. See *Encephalos.*

Convolutions of the intestines. See *Intestines.*

CONVOLU'TUS. Rolled up or folded. Applied to bones, membranes, leaves, &c.

CONVOLVULA'CEÆ. A natural tribe of plants of which the genus *Convolvulus* is the type.

CONVO'LVULUS. (*us, i.* m.; from *convolvo*, to roll together, or entwine.)

1. The ileac passion. See *Ileac passion.*

2. The name of a genus of plants in the Linnæan system, so called from their twisting round others, Class, *Pentandria;* Order, *Monogynia.*

Convolvulus americanus. See *Convolvulus jalapa.*

Convolvulus batatas. A native of the West Indies. Its root is firm, of a pale brown outside, and white within. It is esculent, and when boiled has a sweet taste, like that of the chesnut.

Convolvulus cantabrica. The cantabrica. Lavender-leaved bind-weed. *Convolvulus minimis spicæ foliis. Convolvulus linariæ folio.* It is anthelmintic and actively cathartic. This plant is supposed by many to be the *cantabrica* of Pliny. See *Cantabrica.*

Convolvulus colubri'nus. See *Cissampelos pareira.*

Convolvulus jalapa. The Linnæan name of the jalap plant. Called also, *Mechoacanna nigra, Convolvulus americanus, Convolvulus Syriacus.*

Convolvulus jalapa — caule volubili; foliis ovatis, subcordatis, obtusis, obsolete repandis, subtus villosis; pedunculis unifloris of Linnæus. This plant has been lately ascertained to belong to the genus *Ipomœa.* It is a native of South America. The best jalap is imported from Vera Cruz. It is in oval-pointed tubers, covered with a thin, wrinkled, brown cuticle; sometimes it is in slices. It has a heavy disagreeable smell, and a sweetish slightly pungent taste. It is hard, compact, and internally of a light brown or grayish colour with dark brown streaks. The active principle of jalap is partly imbibed both by water and alkohol, and entirely by diluted alkohol. Ether takes up three parts out of ten of jalap, and leaves on evaporation a resin and some extractive matter. Mr. Hume found a substance in jalap which he believed to be a peculiar alkali and named it *jalapine;* the nature of this substance, however, is doubtful. (See *Jalapine.*) The alkoholic extract occasions violent griping without purging; the watery extract purges without griping. The active principles appear to be resin and extractive matter; according to Cadet there are two kinds of resin, a soft and a hard. The root powdered is a very common, efficacious, and safe purgative, as daily experience evinces; but, according as it contains more or less resin, its effects must of course vary. In large doses, or when joined with calomel, it is an excellent hydragogue and anthelmintic. The operation of jalap is rendered much less irritating by the addition of a few grains of carbonate of potash. Combined with cream of tartar, it forms the compound power of jalap of the Edinburgh Pharmacopœia — an excellent hydragogue medicine. (See *Pulvis Jalapæ compositus.*) The London officinal preparations are the extract and tincture. See *Extractum Jalapæ,* and *Tinctura Jalapæ.*

Convolvulus major albus. See *Convolvulus sepium.*

Convolvulus maritimus. See *Convolvulus soldanella.*

Convolvulus mechoacan. Mechoacan. This plant has been called *Mechoacanna, Jalapa alba, Bryonia alba Peruviana,* and *Rhabarbarum album.* The root of this species of convolvulus is brought from Mexico. It possesses aperient properties, and was long in use as a common purgative in this country, but is now entirely superseded by jalap.

Convolvulus scammonia. The systematic name of the scammony plant; called also, *Convolvulus syriacus, Scammonium syriacum,* and *Diagrydium.*

Convolvulus scammonia —foliis sagittatis postice truncatis, pedunculis teretibus subtrifloris, of Linnæus. It affords the gum resin called scammony. It is a native of Asia Minor, and Cochin China. The principal supply of it is from the mountains between Aleppo and Latachea. No part of the dried plant possesses any medicinal quality, except the root, which Dr. Russell administered in decoction, and found it to be a pleasant and mild cathartic. It is from the milky juice of the root that we obtain the officinal scammony, which is procured in the following manner by the peasants, who collect it in the beginning of June: having cleared away the earth from about the root, they cut off the top in an oblique direction, about two inches below where the stalks spring from it. Under the most depending part of the slope, they fix a shell, or some other convenient receptacle, into which the milky juice gradually flows. It is left there about twelve hours, which time is sufficient for draining off the whole juice; this, however, is in small quantity, each root affording but a very few drachms. This juice from the several roots is put together, often into the leg of an old boot, for want of some more proper vessel, where, in a little time, it grows hard, and is the genuine scammony. The smell of scammony is rather unpleasant, and the taste bitterish and slightly acrid. The different proportions of gum and resin, of which it consists, have been variously stated; but, as proof spirit is the best menstruum for it, these substances are supposed to be nearly in equal parts. It is brought from Aleppo and Smyrna in masses, generally of a light shining gray colour, and friable texture; of rather an unpleasant smell, and bitterish and slightly acrid taste. The scammony of Aleppo is by far the purest. That of Smyrna is pon-

derous, black, and mixed with extraneous matters. Scammony appears to have been well known to the Greek and Arabian physicians, and was exhibited internally as a purgative, and externally for the itch, tinea, fixed pains, &c. The dose is from grs. v. to grs. xv. Its irritating qualities require to be counteracted by the addition of an aromatic. It enters into several compounds, which are administered as purgatives. See *Confectio Scammoniæ. Pulvis Scammoniæ Compositus. Extractum colocynthidis compositum.*

Convolvulus sepium. *Convolvulus major albus.* The juice of this plant, *Convolvulus — foliis sagittatis postice truncatis, pedunculis tetragonis unifloris,* of Linnæus, is violently purgative, and given in dropsical affections. A poultice of the herb, made with oil, has been recommended in white swellings of the knee joint.

Convolvulus soldanella. The systematic name of the sea convolvulus. Κραμβη θαλασσια. *Brassica marina. Convolvulus maritimus. Soldanella.* This plant, *Convolvulus — foliis reniformibus, pedunculis unifloris,* of Linnæus, is a native of our coasts. The leaves are said to be a drastic purge. The medicine has fallen into disuse.

Convolvulus syriacus. See *Convolvulus scammonia.*

Convolvulus turpe'thum. The systematic name of the turbith plant. The cortical part of the root is brought from the East Indies, in oblong pieces: it is of a brown or ash colour on the outside, and whitish within. The best is ponderous, not wrinkled, easily frangible, and of a resinous appearance. When chewed, it at first imparts a sweetish taste, which is followed by a nauseous acrimony. It is strongly purgative, but liable to much irregularity of action. Jalap therefore is now always preferred to it.

Convulsio canina. See *Risus sardonicus.*

Convulsio cerealis. See *Raphania.*

Convulsio habitualis. See *Chorea.*

CONVULSION. (*Convulsio, onis.* f.; from *convello,* to pull together.) A convulsion is an agitation of all the limbs of the body, or of a part, occasioned by violent and involuntary contractions of the muscles, with alternate relaxations, or what are called clonic spasms. Most writers on pathology assert that this state of convulsion is attended by a sound and unaffected state of the mind. It is mostly, however, otherwise; for in the generality of cases the mind is lost during the fit: but, with partial convulsions, it is unusual for the mind to be at all affected. The author has witnessed a convulsed state of one arm for more than an hour, and has conversed with the patient during the whole time: so he has frequently witnessed the one side of the body convulsed, and has found the person converse with the by-standers, until the convulsion became general, and then a state of torpor and sleep supervened. One of the most horrible instances of partial convulsion of the face and jaw that he ever witnessed, was in a noble lady, who would look stedfastly at him and talk until the convulsion prevented her, by seizing the tongue, and alternately elongating and contracting it.

Convulsions are universal or partial.

When universal, all the limbs are more or less affected, as are the muscles of the face and those of respiration. This is the case with epilepsy and hysteria, which diseases are characterised by universal convulsion. See *Epilepsy,* and *Hysteria.*

A convulsion fit varies much in the mode of attack as well as its progress. Sometimes the assault is sudden and without any warning, but more generally there are precursive indications, and especially with those who are subject to returns of it: these forerunners are, coldness of the extremities, dizziness in the head, spectra floating before the eyes, the tremors of some muscles, a cold air or *aura* creeping up a limb, or up the back. The struggle itself varies in extent, violence, and duration. The muscles are alternately rigid and relaxed; the teeth gnash, and often bite the tongue; the mouth foams; the eyelids open and shut in perpetual motion, or are stretched upon a full stare, while the protuberant balls roll rapidly in every direction: the whole face is hideously distorted. The force exerted in some cases is enormous, so as to over-power the strength of several attendants. In some instances, it has been so violent as to break a tooth, and even fracture a bone. When the lungs are much oppressed, the lips, cheeks, and, indeed, the entire surface of the face and arms, are of a dark or purple hue.

The paroxysm will sometimes cease in a few minutes, but occasionally it will last for hours, and after a short period of rest, it perhaps returns again with as much violence as before; this happens frequently in puerperal and infantile convulsion. Great languor commonly succeeds, sometimes headach and vertigo, but not unfrequently there are no secondary symptoms whatever.

Partial convulsions have received different names. 1. That kind which affects several muscles irregularly is called *chorea;* and if the arms only are affected, so that the person hammers, as it were, the knees, it is termed *malleatio.* See *Chorea.*

2. When the muscles of the face only are convulsed, it produces a kind of laughter; and this is called *risus sardonicus.*

From the period of life, a convulsion is called *infantile, juvenile,* &c.

From the particular cause, it is distinguished as being *puerperal, maniacal, dental,* &c.

The convulsion occasionally shifts about from one part to another irregularly, from the face to the arms, and from them to the feet; and in some cases the face, or the chest, or the limbs are more affected than the other parts.

The causes of convulsions are very many and very varied.

In infants, children, and youths, the common causes are irritation of the bowels from gross and indigestible food, teething, and worms. The remedies, consequently, are the appropriate purgatives, and allaying the local irritation by removing the pressure caused by the superincumbent gum. The gums should be properly lanced.

In the puerperal convulsion, the attention

must be directed to the uterus, the irritation of which is best allayed by copious, prompt, and repeated bleeding, and by the administration of opium by the mouth and rectum.

Some of the *narcotic poisons* are productive of convulsions when taken in a sufficient dose, as opium, prussic acid, the upas tienti, &c. The removal of the cause, as far as possible, is here imperiously called for, and the free exhibition of ammonia and stimulants.

Another set of causes which produce a convulsion, are affections of the mind; as excess of anger, joy, grief, and fear. The treatment during the fit must apply to the state of the constitution which gives a tendency to its recurrence.

In many cases there is an apparent congestion in the vessels of the face and head, and probably a similar state of the vascular system exists within the scull: in such cases, venesection must be had recourse to, and is a good measure of caution, more particularly if the person be of a plethoric habit; but when there are no such evidences of vascular fullness, and especially if, on the contrary, the subject is weak and nervous, bloodletting should be had recourse to with reluctance. If any medicine can be taken, it should be selected from the nervous class, as ather, ammonia, valerian, assafœtida, and camphire. I have known the following glyster remove the convulsion almost instantly in adults: —

R. Tincturæ assafœtidæ, f. ʒ iij.
Tincturæ opii, f. ʒ jss.
Aquæ tepidæ, f. ℥ x. Misce pro enemate.

A warm bath is very generally extolled, and for children is very beneficial: but for adults, the inconvenience attending the management of the patient almost prevents its use, and often overbalances the good that might otherwise result.

Another remedy during the fit, is cold water and cold air.

The treatment after the paroxysm is over, in order to prevent a recurrence of the fit, must vary: all the exciting causes being removed, the attention should be directed to restore the healthy condition of the system by removing any vascular plethora, or nervous weakness; and the exhibition of such remedies as have been known to destroy the state of the nervous system which favoured the recurrence. These are, cold bathing, especially sea bathing; regular exercise, especially on horseback; an abstemious, but nourishing diet; aperients, so as to procure a daily and satisfactory elimination of the fæces; and a steady perseverance in antispasmodics and tonics, as cinchona, cascarilla, gentian, colomba, quassia, nux vomica, valerian, camphire, oxide of zinc, sulphate and carbonate of iron, &c.

CONY'ZA. (*a*, *æ*. f.; from *κονιζω*, to be dusty, because the dust adheres to its leaves.) A genus of plants in the Linnæan system. Class, *Syngenesia*; Order, *Polygamia superflua*. Various plants have been called conyza by the older botanists: they are either of the genus iconyza, inula, gnaphalium, erigeron, or chrysocoma.

Conyza squarrosa. Great fleabane. This plant has a strong disagreeable odour, which is said to be fatal to fleas and flies. It was formerly esteemed as an emmenagogue, anticteric, and antepileptic.

Conyza cærulea. See *Erigeron acre.*

Conyza major. Supposed to be the *Inula viscosa* of Linnæus.

Conyza media. See *Inula dysenterica.*

Conyza minor. *Conyza Pulicaria.* The *Inula pulicaria* of Linnæus answers to the description given of this plant in most books. Its chief use is to destroy fleas and gnats.

Coopertoria cartilago. The thyroid cartilage — *Castelli.*

Coo'strum. The centre of the diaphragm. — *Ruland.*

COPA'IBA. (*a*, *æ*. f.; from *copal*, the American name for any odoriferous gum, and *iba*, or *iva*, a tree.) See *Copaifera officinalis.*

COPAI'FERA. (*a*, *æ*. f.; from *copaiva*, and *fero*, to bear.) The name of a genus of plants in the Linnæan system. Class, *Decandria*; Order, *Monogynia.*

Copaifera officinalis. The systematic name of the plant from which the Copaiba balsam — *Balsamum Brasiliense* — *Balsamum copaibæ* — *Balsamum de copaiba* — *Balsamum capivi* — *Capevi*; is obtained. It is now ascertained, that nearly all the species of the genus *Copaifera* yield the balsam more or less abundantly. The *C. Multijuga*, a native of the province of Para, is said to afford the greatest quantity.

Copaiba is a yellow resinous juice, of a moderately agreeable smell, and a bitterish biting taste, very permanent on the tongue. The trees which afford it grow in the Brazils and New Spain. It is obtained by boring the trees near the bottom of the trunk, when the balsam immediately issues, and, at the proper season, flows in such abundance, that sometimes, in three hours, twelve pounds have been procured. The older trees afford the best balsam, and yield it two or three times in the same year. The balsam supplied by the young and vigorous trees, which abound with the most juice, is crude and watery, and is, therefore, accounted less valuable. While flowing from the tree, this balsam is a colourless fluid; in time, however, it acquires a yellowish tinge, and the consistence of oil; but, though by age it has been found thick, like honey, yet it never becomes solid, like other resinous fluids. By distillation in water, the oil is separated from the resin; and, in the former, the taste and smell of the balsam are concentrated. If the operation is carefully performed, about one half of the balsam rises into the receiver, in the form of oil. The balsam unites with fixed and volatile oils, and with spirit of wine. It is given in all diseases of the urinary organs, when no inflammation is present. In gonorrhœa, after the inflammatory symptoms have abated, in gleet, and in leucorrhœa, it is a medicine of great efficacy. It exerts a very stimulating effect on the kidneys, increasing their secretion, and in an overdose, causing inflammation of those organs. It often gives relief in hæmorrhoids. In irritable habits this medicine is liable to excite griping, sickness, and severe pains in the region of the kidneys, so that its use cannot

be persevered in; these effects are sometimes obviated by combining it with opium. The dose is from 20 to 30 drops, twice or thrice a day, mixed with water, by means of an egg, or any mucilage. The balsam of copaiva is occasionally adulterated with turpentine, but its virtues are not greatly injured by the fraud.

Copaiva. See *Copaiba.*

COPAL. (The American name for any odoriferous gum.) Gum copal. This substance, improperly called a gum, is imported from Guinea, and is the produce of the *Rhus copallinum*, from which it exudes spontaneously. It is a hard, shining, transparent, citron-coloured, odoriferous, concrete juice, which has neither the solubility in water common to gums, nor the solubility in alkohol common to resins, at least in any considerable degree. In these properties it resembles amber. It may be dissolved by digestion in linseed oil, rendered drying by quick lime, with a heat very little less than sufficient to boil or decompose the oil. This solution, diluted with oil of turpentine, forms a beautiful transparent varnish, which, when properly applied, and slowly dried, is very hard and very durable. This varnish is applied to snuff-boxes, tea-boards, and other utensils. It preserves and gives lustre to paintings, and greatly restores the decayed colours of old pictures, by filling up the cracks, and rendering the surfaces capable of reflecting light more uniformly.

Cope'lla. See *Cupel.*

Co'phier. A name of camphire.

COPHO'SIS. (Κωφωσις; from κωφος, deaf.) Generally synonymous with deafness, though some writers have restricted it to particular kinds of deafness.

Copi'scus. Κοπισκος. An inferior kind of incense mentioned by Dioscorides.

Co'pos. Κοπος. Weariness, lassitude.

Copparossa. See *Copperas.*

COPPER. (*Cuprum*, i. neut. *quasi æs Cyprium*; so named from the island of Cyprus, whence it was formerly brought.) A metal of a peculiar reddish brown colour; hard, sonorous, very malleable and ductile, and of considerable tenacity. Copper is found in nature in the metallic state, and in the form of oxide, sulphuret carbonate, sulphate, chloride, phosphate, and arseniate. The mineral called *copper-pyrites* is a double sulphuret of copper and iron. The native carbonate of copper constitutes the mineral called *malachite*, the blue varieties of which appear to differ from the green in containing more water. At a degree of heat far below ignition the surface of a piece of polished copper becomes covered with various ranges of prismatic colours, the red of each order being nearest the end which has been most heated; an effect which must be attributed to oxidation, the stratum of oxide being thickest where the heat is greatest, and growing gradually thinner and thinner towards the colder part. A greater degree of heat oxidises it more rapidly, so that it contracts thin powdery scales on its surface, which may be easily rubbed off; the flame of the fuel becoming at the same time of a beautiful bluish green colour. In a heat, nearly the same as is necessary to melt gold or silver, it melts, and exhibits a bluish green flame; by a violent heat it boils, and is volatilised partly in the metallic state.

Copper rusts in the air; but the corroded part is very thin, and preserves the metal beneath from farther corrosion.

There are two oxides of copper: —

1st. The *protoxide*, obtained by digesting a solution of muriate of copper with copper turnings, in a close phial. The colour passes from green to dark brown, and grey crystalline grains are deposited. The solution of these yields, by potash, a precipitate of an orange colour, which is the protoxide. It consists of 8 copper + 1 oxygen.

2d. The *deutoxide*, or black, procurable by heat, or by drying the hydratic oxide precipitated by potash from the nitrate. It consists of 8 copper + 2 oxygen.

Copper, in filings, or thin laminæ, introduced into chlorine, unites with flame into the chloride, of which there are two varieties: the protochloride, a fixed yellow substance; and the dichloride, a yellowish brown pulverulent sublimate.

1. The crystalline grains deposited from the above muriatic solution, are *protochloride.*

2. *Dichloride* is best made by slowly evaporating to dryness, at a temperature not much above 400° Fahrenheit, the deliquescent muriate of copper. It is a yellow powder.

When this substance is moistened with water, and exposed to the air, it is converted into a substance of a pale green colour called *Brunswick green*, or *submuriate of copper*; it is a compound of chloride and oxide of copper.

The *iodide*, *bromide*, and *fluoride* of copper are hitherto little known.

Of the saline compounds of this metal, the acetate, and sulphate, and ammoniated copper only are employed in the cure of diseases.

The joint agency of air and acetic acid is necessary to the production of the *acetates.* By exposing copper plates to the vapours of vinegar, the bluish-green *verdigris* is formed, which by solution in vinegar constitutes *acetate of copper.* See *Verdigris.*

The *sulphate*, or blue vitriol of commerce, is a bisulphate. See *Cupri sulphas.*

The *subsulphate of ammonia and copper* is the *cuprum ammoniatum* of the Pharmacopœias. See *Cupri ammonio-sulphas.*

With arsenious acid copper forms the pigment, known under the name of *Scheele's green.* See *Arsenious acid.*

Copper combines readily with the metals. With gold, it forms the *standard gold* used for coining. (See *Aurum.*) With zinc, it forms *brass*; with tin, *bell metal* and *bronze*; with tin and a little arsenic, the *speculum metal. Tombac, Dutch gold, pinchbeck, similor*, and *Prince Rupert's metal*, are compounds of copper and brass in various proportions. *Tutenag* is said to be an alloy of copper and zinc, with a little iron.

All the preparations of copper act as virulent poisons, when introduced in very small quantities into the stomachs of animals. A few grains are sufficient for this effect. Death is commonly preceded by very decided nervous dis-

orders, such as convulsive movements, tetanus, general insensibility, or a palsy of the lower extremities. This event happens frequently so soon, that it could not be occasioned by inflammation or erosion of the *primæ viæ*; and, indeed, where these parts are apparently sound. It is probable that the poison is absorbed, and, through the circulation, acts on the brain and nerves. The cupreous preparations are, no doubt, very acrid, and if death do not follow their immediate impression on the nervous system, they will certainly inflame the intestinal canal. The symptoms produced by a dangerous dose of copper are exactly similar to those which are enumerated under arsenic, only the taste of copper is strongly perceived. The only chemical antidote to cupreous solutions, whose operation is well understood, is water strongly impregnated with sulphuretted hydrogen. The alkaline hydrosulphurets are acrid, and ought not to be prescribed.

But we possess, in sugar, an antidote to this poison, of undoubted efficacy, though its mode of action be obscure. Duval introduced into the stomach of a dog, by means of a caoutchouc tube, a solution in acetic acid, of four French drachms of oxide of copper. Some minutes afterwards he injected into it four ounces of strong syrup. He repeated this injection every half-hour, and employed altogether 12 ounces of syrup. The animal experienced some tremblings and convulsive movements. But the last injection was followed by a perfect calm. The animal fell asleep, and awakened free from any ailment.

Orfila relates several cases of individuals who had, by accident or intention, swallowed poisonous doses of acetate of copper, and who recovered by taking large doses of sugar. He uniformly found, that a dose of verdigris which would kill a dog in the course of an hour or two, might be swallowed with impunity, provided it was mixed with a considerable quantity of sugar.

As alkohol has the power of completely neutralising, in the ethers, the strongest muriatic and hydriodic acids, so it would appear that sugar can neutralise the oxides of copper and lead. The neutral saccharite of lead, indeed, was employed by Berzelius in his experiments, to determine the prime equivalent of sugar. If we boil for half an hour, in a flask, an ounce of white sugar, an ounce of water, and 10 grains of verdigris, we obtain a green liquid, which is not affected by the nicest tests of copper, such as ferro-prussiate of potash, ammonia, and the hydro-sulphurets. An insoluble green carbonate of copper remains at the bottom of the flask.

Copper, ammoniated solution of. See *Liquor cupri ammonio-sulphatis.*

CO'PPERAS. A name given to blue, green, and white vitriol.

Copracrati'a. (From κοπρος, excrement, and ακρατεια, incontinence.) Involuntary discharge of the fæces.

COPRAGO'GUS. (From κοπρος, the excrement, and αγω, to bring away.) Purgative.

Copragogum. A laxative electuary mentioned by Ruland.

Copre'miesis. (From κοπρος, excrement, and εμεω, to vomit.) A vomiting of fæces. See *Ileac passion.*

Coprocri'ticus. (From κοπρος, excrement, and κρινω, to separate.) Synonymous with ecoprotic.

Copropho'ria. (From κοπρος, excrement, and φορεω, to bring away.) A purging.

Co'pros. (*os, i.* f. Κοπρος.) The fæces, or excrements from the bowels.

Coprosta'sia. (From κοπρος, fæces, and ἱστημι, to remain.) Costiveness.

Copro'stasis. The same.

Copta'rion. (Κοπτη, a small cake.) *Coptarium.* A lozenge.

CO'PTE. (Κοπτη, a small cake.) A medicine used by the ancients. It was generally made of vegetable substances, and applied externally over the stomach, or liver.

CO'PULA. (*a, æ.* f.; a shackle, or band.) 1. A ligament.

2. The word is used by Paulus Zacchius to signify sexual intercourse.

Copula carnalis. Sexual intercourse; coition.

COR. (*Cor, dis.* neut.) 1. The heart. See *Heart.*

2. The pith of a plant.

3. Gold. — *Ruland.*

4. An intense fire. — *Ruland.*

Coraci'ne. (Κορακινη; from κοραξ, a crow: probably so named from its being of a black colour.) The name of a pastil mentioned by Galen.

Coracobo'tane. (From κοραξ, a crow, and βοτανη, a herb.) The Alexandrian laurel.

Coraco-brachiæus. See *Coraco-brachialis.*

CO'RACO-BRACHIA'LIS. *Coraco-brachiæus.* A muscle, so called from its origin and insertion. It arises, tendinous and fleshy, from the fore-part of the coracoid process of the scapula, adhering, in its descent, to the short head of the biceps; inserted, tendinous and fleshy, about the middle of the internal part of the os humeri, near the origin of the third head of the triceps, called *brachialis externus*, where it sends down a thin tendinous expansion to the internal condyle of the os humeri. Its use is to raise the arm upwards and forwards.

Coraco-hyoideus. See *Omo-hyoideus.*

CO'RACOID. (*Coracoides*; from κοραξ, a crow, and ειδος, resemblance: shaped like the beak of a crow.) Some processes of bones are so named, from a fancied resemblance to the beak of a crow; as the *coracoid process of the scapula.*

Coracoid process. See *Scapula.*

Coracoideus musculus. The *Brachialis internus.*

Coral. See *Corallium.*

Corallatum. An alchemical name of the deutoxide of mercury.

CORALLI'NA. (*a, æ.* f.; diminutive of *corallium.*) A genus of marine productions, generally supposed to be polypifers; no polypi, however, have as yet been detected in them, and hence some naturalists have regarded them as plants. They consist of a calcareous, articulated stem, rising from a kind of root, which adheres

to rocks, shells, or other bodies, and divided into articulated branches.

Corallina Corsicana. See *Fucus helminthocorton.*

Corallina melitochorton. See *Fucus helminthocorton.*

Corallina melito-corton. See *Fucus helminthocorton.*

Corallina officinalis. *Muscus maritimus; Corallina alba.* Coralline; Sea moss; White wormseed. This was administered to children as an anthelmintic, in the dose of half a drachm to a drachm, once or twice a day. What virtues it may possess are merely those of carbonate of lime, of which it chiefly consists.

Corallina rubra. See *Fucus helminthocorton.*

Coralline. See *Corallina.*

Coralline, Corsican. See *Fucus helminthocorton.*

Coralline. See *Corallina officinalis.*

Coralline, white. See *Corallina officinalis.*

CORA'LLIUM. (*um, i.* n. κοραλλιον; κουραλιον; probably from κορη, a daughter, and ἁλς, the sea, because it is the production of the sea.) Coral. A general name for those marine polypifers which have a stony or horny axis; as *Isis, Oculina, Gorgonia,* &c.

Corallium album. White coral. The produce of the several species of *Oculina* — *Madrepora oculata* of Linnæus. The powder of white coral has been administered as an absorbent.

Corallium nigrum. Black coral. *Gorgonia antipathes* — *Antipathes* of Linnæus. This was formerly used in epilepsy.

Corallium rubrum. *Acmo. Azur.* Red coral. The red coral of commerce is the hard calcareous substance of the *Isis nobilis.* When powdered, it is exhibited as an absorbent earth to children; but is in no respect preferable to common chalk.

Corallode'ndron. (From κοραλλιον, coral, and δενδρον, a tree: so named from its rich scarlet blossoms.) The coral tree of America. See *Erythrina corallodendron.*

CO'RALLOID. (*Coralloides;* from κοραλλιον, coral, and ειδος, likeness.) Coral-like: applied as a specific name to some plants. See *Clavaria coralloides.*

Corbatum. An alchemical name of copper.

CO'RCHORUS. (*us, i.* m.; from κορη, the pupil of the eye, and κορεω, to purge: so called because it was thought to purge away rheum from the eyes.) The ancient name of some kind of pot-herb, and also of a species of fish; but now applied to a genus of plants of the Class, *Polyandria;* Order, *Monogynia.* The *Corchorus olitorius* is cultivated in Egypt as a pot-herb, and the *C. triloculuris* in Barbary.

CO'RCULUM. (*um, i.* n.; a little heart: diminutive of *cor,* a heart.) An essential part of a germinating seed, called also the *embryo,* or germ. It lies between the cotyledons. It is the point from which the life and organisation of the future plant originate. In some seeds it is much more conspicuous than in others. The walnut, bean, pea, and lupine, show it in perfection. Its internal structure, before it begins to vegetate, is observed to be very simple, consisting of an uniformly medullary substance, enclosed in its appropriate bark or skin. Vessels are formed in it as soon as the vital principle is excited to action, and parts are then developed which seemed not previously to exist. There are observed in it,

1. The *rostellum,* or little beak, which penetrates into the earth, and becomes the root.

2. The *plumula,* which shoots above the ground, and becomes a tuft of young leaves, with which the young stem, if there be any, ascends. See *Cotyledon.*

Corda. See *Chorda.*

Corda tympani. See *Chorda tympani.*

Cordæ Willisii. See *Chordæ Willisii.*

CORDA'TUS. Heart-shaped: applied to leaves, petals, &c. which are ovate, and hollowed out at the base, according to the vulgar idea of a heart; as the leaves of *Arctium lappa,* and *Tamus communis,* and the petals of *Sium selinum.*

A leaf is called *obcordate,* when the apex of the heart-shaped leaf is fixed to the petiole.

CO'RDIA. (*a, æ.* f. So called by Plumier in honour of Euricius Cordius and his son Valerius, two eminent German botanists.) A genus of plants. Class, *Pentandria;* Order, *Monogynia.*

Cordia myxa. The Sebesten plant. *Sebesten, Sebestina. Cordia — foliis ovatis, supra glabris; corymbis lateralibus; calycibus decemstriatis,* of Linnæus. The black fruit of this plant is mucilaginous, and gently laxative; and is exhibited in form of decoction in various diseases of the chest, hoarseness, cough, difficult respiration, &c.

CORDIAL. *Cardiacus.* A term originally adjective; but, like most others expressive of the properties of medicines, used also as a substantive. It is applied to warm and stimulating medicines which raise the spirits, and were formerly supposed to strengthen the *heart,* whence the name.

Cordine'ma. (From καρα, the head, and δινεω, to turn round.) Heaviness of the head; vertigo. — *Erotian.*

CORDO'LIUM. (*um, i.* n.; from *cor,* the heart, and *dolor,* pain.) Synonymous with *cardialgia.*

Cordy'lea. *Crocodilea. Stercus lacerti.* The dung of a species of lizard, common in Egypt and the Levant; *Lacerta stellio* of Linnæus. It is prized in the East as a remedy for cutaneous diseases, and as a cosmetic.

CO'RE. (*e, es.* f. Κορη.) The pupil of the eye.

Corecto'mia. (From κορη, the pupil, and εκτεμνω, to cut out.) The operation of making an artificial pupil by cutting out a portion of the iris. The term is not well constructed.

Coredia'lysis. (From κορη, the pupil, and διαλυω, to loosen.) The formation of an artificial pupil by detaching the iris from the ciliary ligament. The term is ill-devised, and does not express the meaning.

Core'ma. (Κορημα; from κορεω, to cleanse. A medicine for cleansing the skin. — *Paulus Ægineta.*

COREMORPHO'SIS. (From κορη, the pupil, and μορφωσις, formation.) The operation of forming an artificial pupil. — *Wagner.*

CORENCLEI'SIS. (From κορη, the pupil, and εγκλεισις, inclusion.) That operation for artificial pupil in which a portion of the iris is drawn through an incision in the cornea, and cut off.

CORETOMEDIA'LYSIS. (From κορη, the pupil, τεμνω, to cut, and διαλυω, to loosen.) The operation for artificial pupil, by detaching the iris from the ciliary ligament.

CORETO'MIA. (From κορη, the pupil, and τεμνω, to cut.) The operation for artificial pupil.

CORIA'CEOUS. (*Coriaceus*; from *corium*, leather.) Leathery: applied to leaves and pods that are thick and tough without being pulpy, or succulent; as in the leaves of *Magnolia grandiflora*, *Aucuba*, &c., and the pods of the lupine.

Coriander. See *Coriandrum.*

CORIAN'DRUM. (*um*, *i.* n. Κοριον. Κοριανον. Κοριαννον.) Derived, according to some, from κορη, the pupil of the eye, which the seed is said to resemble; but it does not resemble it in the least: others, with more probability, derive it from κορις, a bug, the fresh herb having a disagreeable smell resembling that of bugs. Coriander. 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Digynia.*

2. The pharmacopœial name of the officinal coriander. See *Coriandrum sativum.*

CORIANDRUM SATIVUM. The systematic name of the coriander plant: called also *Cassibor*, and *Corianon.*

Coriandrum—*fructibus globosis*, of Linnæus. This plant is a native of the south of Europe, where, in some places, it is said to grow in such abundance, as frequently to choke the growth of wheat and other grain. From being cultivated here as a medicinal plant, it has for some time become naturalised in this country, where it is usually found in corn-fields, the sides of roads, and about dunghills. Every part of the plant, when fresh, has a very offensive odour; but the seeds, when dried, have a tolerably grateful smell, and their taste is moderately warm, and slightly pungent. They yield their virtues entirely to rectified spirit, but only partially to water. By distillation with water, they yield a small quantity of a yellowish essential oil, which smells strongly, and pretty agreeably, of the coriander.

Dioscorides asserts, that the seeds, when taken in a considerable quantity, produce deleterious effects; and in some parts of Spain and Egypt, where the fresh herb is eaten as a cordial, instances of fatuity, lethargy, &c. are observed to occur very frequently: but these qualities seem to have been unjustly ascribed to the coriander; and Dr. Withering informs us, that he has known six drachms of the seeds taken at once, without any remarkable effect. These seeds, and indeed most of those of the umbelliferous plants, possess a stomachic and carminative power. They were directed in the *infusum amarum*, the *infusum sennæ tartarizatum*, and some other compositions of the pharmacopœias; and, according to Dr. Cullen, the principal use of these seeds is, "that infused along with senna, they more powerfully correct the odour and taste of this than any other aromatic that I have employed; and are, I believe, equally powerful in obviating the griping that senna is very ready to produce."

Coriannon. See *Coriandrum.*

Corianon. See *Coriandrum.*

CO'RIS. (*is*, *is.* f.; from κειρω, to cleave or cut: so called, because it was said to heal wounds.) 1. The ancient name of the herb St. John's wort.

2. The name of a genus of plants. Class *Pentandria*; Order, *Monogynia.*

Coris cretica. See *Hypericum saxatile.*

Coris lutea. See *Hypericum coris.*

CORIS MONSPELIENSIS. Heath pine. *Symphitum petræum.* This plant is intensely bitter and nauseous, but apparently an active medicine, and employed, it is said, with success in syphilis.

CO'RIUM PHLOGI'STICUM. The buffy coat of the blood. See *Sanguis.*

Cork. See *Quercus suber.*

Corn. See *Clavus.*

Corn salad. See *Valeriana locusta.*

CORNACHI'NUS PULVIS. (So named after Cornachini, a physician of Pisa.) *Pulvis de tribus. Pulvis trium diabolorum. Pulvis comitis Warwicensis, Earl of Warwick's powder.* The preparations known under these names consist of scammony, diaphoretic antimony, and cream of tartar, in proportions varying according to different receipts. Cornachini wrote a whole book about his powder, the proportions of the ingredients of which he varied according to circumstances. Quincy tells us that the Earl of Warwick's powder is usually made in our shops, of scammony (prepared with fumes of sulphur) ℥ ij., diaphoretic antimony, ℥ j., crystals of tartar, ℥ ss. The dose for an adult is from grs. xv. to ℥ ss.

CO'RNEA. (*a*, *æ.* f.; so called, because it is of a horny consistence.) See *Oculus.*

CORNEA OPACA. The sclerotic coat of the eye. See *Oculus.*

CORNEA TRANSPARENS. *Cornea pellucida.* See *Oculus.*

CORNESTA. A chemical retort.

Cornflower. See *Centaurea cyanus.*

CORNI'CULA. (*a*, *æ.* f.; from *cornu*, a horn.) A kind of cupping instrument in the shape of a horn, with an aperture at the narrow end, through which the air is exhausted by drawing with the mouth.

CORNICULA'RIS PROCE'SSUS. Horn-shaped process. The coracoid process of the scapula has been so called.

CORNIFO'RMIS. (From *cornu*, a horn, and *forma*, resemblance.) Horn-shaped: applied to the nectary of plants: —*nectarium corniforme*, in the orchis tribe.

CO'RNINE. An alkaline substance discovered by Mr. Carpenter, of Philadelphia, in the *Cornus florida.* It appears to resemble quinine in its properties.

CO'RNU. (*Cornu*, n. indeclinable.) 1. The horn of an animal. See *Horn.*

2. A wart. See *Verruca.*

3. A corn or horny induration of the cuticle. See *Clavus.*

4. The lateral ventricles of the brain terminate in three angular cavities, which are called their *cornua*, or horns.

Cornu ammonis. *Cornu arietis.* When the pes hippocampi of the human brain is cut transversely through, the cortical substance is so disposed as to resemble a ram's horn. This is the true cornu ammonis, though the name is often applied to the *pes hippocampi* itself.

Cornu arietis. See *Cornu ammonis.*

Cornu cervi. Hartshorn. The horns of several species of stag, as the *Cervus alces*, *Cervus dama*, *Cervus elephas*, and *Cervus tarandus*, are used medicinally. Boiled, they impart to the water a nutritious jelly, which was formerly much in esteem. Hartshorn jelly is made thus: — Boil half a pound of the shavings of hartshorn, in six pints of water, to a quart; to the strained liquor add one ounce of the juice of lemon, or of Seville orange, four ounces of mountain wine, and half a pound of sugar; then boil the whole to a proper consistence. The horns, when calcined, afford the *cornu ustum* of the pharmacopœias. By distillation they yield the *liquor volatilis cornu cervi*, or spirit of hartshorn.

Cornu cervi calcinatum. See *Cornu ustum.*

Cornu monocero'tis. Unicorn's horn. See *Unicornu.*

Cornu ustum. *Cornu cervi calcinatum.* Burn pieces of hartshorn in an open fire, until they become thoroughly white; then powder, and prepare them in the same manner as is directed for chalk. Burnt hartshorn has been supposed to possess absorbent, antacid, and astringent properties. It consists of phosphate of lime, with minute proportions of carbonate of lime and phosphate of magnesia; it has evidently, therefore, no antacid or absorbent power, and is probably altogether inert as a medicine.

Cornua uteri. The horns of the womb. See *Uterus.*

Cornumu'sa. *Cornesta.* A retort. — *Morley.*

CO'RNUS. (*us*, *i.* f.) 1. The name of a genus of plants in the Linnæan system. Class, *Tetrandria*; Order, *Monogynia.*

2. The pharmacopœial name of the cornel tree. See *Cornus sanguinea.*

Cornus florida. A north American tree, the bark of which is recommended as a febrifuge.

Cornus mascula. An European tree, the fruit of which is of the size and form of an olive, and is edible. The bark is said to be febrifuge.

Cornus sanguinea. The fruit of this plant is moderately cooling and astringent. It yields an oil useful for burning.

Cornu'ta. A retort.

CORNU'TUS. Horn-shaped. Applied in botany to plants and parts of plants.

CO'ROA. *Coruova. Cornova.* The name of a bark lately introduced into Europe from the East Indies. The tree which affords it is not yet known. It is said to be a powerful bitter and febrifuge. Trommsdorff has found in it a peculiar soft resin and an aromatic bitter principle.

Corocrum. Yeast. — *Ruland.*

CORO'LLA. (*a*, *æ.* f.; from *coronula*, a little crown.) That part of a flower which is within the calyx, and immediately surrounds the organs of fructification. It consists of one or more petals, which are usually of a different colour from the leaves of the plant, and of a finer texture.

When a flower has only one covering, it may be doubtful whether this should be called a *calyx* or a *corolla*, nor have botanists agreed on any absolute criterion by which they are to be distinguished: when, however, it is green, and of a coarse texture, it is generally called a *calyx*, and when of any other colour, and of a fine texture, a *corolla.* The distinction may also be aided by the natural affinities of the plant.

There are four general divisions of corollæ:

1. *Monopetalous*, which consist of one petal; as in *Nicotiana tabacum.*

2. *Polypetalous*, having many; as in *Lilium candidum.*

3. *Compound*, consisting of many corollæ, which are not calyculated, and are on a common receptacle and calyx; as in *Helianthus annuus.*

4. *Aggregate*, consisting of many calyculated corollæ placed on a common calyx; as in *Scabiosa arvensis*, and *Echinops sphærocephalus.*

A. *Monopetalous.* This is formed of one petal, which, for the most part, forms a cavity, and is divided into

a. *Limbus*, the limb, which is the margin, or horizontal spreading portion.

b. *Tubus*, the tube, which is the cylindrical and inferior part, and is enclosed in the calyx.

c. *Fauces*, or the orifice of the tube.

From the figure of a *regular* or *uniform limb* are derived the following terms: —

1. *Corolla campanulata*, bell-shaped; as in *Campanula* and *Atropa.*

2. *Globosa*, globular; as in *Hyacinthus botryoides* and *Erica ramentacea.*

3. *Tubulosa*, tubular; as in *Primula* and *Erica massoni.*

4. *Claviculata*; as in *Erica tubiflora.*

5. *Cyathiformis*, cup-shaped; as in *Symphytum officinale.*

6. *Infundibuliformis*, funnel-shaped; as in *Nicotiana tabacum*, and *Datura stramonium.*

7. *Hypocrateriformis*, salver-shaped, a flat limb upon a long tube; as in *Vinca rosea.*

8. *Rotata*, wheel-shaped, that is, salver-shaped, with scarcely any tube; as in *Borago officinalis*, and *Physalis alkekengi.*

9. *Urceolata*, saucer-like; as in *Evolvulus alcinoides.*

10. *Contorta*, obliquely bent; as in *Vinca minor*, and *Nerium oleander.*

11. *Ligulata*, the tube very short, and ending suddenly in an oblong petal; as in the corolla of the radius of the *Helianthus annuus.*

From the figure of an *unequal limb*: —

1. *Corolla ringens*, irregular and gaping like the mouth of an animal; as in *Lamium album*, and *Salvia sclarea.*

2. *Personata*, irregular and closed by a kind of palate; as in *Antirrhinum majus.*

In the ringent and personate corollæ are to be noticed the following parts: —

a. *Tubus*, the inferior part.

b. *Rictus*, the space between the two lips.
c. *Faux*, the orifice of the tube in the rictus.
d. *Galea*, the helmet or superior arched lip.
e. *Labellum*, or *barba*, the inferior lip.
f. *Palatum*, the palate, an eminence in the inferior lip which shuts the rictus of a personate corolla.
g. *Calcar*, the spur which forms an obtuse or acute bag at the side of the receptacle.

3. *Corolla bilabiata*, two-lipped, the tube divided into two irregular lips opposite each other, without any visible rictus; as in *Aristolochia bilabiata*.

In the bilabiate corolla are to be noticed
a. The *tubus*.
b. The *faux*.
c. The *superior lip*, formed of one or two lobes.
d. The *inferior lip*, mostly three-lobed.
e. *One-lipped*, the upper or lower wanting; as in *Aristolochia clematitis*, and *Teucrium*.

Corolla infera means that the corolla is below the germen, which is its most common place; and *corolla supera*, that it is above the germen, as in roses.

B. *Corolla polypetala*, formed of many petals.

In the petal of this division are noticed
a. The *unguis*, or claw, the thin inferior part.
b. The *lamina*, or border, the broader and superior part; example, *Dianthus caryophyllus*.

From the *number* of *uniform* petals the corolla of this division is named
1. *Dipetalous*; as in *Euphorbia graminea*.
2. *Tripetalous*; as in *Tradescantia virginica*.
3. *Tetrapetalous*; as in *Chieranthus incanus*.
4. *Pentapetalous*; as in *Pæonia officinalis*.
5. *Hexapetalous*; as in *Lilium candidum*.
6. *Polypetalous*; as in *Rosa centifolia*.

From the *figure* the corolla is called,
1. *Malvaceous*; pentapetalous, with its claws united lateraliy, so that it appears monopetalous; as in *Malva sylvestris*, and *Alcea*.
2. *Rosaceous*; spreading like a rose, pentapetalous, almost destitute of claws; as in *Rosa canina*, and *Pæonia officinalis*.
3. *Liliaceous*, six or sometimes three-petalled, without a calyx; as in *Lilium candidum*.
4. *Caryophyllaceous*, five-petalled, with a long claw, spreading border, and a monophyllous tubular calyx; as in *Dianthus caryophyllus*, and *Saponaria officinalis*.
5. *Cruciform*, three-petalled, like a cross; as in *Sinapis alba* and *Lunaria alba*.
6. *Manifold*; many corals lying one on another; as in *Cactus flagelliformis*.

From the *figure* of *unequal petals* the corollæ are called,
1. *Orchideal*, with five petals, three of which are bent backward, and two are lateral and in the middle of these: the labellum is bent back into the nectary.
2. *Papilionaceous*, with four petals, irregular and spreading somewhat like a butterfly; as in *Lathyrus latifolius*, and *Robinia pseudacacia*.

In a *papilionaceous* corolla observe
a. The *vexillum*, the standard or large convex petal at the back.
b. *Alæ*, the wings, or two side-petals, placed in the middle.
c. The *carina*, or keel, consisting of two petals, united or separate, embracing the internal organs.

C. *Compound corolla*; consisting of numerous florets, not calyculate, and within a common perianthium.

We here distinguish
a. The *discus*, disk, or middle.
b. The *radius*, which forms the circumference. The marginal white florets of the daisy exemplify the rays, and the central yellow ones the disk.

From the difference in the florets of a compound flower, it is said to be,
a. *Tubulate*, when all the florets are cylindrical.
b. *Ligulate*, or *semiflosculose*, shaped like a strap or riband; as in *Leontodon taraxacum*.
c. *Radiate*, if the florets in the radius are ligulate, and those in the disk tubular.
d. *Semiradiate*, the radius consisting of only a few ligulate florets on one side; as in *Bidens*.

CORO'LLULA. (*a*, *æ*. f.; diminutive of *corolla*, a little wreath or crown.) The partial floret of a compound flower.

CORO'NA. (*a*, *æ*. f.) A crown. A term used in anatomy and botany to designate certain objects supposed to resemble a crown.

Corona ciliaris. The ciliary ligament.

Corona glandis. The margin of the glans penis.

Corona imperialis. The crown imperial. See *Fritillaria*.

Corona regia. See *Trifolium melilotus officinalis*.

Corona solis. See *Helianthus annuus*.

Corona terræ. The ground ivy. See *Glechoma*.

Corona veneris. An eruption of venereal blotches or pustules on the forehead.

Co'ronal suture. *Sutura coronalis*; *Sutura arcualis*. The suture of the head that extends from one temple across to the other, uniting the two parietal bones with the frontal. It is called coronal, because it was on this part of the head that the ancients wore their *coronæ*, or garlands.

Corona'riæ. The name of an order of plants in Linnæus's Fragments of a Natural Method, consisting of such as have beautiful flowers, thus forming a floral crown.

Corona'rius. See *Coronary*.

CO'RONARY. (*Coronarius*; from *corona*, a crown.) This term is applied in anatomy to several parts because they surround others, or for some less obvious reason.

Coronary arteries of the heart. Two arteries which supply the substance of the heart with blood. See *Heart*.

Coronary ligament of the radius. The ligament which surrounds the neck of the radius, and connects it with the ulna. It is called also the *annular* and the *orbicular* ligament.

Coronary ligament of the liver. See *Hepar*.

Coronatæ plantæ. The name of a class of plants in Linnæus's Fragments of a Natural Method, consisting of plants which have the seed-bud crowned by the flower cup.

CORONA'TUS. Coronate; applied to a

petal which has little crown-like eminences; as in *Nerium oleander.*

CORO'NE. (Κορωνη, a crow: so named from its supposed likeness to a crow's bill.) The acute process of the lower jaw-bone.

CO'RONOID. (*Coronoides, Coronoideus;* from κορωνη, a crow, and ειδος, likeness.) Processes of bones are so called, that have any resemblance to a crow's beak; as coronoid process of the ulna, jaw, &c.

CORO'NOPUS. (*us, odis.* m.; from κορωνη, a crow, and πους, a foot; so called from the resemblance of its leaf to a crow's foot.) See *Plantago.*

CORO'NULA. (*a, æ.* f.; diminutive of *corona.*) The hem or border which surrounds the seeds of some flowers in the form of a crown.

Corpora albicantia. Two white eminences at the base of the brain; called also *corpora albicantia Willisii.* See *Encephalos.*

Corpora Cavernosa Penis. See *Penis.*

Corpora geniculata. Two small eminences at the lower and outer part of the optic thalami. See *Encephalos.*

Corpora olivaria. Two prominences of the medulla oblongata; so named from their being shaped somewhat like an olive. See *Encephalos.*

Corpora ovata. See *Corpora olivaria.*

Corpora pyramidalia. Two eminences of the medulla oblongata; so called from their pyramidal shape. See *Encephalos.*

Corpora quadrigemina. See *Tubercula quadrigemina.*

Corpora restiformia. Two eminences situated one on each side of the upper part of the medulla oblongata. See *Encephalos.*

Corpora sesamoidea. *Corpuscula Arantii. Corpuscula Morgagni.* The small hard granules on the loose edge of the semilunar valves of the aorta and pulmonary artery. See *Heart.*

Corpora striata. See *Encephalos.*

Corpora'tio. The incorporation or blending together of substances. A term used by the old chemists and pharmaceutists.

Corpulency. (*Corpulentia, æ.* f.) See *Polysarcia.*

CORPUS. (*us, oris.* n.) A body; matter of whatever kind. See *Body.*

2. In *Pharmacy*, the basis of a formula was formerly called *corpus;* thus, oil of nutmeg was called *corpus pro balsamo*, because it was used as the basis of factitious balsams.

Corpus annulare. See *Pons varolii.*

Corpus callo'sum. *Commissura magna cerebri. Great commissure of the brain.* The white medullary part joining the two hemispheres of the brain, and coming into view under the falx of the dura mater when the hemispheres are drawn from each other.

Corpus cavernosum clitoridis. See *Clitoris.*

Corpus cavernosum penis. See *Penis.*

Corpus cinereum. See *Corpus dentatum.*

Corpus denta'tum. *Corpus cinereum. Corpus rhomboideum.* A portion of cineritious matter observed in the cerebellum. See *Encephalos.*

Corpus fimbria'tum. The flattened termination of the posterior crus of the fornix of the brain. See *Encephalos.*

Corpus glandulosum. The prostate gland. *Highmorianum.* See *Testicle.*

Corpus luteum. A yellow spot found in that part of the ovarium of females from whence an ovum has proceeded: hence their presence generally determines that the female has been impregnated. The number of the *corpora lutea* corresponds with the number of impregnations. It is, however, asserted by a modern writer, that *corpora lutea* have been detected in young virgins, where no impregnations could possibly have taken place.

Corpus mucosum. See *Cutis.*

Corpus nerveo-spongiosum. The cavernous substance of the penis.

Corpus nervosum. The cavernous substance of the clitoris.

Corpus pampiniforme. (*Pampiniforme;* from *pampinus*, the tendril of a vine.) The plexus formed by the spermatic veins around the spermatic artery.

Corpus papilla're. The nervous and vascular papillæ of the rete mucosum have been so called.

Corpus pro balsamo. See *Corpus.*

Corpus psalloides. See *Lyra.*

Corpus pyramida'le. 1. An eminence on each side of the medulla oblongata. See *Corpora pyramidalia.*

2. The plexus formed by the spermatic veins, usually called *corpus pampiniforme.*

Corpus reticulare. See *Rete mucosum.*

Corpus reticulare malpighi. See *Rete mucosum.*

Corpus rhomboideum. See *Corpus dentatum.*

Corpus spongiosum urethræ. *Substantia spongiosa urethræ. Corpus spongiosum penis.* The spongy structure around the urethra. It commences before the prostate gland, surrounds the urethra, and forms the *bulb;* then proceeds to the end of the corpora cavernosa, and terminates in the *glans penis*, which it forms.

Corpus striatum. See *Encephalos.*

Corpus varicosum. The spermatic plexus of vessels.

Corpu'scle. (*Corpusculum, i.* n.; dim. of *corpus.*) A very minute body; an atom.

Corpuscula Arantii. See *Corpora sesamoidea.*

Corrago. See *Corago.*

Correctio. In *Pharmacy*, the action of a corrigent. See *Corrigens.*

CO'RRIGENS. *Correctorius.* Corrigent. This name is given to any substance in a medical formula or prescription which is intended to modify or render milder the action of another.

Co'rrigia. (Leather thongs.) The tendons of the muscles have been so called.

Corrigiola. An old name of the *Polygonum aviculare.*

CORRO'BORANT. (*Corroborans:* from *corroboro*, to fortify or strengthen.) Possessed of the power of strengthening. See *Tonic.*

Corrosive sublimate. See *Hydrargyri bichloridum.*

CORRUGA'TOR. (*or, oris.* m.; from *corrugo*, to wrinkle.) A muscle, the office of which is to wrinkle or corrugate the part it acts on.

Corrugator supercilii. A small muscle situated on each side of the forehead. *Musculus supercilii*, of Winslow; *Musculus frontalis verus, seu corrugator Coiterii*, of Douglas. Its use is to knit the brows.

Corset de Brasdor. A bandage used by Brasdor in fracture of the clavicle.

CORTEX. (*ex, icis.* m. or f.) 1. The common integument of plants, analogous to the skin of animals. See *Bark.*

2. The Peruvian bark. See *Cinchona.*

Cortex angelinæ. See *Andira.*

Cortex angusturæ. See *Cusparia.*

Cortex antiscorbuticus. See *Wintera aromatica.*

Cortex aromaticus. See *Wintera.*

Cortex bela-aye. See *Nerium.*

Cortex canellæ malabaricæ. See *Laurus cassia.*

Cortex cardinalis de lugo. See *Cinchona.*

Cortex caryophylloides. See *Laurus culilawan.*

Cortex cerebri. The cortical substance of the brain. See *Encephalos.*

Cortex chinæ regius. See *Cinchona.*

Cortex chinchinæ. See *Cinchona.*

Cortex elutheriæ. See *Croton.*

Cortex geoffroyæ jamaicensis. See *Geoffroya jamaicensis.*

Cortex jamaicensis. See *Achras.*

Cortex la'vola. The bark bearing this name is supposed to be the produce of the tree which affords the *Anisum stellatum.* See *Illicium anisatum.*

Cortex magellanicus. See *Wintera.*

Cortex massoy. Massoy bark. The produce of an unknown tree of New Guinea, where it is beaten into a pultaceous mass with water, and rubbed upon the abdomen to allay pain of the bowels. It has the smell and flavour of cinnamon.

Cortex patrum. See *Cinchona.*

Cortex peruvianus. See *Cinchona.*

Cortex peruvianus flavus. See *Cinchona.*

Cortex peruvianus ruber. See *Cinchona.*

Cortex poggereæ. A bark sent from America; said to be serviceable in diarrhœas and dysenteries. The tree which produces it is unknown.

Cortex quassiæ. See *Quassia amara.*

Cortex winteranus. See *Wintera aromatica.*

CO'RTICAL. (*Corticalis;* from *cortex.*) Appertaining to or resembling bark. In *Anatomy*, the external portion of the brain and kidney are denominated the *cortical substance.* See *Encephalos* and *Kidney.*

CORTICO'SUS. Like bark, or rind. Applied in *Botany* to hard woody pods, as those of the *Cathartocarpus fistula.*

CORTU'SA. 1. A name of the wood sanicle. See *Sanicula europea.*

2. The name of a genus of plants. Class, *Pentandria;* Order, *Monogynia.* The *Cortusa matthioli* has been thought useful in rheumatism.

Coru. A tree mentioned by Dalechamps as growing in China, Japan, Malacca, and Bengal. The bark of its root yields a milky juice used against diarrhœa and dysentery. The bark of the stem is employed with the same intention. This tree has been thought to be the *Tabernæmontana citrifolia*, or the *Nerium antidysentericum.*

CORY'DALES. (From κορυς, a helmet.) The name of an order of plants in Linnæus's Fragments of a Natural Method, consisting of plants which have flowers somewhat resembling a helmet or hood.

Cory'daline. An alkaline substance found by Wackenroder in the *Corydalis bulbosa.*

CO'RYLUS. (*us, i.* f.; derivation unknown.) 1. The name of a genus of plants in the Linnæan system. Class, *Monœcia;* Order, *Polyandria.*

2. The pharmacopœial name of the hazel-tree. See *Corylus avellana.*

Corylus avella'na. The hazel-nut tree. *Corylus avellana — stipulis ovatis, obtusis,* of Linnæus. The nuts of this tree are eaten in this country. They are hard of digestion, and often pass the bowels very little altered; they contain, however, a nutritious oil. An oil is also obtained from the wood of the tree, which is said to be efficacious against the toothach, and to kill worms.

CORYMBI'FERÆ. A natural family of plants which bear corymbal flowers.

CORY'MBUS. (*us, i.* m. Κορυμβον, or κορυμβος, a branch or cluster, crowning the summit of a plant; from κορυς, a helmet.) A corymb. That species of inflorescence formed by many flowers, the partial flower-stalks of which are gradually longer, as they stand lower on the common stalk, so that all the flowers are nearly on a level; as in the *Chrysanthemum corymbosum.* It is said to be *simple*, when not divided into branches; as in *Thlaspi arvense*, and *Gnaphalium dentatum;* and *compound*, when it has branches; as in *Gnaphalium stœchas.*

CO'RYPHA. A genus of palms.

Corypha rotundifolia. This species yields a kind of sago.

Corypha umbraculi'fera. The Talipot palm. This majestic palm, a native of Ceylon and Malabar, is celebrated for the immense size of its leaves, which will cover from fifteen to thirty or forty men, and are used for making umbrellas and other purposes. The pith of the young plant is made into cakes, and used as bread. It bears fruit only in the last year of its life, and the fruit is not esculent.

Co'ryphe. Κορυφη. 1. The vertex of the head.

2. The extremities of the fingers.

3. The apex of the heart.

CORY'ZA. (*a, æ.* f. Κορυζα; from καρα, the head, and ζεω, to boil.) Dr. Good says that coryza is a very genuine and a very extensive, as well as a very ancient, oriental term, common, under some modification or other, to the Hebrew, Arabic, Chaldee, and Syriac dialects; from one of which it was undoubtedly imported into the Greek tongue. By Hippocrates it was used in a very extensive sense, so as to signify defluxion of any kind, whether from the head, nostrils, fauces, or chest. The later Greek physicians restrained coryza to a defluxion from the head and nostrils, and ap-

plied the term *catastagmus* to a defluxion from the fauces and thorax.

Cos MEDICA. (*Cos, cotis;* a whet-stone.) A stone slab on which ointments and other medicaments are prepared.

Coscu'LIA. The grains of kermes.

COSME'TIC. (*Cosmeticus;* from κοσμεω, to adorn.) An external medicine used to beautify the skin.

Co'SMOS. A regular series. Hippocrates applies it to the order and series of critical days.

Co'SSIS. A little tubercle in the face, like the head of a worm.

Co'SSUM. A malignant ulcer of the nose mentioned by Paracelsus.

CO'STA. (*a, æ.* f.) 1. In *Anatomy*, the rib of an animal. The ribs are the long curved bones which are placed in an oblique direction at the sides of the chest. Their number in man is generally twelve on each side; but in some subjects it has been found to be thirteen, and in others, though more rarely, only eleven. They are distinguished into true and false ribs. The seven upper ribs, which are articulated to the sternum, are called *true* ribs; and the five lower ones, which are not immediately attached to that bone, are called *false* ribs. At the posterior extremity of each rib we observe a small head, divided by a middle ridge into two articulating surfaces, covered with cartilage, which are received into two cavities contiguous to each other, and formed in the upper and lower part of each dorsal vertebra, as we have observed in our description of the spine. This articulation, which is secured by a capsular ligament, is a species of ginglymus, and allows only of motion upwards and downwards. The head of each rib is supported by a short neck, and immediately beyond this we find a flattened tubercle, affording an oblong and slightly convex surface, which is articulated with the transverse process of the lowest of the two dorsal vertebræ, with which its head is articulated. At some little distance from this tuberosity, the rib makes a considerable curve, which is usually called its angle. From the tubercle to the angle the ribs are of considerable thickness, and approaching to a cylindrical shape; but, from the angle to their anterior extremity, they become thinner and flatter. To this anterior extremity is fixed a long, broad, and strong cartilage, which, in each of the true ribs, reaches to the sternum, where its articulation is secured by a capsular ligament, and by other ligamentous fibres. The cartilages of the sixth and seventh ribs being longer than the rest, are extended upwards, in order to reach the sternum, the inferior portion of which is about on a level with the fifth rib. The cartilages of these two ribs are usually united into one, so as to leave no space between them. The false ribs are supported in a different manner; their cartilages terminate in an acute point before they reach the sternum, the eighth rib being attached by its cartilage to the lower edge of the cartilage of the seventh, or last of the true ribs; the ninth in the same manner to the eighth; and the tenth to the ninth; the cartilages of each rib being shorter than that of the rib above it. The eleventh and twelfth, which are the two lowermost ribs, are not fixed at their anterior extremities like the other ribs, but hang loose, and are supported only by their ligamentous fibres, and by muscles and other soft parts.

The external surface of each rib is somewhat convex, and its internal surface slightly concave. On the inferior and interior surface of these bones we observe a long fossa, for the lodgment of the intercostal vessels and nerves. This channel, however, does not extend through the whole length of the rib, being observable neither at the posterior extremity, where the vessels have not yet reached the bone, nor at the fore-end, where they are distributed to the parts between the ribs. We seldom see any marks of it in the short ribs, as in the first, second, eleventh, and twelfth.

Thus far we have given a description, which is applicable to the ribs in general; but, as we find them differing from each other in shape, length, situation, and other respects, it will be right to speak of each rib in particular.

The *first* rib, which is the shortest of any, is likewise the most curved. It is broader than the other ribs, and, instead of being placed, as they are, obliquely, and with its edges upwards and downwards, it is situated nearly in a transverse direction, one of its edges being placed inwards or nearly so. Of these edges, the inner one is sharp, and the outer one somewhat rounded. Its inner surface is smooth, and its superior surface is sometimes slightly depressed anteriorly by the clavicle. The head of this rib, instead of being angular, is flattened, and slightly convex, being received into a cavity, which is formed wholly in the first vertebra, and not by two vertebræ, as in the case with the other ribs.

The *second* rib is longer than the first, but shorter than the ribs below it. Its angle is placed at a small distance from its tuberosity, and its head is articulated with two vertebræ, like the other ribs. The other ten ribs, the two last only excepted, differ from the general description we have given, chiefly in the difference of their length, which goes on gradually increasing, from the first or uppermost, to the seventh or last of the true ribs, and as gradually diminishing from that to the twelfth. Their obliquity, in respect to the spine, likewise increases as they descend, as does the distance between the head and angle of each rib, from the first rib to the ninth. The two lowest ribs differ from all the rest in the following particulars: — Their heads, like that of the first rib, are rounded, and received into a cavity formed entirely in the body of one vetebra; they have no tubercle for their articulation with the transverse processes, to which they are only loosely fixed by ligaments, and, in this respect, the tenth rib is sometimes found to agree with them: they are much shorter than the rest of the false ribs, and the twelfth is still shorter than the eleventh. The length of the latter, however, is different in different subjects, and is not always found to be the same on both sides. Anteriorly, as we have already observed, their cartilages are short and loose, not being attached to the cartilages

of the other ribs; and this seems to be, because the most considerable motions of the trunk are not performed on the lumbar vertebræ alone, but likewise on the lower vertebræ of the back; so that if these two ribs had been confined anteriorly, like the rest, and likewise united to the bodies of two vertebræ, and to the transverse process, this disposition would have impeded the motion of the two last vertebræ of the back, and consequently would have affected the motion of the trunk in general.

The use of the ribs is to give form to the thorax, and to cover and defend its viscera; also to assist in breathing; for they are joined to the vertebræ by regular hinges, which allow of short motions, and to the sternum by cartilages, which yield to the motion of the ribs, and return again when the muscles cease to act.

2. In *Botany*, the thick nerve-like cords of a leaf, which proceed from the base to the apex, are called ribs. See *Leaf.*

Costa herba. See *Hypochæris.*

Costa pulmonaria. See *Hypochæris.*

COSTAL. (*Costalis;* from *costa*, a rib.) Belonging to a rib; applied to muscles, arteries, nerves, &c.

COSTA'TUS. Ribbed: applied to leaves which have elevated lines extending from the base to the point. See *Leaf.*

Costiveness. See *Constipation.*

COSTO-HYOIDEUS. A muscle so named from its origin and insertion. See *Omo-hyoideus.*

CO'STUS. (*us, i.* m.; from *kasta*, Arabic.) The name of a genus of plants in the Linnæan system. Class, *Monandria;* Order, *Monogynia.*

Costus amarus. See *Costus arabicus.*

COSTUS ARABICUS. The sweet and bitter costus. *Costus indicus; amarus; dulcis; orientalis.* The root of this tree possesses bitter and aromatic virtues, and is considered as a good stomachic. It is also said to be diaphoretic, diuretic, and emmenagogue. Formerly there were two species, the *bitter* and *sweet*, distinguished for use. It is generally believed, however, that they are the same, the root acquiring a bitter flavour by keeping.

Costus corticosus. See *Wintera aromatica.*

COSTUS HORTORUM MINOR. The *Achillæa ageratum.*

COSTUS NIGRA. The artichoke.

COTARONIUM. A name given by Paracelsus to an imaginary liquor, which was an universal solvent.

CO'TIS. Κοτις. The back part of the head. — *Hippocrates.*

Cotton. See *Gossipium herbaceum.*

Cotton-weed. See *Filago.*

CO'TULA. (*a, æ.* f.) Stinking chamomile.

Cotula fœtida. See *Anthemis cotula.*

CO'TULE. (*e, es.* f. Κοτυλη, the name of an ancient measure.) The socket of the hip-bone. See *Acetabulum.*

COTYLE'DON. (*on, onis.* f.; same etymon.) 1. A seed-lobe, or cotyledon. The *cotyledons* are the two halves of a seed, which, when germinating, become two pulpy leaves, called the *seminal leaves.* These leaves are often of a different *form* from those which are about to appear; as in the *Raphanus sativus:* and sometimes they are of another *colour;* as in *Cannabis sativa*, the seminal leaves of which are white.

Almost all the cotyledons wither and fall off, as the plant grows up.

These bodies are spoken of in the plural, because it is much doubted whether any plant can be said to have a solitary cotyledon. Most plants are *dicotyledonous.* Plants without any cotyledons are called *acotyledonous.* Those with more than two, *polycotyledonous.*

Between the two cotyledons of a germinating seed, is seated the *embryo*, or germ of the plant, called by Linnæus, *corculum*, or little heart. Mr. Knight denominates it the germen: but that term is appropriated to a very different part, the rudiment of the fruit. The expanding embryo, resembling a little feather, has, for that reason, been called by Linnæus, *plumula:* it soon becomes a tuft of young leaves, with which the young stem ascends. See *Corculum.*

2. The word has the same significations as *acetabulum*, which see.

COTYLOID CAVITY. (*Cotyloides;* from κοτυλη, the name of an ancient measure, and ειδος, resemblance.) The socket which receives the head of the thigh-bone.

COUCHING. A surgical operation which consists in removing the opake lens out of the axis of vision, by means of a needle constructed for the purpose.

Couch-grass. See *Triticum repens.*

COUGH. A cough is, by the Latins, called *tussis*, and by the Greeks, *bex.* It is a sonorous and violent expulsion of air from the lungs, and is well known to accompany, as a symptom, a great multiplicity of other affections; thus it occurs in pleurisy, pneumonitis, quinsy, asthma, catarrh, phthisis, hysteria, &c.: on this account some nosologists, and amongst them Dr. Cullen, have omitted cough as an idiopathic disease, and have only introduced it as synonymous with catarrh, though it belongs as much to phthisis. Cough is doubtless most frequently a symptom of some other complaint; but it is at times as truly idiopathic as any other disease, and ought to be treated as such. In the act of coughing, the lungs, like the stomach in vomiting, continue inert; and the spasmodic action by which the lungs are emptied, is performed by the muscles of respiration. "It is not necessary," observes John Hunter, "that the stomach should act violently, to produce the evacuation of its contents; nor is it even necessary that it should act at all: for the lungs themselves do not act in the least when any extraneous matter is to be thrown up; and coughing is to the lungs what vomiting is to the stomach. The muscles of respiration are the active parts in emptying the lungs, and can act naturally and preternaturally. The action of vomiting is performed entirely by the diaphragm and abdominal muscles; and we know, by the same action, that the contents of the rectum can be expelled." Generally speaking, idiopathic cough is not dangerous in itself, or while running its regular course: but it has often proved highly dangerous in its results, by superin-

ducing inflammation of some organ, an hæmoptoe, or phthisis.

A cough is in some cases attended by expectoration, and sometimes it exists without any: hence the distinction of cough into moist or *mucous*, and *dry* cough.

The *mucous cough*. — This has been named by writers, *anaptysis*, *anacatharsis*, *tox humida*, and *tussis humida*. The expectoration is chiefly mucous, and is excreted very freely. The exhalents of the mucous membrane of the bronchia are stimulated by an irritation of some kind or other, frequently by a reverse sympathy, in consequence of cold and torpid feet, to act more powerfully than in a state of ordinary health, whence the bronchial vessels become overloaded, and relieve themselves by an expectoration that takes place freely, and without the hoarseness that usually accompanies catarrh, or any considerable disturbance of the respiratory organs. This kind of cough is often a chronic disease in old age, when it takes place in long paroxysms, with a viscid and mucous discharge, excreted with some difficulty, and more or less of difficulty of breathing. Here the bronchial secretion of mucous is, perhaps, less copious than in ordinary health; but the action of the absorbents being as weak and sluggish as that of the excretories, the thinner parts of the mucus alone are imbibed and carried off: and hence what remains is necessarily small in quantity, peculiarly tenacious, and thrown up with great labour and repeated efforts. A cough of this nature, though common to persons advanced in life, occurs also to those whose lungs and bronchial vessels are rendered weak and irritable from a neglect of common mucous coughs, which have thus become habitual, and which are much increased on every change of atmosphere, and particularly during the inclemency of winter.

In some cases, the fluid that is coughed up is thin, frothy, and saline, and generally a depraved secretion: constitutions that are gouty, rheumatic, and bilious, and more especially such as have had occasional attacks of chronic hepatitis, are subject to this kind of expectoration and cough.

The *dry cough*. — There is a cough which is mostly unattended by any expectoration, and which often returns periodically. It is observed in highly irritable, nervous, and hysterical constitutions, and is obviously *nervous*.

With respect to the treatment of cough: that which is produced by cold, requires diaphoretics, demulcents, and expectorants; and laxatives, with small doses of henbane to allay the bronchial irritation, and a diet properly regulated according to circumstances. Where the symptoms assume an inflammatory character, the treatment recommended in acute bronchitis becomes applicable. Where the cough has become more habitual, and attends old age, the more stimulating expectorants are useful, as garlic, ammoniacum, benzoin, styrax; and, where the expectoration is considerable and the temperament phlegmatic, the vapour of tar inhaled twice a day for half an hour at each time, and the internal use of tar water. The nervous cough requires narcotics and antispasmodics; of the former, conium and henbane will generally be found to answer best, and of the latter, volatile alkali: there is less objection to the use of opium in the dry nervous cough, than where the secretion of the bronchial membrane is increased; and a diaphoretic opiate is often very useful in the case under consideration.

The *hooping-cough* is a specific disease, and requires separate consideration. See *Pertussis*.

Cough bronchial. See *Cough tubal*.

Cough, cavernous. The resonance of the cough, heard when the stethoscope is applied over an excavation in the lungs, is termed the *cavernous cough*.

Cough, tubal. When the lungs are hepatised, the cough, as heard through the stethoscope, applied over the trachea, root of the bronchi, and even over the subdivisions of the bronchi no larger than a goose-quill, gives, besides its natural shock, a sensation as of air passing through a tube. This is called *tubal* or *bronchial* cough.

Counter-opening. See *Contra-apertura*.

Coup de soleil. Stroke of the sun. A French term which has been used to signify any malady produced by exposure to the sun's rays, as erysipelas, apoplexy, phrenitis, &c.: it is generally restricted, however, to that form of phrenitis not uncommon in tropical climates, which arises from exposing the head uncovered to the full heat of the sun.

Courap. The vernacular name in India for cutaneous diseases attended with itching, as porrigo, scabies, &c.

Cou'rbaril. See *Hymenæa courbaril*.

Couro'ndi. An evergreen tree of India, said to be antidysenteric.

Courou moelli. A shrub of India, said to be antivenomous. It is the *Flacurtia sepiaria* of Roxburgh.

Couscous. An African food much used about the river Senegal. It is a composition of the flour of millet, with some flesh, and the bark called *lalo*. See *Adansonia digitata*.

Couvre-chef. The French name of a bandage for the head. See *Cucullus*.

Covolam. See *Crateva marmelos*.

Cow. See *Bos taurus*.

Cowhage. See *Dolichos pruriens*.

Cow-itch. See *Dolichos pruriens*.

Cowper's glands. (*Glandulæ Cowperi*; named from Cowper, who first described them.) Two small muciparous glands, each about the size of a pea, situated at the sides of the membranous part of the urethra in the male, before the prostate gland. See *Urethra*.

COW-POX. *Vaccinia*. *Variola vaccina*. Any pustulous disease affecting the cow may be called the cow-pox: whether it arises from an over distension of the udder, in consequence of a neglect in milking the cow, or from the sting of an insect, or any other cause. But the species which claims our particular attention, is that which was recommended to the world by Dr. Jenner, in the year 1798, as a substitute for the small-pox. This was supposed by Dr. Jenner, and a number of succeeding inquirers, to originate from the disease called the *grease*

in the horse's heel, and to be accidentally communicated to the cow. This, however, is now known to be an error; and it is perfectly established that there are two independent sources of the virus called *vaccine*, namely, the heel of the horse when affected with grease, and the udder of the cow, from either of which the disease called vaccinia or cow-pox may be communicated to the human subject. It is also found that the grease of the horse's heel will produce cow-pox in the cow, although the latter also originates in the cow, without any infection from the horse.

The genuine cow-pox appears on the teats of the cow, in the form of vesicles, of a blue colour approaching to livid. These vesicles are elevated at the margin, and depressed at the centre. They are surrounded with inflammation. The fluid they contain is limpid. The animals are indisposed; and the secretion of milk is lessened. Solutions of the sulphates of zinc and copper are a speedy remedy for these pustules; otherwise they degenerate into ulcers, which are extremely troublesome. It must, however, be recollected, that much of the obstinacy attending these cases is owing to the friction of the pustules, in consequence of milking.

Similar effects are produced in the hands of the milkers, attended with febrile symptoms, and sometimes with tumours in the axilla. Other parts, where the cuticle is abraded, or where it is naturally very thin, are also liable to the same affection, provided active matter is applied. It even appears that, in some instances, pustules have been produced by the application of vaccine virus to the sound and perfect cuticle. One case of this kind may be found in a letter from Dr. Fowler, of Salisbury, to Dr. Pearson, published in the first work of Dr. Pearson on this subject.

Genuine cow-pox, as it appears in the cow, is an epizootic disease, and seldom, if ever, appears except when cattle are collected together in herds. It is not frequent under any circumstances; and, in the year 1828, the inquiries of the National Vaccine Board failed to discover a single instance of it in England. The disease appears to be sometimes slight, and chiefly confined to the udder; but it is occasionally very severe and fatal, accompanied with much fever, and a general eruption over the body. It is, therefore, in no instance a merely local disease, but an eruptive fever like the small-pox and measles in man. Cows are subject to other pustular diseases of the udder which, however, have nothing specific in their nature. The pustules have not the blue tint of the vaccine vesicle; they are not surrounded by erysipelatous redness; they are unattended by constitutional disturbance; they scab quickly, and do not occasion ulceration.

Dr. Jenner elucidated one point of the first importance, relative to the genuine cow-pox. It had frequently been observed, that when this disorder prevailed in a farm, some of the persons who contracted it by milking were rendered insusceptible of the small-pox, while others continued liable to that infection. This was owing to the different periods at which the disease was excited in the human subject. One person, who caught the disease while the virus was in an active state, was rendered secure from variolous contagion; while another, who received the infection of the cow-pox when it had undergone a decomposition, remained susceptible of the small-pox. This apparent uncertainty of the prevention was probably the reason why it was not before introduced into practice.

From the violent opposition which vaccine inoculation has met with, in consequence of casual failures, it may be doubted whether the public would ever have adopted the practice, had not this fallacy been detected by Dr. Jenner. To him, also, we are indebted for another discovery of the first importance, namely, that the vesicle excited in the human subject by vaccine matter, yields a fluid of a similar nature with that which was inserted. This experiment, so essential to the general extension of the practice, and so happy in its result, was never before attempted: it was reserved to crown the labours of Dr. Jenner.

A considerable number of instances are on record, to prove that farriers and others, who receive infection from the heel of a horse, are either partly or totally deprived of the susceptibility of the small-pox. When Dr. Jenner first published an account of his discoveries, this point was enveloped in some degree of obscurity. He then conceived, that the matter of grease was an imperfect preservative against the small-pox. This opinion was founded on the following circumstance: — It had been remarked, that farriers either wholly escaped the small-pox, or had that distemper in a milder manner than other people. This, however, is easily reconcilable to reason, if we only suppose, that in some cases the infection is communicated when the virus possesses all its prophylactic virtue; and in others, when its specific quality is in some measure lost.

This variation in the effects produced by the virus of the horse, inclined Dr. Jenner to believe that it was modified, and underwent some peculiar alteration in the teats of the cow. He concluded, that it is perfect when it excites the genuine disease in the cow; yet that a considerable advantage is derived from its being transferred to the latter animal, the nipples of which furnish a more obvious and a more abundant source of this inestimable fluid.

It is now ascertained, however, that the horse and the cow each furnish, independently of the other, a virus capable of communicating genuine cow-pox to the human subject. According to Dr. De Carro, the whole of British India was *equinated*, or originally derived the vaccine disease from the grease of a horse's heel at Milan.

A point respecting vaccine inoculation, which has been much controverted, is the permanency of its effects. Instances have been known where persons have escaped the small-pox for a number of years, and yet have ultimately proved not insusceptible of its infection. Hence many have been of opinion that the influence of vaccination on the system is impaired by time, and it has been contended that, at the ex-

piration of seven, ten, or fourteen years, the system becomes again susceptible of the variolous poison. The question cannot be considered as absolutely decided; on the whole, however, it seems probable that vaccination generally confers a permanent immunity from small-pox; but that a few exceptions to this rule occur, and that the great changes in the constitution sometimes induced by puberty, change of climate, and other less obvious causes, render some individuals liable to small-pox after vaccination.

A number of cases are recorded by Dr. Jenner, and other authors who have written on this subject, in which persons who have received the cow-pox by casual infection, twenty, thirty, forty, and fifty years before, still continued insusceptible of variolous contagion, in whatever form it was applied.

It was till lately denied by the more enthusiastic advocates of vaccination, that small-pox could ever occur after the genuine cow-pox; accumulated evidence to the contrary has, however, convinced dispassionate reasoners of the untenability of this position. The truth is, that vaccination, in a great majority of instances, confers a complete and permanent security against small-pox, but that this law is subject to exceptions. It is also perfectly established that, where the small-pox does occur after vaccination, it is generally divested of its formidable characters, and constitutes a comparatively mild disease: this is now recognised under the name of *modified small-pox*.

As the cow-pox destroys the susceptibility of the small-pox, so the small-pox destroys that of the cow-pox. To this general rule, however, a few exceptions are said to have occurred. Certain it is, that a pustule has now and then been excited by the insertion of vaccine virus, in those who have had the small-pox, and that this pustule has been known to yield the genuine virus; but it is not equally certain that the pustule has been perfect in all respects. Possibly it may have been defective in point of size or duration, in respect to its areola, or the limpidity of its contents. That such a pustule has, in some instances, yielded effectual virus, is admitted; but this is no more than what has often happened, in cases where persons who have had the small-pox are a second time inoculated with the variolous poison.

From the mutual prophylactic influence of cow-pox and small-pox, it has been surmised that they are in reality the same disease, and that the cow-pox is merely the small-pox modified by the constitution of the cow. This opinion was held by Jenner, who considered swine-pox, chicken-pox, cow-pox, and small-pox as essentially the same disease. He believed cow-pox to be the primitive disease from which all the rest spring, and small-pox its severest form. These views of Jenner, taken up on theoretical grounds, were supported by some and opposed by others, without any direct appeal to experiment, till lately. Within the last few years, however, Dr. Sonderland, of Bremen, has made experiments on cows, the alleged result of which is that these animals may be infected with the *cow-pox* by inhaling the effluvia of blankets saturated with the virus of the human *small-pox*. Other experiments are stated to have been made in Egypt, in which the cow inoculated with small-pox became affected with genuine cow-pox, affording a fine active lymph. These experiments, repeated by Dr. Gregory at the London Small-pox Hospital, by M. Numann at Utrecht, and by Mr. Macpherson in India, have *failed altogether*; and this, in conjunction with the loose manner in which the former experiments are detailed, divests them so much of credibility, that they may fairly be considered as worthy of little attention; and the general belief of pathologists in the present day, is that small-pox and cow-pox derive their origin from sources perfectly distinct.

The artificial cow-pox in the human subject is much milder than the casual disease; incomparably milder than the small-pox, even under the form of inoculation; and, unlike the latter disease, it is not communicable by contagious effluvia.

Cow-pox produces no pustulous eruptions. When such attend vaccine inoculation, they are owing to some adventitious cause; such as the small-pox, which it is well known may co-exist with the cow-pox. The vaccine vesicle is confined to the parts where matter is inserted; nevertheless, it is certain, that eruptions of other kinds, in some instances, attend vaccine inoculation; such as a nettle-rash, or an eruption resembling a tooth-rash, but rather larger than what is commonly called by that name.

That the cow-pox is not infectious by effluvia, is naturally concluded from its never being communicated from one person to another in the dairies, where the disease is casual, and appears under its worst form. The same inference may be drawn from its never spreading in a family, when only one person is inoculated at a time. To confirm this proposition more fully, the vaccine pustules have been ruptured, and persons who have never had the disorder have been suffered to inhale the effluvia several times a day, but to no purpose.

As to the constitutional indisposition, it is seldom considerable, unless there is a complication of this with some other distemper; and whenever any unfavourable symptoms appear, they may in general be traced to some other cause. We have, indeed, great reason to believe, that no ill-consequence ever arises from the cow-pox itself, unless from ignorance or neglect.

But notwithstanding the symptoms are so mild, they frequently occur at a very early period. A drowsiness, which is one of the most common attendants of the disease, is often remarked by the parents themselves, within forty-eight hours after the matter is inserted. In a majority of cases, a slight increase of heat is perceptible, together with an acceleration of the pulse, and other signs of pyrexia; but not in such a degree as to alarm the most timorous mother. Sometimes the patient is restless at nights; and now and then a case is met with in which vomiting occurs; but, in many cases, no constitutional indisposition can be perceived. It is not found that the mildness of the disease

and the absence of constitutional disturbance, detracts in any degree from the antivariolous efficacy of the cow-pox, provided the vesicle has been perfect in all its characters.

This being the grand criterion of the security of the patient, too minute an attention cannot be paid to its rise, progress, and decline. The best mode of inoculating is by making a small oblique puncture in the arm, near the insertion of the deltoid muscle, with the point of a lancet charged with fluid matter. In order to render infection more certain, the instrument may be charged again, and wiped upon the puncture. It is a frequent error to make the puncture too small, with a view of preventing the escape of blood, which it is thought washes away the virus; but unless the skin be fairly penetrated, the operation frequently fails, and the flow of blood is not in reality found to prevent the effect, if the virus have been once fairly applied to the absorbing surface of the cutis vera.

It has been a matter of dispute whether one or more punctures should be made in each arm. It is not of much consequence. One will generally answer the purpose, but several render the effect more certain, and it is best, therefore, to make several.

The vaccine fluid may be taken for inoculation as soon as a vesicle appears; but if the vesicle is punctured at a very early period, it is more apt to be injured. When virus is wanting for inoculating a considerable number, it is better to let the pustule remain untouched, till about the eighth day, by which time it has in general acquired a reasonable magnitude. After that day, if the pustule has made the usual progress, the matter begins to lose its virtue; but it may, in general, be used with safety, though with less certainty of producing infection, till the areola begins to be extensive.

The first sign of infection commonly appears on the third day. A small red spot, rather elevated, may be perceived at the place where the puncture was made. Sometimes, however, the mark of infection having succeeded, is not visible till a much later period. It may be retarded, or even entirely prevented, by any other disorder; such as dentition, or any complaint attended with fever, or by extreme cold. Another frequent cause of a slow progress in the pustule, or a total failure of success, is debility. Sometimes it is impossible to discover any sign of infection for above a fortnight. In this respect the cow-pox is subject to the same laws, and liable to the same variation, as the small-pox.

When a considerable inflammation appears within two or three days after inoculation, there is reason to suspect that infection has not taken place; and if suppuration ensues, that suspicion ought, in general, to stand confirmed. Now and then, however, it happens, that after the spurious pustule, or more properly speaking, the phlegmon, has run its course, which is within a few days, a vesicle begins to appear, bearing every characteristic of the genuine vaccine disease, and yielding a limpid and efficient virus for future inoculations. In this case the patient is as perfectly secured from all danger of the small-pox, as if no festering of the puncture had preceded. The occurrence of such a case, though rare, is worthy to be recorded; because some practitioners have concluded a spurious pustule to be a certain proof of failure.

The areola commonly begins to be extensive on the ninth day, and to decline about the eleventh or twelfth. At this period also the pustule begins to dry; the first sign of which is a brown spot in the centre. In proportion as this increases, the surrounding efflorescence decreases, till at length nothing remains but a circular scab, of a dark brown mahogany colour, approaching to black. Sometimes it resembles the section of a tamarind stone; and it often retains the depression in the centre, which characterises this disease before exsiccation takes place.

Instances have been known where the vaccine pustule, though regular, and perfect in all other respects, has been totally destitute of areola; at least, where neither the medical practitioner, on visiting the patient, nor the attendants, have remarked any appearance of that symptom. In these cases, the patient has proved as insusceptible of variolous infection, as if the surrounding efflorescence had covered the whole arm. It must, however, be confessed, that we have no proof of the non-existence of an areola in these cases. It might have been trivial, it might have been transient; yet it might have been effectual. There is, however, greater reason to believe, that the surrounding efflorescence, though usually a concomitant circumstance, is not an essential requisite to the vaccine disease.

If, when the vaccine virus has been inserted, and a genuine vesicle has risen, the virus be again inserted on the fourth, fifth, or sixth day, the vesicle arising from this second insertion will be hurried in its progress, so that, on the ninth day, it will be surrounded by an areola, and will appear as mature as the first. This affords evidence of the constitution being fully under the influence of the disease; and in 1802 Mr. Bryce, of Edinburgh, recommended the reinsertion of the virus at the end of the fifth or beginning of the sixth day, as a test of the efficacy of the first operation, and this has since been extensively practised, and goes by the name of *Bryce's test.*

If by any accident the vesicle is ruptured, suppuration often ensues. In this case more attention than ordinary ought to be paid to the progress, and to all the phenomena of the local affection; both on account of the uncertainty of success in the operation, as a prophylactic, and the greater probability of tedious ulceration.

If there is room for the least doubt of the sufficiency of the first inoculation, a second ought to be performed without delay. This, if unnecessary, is seldom attended with inconvenience, and never with danger. Either no effect is produced, or a slight festering, which terminates in a few days. An exception occurs but rarely where a spurious, or perhaps even a genuine, pustule takes place in those persons who are known to have had the cow-pox, or the small-pox already; but this cannot be the least cause of alarm to any one who knows the benign character of the distemper.

Various topical applications, both stimulant and sedative, have been recommended, in order to allay the violence of inflammation. If the operation for the insertion of matter is not unnecessarily severe, nor the pustule irritated by friction, or pressure, or other violence, no such applications are necessary. Nevertheless, if either the anxiety of the professional man, or the importunity of a tender parent, should demand a deviation from this general rule, any of the following remedies may be had recourse to. The pustule may be touched with very diluted sulphuric acid; which should be permitted to remain on the part half a minute, and then be washed off with a sponge dipped in cold water. This has been called an escharotic; but any one who tries the application will soon discover that its operation is mild and harmless.

To avoid cavil, it is better to apply a saturnine lotion; compresses, dipped in such a lotion, may be applied at any time when inflammation runs high, and renewed as occasion requires.

If the pustule should chance to be broken, a drop of the liquor plumbi acetatis undiluted, may be applied as an exsiccant; but if ulceration threatens to become obstinate or extensive, a mild cataplasm is the best resource. In case the ulceration is only superficial, and not attended with immoderate inflammation, a bit of any adhesive plaster, spread on linen, will prove the most convenient dressing, and seldom fail of success. It will, in general, be unnecessary to renew it oftener than every other day.

These minute observations no one will despise, unless there be any person so ignorant as not to know that the care of the arm is almost the whole duty of the medical practitioner in vaccine inoculation; and that nothing disgusts the public so much against the practice as a sore arm, and the ill consequences which, from a neglect of that symptom, too often ensue.

When fluid virus cannot be procured, it is necessary to be cautious how it is preserved in a dry state. The most improper mode is that of keeping it on a lancet; for the metal quickly rusts, and the vaccine matter becomes decomposed. This method, however, is as likely to succeed as any when the matter is not to be kept above two or three days. If the virus be taken on glass, care must be taken not to dilute it much, otherwise it will probably fail.

Pointed pieces of ivory are much in use as vehicles of the vaccine virus. The point is made to penetrate the skin like a lancet; but these points are hardly ever sharp enough; they give unnecessary pain; and the virus is often not effectually introduced.

Cotton thread is a very commodious vehicle. If it is intended to be sent to any considerable distance, it ought to be repeatedly dipped in the virus. No particular caution is necessary with regard to the exclusion of air; nevertheless, as it can be done with so little trouble, and is more satisfactory to those who receive the matter, it is better to comply with the practice. On this account it may be enclosed in a glass tube, sealed at each end, or between two square bits of glass, which may, if necessary, be also charged with the matter, and wrapped in tin foil.

Nothing is more destructive to the efficacy of cow-pox matter than heat: on this account it must not be dried near the fire, nor kept in a warm place. The advantage of inserting it in a fluid state is so great, that it is to be wished every practitioner would endeavour to keep a constant supply for his own use, by inoculating his patients in succession, at such periods as are most likely to answer that purpose.

CO'XA. (*a*, *æ*. f.) The hip, haunch, or hip-joint; also the ischium and the os coccygis.

Coxæ ossa. The ossa innominata.

COXA'LGIA. (*a*, *æ*. f.; from *coxa*, the hip, and αλγος, pain.) A hybrid term applied to pain in the hip, whether from rheumatism or any other cause.

COXE'NDIX. (*ix*, *icis*. f.; from *coxa*, the hip.) The same as *coxa*.

Coxo-femoral articulation. The hip-joint.

Crab. See *Cancer*.

Crablouse. See *Pediculus*.

Crab-yaws. A name in Jamaica for a kind of ulcer on the soles of the feet, with callous lips, so hard that it is difficult to cut them. See *Frambœsia*.

CRA'MBE. (*e*, *es*. f. Κραμβη, cabbage or colewort.) The name of a genus of plants in the Linnæan system. Class, *Tetradynamia*; Order, *Siliculosa*.

Crambe maritima. The sea-cole, or sea-kale. This plant is indigenous on our shores. It is cultivated for the table, and has a delicate flavour. Like all oleraceous plants, it is flatulent and watery.

CRAME'RIA. (*a*, *æ*. f.; so named in commemoration of two German botanists, named Kramer, who flourished about the middle of the last century.) A genus of plants in the Linnæan system. Class, *Tetrandria*; Order, *Monogynia*.

Crameria triandra. *Krameria ixina*. The systematic name of the tree, the root of which is called *rhatany*, a substance that has been long known to the manufacturers of port wine. It is the production of Peru, and was formerly thought to be the root of the cinchona cordifolia. It is described as externally resembling the root of the rubia tinctorum. It is aromatic, bitter, and very astringent to the taste; its infusion or decoction turns black with sulphate of iron, and precipitates tannin. The principal virtues appear to reside in the cortical part of the root, which is thick and resinous. An opinion prevails that the substance sold in the shops under the name of foreign extract of bark is made from this root.

It is well known that the medicinal virtues of this root are those of a powerful tonic. In debility of the digestive organs, in chronic rheumatism, fluor albus, and in intermittent fevers, it has been employed with good effect. While given in doses similar to cinchona, it has the advantage of being only one third the price of that substance.

Cramp. (*Crampus*; from the German *krempen*, to contract.) See *Spasm*.

Craneshill. See *Geranium.*

Cranesbill, bloody. See *Geranium sanguineum.*

Crangon. See *Cancer crangon.*

CRANIA. Κρανια. The Greek name of the cornel tree. See *Cornus.*

CRANIO'LOGY. (From κρανιον, the skull, and λογος, a discourse.) The study of skulls. The diversity of size, shape, and proportion in the skulls of different races of mankind, and different tribes of animals, is an object of considerable interest to the physiologist. The term craniology has been applied to the art of determining the intellectual and moral peculiarities of individuals by the shape of their skulls. See *Phrenology.*

CRANIO'SCOPY. (From κρανιον, the skull, and σκοπεω, to explore.) The inspection of skulls. See *Phrenology.*

CRA'NIUM. (*um, ii.* n. Κρανιον, *quasi,* καρανιον; from καρα, the head.) The skull, or superior part of the head, which forms a great cavity containing the brain and its appendages. The cranium is composed of eight bones, six of which are called proper to the cranium, and two common to the cranium and face. The six proper to the cranium are the *os frontis,* the two *ossa parietalia,* the two *ossa temporum,* and the *os occipitis:* the two common to the cranium and face are the *os ethmoides* and the *os sphenoides.* This is an arbitrary and incorrect arrangement, since the frontal bone enters into the formation of the face quite as much as the ethmoid or sphenoid, and the temporal bone also partially.

CRANIUM HUMANUM. The human skull. This was formerly an important article of the Materia Medica. It was esteemed alexipharmic and antiepileptic; and divers oils, tinctures, and other preparations were made from it. It is only of late years that its reputation in epilepsy has entirely faded.

CRANTE'RES. (Κραντηρες. From κραινω, to make perfect.) A name given to the *dentes sapientiæ,* because they come last and complete the number of the teeth.

CRA'PULA. (*a, æ.* f. Κραιπαλη; derived according to Galen from καρηνον, the head, and παλλεσθαι, to be agitated.) A surfeit. The oppressed state of the stomach and head arising from excess in eating or drinking.

CRA'SIS. (*is, is.* f.; from κερανυμι, to mix.) Mixture. Applied to the humours of the body, when there is such an admixture of their principles as to constitute a healthy state: hence in dropsies, scurvy, &c., the crasis, or healthy mixture of the principles of the blood, is said to be destroyed.

CRA'SPEDON. (Κρασπεδον, the hem of a garment; from κρεμαω, to hang down, and πεδον, the ground.) A relaxation of the uvula, when it hangs down like the hem of a garment.

CRASSUM INTESTINUM. The large intestine.

CRASSAME'NTUM. (*um, i.* n.; from *crassus,* thick.) See *Sanguis.*

CRA'SSULA. (*a, æ.* f.; from *crassus,* thick: so named from the thickness of its leaves.) 1. A name of the *Sedum telephium* and several other plants. 2. The name of a genus of plants in the Linnæan system. Class *Pentandria;* Order, *Pentagynia.*

CRASSUS PULSUS. A strong and full pulse.

CRATÆ'GONON. (From κρατεω, to gain strength, and γονον, the semen, because it was supposed to render the semen prolific.) An herb mentioned by Pliny, supposed to be the *Melampyrum cristatum* of Linnæus.

CRATÆ'GUS. (*us, i.* f.) A genus of plants in the Linnæan system. Class, *Icosandria;* Order, *Digynia.* The hawthorn, *C. oxyacantha,* and wild service tree, *C. torminalis,* belong to this genus.

CRATÆ'VA. The name of a genus of plants. Class, *Polyandria;* Order, *Monogynia.* The fruit of nearly all the species has a peculiar alliaceous odour, whence they have been called *garlic pears.* The *C. Religiosa* is the *Pura-au* of Tahiti, which is there planted in burial grounds. Its leaves are aromatic and stimulant. The bark of the *C. Tapia* is a bitter tonic, and is esteemed by the Indian practitioners as a febrifuge.

CRATER. A brass vessel with a broad base and a narrow mouth.

CRATI'CULA. (From *crates,* a grate.) The grate which covers the ash-hole in a chemical furnace.

Craw-fish. See *Cancer fluviatilis.*

CREA. *Ocrea.* The anterior part of the leg. —*Blancard.*

Cream of Tartar. See *Potassæ bitartras.*

CRE'ASOTE. (*Creasoton,* from κρεας, flesh; σωζω, to preserve, on account of its antiseptic property.) A substance lately discovered by Reichenbach. The following account of it is taken from an excellent article in the Appendix to Dr. Gully's Translation of Magendie's Formulary: —

Creasote is an oily, colourless, transparent liquid, of a penetrating odour, resembling that of smoke, or smoked meat, and of a burning and exceedingly caustic taste. It has a specific gravity of 1·037.

It boils at 203° Centigrade, and is not congealed by a cold of —27° C.; it burns with a strongly fuliginous flame. With water at 20°, it forms two combinations, one a solution of one part in 80, and the other of 10 parts in 100. This aqueous solution does not change turnsol, nor is it neutralised by acids or alkalis. Nitric acid causes red vapours. A small portion of concentrated sulphuric acid turns it red, but a larger quantity blackens it, the acid itself being also decomposed. Acetic acid seems to be its specific solvent, for it holds any quantity of it. All the acids, even the carbonic, separate creasote from its combinations with potass and soda, without otherwise affecting it. It dissolves a great number of salts, some with, and some without heat. Alkohol, ether, carburetted sulphur, and acetic ether combine with it in any proportion. It decomposes or dissolves resins, resinous colouring matters, and other similar substances.

Shaken with white of egg, coagulation immediately takes place. Fresh meat, soaked for an hour in a solution of creasote, and then dried, may be exposed to the sun, without fear of

putrefaction; in a week it becomes hard, has the smell of smoked meat, and becomes reddish brown. Fish may be preserved in the same manner. Birds poisoned with creasote remain nearly two months without emitting any putrid odour.

These effects on animal matter closely resemble those of pyroligneous acid and tar water, and demonstrate almost to a certainty that creasote is the preservative principle of those fluids. This has been further shown by the extraction of creasote from both of them. Creasote is most abundantly and easily prepared from tar.

In the dry distillation of tar from wood the fluid collected in the receivers contains an empyreumatic acid water, which is rejected, and oil of tar, which is placed in glass retorts and rectified. In these two distillations the oil of tar is at first light, but as the heat is increased, its gravity augments. At one period of the process the oil sinks to the bottom, and a fluid which is poor in creasote, and consists mostly of *eupione*, and other substances that interfere with the purity of the creasote, floats above it: this is poured off, and the pale yellow tar-oil is heated. Carbonate of potass is added, until the carbonic acid is no longer disengaged on shaking: the mixture is decanted, in order to separate the acetate of potass, and the oil is again distilled in a glass retort, and all the first products that float on the water are rejected. The oil is then dissolved in a solution of caustic potass of the specific gravity 1·12; heat is thereby developed, and a portion of the materials composed of eupione, &c. not being dissolved, floats on the surface, and is removed. The alkaline solution is poured into an open capsule, and regularly heated to boiling. It rapidly absorbs the oxygen of the atmosphere, whereby a peculiar oxidisable principle in it is decomposed, and the mixture then turns brown. After cooling in the open air, diluted sulphuric acid is added until the oil is set at liberty. It is then distilled with water, holding a little caustic potass, and the whole is kept boiling until the quantity of oil which passes from the retort becomes diminished: at this point the distillation should cease. The oil and water in the receiver are again distilled with potass, and the same treatment with sulphuric acid repeated, as in the former instance. A third distillation is then made, and a little phosphoric instead of sulphuric acid is added, in order to take up some ammonia retained in the oil.

The oil is then for the third time dissolved in caustic potass, and if the preceding processes have been carefully managed, they combine, without leaving any residue of eupione, and the mixture, on exposure to the air, does not turn brown, but takes on a slightly reddish tint. As long, however, as any eupione remains, and the mixture turns brown, the solution in potass should be repeated. In this state the creasote is not entirely pure, but it may be used for medicinal purposes.

It may be obtained perfectly pure by distilling it with water alone, then rectifying the product of the distillation repeatedly until no water passes over when the heat is raised to 203° C. The last product is creasote unalloyed by eupione, picamare, water, or other matters.

M. Reichenbach endeavoured to simplify this tedious process; but he found that the product was always unfit for internal use, while its action on the surface was much impaired. So procured, its emetic effects were most violent; a single drop applied to the tongue caused in the space of a minute, excessive nausea with tremors, succeeded by vomiting, and great prostration of the powers. These effects he attributes to the presence of eupione, and he therefore recommends the process above described to be followed on all occasions.

Applied to the tongue in a concentrated form, creasote causes violent pain, though no redness or tumefaction is present: a strong taste of smoke extends to the throat. Poured on the skin, it produces a burning sensation with rubefaction and erosion.

Flies, spiders, and small fishes die in the course of two minutes, when immersed in a solution of twelve drops of creasote in two ounces of water.

Two drachms given in half an ounce of water to a puppy-dog induced the following symptoms: complete prostration of muscular power, drooping of the head, fixation of the eyes, vertigo, apparent stupefaction of all the senses; the respiration, from being laboured, was at the end of three minutes almost entirely stopped by an abundant secretion of viscid, filamentous mucus; to which was added vomiting of whitish milky fluid, with spasmodic contraction of the abdominal muscles. These symptoms got gradually worse for two hours, the respiration becoming more laborious, and at longer intervals, the limbs being seized with tremors, then with convulsive contractions, and the whole ending in death.

On opening the body of the animal all the tissues of the body, except the liver, exhaled a strong odour of creasote. The mucous digestive membrane gave signs of inflammation throughout its whole extent; the matters contained in the stomach coagulated white of egg, and heated, gave out the powerful tar smell of creasote. In the heart and the immediate great vessels the blood appeared to be much more firmly coagulated than usual. The lungs were gorged over the greater part of their extent with reddish brown blood; the more ruddy parts of them floated in water readily: the darker portions scarcely swam at all. No sign of congestion about the brain appeared.

On injecting equal parts of creasote and water into the carotid artery of a dog, the same symptoms were produced, but death ensued more speedily.

If concentrated or diluted creasote be added to blood, the latter thickens and becomes reddish brown, with small spots of white, probably coagulated albumen: on further exposure to the air the blood acquires a yellowish red colour.

The signs of poisoning with creasote, therefore, are the redness of the gastro-intestinal mucous membrane, the peculiar thickness and colour of the blood, the property possessed by the matters in the stomach of coagulating albu-

men, and more especially the peculiar odour exhaled by all the tissues of the body.

Plants watered with a solution of creasote, fade and die in the course of a few days.

M. Reichenbach's first trials of the medicinal virtues of creasote were made on slight burns, infantile excoriations and wounds. Subsequently he was induced to try it in extensive burns by hot iron and boiling fluids: in itch and various kinds of tetters; in gangrene consequent on extensive compound fracture of the leg; in caries of the phalanges of the fingers and toes; in toothach, though it fails to put a stop to the caries of the tooth; in open, fungous whitlow; in scrofulous ulcers of the throat, leg, and joints of the fingers; in ulcerated white-swelling of the knee of two years standing; in chancres and other syphilitic ulcers; in wounds from cutting and piercing instruments, caustic alkalis, &c., in which cases the wounds did not heal by suppuration, but by actual desiccation caused by the creasote. In all these instances he has found the remedy most effectual and astonishingly rapid in its operation. Thus in a case of old standing and scrofulous ulceration of the throat, with purulent discharge from the ears, the ointment of creasote to the former, and the injection of creasote water into the latter, put an end to both in the course of three weeks.

Internally, M. Reichenbach has given it in several cases of hemoptysis; in two of these, the sanguineous expectoration had continued for upwards of a week, when the administration of four drops of creasote, on sugar, daily for four days, arrested the flow of blood.

Turning to the practice of the French physicians, we find that creosote has been successfully employed in burns, by Berthelot and Goupil, who observe, that in treating these with creasote, the tendency to cicatrise from the circumference to the centre, and the consequent contractions and irregularities, are avoided; in various dry and moist tetters by Goupil, Coster, Berthelot, Martin-Solon, Duchesne-Duparc and Dauvergne; in chancres and old venereal ulcers, by Künckel, Lesseré, and others; in sanious ulceration of the cervix uteri, by Colombat; in a cancerous ulcer of the nose, by Breschet; in chronic inflammation with suppuration of the edges of the eyelids, by Coster; in cancer of the womb by Hippolyte Cloquet and Tealier; in varicose, ill-conditioned ulcers of the leg, by Goupil, &c. &c. Chilblains are also considerably benefited by frictions, with creasote ointment or water. M. Regnart relieved the celebrated M. Broussais from an excruciating toothach by the free application of a concentrated solution of creasote to the carious tooth.

Creasote has been employed by the French physicians in pulmonary phthisis; but the alleged successful cases are strained, and tell but little in favour of the remedy. It has not been more successfully used, in several cases of chronic bronchitis, by inhalation.

Creeping. See *Repens.*

CREMA'STER. (*er, eris.* m.; from κρεμαω, to suspend.) *Musculus testis. Musculus scroti.* A muscle of the testicle, by which it is suspended, and drawn up and compressed, in the act of coition. It arises from the lower edge of the internal oblique muscle of the abdomen, passes over the spermatic chord, and is lost in the cellular membrane of the scrotum covering the testicle.

CRE'MNUS. (Κρημνος, a precipice, or shelving place.) 1. The lip of an ulcer.

2. The labium pudendi.

CREMOCA'RPIUM. (From κρεμαω, to suspend, and καρπος, fruit.) The name given by Mirbel to a simple fruit united with the calyx, and divided into two indehiscent monospermatous *cocca*. This species of fructification occurs throughout the *Umbelliferæ*.

CRE'MOR. (*or, oris.* m.) 1. Cream. The oily part of milk which rises to the surface of that liquid, mixed with a little curd and serum.

2. Any substance floating on the top of a liquid, and skimmed off.

3. A thick decoction of barley. — *Blancard.*

CREMOR CALCIS. The pellicle of carbonate of lime, which forms on the surface of lime-water when exposed to the air.

CREMOR TA'RTARI. Cream of tartar. See *Potassæ bitartras.*

CRENA'TUS. Crenate: notched, or scolloped. Applied to a leaf or petal, when the indentations are blunted or rounded, and not directed towards either end of the leaf; as in *Glecoma hederacea.* The two British species of *Salvia* are examples of doubly crenate leaves. The petals of the *Linum usitatissimum* are crenate.

Creosote. See *Creasote.*

CREPA'TIO. *Crepatura.* In *Pharmacy*, the boiling of seeds till they burst.

CREPITATION. (From *crepito*, to make a crashing or crackling noise.) 1. The peculiar sound, or sensation, occasioned by pressure between the fingers, in cellular tissues filled with air; as the lungs in their natural state, or a part affected with emphysema.

2. The grating of the ends of broken bones. See *Crepitus.*

3. Synonymous in *Chemistry* with *decrepitation.*

CRE'PITUS. (*us, ûs.* m.; from *crepo*, to make a noise.) A crashing or cracking noise. A discharge of wind from the bowels upwards or downwards. In medicine, the term is usually applied to the grating sound which is heard when the ends of a fractured bone are rubbed on each other.

Crepitus lupi. See *Lycoperdon bovista.*

Crescent-shaped. See *Leaf.*

CRESS. A number of plants which have a more or less pungent flavour are called cresses.

CRESSIS. A barbarous Latin name of the *Nasturtium sativum.*

Cress, garden. See *Lepidium sativum.*

Cress, sciatica. See *Lepidium iberis.*

Cress, water. See *Sisymbrium nasturtium aquaticum.*

Cress, wild. See *Sysimbrium nasturtium aquaticum.*

Crest. See *Crista.*

Crested. See *Cristatus.*

CRE'TA. (*a, æ.* f.) Chalk. An impure carbonate of lime. See *Creta præparata.*

Creta præparata. Prepared chalk. Take of chalk a pound; add a little water, and rub it to a fine powder. Throw this into a large vessel full of water; then shake them, and after a little while pour the still turbid liquor into another vessel, and set it by that the powder may subside; lastly, pouring off the water, dry this powder. This is a pure carbonate of lime, and is antacid and absorbent. It is exhibited chiefly in the form of the cretaceous mixture. See *Mistura cretæ*. It is also an ingredient of many compound medicines.

CRETA'CEOUS. (*Cretaceus*; from *creta*, chalk.) Chalky: appertaining to chalk.

Cretaceous acid. See *Carbonic acid.*

Cretaceous mixture. See *Mistura cretæ.*

Cretaceous powder. See *Pulvis cretæ compositus.*

Crete, dittany of. See *Origanum dictamnus.*

CRETINISMUS. (*us, i.* m.) Cretinism: a peculiar endemic disease common in Switzerland, and found also in some other mountainous regions.

Cretinism makes a very close approach to rickets in its general symptoms. It differs principally in the tendency to the peculiar enlargement of the thyroid gland, which, in France, is denominated goitre, and with us, Derbyshire-neck, and in the mental imbecility which accompanies it from the first.

In cretinism the organ of the brain seems to follow the fate of the rest of the body, and, in many cases, even to take the lead, so that the chief imbecility is to be found in this region. For the peculiar symptom of goitre it is not so easy to account. We know so little of the purpose, and even of the fabric of this gland, as to be incapable of assigning its use in the animal economy, and hence, it is not much to be wondered at that its peculiar tendency to associate, in the present disease, with the morbid condition of the bones and of the intellect, should not hitherto have been ascertained. Goitre, however, does not always accompany the other symptoms, though it is, for the most part, an associate.

Cretinism was first distinctly noticed and described by Plater about the middle of the seventeenth century, as occurring among the poor in Carinthia and the Valais; and that it was afterwards found in a still severer degree in other valleys of Switzerland and the Alps generally; as it has since been detected in very distant regions where the country exhibits a similarity of features, as among a miserable race called Caggots, inhabiting the hollows of the Pyrenees, whose district and history have been given us by M. Raymond, and as far off as Chinese Tartary, where it is represented as existing by Sir George Staunton.

On the first discovery of cretinism, it was ascribed by some to the use of snow-water, and by others to the use of water impregnated with calcareous earth: both which opinions are entirely without foundation. The first is sufficiently disproved by observing that persons born in places contiguous to the glaciers, and who drink no other water than what flows from the melting of ice and snow, are not subject to the disorder, and that Sir John Pringle and Captain Cook have found melted snow or ice-water afford to seamen a peculiarly wholesome beverage: while on the contrary the disorder is observed in places where snow is unknown, as at Sumatra. The second is contradicted by the fact that the common waters of Switzerland, instead of being impregnated with calcareous matter, excel those of most other countries in Europe in purity and flavour. "There is not," observes Dr. Reeve, "a village, nor a valley, but what is enlivened by rivulets, or streams gushing from the rocks. The water usually drunk at La Batia and Martigny is from the river Dranse, which flows from the glacier of St. Bernard, and falls into the Rhone; it is remarkably free from earthy matter, and well tasted. At Berne the water is extremely pure, yet, as Haller remarks, swellings of the throat are not uncommon in both sexes, though cretinism is rare."

As comfortable and genial warmth form one of the best auxiliaries in attempting the cure of both cretinism and rickets, there can be no doubt that the chill of snow-water, if taken as such, must considerably add to the general debility of the system when labouring under either of these diseases, though there seems no reason for supposing that it would originate either. It is not difficult to explain why water impregnated with calcareous earth should have been regarded as a cause: for in cretinism, as in rhachia, the calcareous earth designed by nature for building up the bones, is often separated, and floats loose in various fluids of the body for want of a sufficiency of phosphoric acid to convert it into a phosphate of lime, and give it solidity. And as it is, in consequence hereof, pretty freely discharged by the urine, it seems to have given rise to the opinion that such calcareous earth was introduced into the system with the common beverage of the lakes or rivers, and produced the morbid symptoms.

M. de Saussure has assigned a far more probable, and unquestionably the real cause of the disease, in referring us to a few other physical features of the Alpine districts in which it makes its appearance chiefly. The valleys, he tells us, are surrounded by very high mountains, sheltered from currents of fresh air, and exposed to the direct, and, what is worse, the reflected rays of the sun. They are marshy, and the atmosphere is hence humid, close, and oppressive. And when to these chorographical causes we add the domestic ones, which are also well known to prevail very generally among the poor of these regions, such as meagre, innutritious food, indolence, and defect of cleanliness, with a predisposition to the disease from an hereditary taint of many generations, we can sufficiently account for the prevalence of cretinism in such places, and for the most humiliating characters it is ever found to assume.

The general symptoms of cretinism are those of rhachia; but the disease shows itself earlier, often at birth, and not unfrequently before this period, apparently commencing with the procreation of the fœtus, and affording the most evident proofs of ancestral contamination. The

child, if not deformed and cachectic at birth, soon becomes so; the body is stinted in its growth, and the organs in their development; the abdomen swells, the skin is wrinkled, the muscles are loose and flabby, the throat is covered with a monstrous prominence, the complexion wan, and the countenance vacant and stupid. The cranium bulges out to an enormous size, and particularly towards the occiput, for it is sometimes depressed on the crown, and at the temples; insomuch, that to a front view the head, in some cases, appears even diminutive. The blunted sensibility of these wretched beings renders them indifferent to the action of cold and heat, and even to blows or wounds. "They are, generally," observes, M. Pinel, "both deaf and dumb. The strongest and most pungent odours scarcely affect them. I know a Cretin who devours raw onions and even charcoal with great avidity: a striking proof of the coarseness and imperfect development of the organ of taste. Their organs of sight and feeling are equally limited in their operation. Of moral affections they seem wholly destitute; discovering no signs of gratitude for kindness shown to them, nor any attachment to their nearest relations." — *Mason Good.*

It is evident that medical treatment, generally speaking, can be of no avail except in as far as relates to the general health of the individual.

Cribra'tio. (*o, onis.* f.) The operation of sifting or passing through a sieve.

CRI'BRIFORM. (*Cribriformis;* from *cribrum*, a sieve, and *forma*, likeness; because it is perforated like a sieve.) Applied to one of the bones of the cranium. See *Ethmoid bone.* The tunica decidua of the ovum has been called *membrana cribriformis* by Osiander.

Cri'co-arytæno'des latera'lis. A muscle which rises from the side of the cricoid cartilage and is inserted into the side of the base of the arytenoid cartilage. Its use is to open the glottis by separating the arytenoid cartilages.

Cri'co-arytenoide'us posti'cus. A muscle which arises from the back part of the cricoid cartilage, and is inserted into the back part of the base of the arytenoid cartilage. Its use is to draw back the arytenoid cartilage, to render the ligament of the glottis tense, and thereby to lengthen the glottis.

Crico-pharyngeus. See *Constrictor pharyngis inferior.*

Cri'co-thyroide'us. A muscle which rises from the side and anterior part of the cricoid cartilage and has two insertions, one into the under part of the ala of the thyroid cartilage, and the other into its inferior cornu. Its action is to draw the thyroid cartilage downwards and forwards, or the cricoid cartilage, upwards and backwards.

Cri'co-thy'ro-pharyngæ'us. The inferior constrictor muscle of the pharynx is so called by Dumas.

CRI'COID. (*Cricoides*; *Cricoideus*, from κρικος, a ring, and ειδος, resemblance.) Ring-like: applied to a round ring-like cartilage of the larynx. See *Cartilago cricoides.*

Cridones. The same as *crinones.* See *Crino.*

Crimno'des. (From κριμνον, bran, and ειδος, resemblance.) Bran-like; applied to urine, which deposits a sediment like bran. — *Hippocrates.*

Crina'le. An instrument formerly used to exert pressure in cases of fistula lachrymalis. It is named from having at one end a small cushion stuffed with hair.

Cri'nis. The hair. See *Capillus.*

Crino'myron. (From κρινον, a lily, and μυρον, ointment.) An ointment composed of lilies and aromatics; the same with the *Unguentum ægyptium album.*

CRI'NO. (*o, onis.*; from *crinis*, the hair.) 1. A genus of entozoa observed chiefly in horses and dogs, the description of which is so imperfect as to render it doubtful whether it ought to be considered as a separate genus.

2. A disease which, according to Ettmuller and others has prevailed epidemically among infants. It consisted in the eruption of rigid black hairs from the skin of the back, arms, and legs, accompanied with febrile irritation and emaciation. The hairs become blacker, and at last fall off. Three or four successive crops of them arise within the first month of the child's life. Children are liable to them as late as the end of the second year.

Crio'genes. An epithet of certain troches, mentioned by P. Ægineta, which he commends for cleansing ulcers.

CRI'SIS. (*is, is.* f. Κρισις, a judgment or determination; from κρινω, to judge.) A sudden change for the better or worse taking place in the course of acute diseases, and especially fevers. A favourable crisis is sometimes attended with a diarrhœa, perspiration, or other sensible evacuation, and such evacuations are styled *critical.* At other times the crisis is unattended with any sensible evacuation. A crisis is *perfect* or *imperfect;* the former bringing the patient suddenly to a state of convalescence, the latter merely causing a marked alleviation of the symptoms. The crisis is also called *salutary* or *fatal*, according to the result. It has been a question from the time of Hippocrates down to the present, whether fevers have a tendency to a crisis on particular days of their course rather than on others. See *Critical days.*

Crispation. See *Crispatura.*

Crispatu'ra. (From *crispo*, to curl.) Crispation. A slight contraction of any part whether natural or induced by a morbid cause; thus, the skin when contracted so as to form what is called *cutis anserina* is in a state of crispation; the small arteries divided by a wound when they retract so as to arrest the hæmorrhage are in a state of crispation.

CRI'SPUS. Crisp: curled. Applied to a leaf, when the border is so much more dilated than the disk, that it necessarily becomes curled and twisted; as in *Malva crispa*, &c.

CRIS'TA. (*a, æ.* f. The comb of a cock; a crest.) This name is given, 1. In *Anatomy*, to several processes and parts of bones; as the *crista ilii*, and *crista galli* of the ethmoid bone.

2. In *Surgery*, to excrescences, like the comb of a cock, about the anus.

Crista galli. An eminence of the ethmoid

bone, so called from its resemblance to a cock's comb. See *Ethmoid bone*.

CRISTA'TUS. Crested: applied to parts of plants having an appendage resembling a crest.

Crithamum. See *Crithmum*.

CRI'THE. (*e, es.* f. Κριθη, barley.) A sty or small tumour on the eyelid, somewhat resembling a barleycorn. See *Hordeolum*.

CRITHE'RION. (From κρινω, to judge.) The same as crisis.

CRI'THUM. (*um, i.* n; from κρινω, to secrete: said to be so named from its supposed virtues in promoting a discharge of the urine and menses.) The name of a genus of plants. Class, *Pentandria*; Order, *Digynia*.

CRITHMUM MARITIMUM. The samphire, or sea-fennel. *Herba Sancti Petri*. *Crithmum* of the Pharmacopœias. It is a low perennial plant, and grows about the sea-coast in several parts of our island. It has a spicy aromatic flavour, and the country people use it as a pot-herb. Pickled with vinegar and spice, it makes a wholesome and elegant condiment.

CRI'TICAL. Appertaining to the *crisis*; determining the event of a disease. Applied to symptoms, evacuations, periods, &c. which have reference to a crisis.

CRITICAL DAYS. *Dies judicatorii. Dies decretorii. Dies principes. Dies radicales.* Hippocrates and Galen taught that there were certain days on which the crisis of fever was generally perfect and favourable; others on which it was imperfect or unfavourable; and others again, which were seldom marked by any particular change one way or the other. According to Galen, the 7th day is particularly favourable; next to this the 14th, then the 9th, 11th, and 20th; then the 17th and 5th; lastly, the 4th, 3rd, and 18th. The 6th day is very doubtful and unfavourable, and like it are the 8th, 10th, 12th, 16th, and 19th. The 13th day is intermediate and not marked by any considerable change. Diocles and Archigenes made the 21st one of the favourable days; but Galen agrees with Hippocrates in rejecting this and substituting the 20th. The doctrine of critical days has been much contested, and is so more or less to the present time. It is now generally disbelieved, however, by physicians that the critical days of fever can be determined with any degree of accuracy sufficient to render the doctrine practically useful.

CRO'CEUS. Deep yellow. In general use to designate the colour of plants, animals, minerals, &c.

Croci stigmata. See *Crocus*.

CROCIDI'XIS. (*is, idis.* f.; from κροκιδιζω, to gather wool.) Floccilation. See *Carphologia*.

CRO'CINUM. (From κροκος, saffron.) A mixture of oil and saffron, sometimes with the addition of aromatics.

CROCO'DES. (From κροκος, saffron; so called from the quantity of saffron it contains.) A troch mentioned by Paulus Ægineta.

Crocodilea. See *Cordylea*.

CROCOMA'GMA. (From κροκος, saffron, and μαγμα, thick oil or dregs.) A troch made of oil of saffron and spices.

CRO'CONATE. A salt formed by the union of the croconic acid with a base.

CROCO'NIC ACID. *Acidum croconicum*. So called from *crocus*, saffron, on account of the yellow colour of its salts. During the distillation of potassium from a mixture of carbonate of potash and charcoal a gray compound comes over, which forms a yellow solution with water. From this solution yellow crystals of croconate of potash may be obtained by evaporation. To separate the acid, purified crystals of coronate of potash are dissolved in strong alkohol, to which sulphuric acid is carefully added, so as barely to saturate the alkohol. Sulphate of potash is precipitated, and the croconic acid remains dissolved in the alkohol, from which it may be obtained by evaporation. It is in yellow prismatic crystals soluble in water. It is decomposed by a strong heat, and deposits pure charcoal. Gmelin considers it as a compound of carbon, oxygen, and hydrogen.

CRO'CUS. (*us, i.* and *um, i.* n. Κροκος. Κροκον. The story of the young Crocus, turned into this flower, may be seen in the fourth book of Ovid's Metamorphoses. Some derive this name from κροκη or κροκις, a thread; whence the stamens of the flowers are called κροκιδες, and from them the whole plant κροκος. Others, again, derive it from the Chaldee language.) Saffron.

1. The name of a genus of plants in the Linnæan system. Class, *Triandria*; Order, *Monogynia*. Saffron.

2. The pharmacopœial name of the prepared stigmata of the saffron plant. See *Crocus sativus*.

3. A name given by the older chemists to several preparations of metallic substances, from their colour; thus, *Crocus martis, Crocus veneris*.

CROCUS ANTIMONII. A sulphuretted oxide of antimony.

Crocus Germanicus. See *Carthamus*.

Crocus Indicus. See *Curcuma*.

CROCUS MARTIS. Burnt green vitriol.

CROCUS METALLORUM. A sulphuretted oxide of antimony. See *Antimony*.

Crocus officinalis. See *Crocus sativus*.

Crocus saracenicus. See *Carthamus*.

CROCUS SATIVUS. The systematic name of the saffron plant.

Crocus — spatha univalvi radicali, corollæ tubo longissimo, of Linnæus. This plant is a native of Greece and Asia Minor. It is sometimes found wild in England, but is probably not indigenous. It is cultivated abundantly for medicinal use in Cambridgeshire and Essex.

For the preparation of the saffron, the flowers are gathered early in the morning, just as they are about to blow. They are then spread upon a table, and the stigmas, with a proportion of the style, carefully picked out of the flower, which is thrown away as useless. The stigmas are then dried upon a portable kiln of a peculiar construction, over which a haircloth is stretched, and over it several sheets of white paper are laid, upon which the wet saffron is spread between two and three inches thick. It is now covered with other sheets of paper, and over them is a laid a coarse blanket, five or six

times doubled, which is pressed down with a board and a large weight after the fire is lighted. The first heat is strong, to make the saffron sweat; and, after an hour, when it is intended to form the saffron into a cake, it is turned, and the same degree of heat continued for another hour. The fire is then reduced to a moderate heat, which is kept up for twenty-four hours, during which time the cake is turned every half hour, so as to dry it thoroughly. It is then fit for the market. The finest saffron is not formed into a cake, but consists of the stigmas dried; and thence it is termed *hay* saffron.

In the shops, is found saffron from Sicily, France, and Spain, besides the English. The Spanish is generally spoiled with oil, in which it is dipped with the intention of preserving it; the Sicilian and French saffron is better than the Spanish; but the English as being fresher, more genuine, and better cured, is always preferred. It is sometimes adulterated with fibres of smoked beef, the petals of the safflower (*Carthamus tinctorius*), and of officinal marigold (*Calendula officinalis*): or saffron, from which tincture or infusion has been drawn, is mixed with a little good saffron, and again pressed into a cake. These frauds are detected by infusing the suspected saffron in hot water, when the expanded stigmas will be easily distinguished from the florets of the other flowers; and the deficiency of the presence of colour and odour, or an unpleasant odour arising when the saffron is thrown upon red-hot coals, will indicate the presence of the other fraudulent ingredients. It should be chosen fresh in hay, or in close, tough, compact cakes, moderately moist, and possessing, in an obvious degree, all the under-mentioned sensible qualities: the not staining the fingers, but making them oily, its exhaling a musty flavour; a whitish yellow or a blackish colour indicate that it is bad, or too old.

Qualities. — Good saffron has a sweetish, penetrating, diffusive odour; a warm, pungent, bitterish taste; and a rich deep orange-yellow hue in the hay, or an orange-red colour in cake. It yields its colour and active ingredients to water, alkohol, proof spirit, wine, vinegar, and, in a smaller degree, to ether. By distillation with water it affords a small quantity of a heavy golden-yellow coloured volatile oil; and it is to this oil that saffron owes its active properties: 32 parts of saffron yield one of oil. The watery infusion, which has a deep orange-colour, is rendered, when much concentrated, of a very deep purple by strong sulphuric acid, the mixture emitting the smell of vinegar, and yielding a copious black precipitate when diluted with water: chlorine produces a copious yellow precipitate, the liquid retaining only a very pale lemon-colour. Saffron seems to contain chiefly extractive, which, according to Hermbstadt, is nearly pure and in the proportion of ten parts in sixteen of the vegetable; but M. Henry has demonstrated that it contains volatile oil; and he contends that its stimulant influence is dependent on this oil: the remainder being chiefly ligneous fibre. This extractive, when pure, is named *polychroite* by Bouillon la Grange and Vogel, on account of the different colours it is capable of assuming when it is acted on by sulphuric acid, which changes it to indigo, which gradually becomes lilac: nitric acid gives it a green hue.

It also contains resin; for sulphuric ether digested on saffron is coloured, and when evaporated on the surface of water, a pellicle of resin is left, whilst the colour extractive, which is taken up with the resin, is dissolved in and colours the water.

Medical properties and uses. — Saffron is regarded as a stimulant and antispasmodic; but, from the experiments of Dr. Alexander, its powers appear to be inconsiderable. It was known to the ancients, who considered it as a remedy of great activity; of moderate doses exhilarating the spirits, easing pain, and producing sleep; but occasioning headachs, coma, delirium, convulsive laughter, and even fatal effects, when given in large doses. In modern practice, however, it is scarcely ever given except as a cordial adjunct to more active remedies. The dose in substance is from grs. x. to ʒ ss.; but it has been given in much larger doses without any sensible effect being produced. — *A. T. Thomson.*

It is extensively used in pharmacy as a colouring matter. The London College, a syrup, and the Edinburgh, a tincture of saffron.

Crocus veneris. Oxide of copper formed by calcining the metal.

Cromm'yon. (Παρα το τας κορας μυειν, because by its pungency it makes the eyes wink.) An onion.

Crommyoxyre'gma. (From κρομμυον, an onion, οξυς, acid, and ρηγνυμι, to break out.) An acid eructation, accompanied with a taste resembling onions.

Crop. A dilation of the gullet in birds. See *Ingluvies.*

Cross birth. The popular name for what obstetricians call *Preternatural labour.* See *Parturitio.*

CRO'TALUS. (*us, i.* m.; from κροταλον, a rattle.) The rattlesnake. A genus of venomous serpents abounding in various parts of the American continent. There are three species, the characters of which are well ascertained, *C. durissus, C. horridus,* and *C. miliarius:* a fourth *C. cascabella,* has been recently found in Brazil. The most remarkable characteristic of these reptiles is the rattle appended to their tails. This consists of a number of horny joints, which are moveable on one another, and make a rattling noise when the animal moves. The number of these joints increases with the age of the serpent, one being added every time it changes its cuticle.

The bite of the rattlesnake is almost uniformly fatal, being followed by gangrenous inflammation of the injured part and rapid sinking of the vital powers.

Crotaphi'tes. (From κροταφος, the temple.) Appertaining to the temple. Applied to the temporal artery, vein, or muscle.

Crota'phium. (From κροταφος, the temple.) A pain in the temples.

Cro'taphos. (*Κροταφος*; probably from *κροτεω*, to pulsate.) The temples.

CROTCHET. A curved instrument, with a hook, used to extract the fœtus in the operation of embryotomy.

CRO'TON. (*on, onis. κροτων.*) 1. The Greek name of the dog tick.

2. The name of a genus of plants in the Linnæan system. Class, *Monœcia*; Order, *Monadelphia*.

Croton benzoe. See *Styrax benzoe.*

Croton cascarilla. The systematic name of the plant which affords the Cascarilla bark: called also, *Cascarilla*, *Chocarille*, *Elutheria*, and *Eluteria*. It is a native of the Bahama islands, and found also in the West Indies. The London College orders an infusion of it, and the Dublin a tincture and an extract. The bark comes to us in quills, covered upon the outside with a rough, whitish matter, and brownish on the inner side, exhibiting, when broken, a smooth, close, blackish-brown surface. It has a light agreeable smell, and a moderately bitter taste, accompanied with a considerable aromatic warmth. It is very inflammable, and when burnt and extinguished gives out a fragrant musky smell. It yields its virtues partially to water and to alkohol, and entirely to proof spirit. According to Trommsdorff 4·696 parts of the bark consist of woody fibre, 3·024 mucilage, and a bitter principle 8·64, resin 6·88, volatile oil 72, and water 48. It is a very excellent tonic, astringent, and stomachic, and is deserving of a more general use than it has hitherto met with. The dose of the powdered bark is from grs. xij. to ʒj. three or four times a day.

Croton sebi'ferum. The tallow-tree of China, now referred to another genus. See *Stillingia.*

Croton ti'glium. The systematic name of the tree which affords the pavana wood, and tiglia seeds. *Croton — foliis ovatis glabris acuminatis serratis, caule arboreo*, of Linnæus. It is a native of the island of Ceylon, and is found in Malabar, China, Cochin China, and the Molucca Islands. Every part of the plant would seem to be endowed with medicinal activity: the *root* acts as a drastic purgative, and when pulverised, and exhibited in the dose of a few grains, is considered at Amboyna and Batavia, as a specific for dropsy; the *wood* (*lignum Pavanæ*) produces, when administered in small doses, a diaphoretic effect, and in larger ones it proves drastic; the *leaves* are also purgative, and when dried and powdered are supposed to afford an antidote against the bite of the *cobra del Capella.* The *seeds*, however, are the parts which have been more generally employed in medicine, the effects of which appear to have been well known for nearly a thousand years. They were early introduced into Europe, and long known under the names of *Grana Molucca — Tilii Grana*, — and *Grana Tiglia.* It appears that they were at first very frequently administered; but their extreme acrimony and violence, and probably the accidents which arose from their injudicious use, soon banished the article from medical practice; in India, however, these seeds are still employed as an effectual purgative, after first undergoing the process of roasting, or baking, for the purpose of removing the shell, rendering the nut pulverulent, and at the same time of moderating the acrimonious qualities. The expressed oil of these seeds does not appear to have been obtained in a separate form until a later period; Lemery speaks of it, and Geoffroy in directing its dose cautions us against giving more than ʒj.! — he probably meant a drop. Its use has very lately been revived, and there can be little doubt but that under proper restrictions, it may become a valuable acquisition to the practitioner. The profession is indebted for its late introduction, or rather revival, to Mr. E. Conwell, of the East India Company's Service.

This expressed oil has a yellow colour, a faint odour, and an acrid taste; these qualities, however, will be found to vary in different samples; but the fact, as Dr. Nimmo has justly observed, may be fairly explained, without suspecting the existence of any fraud, by supposing that the seeds have undergone a different degree of torrefaction, in order to separate the oil from the farinaceous part. The experiments of Dr. Nimmo have very satisfactorily shown that this oil consists of forty-five parts of an *acrid purgative principle*, and fifty-five of a fixed oil resembling that of olives, and not possessed of any cathartic property. The acrid matter consists of a peculiar acid and a resin. The acid has been named *crotonic* by M. Brandes. It was discovered by Pelletier and Caventou, who called it the *iatrophic.* This oil does not appear to produce any effects which cannot be commanded by other drastic purgatives; its value depends upon the facility with which it may be administered; in some cases it is amply sufficient to touch the tongue, in others a drop or two will be required. In mania, and in cases where the administration of bulky medicines is extremely difficult, it would seem to offer a decided advantage. It has been usually given in this country in the proportion of from one to two drops, in the form of pills. Dr. Nimmo's discovery with respect to the chemical composition of the oil, very naturally suggested to him the mode of administering it in the form of an alkoholic tincture, (*Tinctura Tiglii*) and he has found by experience that such a preparation furnishes the means of readily apportioning the dose to the various circumstances of the case; thus he found that in administering a tincture in doses equivalent to the number of drops decomposed, the same effects were produced as have been attributed to the entire oil. Much has been said upon the fraudulent admixture of this comparatively expensive article with the cheaper fixed oils, and we believe with much truth; a circumstance which will of necessity prevent the general use of the article, and occasion very different reports with respect to its value and activity. Dr. Nimmo, however, proposes a method of detecting such adulteration, by a process suggested by the results of his experiments upon its composition, and whose rationale will be easily understood after the chemical history that has been just presented.

"Let a very light phial be counterpoised in an accurate balance; pour into it fifty grains of the suspected oil, add alkohol (which has been previously digested upon olive oil,) agitate them well, pour off the solution and add more alkohol as before, until the dissolved portion is diffused in such a proportion of alkohol that each half drachm measure shall contain equal to one dose of the oil of *Tiglium* for an adult. By afterwards placing the phial near a fire, to evaporate what remains of the alkohol in the bottle, *if the residuum be to that which has been abstracted by the alkohol as fifty-five to forty-five, the oil is genuine.* If olive, or any other oil little soluble in alkohol, has been employed as the adulterating agent, it is evident that the residuum will be in a larger proportion; but should *Castor Oil* have been employed for that purpose, the proportion of residuum will be smaller even than the genuine medicine." — *Paris.*

Croton tinctorium. The systematic name of the litmus plant. *Croton — foliis rhombeis repandis, capsulis pendulis, caule herbaceo,* of Linnæus. *Bezetta cærulea.* This plant, which is a native of the Levant, Italy, and the south of France produces the litmus or *turnsol,* called also *succus heliotropii* and *lacca carnea.*

Cro'tonate. A salt formed by the crotonic acid with a base.

Croto'ne. (From κροτον, the tick.) A fungus on trees produced by an insect like a tick; and, by metaphor, applied to small fungous excrescences on the periosteum.

Crotonic acid. See *Croton tiglium.*

CROUP. The disease which is called croup is known by a permanently laborious and suffocative breathing, accompanied by a stridulous noise, a short and dry cough, and frequently, towards the close, an expectoration of a concrete membraneous sputum. Three very distinct forms of disease have been described by authors under the name of croup: the acute, the chronic, and the spasmodic.

1. The *acute croup.* In this the sense of suffocation is great and constrictive, chiefly seated in the throat; the respiration is sonorous, the voice harsh, the cough ringing: there is great restlessness, and active inflammatory fever. The disease essentially consists of a peculiar inflammation, that spreads through different parts, or even the whole range of the windpipe, from the larynx to the minutest ramifications of the bronchiæ; and, as the whole tube was called *bronchus* by the ancients, the most appropriate name for it would be bronchitis. It has also received many other appellations, from its prominent symptoms, in the nosological arrangements of physicians; as *tracheitis, cynanche trachealis, cynanche laryngea, suffocatio stridula, angina perniciosa, cynanche stridula, morbus strangulatorius, catarrhus suffocativus, angina polyposa sive membranacea,* &c. &c. Dr. Home first called the attention of medical practitioners to it as a distinct disease. It usually commences in the larynx, or trachea, during which a peculiar secretion is effused, that readily assumes a membranous form, and lines the tube, not only above its bifurcation, but also in its minutest branches. When chemically examined, the secretion appears to consist chiefly, if not entirely, of the albuminous part of the blood, diluted with its serosity, and copiously combined with that peculiar substance of the blood called fibrin. How it happens that the mucous secernents of the air passages afford so unusual a secretion in this particular instance, we know not. It is not a little singular that children should be chiefly subject to this disease, at whose age fibrin is not peculiarly abundant, and whose blood contains, comparatively, but a small proportion of azote, which in fibrin is so large a constituent. Dr. Cullen asserts that acute croup seldom attacks infants till after they have been weaned; and that there is no instance of its occurring in children above twelve years of age. Those who have once had it are more susceptible of it than before; though the susceptibility gradually wears off as they grow older. It is found equally in midland regions and on the coast, but perhaps more frequently in low, marshy grounds, than in drier uplands. There is no unequivocal instance of its being contagious, though it seems to have been occasionally epidemic.

It commences usually with a slight cough, hoarseness, and sneezing, as though cold had been taken, and the patient was about to suffer from catarrh. To these symptoms, in a day or two, and sometimes in a few hours, succeed a peculiar shrillness and ringing of the voice, as if the sound were sent through a brazen tube.

"At the same time," says Dr. Cullen, who has well described the progress of the disease, "there is a sense of pain about the larynx, some difficulty of respiration, with a wheezing sound in inspiration, as if the passage of the air were straitened. The cough which attends it is sometimes dry; and if any thing be spit up, it is a matter of a purulent appearance, and sometimes films, resembling portions of a membrane. Together with these symptoms, there is a frequency of pulse, a restlessness, and an uneasy sense of heat. When the internal fauces are viewed they are sometimes without any appearance of inflammation; but frequently a redness and even swelling appear: and sometimes in the fauces there is an appearance of matter like to that rejected by coughing. With the symptoms now described, and particularly with great difficulty of breathing, and a sense of strangling in the fauces, the patient is sometimes suddenly cut off. The countenance generally exhibits great distress; the head and face are covered with perspiration, from the violence of the struggle, and the lips and cheeks are alternately pale and livid. The essence of this species of croup consists in the secretion of the concrete lining, which is perpetually endangering suffocation." Notwithstanding the latter affirmation, Dr. Cullen seems to consider spasm of the glottis as the more frequent cause of suffocation; adding, however, that he never found antispasmodic medicines of any use. Spasm was with him a favourite doctrine, and often warped his judgment. Dr. Marcus regards croup as a local inflammation alone, utterly independent of spasm, and attributes the danger to this symptom solely. That there is some degree of spasmodic action, however, is unquestionable;

and the locality of the disease, as well as the peculiar character of the inflammation, sufficiently distinguish it from catarrh, in which there is also some inflammation of the mucous membrane of the trachea, though of a common kind, and rarely limited to this organ.

The cure demands a prompt and active attention; and must depend, not so much upon searching into and correcting the remote cause, or even counteracting the spasm, as in counteracting and removing the membranous secretion, which is every moment in danger of producing suffocation; the more so, that in children the natural aperture of the glottis is much smaller in proportion than in adolescents, and occasionally not more than a line and a half in breadth. The patient makes frequent and painful efforts to remove this solid secretion by coughing; but the cough is, for the most part, dry and ineffectual, and nothing more than a little flaky mucus is excreted. Very copious bleeding, at the commencement of the attack, by breaking abruptly upon the inflammatory action, has sometimes carried off the disease at once. This may be effected from the jugular vein, and leeches may be applied afterwards, according to circumstances. Emetics have been given immediately after. These are of doubtful effect; in many instances, however, they have soon removed the disease. A full dose of tartrate of antimony is the best emetic in this case. The inhalation of warm vapour, recommended by Dr. Home, is, for obvious reasons, so rarely practicable, that it need scarcely be taken into consideration. The remedy principally relied on in the present day, and which in many instances has acted like a charm, is large and repeated doses of the submuriate of mercury. Of this, not less than five or six grains are commonly given to very young children, and continued every two or three hours, till there is a discharge of green bilious matter, which seems to be the criterion of its having taken effect. When depletion has been carried far enough, and the disease still continues, the application of a blister on the back of the neck or between the shoulders may be serviceable.

2. The *chronic* form of a croup is very rare. A concrete parenchymatous material, obstructing the bronchia, and formed occasionally in the trachea, is coughed up in smaller or larger masses. It is sometimes loose, and without any attachment to the sides of the bronchial tubes; and sometimes so extensively connected by the inosculation of vessels, as to cause a fatal hæmorrhage when expelled with violence. In some instances, the material is membranous, like white paper, the size of a shilling, or larger, or it is tubular, having the form of the bronchia. Dr. Warren gives a good account of this disease in the first volume of the Transactions of the College of Physicians. It is attended with a difficulty of breathing, a short, dry, and almost incessant cough, which vanish when the membrane is expelled. This disease returns by paroxysms, which recur as more membrane is forming. At other times there is little deviation from health, and febrile symptoms are seldom noticed. Mercury, in small doses, with expectorants, have, in the several cases which I have seen, removed the morbid and peculiar action of the mucous membrane, which is the essence of the disease.

3. The *spasmodic croup*. This is a very different disease from the two former, the very essence of which is inflammation, and a membrane-like secretion, neither of which exist in this, which is of a purely nervous or spasmodic nature. Dr. Good very properly gives it another name — *laryngismus stridulus*, and places it amongst nervous diseases. See *Laryngismus stridulus*.

Crowfoot. See *Ranunculus*.

Crowfoot-cranesbill. See *Geranium pratense*.

Crow-silk. See *Conferva rivalis*.

Crown. See *Corona*.

Crown imperial. See *Corona imperialis*.

CRU'CIAL. (*Crucialis;* from *crux*, a cross.) Cross-like. Applied in *Anatomy* to some parts disposed in the manner of a cross, as the crucial ligaments of the knee-joint. 2. In surgery, to an incision made in the shape of a cross.

Cruci'lis. See *Crucial*.

Cruci'tus. See *Cruciformis*.

CRU'CIBLE. (*Crucibulum*, *i*. n.; from *crucio*, to torment: so named, because, in the language of the old chemists, metals are tormented in it, and forced to yield up their powers and virtues.) A chemical vessel in which substances are exposed to the heat of a fire or furnace. They are of various materials, as earthenware, iron, black lead, platina, &c. Earthen crucibles of a triangular shape are those most used in common chemical operations.

CRUCI'FERÆ. (From *crux*, a cross, and *fero*, to bear.) Cruciform plants. A natural family of plants, the corollæ of which are in the shape of a cross. They all belong to Linnæan class *Tetradynamia*, and they are all more or less pungent and aromatic.

CRUCIFO'RMIS. *Cruciatus*. Cross-like. Applied to leaves, flowers, &c. which have the shape of a cross.

CRU'DITAS. (From *crudus*, raw.) *A*crudity. A term applied to undigested substances in the stomach, and formerly to humours in the body unprepared for concoction.

Cru'nion. (From κρουνος, a fountain.) A medicine mentioned by Aëtius, and named from the violence of its operation as a diuretic.

CRU'OR. (*or*, *oris*. m.; from κρυος, cold; it being that which appears like a coagulum as the blood cools.) The red part of the blood. See *Blood*.

Cru'ra. The plural of *crus*.

CRURÆ'US. (From *crus*, a leg.) *Cruralis*. A muscle situated on the fore-part of the thigh. It arises, fleshy, from between the two trochanters of the os femoris, but nearer the lesser, firmly adhering to the fore-part of the os femoris throughout the greater part of its length; and is inserted, tendinous, into the upper part of the patella, behind the rectus. Its use is to assist the vasti and rectus muscles in the extension of the leg.

CRU'RAL. (*Cruralis;* from *crus*, the leg.) Belonging to the *crus*, leg, or lower extremity.

Crural hernia. See *Hernia cruralis*.

Cruralis. See *Cruræus.*

CRUS. (*Crus, ris.* n.) 1. The leg.

2. The root or origin of some parts of the body, from their resemblance to a leg; as *Crura cerebri, Crura cerebelli; Crura* of the diaphragm, &c.

Crus clitoridis. See *Clitoris.*

Crus penis. See *Penis.*

CRU'STA. (*a, æ.* f.) 1. A shell.

2. A scab.

3. The scum of a fluid.

Crusta lactea. Milk scab. A name that has been given to the scald head. See *Porrigo.*

Crusta villo'sa. The mucous coat of the stomach and intestines.

CRUSTA'CEA. A class of articulated animals, which have the body protected by a hard shell. See *Animal kingdom.*

CRUSTA'CEOUS. Covered with a shell, or resembling a shell. Applied to various objects in zoology and botany.

Cru'stula. (Dim. of *crusta*, a shell.) An effusion of blood under the tunica conjunctiva of the eye, from a bruise or any other cause.

Crustumina'tum. A kind of rob prepared by the ancients with Crustuminian pears, and apples, boiled with honey.

Crymo'des. (Κρυμωδες, from κρυος, cold.) An epithet of a fever, wherein the external parts are cold, and the internal hot.

CRYO'PHORUS. (From κρυος, cold, and φερω, to bear.) The frost-bearer, or carrier of cold; an instrument, invented by Dr. Wollaston, to demonstrate the relation between evaporation at low temperatures, and the production of cold.

CRYPSO'RCHIS. (*is, idis.* m.; from κρυπτω, to conceal, and ορχις, a testicle.) A man whose testicles are hid in the belly, not having descended into the scrotum.

CRY'PTA. (*a, æ.* f.; from κρυπτω, to hide.) 1. The little rounded appearances at the end of the small arteries of the cortical substance of the kidneys, that appear as if formed by the artery being convoluted upon itself, are called *cryptæ.*

2. A *follicle*, or *follicular gland.*

Cryptoce'phalus. (From κρυπτος, hidden, and κεφαλη, a head. The name given by G. St. Hillaire to a monstrosity, in which the head is very small, and does not project from the trunk.

CRYPTOGA'MIA. (*a, æ.* f.; from κρυπτος, hidden, and γαμος, a marriage.) The twenty-fourth and last class of the Linnæan system of plants, comprehending those in which the parts essential to fructification have not been sufficiently ascertained to admit of their being referred to the other class. It contains four orders, *Filices, Musci, Algæ*, and *Fungi.*

CRYSTAL. (*Crystallus, i.* m.; Κρυσταλλος.) When liquid or gaseous bodies assume the solid form, their particles in some instances aggregate indiscriminately, forming irregular masses, and in other instances become connected in a certain order, so as to constitute defined mathematical figures. The researches of Romé de Lisle, Gahn, Bergman, and Haüy, have established that every body susceptible of crystallisation, crystallises in some *primitive form*, as the cube tetraëdron, octoëdron, &c.; and that all the *secondary forms* arise from the decrement of particles from the edges and angles of these primitive forms.

Crystal mine'ral. A French name of the *sal prunellæ* when in the form of cakes. See *Sal prunellæ.*

Crystalli. This name seems to have been given both to *Pemphigus* and to *Varicella.*

CRYSTALLINE. *Crystallinus.* Resembling crystal.

Crystalline lens. See *Oculus.*

CRYSTALLISATION. (*Crystallizatio, onis*, f.; from *crystallus*, a crystal.) A process in which crystallisable bodies tend to assume a regular form, when placed in circumstances favourable to that particular disposition of their particles. Almost all minerals possess this tendency; but it is most eminent in saline substances. The circumstances which are favourable to the crystallisation of salts, and without which it cannot take place, are two: 1. Their particles must be divided and separated by a fluid, in order that the corresponding faces of those particles may meet and unite. 2. In order that this union may take place, the fluid which separates the integrant parts of the salt must be gradually carried off, so that it may no longer divide them.

Cte'dones. (From κτηδων, a comb.) Fibres disposed in a pectinated manner, were so called by the Greek anatomists.

Cteis. (Κτεις, a comb.) 1. The os pubis.

2. The incisor teeth were called κτενες.

CUBE'BA. (*a, æ.* f.; from *cubabah*, Arab.) See *Piper cubeba.*

Cubebs. See *Piper cubeba.*

Cubiforme os. See *Os cuboides.*

Cubitæus externus. See *Extensor digitorum communis.*

Cubitæus internus. See *Flexor sublimis*, and *profundus.*

CU'BITAL. (*Cubitalis*; from *cubitus*, the fore-arm.) Belonging to the fore-arm.

Cubital artery. *Arteria cubitalis.* The ulnar artery. See *Ulnar artery.*

Cubital nerve. *Nervous cubitalis.* The ulnar nerve. See *Ulnar nerve.*

Cubitalis musculus. See *Anconeus.*

CU'BITUS. (*us, i.* m.; from *cubo*, to lie down: because the ancients used to lie down on that part at their meals.) 1. The fore-arm, or that part between the elbow and wrist.

2. The larger bone of the fore-arm is called *os cubiti.* See *Ulna.*

CUBOI'DES. (From κυβος, a cube or die, and ειδος, likeness.) Cuboid, resembling a cube.

Cuboides os. *Os cubiforme. Os grandinosum.* A tarsal bone of the foot. See *Tarsus.*

Cuckow flower. See *Cardamine.*

Cuckow pint. See *Arum maculatum.*

CUCU'BALUS. (*us, i.* m.) The name of a genus or family of plants in the Linnæan system. Class, *Decandria*; Order, *Tryginia.*

Cucubalus baccifer'us. The systematic name of the berry-bearing chick-weed, which is sometimes used as an emollient poultice.

Cucubalus behen. The systematic name

of the *Behen officinarum*, or spatling poppy, formerly used as a cordial and alexipharmic.

CUCULLA'RIS. (From *cucullus*, a hood: so named, because it is shaped like a hood.) See *Trapezius*.

Cuculatum majus. A barbarous name of brandy. — *Ruland*.

CUCULLA'TUS. Hooded; cone-shaped. Applied to a leaf, when the edges meet in the lower part, and expand in the upper, forming a sheath or hood, like the paper rolled by grocers to put small quantities of any thing in, or like a hollow cone, as in the genus *Sarracenia*.

CUCU'LLUS. (*us, i.* m.) 1. A hood.

2. An odoriferous cap for the head.

Cucumber. See *Cucumis*.

Cucumber, bitter. See *Cucumis colocynthis*.

Cucumber, squirting. See *Momordica elaterium*.

Cucumber, wild. See *Momordica elaterium*.

CU'CUMIS. (*is, is.* m.; also *cucumer, ris.*; *quasi curvimer*, from its curvature.) The cucumber. 1. The name of a genus of plants in the Linnæan system. Class, *Monœcia*; Order, *Syngenesia*. The cucumber.

2. The pharmacopœial name of the garden cucumber. See *Cucumis sativus*.

Cucumis agrestis. See *Momordica elaterium*.

Cucumis asininus. See *Momordica elaterium*.

Cucumis colocynthis. The systematic name of the bitter apple, bitter gourd, or bitter cucumber. *Colocynthis*. *Alhandula* of the Arabians. *Coloquintida*. *Cucumis — foliis multifidis, pomis globobis glabris*, of Linnæus. This plant is an annual, a native of Turkey and Nubia, flowering from May till August, and much resembling the cucumber in its herbage. The root is branching, and strikes deep into the ground. The stems are trailing, beset with rough hairs; the leaves are on long petioles, of a triangular form, variously sinuated, obtuse, of a fine green colour on the upper surface, and whitish and rough beneath. The flowers are solitary, axillary, and of a yellow colour. The calyx of the male flowers is bell-shaped; the corolla the same shape with the limb, divided into five-pointed segments; and the anthers, which stand on three short filaments, are long, erect, and adhere together on the outer side. The female flower is like the male, but the filaments have no anthers. The fruit is a round berry or pepo, the size of a small orange, yellow, and smooth on the outside when ripe; trilocular, each cell containing many ovate, compressed, whitish seeds, enveloped by a white spongy pulp.

When the fruit is ripe and yellow, it is peeled and dried in a stove; and in this state it is brought to this country. When it is larger than a St. Michael's orange, and has black acute-pointed seeds, it is not good.

Qualities. — Dried coloquintida is inodorous; but has an extremely bitter nauseous taste, and the pulp feels mucilaginous when chewed. Independent of the seeds, it is altogether composed of a very light, easily torn, white, cellular matter. Ether, alkohol, and water extract its virtues. The infusion in boiling water has a golden-yellow colour, gelatinises as it cools, and resembles, except in colour and taste, mucilage of quince-seed. This mucilage is soluble in cold water. Alkohol and all the acids coagulate the solution, which is precipitated by solutions of acetate and subacetate of lead, and nitrate of silver. Sulphate of iron strikes with it a deep olive colour.

Its colour is rendered also greenish by solution of potassa, which precipitates it; but the mucilage is dissolved by solution of ammonia. Ether, digested on the pulp, deposits, when evaporated on the surface of water, a white, opaque, bitter resin, and some extractive; from which the water acquires the bitter taste of the fruit, and precipitates solutions of potassa, nitrate of silver, and acetate of lead. From these experiments colocynth pulp should consist chiefly of mucus, resin, a bitter principle, and some gallic acid. M. Vauquelin found that an alkoholic tincture formed from the residue of a strong decoction of colocynth, when evaporated and washed with a little water to free it from some acetate of potassa, yields a brittle orange-yellow substance, partially soluble only in water, the residue being a white filamentous mass, changing to yellow. This substance he has named *Colocythine*; and he regards it as the active principle of the drug. Colocynthine is more soluble in alkohol than in water. It is precipitated by infusion of nutgalls.

Medical properties and uses. — The pulp of this fruit is a very powerful drastic cathartic. It was employed by the ancients in dropsical, lethargic, and melancholic affections; but always with caution, on account of its violent effects. Orfila, from his own observations, asserts that one or two drachms of it only, applied to the cellular tissue of the interior of the thigh of a man, produced death in the space of twenty-four hours. When given alone, even in moderate doses, it purges vehemently, producing violent gripings, bloody dejections, and not unfrequently, convulsions and inflammation of the bowels. The watery decoction, or the infusion, is much less violent in its operation, and has been recommended in worm cases. It is scarcely ever given alone in any form, but is generally united with other purgatives to quicken their operation. The dose is from gr. j. to grs. v. triturated with almonds, or gum, or some farinaceous matter.

Officinal preparations. — *Extractum Colocynthidis*, L. D. *Extractum Colocynthis comp.* L. D. *Pilulæ Colocynthidis comp.* E. D. *Pilulæ Aloe cum Colocynthide*, D. — *A. T. Thomson*.

Cucumis melo. The systematic name of the melon plant. *Melo*. Musk melon. The fruit, when ripe, has an agreeable cool flavour, but must be eaten moderately, with pepper, or some aromatic, as all this class of fruits are liable to produce flatulence and colic. The seeds possess mucilaginous qualities.

Cucumis sativus. The systematic name of the cucumber plant. *Cucumis. Cumis — foliorum angulis rectis; pomis oblongis scabris*, Linnæus. It is cooling and aperient, but very apt to disagree with bilious stomachs. It should always be eaten with pepper and oil. The seeds were formerly used medicinally.

Cucumis sylvestris. See *Momordica elaterium*.

Cu'cupha. A hood. An odoriferous cap for the head, containing aromatic drugs.

CUCU'RBITA. (*a. æ.* f.; *à curvitate*, according to Scaliger, the first syllable being doubled; as in *Cacula*, *Populus*, &c.) 1. The name of a genus of plants in the Linnæan system. Class, *Monœcia*; Order, *Syngenesia*. The pumpion.

2. The pharmacopœial name of the common gourd. See *Cucurbita pepo*.

3. A chemical distilling vessel, shaped like a gourd.

4. A cupping-glass.

Cucurbita citrullus. The systematic name of the water-melon plant, or Sicilian citrul, or water-melon. *Citrullus. Anguria. Tetranguria.* The seeds of this plant, *Cucurbita — foliis multipartitis*, of Linnæus, were formerly used medicinally, but now only to reproduce the plant. Water-melon is cooling and somewhat nutritious; but so difficult of digestion, as to prove highly noxious to some stomachs, and bring on spasms, diarrhœa, cholera, colic, &c.

Cucurbita lagenaria. See *Cucurbita pepo.*

Cucurbita pepo. The common pumpion, gourd, or bottle gourd. *Cucurbita.* The seeds of this plant, *Cucurbita — foliis lobatis, pomis lævibus*, are used indifferently with those of the *Cucurbita lagenaria — foliis subangulatis, tomentosis, basi subtus biglandulosis, pomis lignosis.* They contain a large proportion of oil, which may be made into emulsions, but is superseded by that of sweet almonds.

CUCURBITA'CEÆ. The name of an order of Linnæus's Fragments of a Natural Method, consisting of plants which resemble the gourd.

Cucurbiti'nus. The *tænia solium*, a species of tape-worm, has been so named from its resemblance to the seed of the gourd. See *Tænia.*

CUCURBI'TULA. (*a, æ.* f.; a diminutive of *cucurbita*, a gourd: so called from its shape.) A cupping-glass. See *Cupping.*

Cucurbitula cruenta. A cupping-glass, applied after scarification, to procure blood.

Cucurbitula cum ferro. The same.

Cucurbitula sicca. A cupping-glass applied without scarification.

Cudweed. See *Filago.*

Culbi'cio. A sort of strangury, or rather heat of urine.

Cu'leus. A Roman measure containing twenty amphoræ.

CU'LEX. (*ex, icis.* m.) A genus of dipterous insects. The gnat family.

Culex pipiens. The common gnat, and the mosquito, the bite of which is so pungent. The best application to the bitten part is diluted spirit of hartshorn.

Culilawan. See *Laurus Culilawan.*

CULMIFERÆ. Plants which have smooth soft stems.

CU'LMUS. (*us, i.* m.; from the Greek καλαμος, a reed.) Culm. Straw. The stem of grasses, rushes, and plants nearly allied to them. It bears both leaves and flowers, and its nature is more easily understood than defined. The varieties of the culmus are,

1. *Teres*, round; as in *Carex uliginosa.*
2. *Tetragonus*; as in *Festuca ovina.*
3. *Triangularis*; as in *Eriocaulon triangulare.*
4. *Capillaris*; as in *Scirpus capillaris.*
5. *Prostratus*; as in *Agrostis canina.*
6. *Repens*; as in *Agrostis stolonifera.*
7. *Nudus*; as in *Carex montana.*
8. *Enodis*, without joints; as in *Juncus conglomeratus.*
9. *Articulatus*, jointed; as in *Agrostis alba.*
10. *Geniculatus*, bent like the knee; as in *Alopecurus geniculatus.*

It is also either solid or hollow, rough or smooth; sometimes hairy or downy, scarcely woolly.

CU'LTER. *ter, tri.* m. A knife or shear. The third lobe of the liver has been so called, from a supposed resemblance in shape.

Cumamus. See *Piper cubeba.*

Cumana brassica. Red colewort.

Cumin. See *Cuminum.*

CU'MINUM. (*um, i.* n.; from κυω, to bring forth: because it was said to cure sterility.) 1. The name of a genus of plants in the Linnæan system. Class, *Heptandria*; Order, *Digynia.* The cumin plant.

2. The pharmacopœial name of the cumin plant. See *Cuminum cyminum.*

Cuminum æthiopicum. See *Sison.*

Cuminum cy'minum. The systematic name of the cumin plant; called also, *Fœniculum orientale.* A native of Egypt and Ethiopia, but cultivated in Sicily and Malta, from whence it is brought to us. The seeds of cumin, which are the only part of the plant in use, have a bitterish taste accompanied with an aromatic flavour, but not agreeable. They are generally preferred to other seeds for external use in discussing indolent tumours, as the encysted, scrofulous, &c. and give name both to a plaster and cataplasm in the Pharmacopœias.

Cunea'lis sutura. The suture by which the os sphenoides is joined to the os frontis.

CUNEIFORM. (*Cuneiformis*; from *cuneus*, a wedge, and *forma*, likeness.) Wedgelike. Applied in anatomy and natural history to various objects from their shape.

Cuneiformia ossa. See *Tarsus.*

Cune'olus. (From *cuneus*, a wedge.) A crooked tent to put into a fistula.

CUNI'LA. A genus of plants. Class, *Diandria*; Order, *Monogynia.* The *C. mariana* is thought to be febrifuge.

Cunila bubula. A name given by Pliny to marjoram.

Cunila mascula. A name of the *inula dysenterica.* — *C. Bauhin.*

Cunilago. See *Cunila mascula.*

Cup. See *Calyx.*

CU'PEL. (*Kuppel*, a cup. German.) *Copella, Catullus cinereus, Cineritium, Patella docimastica, Testa probatrix, exploratrix*, or *docimastica.* A shallow earthen vessel like a cup, made of phosphate of lime, which suffers the baser metals to pass through it, when exposed to heat, and retains the pure metal. This process is termed cupellation.

CUPELLATION. *Cupellatio.* The purifying of perfect metals by means of an addition

of lead, which, at a due heat, becomes vitrified, and promotes the vitrification and calcination of such imperfect metals as may be in the mixture, so that these last are carried off in the fusible glass that is formed, and the perfect metals are left nearly pure. The name of this operation is taken from the vessels made use of, which are called cupels.

CUPPING. (So called, most probably, from the cup-like shape of the glasses.) The application of the *cucurbitula*, or cupping-glass. This practice is of great antiquity, being mentioned by Hippocrates, and then the instrument was made of horn or metal. A figure of a cupping apparatus may be seen in the surgical works of Albucasis.

Cupping is performed by glasses, called from their shape *cucurbitulæ*, of different sizes and shapes, mostly open like a cup, but more ample and round at the bottom part, a spirit lamp and a scarificator. When the operation is about to be done, a basin of warm water, a piece of fine sponge, and the lighted lamp must be at hand. As many of the cupping-glasses as may be judged necessary, are to be put into the basin. Each glass is then to be held for an *instant only* over the flame of the spirit lamp, and immediately placed upon the skin: by this the air in the glass is rarified; and the moment the glass is applied, the skin and integuments are drawn up, and become swollen, from the blood being drawn into the small vessels, where it becomes stagnant, and perhaps effused into the cellular tissue. When nothing more is done, the operation is called *dry cupping*. The glasses are removed after two or three minutes, and again applied in the same way five or six times: but cupping being mostly intended to remove a quantity of blood, the operator proceeds, after the glass has been on a minute, to remove it, which he does by pressing the nail of a finger between the edge of the glass and the skin to let the air in, and in its place he quickly applies the scarificator — See *Scarificator* — and as quickly lays it aside, and immediately puts on the cupping-glass, having rarified the air within it by the flame of the spirit lamp as before. This is called cupping with scarifications. The successful performance of this operation requires some dexterity, and depends in a great measure on the quickness with which the application of the scarificator succeeds the removal of the glass; and by this adroitness the patient is saved a degree of pain which he would otherwise suffer from the scarifications. When the glasses are so full as to be in danger of falling off, or the blood is coagulated in them, they should be removed, emptied, and applied again. For the sake of neatness, care should be taken to insert the nail under the upper part of the glass, and remove it so as to keep its bottom downwards, the scarifications being at the same time wiped with a sponge, wet with warm water. The glasses also, previously to each application, should be rinsed with warm water, but not dried.

A bit of soft rag is usually doubled and put over the scarified part, at the end of the operation.

CUPRE'SSUS. (So called, *απο του κυειν παρισους τους ακρεμονας*, because it produces equal branches.) Cypress.

1. The name of a genus of plants in the Linnæan system. Class, *Monœcia;* Order, *Monadelphia*. The cypress-tree.

2. The pharmacopœial name of the cypress-tree. See *Cupressus sempervirens.*

Cupressus sempe'rvirens. The systematic name of the cupressus of the shops. *Cupressus —foliis imbricatis squamis quadrangulis*, of Linnæus; called also *cyparissus*. Every part of the plant abounds with a bitter, aromatic, terebinthinate fluid; and is said to be a remedy against intermittents. Its wood is extremely durable, and constitutes the cases of Egyptian mummies.

Cupri ammoniati liquor. See *Liquor cupri ammonio-sulphatis.*

Cupri rubigo. Verdigris.

Cupri sulphas. Sulphate of copper. Blue vitriol, called formerly, *Vitriolum cupri*, *Vitriolum cæruleum*, *Vitriolum Romanum*, and *Cuprum vitriolatum*. It possesses corrosive and styptic qualities; is esteemed as a tonic, emetic, astringent, and escharotic; and is exhibited internally in the cure of dropsies, hæmorrhages, and as a speedy emetic. The dose, as a tonic and astringent, is gr. $\frac{1}{6}$, gradually increased to gr. ij.; as an emetic, from gr. v. to gr. xv. Externally, it is applied to stop hæmorrhages, to hæmorrhoids, leucorrhœa, phagedænic ulcers, proud flesh, and condylomata.

CU'PRUM. (*Quasi æs Cyprium;* so called from the island of Cyprus, whence it was formerly brought.) See *Copper.*

Cuprum ammoniacale. See *Cupri ammonio sulphas.*

Cuprum ammoniatum. See *Cupri ammonio-sulphas.*

Cupri ammonio-sulphas. Ammoniated copper. Ammoniacal sulphate of copper. *Cuprum ammoniatum. Cuprum ammoniacale.* Take of sulphate of copper, half an ounce; subcarbonate of ammonia, six drachms: rub them together in a glass mortar, till the effervescence ceases; then dry the ammoniated copper, wrapped up in bibulous paper, in the air. In this process the suphate of copper is decomposed by the sesquicarbonate of ammonia, and a portion of the carbonic acid of the latter escapes. Carbonate of copper and sulphate of ammonia are formed, which, with the excess of sesquicarbonate of ammonia appears to constitute the substance under consideration. This preparation is much milder than the sulphate of copper. It is found to produce tonic and astringent effects on the human body. Its principal internal use has been in epilepsy, and other obstinate spasmodic diseases, given in doses of half a grain, gradually increased to five grains or more, two or three times a day. For its external application, see *Liquor cupri ammonio-sulphatis.*

Cuprum vitriolatum. See *Cupri sulphas.*

CU'PULA. An accidental part of a seed, being a rough calyculus, surrounding the lower part of a gland, as that of the oak, of which it is the cup.

CURA'TIO. *Cura.* The treatment of a dis-

ease or injury. It is not synonymous with our word *cure*; since it applies to treatment merely, whether successful or otherwise; thus *curare vulnus* does not mean to *cure* a wound, but to *dress* a wound.

Cura avenacea. A decoction of oats and succory roots, in which a little nitre and sugar were dissolved, was formerly used in fevers, and was thus named.

Curativus. Relative to a cure.

Curcas. See *Jatropha curcas.*

CURCU'LIO. (From *karkarah*, Hebrew.) The throat, and the aspera arteria.

Curcum. See *Chelidonium majus.*

CURCU'MA. (*a*, *æ*. f.; from the Arabic *curkum.*) Turmeric.

1. The name of a genus of plants in the Linnæan system. Class, *Monandria*; Order, *Monogynia.*

2. The pharmacopœial name of the turmeric-tree. See *Curcuma longa.*

Curcuma longa. The systematic name of the turmeric plant; also called, *Crocus Indicus, Terra marita, Cannacorus radice croceo, Curcuma rotunda*, and *Mayella*; *Kua kaha* of the Indians.

Curcuma — foliis lanceolatis; nervis lateralibus numerossimis, of Linnæus. The Arabians call every root of a saffron colour by the name *curcum.* The root of this plant is imported here in its dried state from the East Indies, in various forms. Externally, it is of a pale yellow colour, wrinkled, solid, ponderous, and the inner substance of a deep saffron or gold colour: its odour is somewhat fragrant; to the taste it is bitterish, slightly acrid, exciting a moderate degree of warmth in the mouth, and, on being chewed, it tinges the saliva yellow. It is an ingredient in the composition of *Curry powder*, is valuable as a dyeing drug, and furnishes a chemical test of the presence of uncombined alkalis. It is now very seldom used medicinally, but retains a place in our pharmacopœias.

Curcuma rotunda. See *Curcuma longa.*

CURD. The coagulum, which separates from milk, upon the addition of acid and other substances.

CURE'TTE. (French.) An instrument, shaped like a little scoop, for taking away any opake matter that may be left behind the pupil, after extracting the cataract from the eye.

Curled. See *Crispus.*

Cu'rmi. (Κουρμι.) Ale. A drink made from barley; a kind of ale. — *Dioscorides.*

Currant. See *Ribes.*

Cursuma. *Curtuma.* See *Ranunculus ficaria.*

Curtain. See *Volva.*

Curva'tor coccy'gis. The name of a muscle described by Albinus.

CURVA'TUS. (From *curvo*, to bend.) Curvate: bent.

CUSCU'TA. (*a*, *æ*. f.; according to Linnæus, a corruption from the Greek κασυτας, or καδυτας, which is from the Arabic *chessuth*, or *chasuth.*) Dodder. 1. The name of a genus of plants in the Linnæan system. Class, *Tetrandria*; Order, *Digynia.*

2. The pharmacopœial name of dodder of thyme. See *Cuscuta epithymum.*

Cuscuta epithymum. The systematic name of the dodder of thyme; called also, *Intestina diaboli, epithymum. Cuscuta — foliis sessilibus, quinquifidis, bracteis obvallatis.* A parasitical plant, possessing a strong disagreeable smell, and a pungent taste, very durable in the mouth: recommended in melancholia, as cathartics. A large variety, common on heaths, on furze, and nettles, is sometimes called *hell-weed*, from the destruction it produces, and also *devil's guts.*

Cuscuta europæa. The systematic name of a species of dodder. *Linangina. Cuscuta — floribus sessilibus*, of Linnæus.

CUSPA'RIA. (*a*, *æ*. f.) 1. The name given by Messrs. Humboldt and Bonpland to a genus of plants in which is the tree which yields the angustura bark. See *Bonplandia trifoliata*, in the *Supplement.*

2. The tree which yields the angustura bark. See *Bonplandia trifoliata*, in the *Supplement.*

CUSPIDA'TUS. (From *cuspis*, a point.) Cuspidate. 1. Four of the teeth are called *cuspidati*, because they have the two sides of their edge sloped off to a point. See *Teeth.*

2. Sharp-pointed: applied to leaves which are tipped with a spine, as in thistles. See *Leaf.*

CU'SPIS. (*is*, *idis*. f.) A point. 1. The glans penis has been so called, from its likeness to the point of a spear.

2. The name of a bandage.

Cu'stos oculi. An instrument to fix the eye during an operation.

Cuta'mbulus. (From *cutis*, the skin, and *ambulo*, to walk.) 1. A cutaneous worm; most probably the *Gordius medinensis.*

2. Scorbutic itching.

CUTA'NEOUS. (*Cutaneus*; from *cutis*, the skin.) Belonging to the skin.

Cuta'neus musculus. See *Platysma myoides.*

CU'TICLE. (*Cuticula*, *æ*. f.; a diminutive of *cutis*, the skin.) See *Cutis.*

CU'TIS. (*is*, *is*. fœm.) *Dermis. Pellis.* The skin. Skin has been said to consist of three parts: true skin (*cutis vera*), mucous net (*rete mucosum*), and scarf-skin, or cuticle. Haller, Camper, and Blumenbach are inclined to deny the existence of the mucous net in the skin of the white, and to admit it in that of the negro only; and in point of fact, indeed, its existence has been demonstrated in the negro race only, and inferred by analogy to exist in the white. "When a blister has been applied to the skin of a negro," says Cruickshank, "if it has not been very stimulating, in twelve hours after a thin transparent greyish membrane is raised, under which we find a fluid. This membrane is the cuticle or scarf-skin. When this with the fluid is removed, the surface under these appears black; but if the blister had been very stimulating, another membrane, in which this black colour resides, would also have been raised with the cuticle. This is *rete mucosum*, which is itself double, consisting of another grey transparent membrane, and of a black web very much resembling the *pigmentum nigrum* of the eye. When this membrane is removed, the surface of the true skin, as has been hitherto believed, comes in view, and is white like that of a European. The *rete mucosum* gives the

colour to the skin; is black in the negro; white brown or yellowish in the European."

Bichat denies the existence of a mucous coating or varnish (*corpus mucosum*), such as Malpighi describes it, and regards the vascular surface of the corion as the only mucous net.

According to Chaussier, the skin consists of two parts only, the *derma* (δερμα) *cutis vera* or corion, and the epidermis, cuticle, or scarf-skin; the first embracing the organic elements of this tissue; the second being an inorganic substance prepared by the organic, and deposited on its surface. This opinion is adopted by Gordon, according to whom the skin consists of two substances placed above each other like layers or plates (*laminæ*), the inner of which is the true skin, the outer the cuticle, or scarf-skin. Beclard, on the contrary, thinks that a peculiar matter, which occasions the colour by which the several races are distinguished, is found between the outer surface of the corion and the cuticle; and that no fair race is destitute of it except the *albino*, the peculiar appearance of whom he ascribes to the absence of the mucous net of the skin.

The *corion* of the human skin (*pellis*, *corium*, *derma*, *cutis vera*) seems to consist chiefly of very small dense fibres, not unlike those of the proper arterial coat, closely interwoven with each other, and more firmly compacted the nearer they are to its outer or cuticular surface. The inner surface of the corion is of a grey colour; and in almost all parts of the body presents a number of depressions, varying in size from $\frac{1}{10}$th to $\frac{1}{12}$th of an inch, and consequently forming spaces or intervals between them. These depressions, which correspond to eminences in the subjacent adipose tissue, have been termed *areolæ*. They are wanting in the corion of the back of the hand and foot only.

The outer or cuticular surface of the corion is quite smooth, of a pale or flesh-red tinge, and is much more vascular than its inner surface. It presents, further, a number of minute conical eminences (*papillæ*), which, according to the recent observations of Gaultier and Dutrochet, are liberally supplied with blood-vessels (*bourgeons sanguins*), and are the most vascular part of this membrane. In the ordinary state of circulation and temperature during life these eminences are on a level with the surrounding *corion;* but when the surface is chilled this membrane shrinks, while the papillæ either continue unchanged, or shrink less proportionally, and give rise to the appearance described under the name of *goose skin* (*cutis anserina*). This surface was said by the older anatomists to present numerous openings, orifices, or pores; but according to Gordon, if we trust to mere observation, no openings of this kind can be recognised, either by the eye or the microscope, except those of the sebaceous follicles. The hairs, indeed, are found to issue from holes in the corion, but they fill them up completely.

In certain situations, for instance, at the entrance of the external auditory hole, at the tip of the nose, on the margins of the eyelids, in the arm-pits, at the nipple, at the skin of the pubes, round the anus, and the female pudendum, are placed minute orifices, from which exudes an oleaginous fluid, which is quickly indurated. These openings lead into small sacs or cavities, called follicles (*folliculi*), or sebaceous glands (*glandulæ sebaceæ*). Of these sacs the structure is simple. They appear to consist simply of hollow surfaces secreting an oleaginous fluid, which is progressively propelled to the orifice, where it soon undergoes that partial inspissation which gives it the sebaceous or suet-like aspect and consistence.

The corion is liberally supplied with blood-vessels, nerves, and absorbents. After a successful injection, its outer surface appears to consist of an uniform network of minute vessels, subdivided to an infinite degree of delicacy, and containing during life blood coloured and colourless. It can scarcely be doubted that this vascular network (*rete vasculosum*) is the only texture corresponding to the *reticular body* of the older anatomists.

It is well known that this membrane when boiled sufficiently long is converted into a viscid glutinous liquor, which consists chiefly of gelatin (Chaptal, Seguin, Hatchett, Vauquelin, &c.), and that glue is obtained in great quantity from it for the purposes of art. As, however, in these operations a portion of matter is left undissolved, and as glue is completely soluble in water, while skin resists it for an indefinite time, it may be concluded, that though the chief constituent of the corion is gelatin, it is under some peculiar modification not perfectly understood. The union of this organised gelatin with the vegetable principle denominated *tannin* forms leather, which is quite insoluble in water.

Cuticle or scarf-skin (*epidermis*, *cuticula*) is a semitransparent, or rather translucent layer, of thin light-coloured matter, extended continuously over the outer surface of the corion. Its thickness varies, being thinnest on those parts least exposed to pressure and friction, but thickest in the palms and soles. It is destitute of blood-vessels, nerves, and absorbents; and there is reason to believe, from observing the phenomena and process of its reproduction, that it is originally secreted in the form of a semifluid viscid matter by the outer surface of the corion; and that, as it is successively worn or removed by attrition, it is in like manner repaired by a constant process of secretion or deposition. This semifluid viscid matter, which, in point of fact, is found between the outer surface of the corion and the firm cuticle, appears to be the substance mentioned by Malpighi, and so often spoken of as the mucous body or net (*corpus mucosum*). It is certainly quite inorganic; and it is impossible to explain its production otherwise than by ascribing it to the outer or vascular surface of the corion.

Cuticle is rendered yellow, and finally dissolved by immersion in nitric acid. It is also dissolved by sulphuric acid, in the form of a deep brown pulp. These, and some other experiments performed by Hatchett, appear to show that it consists chiefly of albuminous matter somehow modified.

This description shows, that, if strict observation be trusted, the mucous net has no exist-

ence, at least in the European. In the Negro, Caffre, and Malay, however, a black membrane is said to be interposed between the corion and cuticle, and to be the cause of the dark complexion of these races. On this subject I refer to the description given by Cruickshank, which is the best; the Essay of M. Gaultier already quoted; and the observations of Béclard. What is found in the skin of the mixed or half cast races, *i. e.* the offspring of an African and an European, or of a mulatto and European? and how is the transition between this colouring layer and its insensible diminution effected?

Nail is a substance very familiarly known. On its nature and structure we find many conjectures, but few or no facts in the writings of anatomists; and almost all that has been written is the result of analogical inference, rather than of direct observation. It is known that they drop off with the scarf-skin in the dead body; that they are destroyed or diseased by causes which act on the outer surface of the corion, and produce disease of the cuticle; and that, if forcibly torn out, the surface of the corion to which they were attached bleeds profusely and inflames. In other respects they are quite inorganic; but these facts appear to warrant the conclusion, that the root of the nail is connected with the organic substance of the corion, and that the whole substance is the result of a process of secretion quite similar to that by which the cuticle is formed.

According to the experiments of Hatchett, they consist of a substance which possesses the properties of coagulated albumen, with a very small trace of phosphate of lime. — *Craigie.*

The hair also is an appendage of the cutaneous texture. It has already been treated of in the article *Capillus.*

Cutis anseri'na. Goose-skin. The contracted state of the skin, arising from cold and other causes, in which its papillæ are rigid and prominent, giving it the appearance of the skin of a plucked goose.

Cutis vera. See *Cutis.*

Cutubuth. The Arabic name of a kind of melancholy, accompanied with extreme restlessness.

Cyani'a. (Κυανεια; from κυανος, blue.) An epithet of the blue disease. See *Cyanosis.*

CYANIC ACID. *Acidum cyanicum.* The existence of an acid, composed of cyanogen and oxygen, was first suspected by Vauquelin; but for the mode of obtaining it, its composition, and properties, we are indebted to Wöhler, and to Liebig, though it can scarcely be said to have been hitherto procured in a detached state. When cyanogen is passed into alkaline solutions, it is absorbed, and a cyanuret and cyanate are formed, which, however, cannot be effectually separated, so that, in this respect, the action of cyanogen on the alkaline solution corresponds with that of chlorine and of iodine. But, according to Wöhler, a true cyanate may easily be obtained by exposing a mixture of black oxide of manganese and ferrocyanate of potassa to a dull red heat, carefully avoiding too high a temperature, and boiling the resulting compound in spirit of wine of the specific gravity of 0·86. As the solution cools, tabular crystals of *cyanate of potassa* are deposited. When these are dissolved in cold water, the solution slowly decomposes; and, if boiled, carbonic acid and ammonia are produced, in consequence of the reaction of the elements present. Cyanic acid forms a soluble salt with baryta, but it occasions insoluble precipitates in solutions of lead, mercury, and silver; and these cyanates may be decomposed by diffusing them through water, and exposing them to the action of a current of sulphuretted hydrogen, not in excess. A sour liquid, smelling like vinegar, is thus obtained, but it is very prone to decomposition. (See *Cyanuric acid.*)

According to the analysis of Wöhler, corroborated by the experiments of Liebig, cyanic acid consists of

Carbon	2	12	35·2	Cyanogen	1	26	76·3
Nitrogen	1	14	41·1				
Oxygen	1	8	23·7	Oxygen	1	8	23·7
	1	34	100·0		1	34	100·0

Brande.

CYA'NOGEN. (*Cyanogenium, ii.* n. *Bicarburet of nitrogen.*) *Prussine.* This gaseous compound was discovered in 1815, by Gay Lussac, and termed *cyanogen,* (from κυανος, *blue,* and γενναω, *to generate,*) in consequence of its being essential to the formation of *Prussian blue.* It may be obtained from dry and pure crystals of *cyanuret of mercury.* This substance, when heated in a small glass tube to dull redness, becomes black, and a quantity of mercury passes over and condenses in the cold part of the tube: the gas which is at the same time evolved must be collected over mercury. Under a pressure of between three and four atmospheres at the temperature of 45°, Mr. Faraday condensed cyanogen into a limpid colourless liquid, of a specific gravity of about 0·9, and a refractive power rather less than that of water. When a tube containing it was opened, the expansion within appeared inconsiderable, and the liquid slowly evaporated, producing intense cold. It does not conduct electricity.

Cyanogen gas is colourless, and has a penetrating and very peculiar smell, somewhat resembling that of bitter almonds. When a lighted taper is dipped into it, it is immediately extinguished; but the gas takes fire and burns upon the surface, in contact with air, with a beautiful and very characteristic purple flame. Its specific gravity to hydrogen is as 26 to 1; and to common air as 1·82 to 1; 100 cubic inches weigh 55·5 grains. It sustains a high temperature without decomposition. Water dissolves 4·5 volumes, and alkohol 23 volumes of this gas. Sulphuric ether and oil of turpentine also absorb it. The aqueous solution reddens vegetable blues; and, according to Vauquelin (*Ann. de Chim.* Oct. 1818), is subject to spontaneous decomposition, being gradually converted into carbonic and hydrocyanic acids, ammonia, a peculiar acid, which he calls the *cyanic,* and a brown substance containing carbon: the ammonia saturates the acids, and the carbonaceous compound is deposited. These changes are referrible to the mutual reaction of the elements of cyanogen upon those of water. According to Wöhler, the mutual action of cy-

anogen and water is attended by the production of cyanic acid and ammonia, which, by combination, generate *urea*.

Cyanogen may be analysed by detonation with oxygen, or by passing it over red-hot oxide of copper. One volume, detonated over mercury, with two of oxygen, produces two volumes of carbonic acid and one of nitrogen. Whence it appears that cyanogen consists of its own volume of nitrogen, combined with carbon sufficient to form two volumes of carbonic acid; or of equal volumes of nitrogen and gaseous carbon; and if so constituted, as

	Grains.
100 cubic inches of carbon vapour weigh	25·4
100 nitrogen gas.....	30·1
100 cyanogen vapour should weigh	55·5

Cyanogen, therefore, is constituted of

				Vols.	S. G.
Carbon	2	12	46·1	1	0·843
Nitrogen	1	14	53·9	1	0·976
	1	26	100·0	1	1·819

Iodine, sulphur, and phosphorus may be sublimed in cyanogen without change; but when they are heated in contact with cyanuret of mercury, compounds of those bodies with cyanogen are the result. It also combines with several of the metals, and constitutes compounds which might be called *nitrocarburets*: they have sometimes been termed *cyanides*; but, perhaps, *cyanuret* is the least objectionable appellation. The cyanurets also combine with each other, and produce an extensive and curious class of salts, which have been termed *double cyanurets*. — *Brande*.

Cyanopathi'a. (*a*, æ. f.; from κυανος, blue, and παθος, a disease.) Blue disease. See *Cyanosis*.

CYANO'SIS. (*is*, *is*. m.; from κυανος, blue.) *Cyanopathia*. The blue disease. An unnatural blue colour of the whole skin. This generally arises from a congenital malformation of the heart, in which the right and left cavities directly communicate, so that the whole of the blood is not duly aerated in the lungs.

CYANURET. A compound of cyanogen with a base.

Cyanuret of mercury. *Cyanuretum hydrargyri*. This is a highly poisonous substance, analogous in its operation to the corrosive sublimate. It is used in France, however, in obstinate venereal and cutaneous diseases. The dose is from the sixteenth of a grain to half a grain, in pills or solution.

Cyanuret of potassium. This has been employed as a substitute for hydrocyanic acid, and is thought to possess similar properties. It has the advantage of keeping unchanged. The dose is from the fourth of a grain to a grain, in pill or solution.

Cyanuret of zinc. This is said to have nearly the same medicinal properties as the cyanuret of potassium, and may be given in the same doses.

Cyanuric acid. When uric acid is distilled *per se*, it yields carbonate and hydrocyanate of ammonia, and a sublimate of *pyrouric*, or *cyanuric* acid.

Cyanuric acid may also be obtained from *urea*, which, when gradually heated in a retort to about 600°, is resolved into ammonia and anhydrous cyanuric acid; the latter remains in the retort; to purify it, it is dissolved in hot sulphuric acid, and nitric acid dropped in till it occasions no further effervescence, and the solution becomes colourless: when cold, water is added, which throws down cyanuric acid in the form of a white crystalline powder. It may be obtained in large crystals, by evaporating its hot saturated solution to about half its bulk, at a temperature of 150°, and allowing it gradually to cool upon the sand-bath. Cyanuric acid is remarkably unchangeable by the action of acids, and when heated it sublimes unchanged in the form of acicular crystals. It may be obtained *anhydrous*, by dissolving the crystals in hot sulphuric acid, from which it is deposited on cooling. According to Wöhler and Liebig, cyanuric acid consists of 3 atoms of cyanogen, 3 hydrogen, and 6 oxygen; so that its ultimate components are

Carbon	6	36	27·8
Nitrogen	3	42	32·6
Hydrogen	3	3	2·4
Oxygen	6	48	37·2
Cyanuric acid	1	129	100·0

The conversion of hydrous cyanic acid, and of urea, into cyanuric acid, and other cases of its formation, will be intelligible by reference to its ultimate components; the hypothetical arrangements of which these will admit are too numerous to be here inserted. — *Brande*.

CY'AR. (Κυαρ, the eye of a needle.) The internal auditory foramen.

CYATHIFO'RMIS. (From *cyathus*, a cup or glass, and *forma*, resemblance.) Glass-shaped. Applied, in *Botany*, to a corol which is tubular, but dilated towards the top like a drinking-glass; as in the cup of Jacob's ladder, &c.

Cyathi'scus. (*us*, *i*. m.; from κυαθος, a cup.) A probe with a hollow at the end, to remove wax, &c. from the ear.

CY'ATHUS. (*us*, *i*. m. Κυαθος.) 1. A drinking cup.

2. A liquid measure used by the ancients, equal to the twelfth part of a *sextarius*.

3. A solid measure used by the ancients, equal to ten drachms.

4. In modern prescription the term cyathus signifies a wine glass.

Cyboïdes. See *Cuboides*.

CY'CAS. (Κυκας, of Theophrastus.) The name of a plam said to grow in Ethiopia. The name of a genus of plants, one of the *Palmæ pinnatifoliæ*, of Linnæus; but afterwards removed by him to the *filices*.

Cycas circina'lis. The systematic name of a palm-tree, or meal-bark tree, which affords *Sago*, a dry fecula, obtained from the pith of this palm, in the islands of Java, Molucca, and the Philippines. The same substance is also brought from the West Indies, but it is inferior to that brought from the East. Sago becomes

soft and transparent by boiling in water, and forms a light and agreeable liquid, much recommended in febrile, phthisical, and calculous disorders, &c. To make it palatable, it is customary to add to it, when boiled or softened with water, some lemon-juice, sugar, and wine.

Cy'ceum. (Κυκεων; from κυκαω, to mix.) An article of diet used by the ancient Greeks. It was of a pappy consistence. There were two kinds, one made simply of flour and water, and another of various kinds of flour, wine, honey, and sometimes cheese.

Cycima. Litharge. — *Ruland.*

CY'CLAMEN. (*en, inis.* n.; from κυκλος, circular; either on account of the round form of the leaves, or of the roots.) *Cyclaminus. Cyclaminum.* Cyclamen. 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Monogynia.*

2. The pharmacopœial name of the sow-bread. See *Cyclamen europæum.*

Cyclamen europæum. The systematic name of the sow-bread. *Arthanita* of the Pharmacopœias. The root is a drastic purge and errhine; and by the common people it has been used to procure abortion.

Cycli'scus. (Κυκλισκος; from κυκλος, a circle.) 1. A lozenge.

2. A kind of raspatory of a semilunar shape, used by the Greek surgeons.

Cycli'smus. The same as *cycliscus.*

CYCLONEU'RA. (From κυκλος, a circle, and νευρον, a nerve.) The name given by Dr. R. Grant to the radiated animals, from the distribution of their nervous system. See *Animal kingdom.*

Cyclopho'ria. (From κυκλος, a circle, and φερω, to bear.) The circulation of the blood, or other fluids.

Cyclo'pion. (From κυκλοω, to surround, and ωψ, the eye.) The white of the eye.

CYCLO'STOMI. (From κυκλος, a circle, and στομα, the mouth; because they have round mouths.) A genus of cartilaginous fishes.

CYCLOBRA'NCHIA. (From κυκλος, a circle, and βραγχια, gills.) An order of gasteropodous mollusca, so called from the circular arrangement of their gills.

Cy'clus metasyncri'ticus. (Κυκλος μετασυγκριτικος.) A long course of remedies, persisted in with a view of restoring the particles of the body to such a state as is necessary to health.

Cydar. An alchemical name of tin.

Cydo'natum. (Κυδωνατον.) A confection composed of quinces and aromatics. — *Paulus Ægineta.*

Cydo'nia. (*a, æ.* f.; from *Cydon*, a town in Crete, where the tree grows wild.) The quince-tree. See *Pyrus cydonia.*

Cydonium. See *Pyrus cydonia.*

Cydonium malum. (Κυδωνιον μηλον.) A quince. See *Pyrus cydonia.*

CYE'MA. (Κυημα; from κυω, to bring forth.) The product of conception. The ovum.

Cygnus. See *Anas.*

Cygnus mutus. The tame swan.

Cyli'chne. Κυλιχνη. Κυλιχνις. Κυλιχνιον. A pill box, a gallipot, or other vessel for holding medicines.

Cylindrical leaf. See *Leaf.*

Cyllo'sis. (Κυλλυσις; from κυλλοω, to maim or distort.) 1. In a general sense, distortion, mutilation, lameness of any kind.

2. Curvature of the leg outwards; that state of the leg commonly called a bandy leg.

CY'MA. (*a, æ.* f.) A cyme, or tuft. A species of inflorescence of plants, consisting of several flower-stalks, all springing from one centre or point, but each stalk is variously subdivided; and in this last respect, a cyme differs essentially from an umbel, the subdivisions of the latter being formed, like its primary divisions, of several stalks springing from one point. This difference is of great importance in nature. The mode of inflorescence agrees also with a corymbus in general aspect; but in the latter the primary stalks have no common centre, though the partial ones may sometimes be umbellate, which last case is precisely the reverse of a cyme.

From its division into primary stalks or branches, it is distinguished into,

1. *Trifid;* as in *Sedum acre.*

2. *Quadrifid;* as in *Crassula rubens.*

3. *Tripartite*, having three lesser cymes; as in *Sambucus ebulus.*

4. *Quinquipartite;* as in *Sambucus nigra.*

5. *Sessile*, or without stalk; as in *Gnaphalium frutescens.*

6. *Nude*, or naked; as in *Comus sanguinea* and *sericea.*

Cy'ma. (*a, atis.* n.; κυμα, from κυω, to produce.) A sprout from a stalk.

Cymato'des. (Κυματωδης; from κυμα, a wave.) Applied by Galen and others to an unequal fluctuating pulse.

CY'MBA. (*a, æ.* f.; from κυμβος, hollow.) A boat, pinnace, or skiff. A bone of the wrist is so called from its supposed likeness to a skiff. See *Naviculare os.*

Cymbala'ria. This is now the specific name of a species of *antirrhinum* not used medicinally. Gerarde calls the pennywort by this name, and says that the aquatic kind is highly poisonous. See *Aquetta.*

Cymbala'ris cartila'go. The cricoid cartilage.

CYMBIFO'RMIS. (From *cymba*, a boat or skiff, and *forma*, likeness.) Skiff or boat like: applied to seeds, as those of the *Calendula officinalis*, and to a bone of the foot, usually called *Os naviculare.*

Cy'minum. See *Cuminum.*

CYMO'SUS. Having the character of a cyme: applied to aggregate flowers.

CYNA'NCHE. (*e, es.* f.; from κυων, a dog, and αγχω, to suffocate, or strangle: so called from dogs being said to be subject to it. "*Cynanche, synanche*, and *parasynanche* are terms met with in the Greek writers after Hippocrates, the common signification of all of which is strangulation or angina; while the prefixes cy, sy, and parasy, are of doubtful meaning. Ætius attempted to justify cynanche; but Cœlius Aurelianus and Paulus used synanche after Celsus. The Latins employed angina in the same extent as Hippocrates did paristhmia: quinsy is used in a parallel latitude among our-

selves." — *Good.*) Sore-throat. See *Tonsillitis*, *Pharyngitis*, and *Croup*.

Cynanche laryngea. See *Croup.*
Cynanche maligna. See *Tonsillitis.*
Cynanche parotidea. See *Parotitis.*
Cynanche pharyngea. See *Pharyngitis.*
Cynanche strepitora. See *Croup.*
Cynanche stridula. See *Croup.*
Cynanche suffocatica. See *Croup.*
Cynanche tonsillaris. See *Tonsillitis.*
Cynanche trachealis. See *Croup.*

Cyna'nchicus. (From κυναγχη, the quinsy.) Applied to medicines which relieve the quinsy.

CYNA'NCHUM. The name of a genus of plants. Class, *Pentandria;* Order, *Digynia.*

Cynanchum arghel. An Egyptian plant, the leaves of which are employed to adulterate senna. See *Cassia senna.*

Cynanchum monspeliacum. This yields the Montpellier scammony, which is purgative, but little used.

Cynanchum vomitorium. This plant yields the ipecacuan of the Isle of France. It resembles the common ipecacuan in its properties. The dose also is the same.

Cynanthro'pia. (From κυων, a dog, and ανθρωπος, a man.) This term is used by Bellini, *De Morbis Capitis*, to express a particular kind of melancholy, in which men fancy themselves changed into dogs, and imitate their actions.

Cy'nara. See *Cinara.*
Cynarocephalus. See *Cinarocephalus.*

Cy'nchnis. (Κυγχνις.) A vessel of any kind to contain medicines.

CYNIPS. A genus of hymenopterous insects.

Cynips quercusfolii. The insect by the puncture of which oak galls are formed. See *Galla.*

Cynips rosæ. The insect whose bite produces the excrescences on rose trees called *Bedeguar.* See *Bedeguar.*

Cynocra'mbe. (*a*, *es.* f.; from κυων, a dog, and κραμβη, cabbage.) A herb of the cabbage tribe, with which dogs are said to physic themselves. See *Mercurialis perennis.*

Cyno'ctonum. (*um*, *i.* n.; from κυων, a dog, and κτεινω, to kill.) A species of aconitum, said to destroy dogs. See *Aconitum napellus.*

Cynocytisis. (From κυων, a dog, and κυτισος, the cytisus: so named, because it was said to cure the distemper of dogs.) The dog-rose. See *Rosa canina.*

Cynode'ctos. (*us*, *i.* m.; from κυων, a dog, and δακνω, to bite.) So Dioscorides calls a person bitten by a mad dog.

Cyno'des orexis. (Κυνωδης ορεξις.) Canine appetite. See *Bulimia.*

Cynode'smion. (Κυνοδεσμιον. Κυνοδεσμος. Κυνοδεσμη; from κυων, a dog, and δεω, to bind: so named, because in dogs it is very discernible and strong.) The frænum of the prepuce. See *Frænum.*

CYNODO'NTES. (*Cynodentes*, *tum.* pl.; from κυων, a dog, and οδους, a tooth.) Canine teeth. See *Teeth.*

CYNOGLO'SSUM. (*um*, *i.* n.: from κυων, a dog, and γλωσσα, a tongue: so named, from its supposed resemblance.) Hound's tongue.

1. The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Monogynia.*

2. The pharmacopœial name of the hound's tongue. See *Cynoglossum officinale.*

Cynoglossum officinale. The systematic name for hound's tongue; called also, *Cynoglossum*, and *Lingua canina.*

Cynoglossum — staminibus corolla brevioribus; foliis lato lanceolatis, tomentosis, sessilibus, of Linnæus. It possesses narcotic powers, but is seldom employed medicinally. Acids are said to counteract the ill effects from an over-dose more speedily than any thing else, after clearing the stomach.

Cyno'lophi. (From κυων, a dog, and λοφος, a protuberance: so called, because they are prominent in dogs.) The spinous processes of the vertebræ.

Cynoly'ssa. (*a*, *æ.* f.; from κυων, a dog, and λυσση, madness.) Canine madness.

CYNOMO'RIUM. (*um*, *ii.* n.) The name of a genus of plants in the Linnæan system. Class, *Monœcia;* Order, *Monandria.*

Cynomorium coccineum. The systematic name of the *Fungus melitensis*, a small plant which grows in Sicily and Malta. A drachm of the powder is given for a dose in dysenteries and hæmorrhages, and with remarkable success.

CYNORE'XIA. (*a*, *æ.* f.; from κυων, a dog, and ορεξις, appetite.) A canine appetite. See *Bulimia.*

Cyno'sbatos. See *Cynosbatus.*

Cyno'sbatus. (*os* and *us*, *i.* f.; from κυων, a dog, and βατος, a thorn: so called, because dogs are said to be attracted by its smell.) The dog-rose. See *Rosa canina.*

Cynospa'stum. (From κυων, a dog, and σπαω, to attract.) The dog-rose. See *Rosa canina.*

Cypho'ria. (*a*, *æ.* f.; from κυος, a fœtus, and φερω, to bear.) Pregnancy.

Cyparissus. See *Cupressus.*

CY'PERUS. (*us*, *i.* m.; from κυπαρος, a little round vessel, which its roots are said to resemble.) Cyperus. The name of a genus of plants in the Linnæan system. Class, *Triandria;* Order, *Monogynia.*

Cyperus esculentus. The rush-nut. This plant is a native of Italy, where the fruit is collected and eaten, and said to be a greater delicacy than the chesnut.

Cyperus longus. The systematic and pharmacopœial name of the English galangale. *Cyperus — culmo triquetro folioso, umbella foliosa supra-decomposita; pedunculis nudis, spicis alternis,* of Linnæus. The smell of the root of this plant is aromatic, and its taste warm, and sometimes bitter. It is now totally fallen into disuse.

Cyperus rotundus. This species, the round cyperus, *Cyperus — culmo triquetro subnudo, umbella decomposita; spicis alternis lineariibus,* of Linnæus, is generally preferred to the former, being a more gratefully aromatic bitter. It is chiefly used as a stomachic.

CYPHE'LLA. (*a*, *æ.* f.) A peculiar sort

of pit or pore, on the under side of the frond, in that section of lichens called *stricta*.

CYPHI. (Κυφι.) An aromatic confection which according to Dioscorides, was used by the priests of Egypt. Several alexipharmic medicines took their name from it.

Cyphoma. See *Cyphosis.*

CYPHO'SIS. (Κυφωσις, κυφωμα, κυφος; from κυπτω, to bend.) Gibbosity. A hump back.

Cypress. See *Cyprus.*

Cypress spurge. See *Esula minor.*

CY'PRINUM OLEUM. (Κυπρινον ελαιον.) It was composed of oil of unripe olives, aspalathus, calamus, myrrh, cardamum, elecampane, and Jew's pitch. — *Dioscorides.*

CY'PRINUS. The name of a genus of fishes. Of the many species belonging to this, the carp genus, the five following only are used as food.

CYPRINUS ALBURNUS. The bleak. A small fish, about four or five inches long, thought good by some; but not generally much esteemed.

CYPRINUS BARBUS. The barbel: so called, because it has four appendages, like a beard, hanging from the under jaw. It is likewise denominated *barbus*, and *barbo*. A coarse and very common freshwater fish, eaten for want of better. The roe is a violent emetic. The young or fry, of this fish has been supposed to be the little fish known by the name of white bait, which is caught in the months of June and July, in great quantity, in the river Thames, between Deptford and Woolwich, but the white bait is now ascertained to be a distinct species. See *Clupea latulus.*

CYPRINUS CARPIO. The carp. A fish that delights in stagnant waters, and is bred in our ponds and canals. The flesh is coarse, and has an earthy taste. It is esteemed by some when stewed in a rich and vinous sauce.

CYPRINUS GOBIO. The gudgeon. A small fresh-water fish, of the size of a smelt. The flesh is white and soft, and of easy digestion.

CYPRINUS LEUCISCUS. The dace. This fish lives in still rivers, and seldom exceeds six or eight inches in length. Its flesh is white, and in some estimation.

CYPRIUM ÆS. Copper: so called because this metal was brought from the island of Cyprus.

CY'PRUS. (*us. i.* f.; so called, from the island of Cyprus, where it grew abundantly.) The cypress tree or eastern privet. See *Cupressus.*

CY'PSELE. Κυψελη. Κυψελις. *Cypselis.* A bee hive. The wax of the ear.

Cypselis. See *Cypsele.*

CYPTA'RION. The name of an antidote described by N. Myrepsus.

CYRTO'MA. (*a, atis.* n.; κυρτωμα, κυρτωσις: from κυρτος, curved.) *Cyrtosis.* 1. The same as gibbosity, or curvature.

2. Hippocrates applied the term κυρτωματα to swellings or tumours of the hypochondria.

CYRTO'NOSUS. (*us, i.* m.; from κυρτος, curved, and νοσος, a disease.) 1. The rickets.

2. Curved spine. — *Turton.*

Cyrtosis. See *Cyrtoma.*

CY'SSARUS. (From κυσος, the anus.) The intestinum rectum was so called, because it reaches to the anus.

CYSSA'NTHEMON. (From κυσσος, ivy, and ανθεμον, a flower.) The *cyclamen.*

CYSSOPHY'LLON. (From κυσσος, ivy, and φυλλον, a leaf.) A name of the *cyclamen.*

CYSSOTIS. (From κυσος, the anus.) An inflammation of the anus.

CYSTA'LGIA. (*a, æ.* f.) Painful spasmodic affection of the bladder. Such affections are not very common, but they are occasionally met with. The spasm comes on in paroxysms, which sometimes equal in severity those of the stone.

CYSTEO'LITHUS. (*us, i.* m.; from κυστις, the bladder, and λιθος, a stone.) A stone in the urinary-bladder or gall-bladder.

CY'STHUS. (Κυσθος.) The anus.

CY'STIC. (*Cysticus;* from κυστις, a bladder.) Belonging to the urinary or gall-bladder; as cystic duct, cystic bile, &c.

Cystic duct. See *Ductus cysticus.*

CYSTIC OXIDE. A peculiar animal product, discovered by Dr. Wollaston. See *Calculus, urinary.*

CYSTICA MEDICAMENTA. Medicines used in diseases of the bladder.

CYSTICE'RCUS. (*us, i.* m.; from κυστις, a bladder, and κερκος, a tail.) The tailed bladder worm. A genus of worms of the hydatid tribe, consisting of a cylindrical body, terminated by a caudal vesicle, and having a head furnished at its base with four nipples or suckers. Those which have been found in the human subject, are,

1. *Cysticercus tenuicollis* of Rudolphi. Dr. Brera found these in great quantity in the choroid plexus of a man, fifty-five years of age, who died of apoplexy. It is about an inch long when full grown, and its head is very small.

2. *Cysticercus finnia* of Zeder. This has been found by Werner. This species is always enclosed in a delicate cyst. The worm itself is ordinarily hidden within its caudal bladder, and is opaque and yellowish. It is of the size of a linseed.

3. *Cysticercus Fischerianus;* so called, by Laennec, after M. Fischer, of Leipsic, who found twenty-three in the choroid plexus of a man, where they caused no inconvenience.

4. *Cysticercus dicystus.* Doctor Laennec found this, once only, in the ventricle of the brain of a subject that died of apoplexy. It presented two vesicles; the one the ordinary caudal bladder, the other embracing the body anteriorly.

5. *Cysticercus punctatus.* Dr. Treutler has described this species, which he found in the choroid plexus of a woman twenty-two years of age. Its caudal bladder is globular, and presents several white spots.

CYSTIPHLO'GIA. (*a, æ.* f.; from κυστις, the bladder, and φλεγω, to burn.) An inflammation of the bladder. See *Cystitis.*

CYSTIRRHA'GIA. (*a, æ.* f.; from κυστις, the bladder, and ρηγνυμι, to burst forth.) A discharge from the bladder, whether of blood or mucus.

CYSTIRRHŒ'A. (From κυστις, the blad-

der, and ῥεω, to flow.) Discharge of mucus from the bladder; vesical catarrh.

CY'STIS. (*Cystis.* Κυστις, a bag.) 1. A cyst or bladder.

2. The urinary bladder in particular.

3. The membranous bag surrounding or containing any morbid substance.

Cystis choledocha. See *Gall-bladder.*

Cystis fellea. See *Gall-bladder.*

Cystis urinaria. See *Urinary-bladder.*

CYSTI'TIS. (*is, idis.* f.; from κυστις, the bladder.) Inflammation of the bladder. Inflammation affects chiefly the mucous coat of the bladder, but all the coats may be implicated. The disease may be either acute or chronic. The acute form is known by great pain in the region of the bladder, attended with fever and hard pulse, a frequent and painful discharge of urine or a suppression, and generally tenesmus. If the lower part of the bladder be chiefly affected, the pain extends to, and takes the course of, the perinæum. If the disease be seated in the neck of the organ, there is a retention of urine, with a constant urgency to evacuate; if in the fundus, the urine flows stillatitiously and without ceasing, the bladder feels as if constantly full, and the patient is perpetually and fruitlessly striving to empty it. If the disease be not soon subdued, the restlessness and anxiety increase, the extremities become cold, vomiting supervenes, and delirium and other marks of great general irritation: the disease runs its course with rapidity; and subsides or destroys the patient, in a few days.

With respect to the causes, they are those which excite inflammation of the other viscera: but the bladder often contains calculous concretions, which may produce cystitis; besides it is often irritated and inflamed by viscid substances that pass into the circulation, and particularly by cantharides, ardent spirits, and terebinthinate essences or balsams. The treatment is very similar to that of *Nephritis.*

Chronic inflammation of the bladder is attended with a highly irritable state of the organ, and a very copious excretion of mucus along with the urine, whence the name of *catarrhus vesicæ* which has been applied to it.

CY'STITOME. (*Cystitomus, i.* m.; from κυστις, a cyst, and τεμνω, to cut.) The name given by Lafaye to an instrument for opening the capsule of the crystalline lens.

CY'STO-BUBONOCE'LE. (From κυστις, the bladder, βουβων, the groin, and κηλη, a tumour.) A rare species of hernia, in which the urinary bladder is protruded through the inguinal aperture.

CYSTOCE'LE. (From κυστις, the bladder, and κηλη, a tumour.) Hernia of the bladder. This is rare. It occurs most frequently at the inguinal ring, less at the crural ring; the bladder has also been known to protrude through the perinæum, vagina, or thyroid foramen.

CY'STOMEROCE'LE. (From κυστις, the bladder, μερος, the thigh, and κηλη, a tumour.) A hernial protrusion of the bladder through the femoral ring. See *Cystocele.*

Cystophlogia. See *Cystiphlogia.*

CYSTOPLE'GIA. (From κυστις, the bladder, and πλησσω, to strike.) Paralysis of the bladder.

CYSTOPLE'XIA. The same as cystoplegia.

CYSTOPTO'SIS. (From κυστις, the bladder, and πιπτω, to fall.) A name given by Vogel to a relaxation of the internal coat of the bladder, whereby it protrudes into the urethra.

CYSTOSPA'STICUS. (From κυστις, the bladder, and σπαω, to draw.) Relating to spasm of the bladder.

CYSTOTO'MIA. (*a, æ.* f.; from κυστις, the bladder, and τεμνω, to cut.) The operation of cutting into the bladder.

CY'THION. The name of a collyrium mentioned by Celsus.

CY'TINUS. (*us, i.* m.; perhaps, as Martyn suggests, from κυτινος, a name given by Theophrastus to the blossoms of the pomegranate, the calyx of which the flower in question resembles in shape.) The name of a genus of plants. Class, *Gynandria;* Order, *Octandria,* of Linnæus.

CYTINUS HYPOCISTIS. Rape of cystus. A fleshy pale-yellowish plant, parasitical on the roots of several species of cystus in the south of Europe, from which the *succus hypocistidis* is obtained.

CY'TISINE. A bitter principle detected by Chevallier and Lassaigne, in the seeds of the *Cytisus laburnum.* It is of a nauseous taste, emetic, and poisonous.

CY'TISO-GENI'STA. The common broom.

CYZEMER. A swelling of the wrists.

CYZICE'NUS. The name of a plaster used by Galen for obstinate ulcers and wounds of tendinous parts.

D.

DAB. See *Pleuronectes limanda.*

Daberlocks. See *Fucus esculentus.*

Dace. See *Cyprinus leuciscus.*

DACNE'RON. (From δακνω, to bite.) The Greek epithet of a sharp eye-wash, composed of burnt copper, pepper, cadmia, myrrh, saffron, gum arabic, and opium.

DACRY'DIUM. (*ium, ii.* n.; from δακρυ, a tear.) Scammony, which flows from the tree liquid, and hardens into tears.

DACRYNO'MA. (From δακρυω, to weep.) Epiphora, from obstruction of the puncta lachrymalia. — *Vogel.*

DACTYLE'THRA. *Dactylithra.* (Δακτυληθρα.

δακτυλιθρα; from δακτυλος, a finger.) A name given to certain topical medicines which were thrust into the throat to excite vomiting. They were so called, either because they were shaped like a finger, or because they were applied with the fingers.

Dactyle'tus. (From δακτυλος, the date.) See *Hermodactylus.*

Dacty'lion. (From δακτυλος, a finger.) Vogel gives this name to preternatural adhesion of the fingers to each other. This is sometimes a congenital deformity, but more frequently a consequence of burns.

Da'ctylius. (Δακτυλιος, a ring.) A lozenge; so called from its shape.

DA'CTYLUS. (*us, i.* m. δακτυλος.) 1. A finger. See *Digitus.*

2. The date. See *Phœnix dactylifera.*

Dæda'lia. The name of a genus of funguses.

Dædalia suaveolens. See *Boletus suaveolens.*

Dæ'dalus. An old name of quicksilver.

Dæ'dium. (*um, ii.* n. δαιδιον; from δαις, a torch.) A small torch or candle. A bougie.

Dæmo'nia. The same as *Dæmonomania.*

DÆMONOMA'NIA. (*a, æ.* f.; from δαιμων, a dæmon, and μανια, madness.) That species of melancholy where the patient supposes himself to be possessed by devils, or is in fear of the machinations of devils.

Daffy's elixir. Compound tincture of senna, made with treacle instead of sugar candy, and with the addition of aniseed and elecampane root.

Daib. *Deheb. Dehebeb. Doab.* Alchemical names of gold. — *Ruland.*

Daisy. See *Bellis perennis.*

Daisy, ox-eye. See *Chrysanthemum.*

Dalby's carminative. A nostrum much used as a carminative for children. It consists of carbonate of magnesia ʒ ij., oil of peppermint, ♏j., oil of nutmeg ♏ij., oil of aniseed ♏iij., tincture of castor, ʒ ss., tincture of assafœtida ♏ xv., tincture of opium ♏ v., spirit of pennyroyal ♏ xv., compound tincture of cardamoms ʒ ss., peppermint water ℥ ij.

Dama. A deer. See *Cervus.*

Damask rose. See *Rosa centifolia.*

Damina'tus. (From *damno*, to condemn.) The dry useless fæces, left in a vessel after the moisture has been distilled from it, was called by the old chemists *terra damnata*, or *caput mortuum.*

Damson. The fruit of a variety of the *Prunus domestica.*

Da'nais. A plant mentioned by Dioscorides, supposed to be the *conyza.*

Dandelion. See *Leontodon.*

Dandrif. See *Pityriasis.*

Danevert. The name of a mineral spring a few miles from Upsal, in Sweden. It contains carbonic acid, carbonate and sulphate of iron, sulphates of soda and lime, muriate of soda, and silica.

Danewort. See *Sambucus ebulus.*

Danich. An Arabian weight of eight grains.

Danse de saint-guy. The common French name of the disease which we call St. Vitus's dance. See *Chorea.*

DA'PHNE. (*e, es.* f. Δαφνη; from δαω, to burn, and φωνη, a noise: because its leaves crepitate when burnt; or from the nymph *Daphne*, who was fabled to have been changed into a laurel.) 1. The Greek name of the laurel.

2. The name of a genus of plants in the Linnæan system. Class, *Octandria;* Order, *Monogynia.* The laurel, or bay-tree.

Daphne alpina. This species of dwarf olive-tree, called also *Chamælea*, and *Chamelæa*, is said to be purgative in the dose of ʒ ij., and is sometimes given by country people. The French chemists have lately examined it chemically. See *Daphnine.*

Daphne, flax-leaved. See *Daphne.*

Daphne gni'dium. The systematic name of the tree which affords the Garou bark. Spurge-flax; Flax-leaved Daphne. *Thymelæa; Oneoron. Daphne gnidium — panicula terminali foliis lineari lanceolatis acuminatis*, of Linnæus. This tree affords the Garou bark, which very much resembles that of our mezereum. It is to be immersed in vinegar for about an hour before it is wanted: a small piece, the size of a sixpence, thus steeped, is applied to the arm or any other part, and renewed once a day in winter and twice in summer. It produces a serous exudation from the skin, without excoriating or blistering. It is recommended, and is in frequent use in France and Russia, against some diseases of the eyes.

Daphne laure'ola. The systematic name of the spurge-laurel. *Laureola daphnoides.* The bark of this plant is recommended to excite a discharge from the skin, in the same way as that of the *Daphne gnidium.*

Daphne meze'reum. The systematic name of the mezereon. Spurge-olive; Widow-wail: called also *Ætolium*, and *Ætocion. Mezereum. Daphne mezerium — floribus sessilibus ternis caulinis, foliis lanceolatis deciduis*, of Linnæus. This plant is extremely acrid, especially when fresh, and, if retained in the mouth, excites great and long-continued heat and inflammation, particularly of the mouth and fauces; the berries, *grana cnidii* of old writers, also have the same effects; and, when swallowed, prove a powerful corrosive poison, not only to man, but to dogs, wolves, and foxes. Vauquelin thought he had discovered an alkali in the mezereum, but this has not been confirmed. (See *Daphnine.*) The bark of the root is the part employed medicinally in the *decoctum sarsaparillæ compositum*, intended to assist mercury in resolving nodes and other obstinate symptoms of syphilis. The antisyphilitic virtues of mezereum, however, have been by many writers very justly doubted. "The result of my own experience (says Mr. Pearson, of the Lock Hospital) by no means accords with the representation given of this root by former writers. From all that I have been able to collect, in the course of many years' observation, I feel myself authorised to assert, unequivocally, that the mezereum has not the power of curing the venereal disease in any one stage, or under any one form. If a decoction of this root should ever reduce a venereal node, where no mercury has been previously

given, yet the patient will by no means be exempted from the necessity of employing mercury for as long a space of time, and in as large a quantity, as if no mezereum had been taken. With respect to the power it is said to possess, of alleviating the pain, and diminishing the bulk of membraneous nodes, nothing peculiar and appropriate can be ascribed to the mezereum on these accounts, since we obtain the same good effects from sarsaparilla, guaiacum, volatile alkali, blistering plasters, &c. Nevertheless, venereal nodes, which have subsided under the use of any o 'these articles of the materia medica, will appear again, and often with additional symptoms, if a full and efficacious course of mercury be not submitted to. It has, indeed, been alleged, that mezereum always alleviates the pain occasioned by a venereal node, and generally reduces it, where the periosteum only is affected; and that it seldom fails in removing those enlargements of the periosteum which have not yielded during the administration of mercury.

"That some instances of success, in cases like these, may have fallen to the share of those who made the assertion, it would not become me to deny; but I have met with few such agreeable evidences of the efficacy of this medicine. I have given the mezereum in the form of a simple decoction, and also as an ingredient in compound decoctions of the woods, in many cases, where no mercury had been previously employed, but never with advantage to a single patient. I have also tried it, in numerous instances, after the completion of a course of mercury; yet, with the exception of two cases, where the thickened state of the periosteum was removed during the exhibition of it, I never saw the least benefit derived from taking this medicine. In a few cases of anomalous pains, which I supposed were derived from irregularities during a mercurial course, the mezereum was of service, after I had tried the common decoction of the woods without success; but, even in this description of cases, I have always found it a very uncertain remedy. I have made trial of this vegetable in a great number of scrofulous cases, where the membranes covering the bones were in a diseased state, and I am not sure that one single patient obtained any evident and material benefit from it.

"The late Dr. Cullen, whose reports may justly claim attention from all medical men, when treating of the mezereum, in his Materia Medica, says, 'I have frequently employed it in several cutaneous affections, and sometimes with success.' It were to have been wished that the professor of medicine had specified what those diseases of the skin were, in which the mezereum was sometimes applied with success; for, if I except an instance or two of lepra, in which the decoction of this plant conferred a temporary benefit, I have very seldom found it possessed of medicinal virtue, either in syphilis, or in the sequelæ of that disease, in scrofula, or in cutaneous affections. Indeed the mezereum is of so acrimonious a nature, often producing heat and other disagreeable sensations in the fauces, and, on many occasions, disordering the primæ viæ, that I do not often subject my patients to the certain inconveniences which are connected with the primary effects of this medicine, as they are rarely compensated by any other important and useful qualities."

Daphnelæ'on. (*on, i.* n.; from δαφνη, the laurel, and ελαιον, oil.) Oil of bay-berries.

Da'phnia. A gem mentioned by Pliny, believed to have the power of curing epilepsy.

DAPHNINE. The bitter principle of the *Daphne alpina*. From the alkoholic infusion of this bark, the resin is separated by its concentration. On diluting the tincture with water, filtering and adding acetate of lead, a yellow *daphnate of lead* falls, from which sulphuretted hydrogen separates the lead, and leaves the daphnine in small transparent crystals. They are hard, of a greyish colour, a bitter taste when heated, evaporate in acrid acid vapours, are sparingly soluble in cold, but moderately in boiling water. It is stated, that its solution is not precipitated by acetate of lead; yet acetate of lead is employed in the first process to throw it down.

Daphni'tis. (From δαφνη, the laurel.) The spurge-laurel.

Daphnoi'des. (From δαφνη, the laurel, and ειδος, a likeness.) The spurge-laurel. See *Daphne laureola*.

Darseni. *Darsini.* An Arabic name of the *Canella alba*.

Da'rsis. (*is, is.* m.; from δερω, to excoriate.) Excoriation. The anatomical process of removing the skin from the subjacent texture, or the morbid abrasion of the cuticle in the living body.

Da'rta. A severe impetigo. — *J. N. Binninger.*

DA'RTOS. (Δαρτος; from δερω, to excoriate: so called from its raw and excoriated appearance.) The part so named, under the skin of the scrotum, is by some anatomists considered as a muscle, although it appears to be no more than a condensation of the cellular membrane lining the scrotum. It is by means of the dartos that the skin of the scrotum is corrugated and relaxed.

The word δαρτος is an adjective, with χιτων understood — δαρτος χιτων, *the excoriated coat or membrane.* Like many other such terms, it is used as a substantive.

DARTRE. A term variously and vaguely applied by French writers to cutaneous diseases: generally speaking, it corresponds with *herpes.*

Da'syma. (Δασυμα; from δασυς, rough.) A scabby roughness of the eyelids, the same with *trachoma.* — *Aëtius.*

Date. See *Phœnix dactylifera.*

Date plum, Indian. See *Dyospyrus lotus.*

DATU'RA. (*a, æ.* f. Blancard says it is derived from the Indian word *datiro*, of which he knows not the meaning.) The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Monogynia.*

Datura stramonium. The systematic name of the thorn apple; called also, *Stramonium, Dutray, Barryococcalon, Solanum manicum, Stramonium spinosum Solanum fœtidum,* and *Stramonium majus album.*

Datura stramonium — pericarpiis spinosis erectis vatis, foliis ovatis glabris, of Linnæus.

The odour of this plant is fœtid and narcotic, casioning headach and stupor. Its taste is itter and somewhat nauseous. Its componants re gum, resin, and carbonate of ammonia; the cent experiments of M. Brandes have also veloped an alkaline element of activity, to hich the name of *Daturia* has been assigned; appears to exist in native combination with alic acid; when in an uncombined state it is early insoluble in water, and in cold alkohol, t boiling alkohol dissolves it. It has been tained with difficulty in the form of quadran-ular prisms. The medicinal powers of the erb are alike extracted by aqueous and spirit-ous menstrua. The infusion is precipitated y the salts of lead, silver, mercury, and iron; ie mineral acids would also appear to pro-uce some essential changes which may di-inish its efficacy. Acetic acid increases its owers, although it relieves the effects of an ver-dose, if administered after the stomach has een emptied. This apparent anomaly is easily xplained when we consider, that in the first ase its operation is purely *chemical*, increasing ie solubility of the active principle of the plant, hile in the latter case it operates as a *vital* gent, restoring to the nervous system that nergy which has been suspended by the nar-otic influence of the vegetable. Stramo-ium is narcotic, and has been regarded by any authors as eminently antispasmodic; Dr. Barton, an American physician, made very xtensive trials of its efficacy in mania, the esult of which is highly favourable to its use. Dr. Marcet first noticed its salutary effects in ronic diseases attended with violent pain; he ound it to lessen powerfully, and quickly, sens-ility and pain, and to produce a sort of nervous hock, attended with a momentary affection of ie head and eyes, with a degree of nausea, and ith phenomena resembling those which are oduced by intoxication. It seems to be more rticularly beneficial in chronic rheumatism, iatica, &c. Its root, smoked in the manner tobacco, has been much extolled as a remedy the paroxysms of spasmodic asthma; this ractice, however, is not unattended with danger; ie same transient feelings of relief may be ocured by smoking a mixture of opium and y aromatic herb. Some discrepancy of opin-n has existed as to the form in which this edicine should be exhibited. The native prac-tioners in the Carnatic give the powdered root. Tufeland recommends a tincture of the whole ant. In this country an extract of the leaves, ; more lately, of the seeds, has been preferred, d Dr. Paris has been informed by Sir Henry alford, that he has found a tincture made ith the seeds, a very efficient and unobjec-nable preparation. Dr. Davy, at the request Dr. Paris, made a series of experiments upon e extracts prepared by Mr. Barry *in vacuo*, d his report upon the effects of that of stra-onium will be found under the article *Extract. ramonii*, which see. The dose of the powder-l leaves at the commencement is gr. j.; that of e seeds gr. ss. It is said that the Turks some-times use the stramonium instead of opium, and the Chinese infuse the seeds in beer. Cata-plasms of the fresh-bruised leaves have been very successfully used in sores of a highly irritable and painful nature. — *Paris.*

Officinal preparation. — *Extract. Stramonii.*

Daturia. See *Datura stramonium.*

Dauci'tes vinum. Must, in which bruised carrots have been steeped. It was used by the ancients as an antispasmodic.

DAU'CUS. (*us, i.* m. Απο του δαυειν, from its relieving the colic, and discussing flatulencies.) 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Digynia.*

2. The pharmacopœial name of the garden carrot. See *Daucus carota.*

Daucus alsaticus. See *Oreoselinum.*

Daucus annuus minor. See *Caucalis anthriscus.*

Daucus carota. The systematic name of the carrot plant; called also, *Daucus, Daucus sativus*, and *Pastinaca sylvestris tenuifolia officinarum.*

Daucus carota — seminibus hispidis, petiolis subtus nervosis, of Linnæus. The cultivated root, scraped and applied in the form of a poultice, is an useful application to phagedænic ulcers, and to cancers and putrid sores. The seeds, which obtain a place in the materia medica, have a light aromatic smell, and a warm acrid taste, and are esteemed for their diuretic qualities, and for their utility in calculous and nephritic complaints, in which an infusion of three spoonfuls of the seeds in a pint of boiling water has been recommended; or the seeds may be fermented in malt liquor, which receives from them an agreeable flavour, resembling that of lemon-peel. The boiled root is said by many to be difficult of digestion; but this is the case only when the stomach is weak. It contains a considerable quantity of the saccharine principle, and is very nutritious.

Daucus creticus. See *Athamanta.*

Daucus Macedonius. See *Apium graveolens.*

Daucus montanus. See *Oreoselinum.*

Daucus sativus. See *Daucus carota.*

Daucus selenoides. See *Oreoselinum.*

Daucus seprinius, Most probably chervil. See *Scandix cerefolium.*

Daucus sylvestris. Wild carrot, or bird's nest. The seeds of this wild plant have been thought more efficacious than those of the garden carrot; they are said to possess demulcent and aromatic qualities, and have been given, in infusion or decoction in calculous complaints.

Daucus vulgaris. See *Daucus sylvestris.*

Daura. Hellebore. Leaf-gold. — *Ruland.*

Day-mare, See *Ephialtes.*

Day-sight. See *Hemeralopia*, and *Nyctalopia.*

Dead-nettle. See *Lamium album.*

Deadly nightshade. See *Atropa.*

Deafness. See *Dysecoia.*

Deaf dumbness. See *Aphonia.*

Dealbatio. See *Albatio.*

Dearticula'tio. (From *de*, and *articulus*, a joint.) The same as *abarticulatio.* See *Diarthrosis.*

DEASCIA'TIO. (From *de*, and *ascio*, to chip, as with a hatchet.) Synonymous with *aposceparnismus*, which see.

DEAURATIO. The wrapping up of pills in gold leaf.

DEBILITAS. (*as, atis.* f.) Weakness. Sauvage has constituted a peculiar class of diseases under the name of *Debilitates*, or those characterised by debility.

DECAGY'NIA. (*a, æ.* f.; from δεκα, ten, and γυνη, a woman.) The name of an order of the class *Decandria*, of the sexual system of plants.

DECAMY'RON. (From δεκα, ten, and μυρον, an ointment.) An aromatic ointment, mentioned by Oribasius, containing ten ingredients.

DECA'NDRIA. (*a. æ*, f.; from δεκα, ten, and ανηρ, a man.) The name of a class, and also of an order, of plants in the sexual system.

DECANTATION. *Decantatio.* The pouring off of a liquor clear from sediments.

DECAPHY'LLOUS. (*Decaphyllus;* from δεκα, ten, and φυλλον, a leaf.) Ten leaved: applied to the perianth of flowers.

DECE'MFIDUS. Ten-cleft: applied in *Botany*, to perianths.

DECEMLOCULA'RIS. Ten-celled; applied, in *Botany*, to capsules.

DECIDE'NTIA. (From *decido*, to fall down.) Synonymous with *cataptosis*, which see.

DECI'DUOUS. (*Deciduus;* from *decido*, to fall off, or down; to die.) Falling off. 1. In *Botany*, applied to trees, shrubs, &c. which, in most European countries, lose their leaves as winter approaches. This term is expressive of the second stage of duration, and, like *caducous*, has a different application according to the particular part to which it refers; thus leaves are deciduous which drop off in the autumn, petals which fall off with the stamina and pistils; and calyces are *deciduous* which fall off after the expansion, and before the dropping of the flower.

2. In *Anatomy*, applied to a very thin and delicate membrane, *Membrana decidua*, which adheres to the internal surface of the gravid uterus. It is generally supposed by anatomists of the present day, that the decidua is a sac without any aperture, lining the uterus previously to the descent of the ovum; and that when the ovum descends it pushes the decidua before it and is enveloped by it, except at the part where the placenta is afterwards formed. That part of the membrane which lines the uterus is called *Tunica decidua uteri*, and that which covers the ovum is called *Tunica decidua reflexa.*

DECIMA'NUS. (From *decem*, ten.) Returning every tenth day; formerly applied to some erratic fevers.

DECLINING. *Declinatus, Declivis.* Applied by botanical writers, to stems, pericarps, &c. when bent like a bow, with the arch downwards. Applied also formerly, to a muscle of the abdomen, because of its posture. See *Obliquus descendens.*

Declinatus. See *Declining.*

DECLI'VIS. (From *de*, and *clivis*, a hill.) Declining: descending. See *Obliquus descendens.*

DECO'CTUM. (*um, i.* n.; from *decoquo*, to boil.) A decoction. A preparation made by boiling in a watery fluid. In a chemical point of view, it is a continued ebullition with water, to separate such parts of bodies as are only soluble at that degree of heat. The following are among the principal decoctions used in medicine.

Decoctum album. See *Mistura cornu usti.*

DECOCTUM ALOES COMPOSITUM. Compound decoction of aloes. Take of extract of liquorice, seven drachms; carbonate of potash, one drachm; aloes powdered, myrrh powdered, saffron, of each a drachm and a half; water, a pint and a half. Boil down to a pint, and strain; then add compound tincture of cardamoms, seven fluid ounces. This decoction is altered from one in the former London Pharmacopœia, which was analogous to an article in very frequent use, invented by the late Dr. Devalingin, and sold under the name of *Beaume de vie.* By the proportion of tincture which is added, it will keep unchanged for any length of time.

DECOCTUM ALTHÆÆ. Decoction of marsh mallows. Take of dried marsh mallow roots, ℥ iv.; raisins of the sun stoned, ℥ ij.; water, O vij. Boil to five pounds; place apart the strained liquor, till the fæces have subsided, then pour off the clear part. This preparation, directed in the Edinburgh Pharmacopœia, may be exhibited as a common drink in nephralgia, and many diseases of the urinary passages, with advantage.

DECOCTUM ANTHEMIDIS. Chamomile decoction. Take of chamomile flowers, ℥ j.; caraway seeds, ℥ ss.; water, ℔ v. Boil fifteen minutes, and strain. A very common and excellent vehicle for tonic powders, pills, &c. It is also in very frequent use for fomentation and clysters. See *Decoctum chamæmeli.*

DECOCTUM ASTRAGALI. Take of the root of the astragalus escapus, ℥ j.; distilled water, O iij. These are to be boiled, till only a quart of fluid remain. The whole is to be taken, a little warmed, in the course of 24 hours. This remedy was tried very extensively in Germany and said to exert every powerful effects, as an antisphylitic.

DECOCTUM BARDANÆ. Take of bardana root, f. ℥ vj.; of distilled water, O vj. These are to be boiled till only two quarts remain. From a pint to a quart in a day is given, in those cases where sarsaparilla, and other remedies that are called alterative, are supposed to be requisite.

Decoctum chamæmeli. See *Decoctum anthemidis.*

DECOCTUM CINCHONÆ. Decoction of cinchona, commonly called decoction of Peruvian bark. Take of lance-leaved cinchona bark bruised, ten drachms; water, a pint. Boil for ten minutes, in a vessel slightly covered, and strain the decoction while hot. According to the option of the practitioner, the bark of either of the other species of cinchona, the cordifolia, or *yellow*, or the oblongifolia, or *red*, may be substituted for the lancifolia, or *quilled*; which is here directed. This way of administering the bark is very general, as all the other preparations may be mixed with it, as necessity requires. It is a

very good astringent lotion for prolapsus of the uterus or rectum.

Decoctum cornu. See *Mistura cornu usti.*

Decoctum cydoniæ. *Mucilago seminis cydonii mali. Mucilago seminum cydoniorum.* Decoction of quince seeds. Take of quince seeds, two drachms; water, a pint. Boil over a gentle fire for ten minutes, then strain. This decoction, in the later London Pharmacopœias, has been removed from among the mucilages, as being less dense than either of the others, and as being employed in larger doses, like other mucilaginous decoctions. In addition to gum, it contains other constituent parts of the seeds, and is, therefore, more apt to spoil than common mucilage, over which it possesses no other advantages than that it is more grateful, and sufficiently thin, without further dilution, to form the bulk of any liquid medicine. Its virtues are demulcent. Joined with syrup of mulberry and a little borax, it is useful against aphthæ of the mouth and fauces.

Decoctum daphnes mezerei. Decoction of mezereon. Take of the bark of mezereon root, ℥ ij.; liquorice root bruised, ℥ ss.; water, O iij. Boil with a gentle heat down to two pounds, and strain. From four to eight ounces of this decoction may be given four times a day, in some obstinate venereal and rheumatic affections. It operates chiefly by perspiration.

Decoctum dulcamaræ. Decoction of woody nightshade. Take of the incised stalks of woody nightshade, ℥ x.; distilled water, O jss. These are to be boiled away to a pint, and strained. The dose is half an ounce to two ounces, mixed with an equal quantity of milk. This remedy has been employed in inveterate cases of scrofula; in cancer and phagedæna; in lepra and other cutaneous affections; and in anomalous local diseases, originating in venereal lues. Its chief use is as a diuretic in dropsy. Dose ℥ ss. to i. three times a day.

Decoctum geoffrææ inermis. Decoction of cabbage-tree bark. Take of bark of the cabbage-tree, powdered, ℥ j.; water, O ij. Boil down, with a gentle fire, down to one pound, and strain. This is a powerful anthelmintic. It may be given in doses of one table-spoonful to children, and four to adults. If disagreeable symptoms should arise from an overdose, or from drinking cold water during its action, we must immediately purge with castor oil, and dilute with acidulated drinks.

Decoctum guaiaci officinalis compositum. *Decoctum lignorum.* Compound decoction of guaiacum, commonly called decoction of the woods. Take of guaiacum raspings, ℥ iij.; raisins stoned, ℥ ij.; sassafras root, liquorice, each ℥ j.; water, O x. Boil the guaiacum and raisins with the water, over a gentle fire, to the consumption of one half; adding, towards the end, the sassafras and liquorice. Strain the liquor, without expression. This decoction possesses stimulant and diaphoretic qualities, and is generally exhibited in rheumatic and cutaneous diseases, which are dependent on a vitiated state of the humours. It may be taken by itself, in the quantity of a quarter of a pint, twice or thrice a day, or used as an assistant in a course of mercurial or antimonial alteratives; the patient, in either case, keeping warm, in order to promote the operation of the medicine.

Decoctum hellebori albi. Decoction of white hellebore. Take of the root of white hellebore, bruised, ℥ x.; distilled water two pints; rectified spirits of wine, f. ℥ iij. by measure. Boil the water, with the root, to one pint; and the liquor being cold, add the spirit, and press, and strain. This decoction, in the last London Pharmacopœia, is called decoctum veratri. It is considered an efficacious application, externally, as a wash, in tinea capitis, lepra, psora, &c. When the skin is very tender and irritable, it should be diluted with an equal quantity of water.

Decoctum hordei. *Decoctum hordei distichi. Aqua hordeata.* Barley water. Take of pearl barley, ℥ ij.; water, four pints and a half. First wash away any adhering extraneous substances with cold water; next, having poured upon the barley half a pint of water, boil for a few minutes. Let this water be thrown away, and add the remainder of the water boiling; then boil down to two pints, and strain. Barley-water is a nutritive and softening drink, and the most proper of all liquors in inflammatory diseases. It is an excellent gargle in inflammatory sore throats, mixed with a little nitre.

Decoctum hordei compositum. *Decoctum pectorale.* Compound decoction of barley. Take of decoction of barley, two pints; figs sliced, ℥ ij.; liquorice root, sliced and bruised, ℥ ss.; raisins stoned, ℥ ij.; water, a pint. Boil down to two pints, and strain. From the pectoral and demulcent qualities of this decoction, it may be administered as a common drink in fevers and other acute disorders, in catarrh, and several affections of the chest.

Decoctum hordei cum gummi. Barley water, O ij.; gum arab. ℥ j. The gum is to be dissolved in the barley decoction whilst warm. It then forms a suitable diluent in strangury, dysury, &c.

Decoctum lichenis. Decoction of Iceland moss or liverwort. Take of liverwort, one ounce; water, a pint and a half. Boil down to a pint, and strain. The dose is from ℥ j. to ℥ iv. This is now called *Decoctum cetrariæ.*

Decoctum lobeliæ. Take a handful of the roots of the *Lobelia sphilitica;* distilled water, O xij. These are to be boiled in the usual way, till only four quarts remain. The very desirable property of curing the venereal disease has been attributed to this medicine; but it is not more to be depended on than guaiacum, or other vegetable substances, of which the same thing has been alleged. The effects of this decoction are purgative, and the manner of taking it, as described by Swediaur, is as follows: — The patient is to begin with half a pint twice a day. The same quantity is then to be taken four times a day, and continued so long as its purgative effect is not too considerable. When the case is otherwise, it is to be discontinued for three or four days, and then had recourse to again till the cure is completed. This remedy is not admitted into our modern pharmacopœias, as no confidence is now placed in it.

Decoctum lusitanicum. Take of sliced sarsaparilla, lignum sassafras, lignum santalum rubrum, officinal lignum guaiacum, of each one ounce and a half; of the root of mezereon, coriander seed, of each half an ounce; distilled water, ten pounds. These are to be boiled till only half the fluid remains. The dose is a quart or more in a day.

Take of sliced sarsaparilla, lignum santalum rubrum, lignum santalum citrinum, of each ℥ jss.; of the root of glycyrrhiza and mezereon, of each ʒij.; of lignum rhodii, officinal lignum guaiacum, and lignum sassafras, of each ℥ss.; of antimony, ℥ j.; distilled water, O v. These ingredients are to be macerated for twenty-four hours, and afterwards boiled till the fluid is reduced to half its original quantity. From one to four pints are given daily.

The late Mr. Hunter notices this, and also the following formula, in his Treatise on the Venereal Disease: —

Take of sliced sarsaparilla, of the root of China, of each ℥ j.; walnut-peels, dried, xx.; antimony, ℥ij.; pumice-stone, powdered, ℥j.; distilled water, O x. The powdered antimony and pumice-stone are to be tied in separate pieces of rag, and boiled along with the other ingredients. This last decoction is reckoned to be the genuine Lisbon diet-drink, the qualities of which have been the subject of so much encomium.

Decoctum malvæ compositum. *Decoctum pro enemate. Decoctum commune pro clystere.* Compound decoction of mallows. Take of mallows, dried, an ounce; chamomile flowers, dried, half an ounce; water, a pint. Boil for a quarter of an hour, and strain. A very excellent form for an emollient clyster. A variety of medicines may be added to answer particular indications.

Decoctum mezerei. See *Decoctum daphnes mezerei.*

Decoctum papaveris. *Decoctum pro fomento. Fotus communis.* Decoction of poppy. Take of white poppy capsules, bruised, ℥iv.; water, four pints. Boil for a quarter of an hour, and strain. This preparation possesses slight anodyne properties, and is used as a fomentation in acute ophthalmia, painful swellings, &c.

Decoctum pro enemate. See *Decoctum malvæ compositum.*

Decoctum pro fomento. See *Decoctum papaveris.*

Decoctum quercus. Decoction of oak bark. Take of oak bark, ʒx.; water, two pints. Boil down to a pint, and strain. This astringent decoction is chiefly used for external purposes, and its strength may be varied according to circumstances. It is a good lotion in prolapsus ani, and may be used also, in some cases, as an injection.

Decoctum sarsaparillæ. Decoction of sarsaparilla. Take of sarsaparilla root, sliced, ℥v.; boiling water, four pints. Macerate for four hours, in a vessel lightly covered, near the fire; then take out the sarsaparilla, and bruise it. After it is bruised, put it again into the liquor, and macerate it in a similar manner for two hours more; then boil it down to two pints, and strain. This decoction is much extolled by some practitioners, in various cachectic diseases, and to restore the strength after a long course of mercury. It is called *Decoctum sarzæ* in the present London Pharmacopœia.

Decoctum sarsaparillæ compositum. Compound decoction of sarsaparilla. Take of decoction of sarsaparilla, boiling, four pints; sassafras root sliced, guaiacum-wood shavings, liquorice root bruised, of each an ounce; mezereon-root bark, ʒ iij. Boil for a quarter of an hour, and strain. The alterative property of the compound is very great: it is generally given after a course of mercury, where there have been nodes and indolent ulcerations, and with great benefit. The dose is from half a pint to a pint in twenty-four hours. This is the *Decoctum sarzæ compositum* of the present London Pharmacopœia.

Decoctum sarzæ. See *Decoctum sarsaparillæ.*

Decoctum senegæ. Decoction of senega. Take of senega root, ʒx.; water, two pints. Boil down to a pint, and strain. This has been introduced into the later London Pharmacopœias, as being a useful medicine, especially in affections of the lungs, attended with debility and inordinate secretion.

Decoctum ulmi. Decoction of elm bark. Take of fresh elm bark, bruised, four ounces; water, four pints. Boil down to two pints, and strain. This may be employed with great advantage as a collyrium in chronic ophthalmia. It is given internally in some cutaneous eruptions.

Decoctum veratri. See *Decoctum hellebori albi.*

Decolora'tion. A term adopted from the French, signifying blanching or loss of the natural colour of any object.

Decompo'sitæ. The name of a class in Sauvage's Methodus Foliorum, consisting of such as have twice-compounded leaves; that is, have a common footstalk supporting a number of lesser leaves, each of which is compounded; as in *Fumaria*, and many umbelliferous plants.

DECOMPOSITION. (*Decompositio, onis.* f.; from *de*, and *compono*, to discompose or alter the arrangement of.) The separation of the component parts or principles of bodies from each other. The decomposition of bodies forms a very large part of the practice of chemistry. It seems probable, from the operations we are acquainted with, that it seldom takes place but in consequence of some combinations or compositions having been effected. It would be difficult to point out an instance of the separation of any of the principles of bodies which has been effected unless in consequence of some new combination. The only exceptions seem to consist in those separations which are made by heat, and voltaic electricity.

DECOMPO'SITUS. A term applied to leaves, and meaning doubly compound.

The decomposite, or doubly compound leaves are of three different kinds: —

1. *Bigeminate*, or twinforked, when a forked leafstalk bears several leafits at the end of each division or fork.

2. *Biternate*, or doubly threefold, when a leafstalk with three divisions bears three leafits upon the end of each division.

3. *Duplicato-pinnate*, or *bipinnate*, doubly winged, when a leafstalk has lateral ribs, and each of these ribs forms a winged leaf; as in *Tanacetum vulgare*, *Achillea millefolium*, &c.

DECORTICA'TION. (*Decorticatio, onis.* f. from *de*, from, and *cortex*, bark.) The stripping of any thing of its bark, husk, or shell: thus almonds, and the like, are decorticated; that is, deprived of their pellicle, when ordered for medicinal purposes.

DECREPITA'TION. (*Decrepitatio, onis.* f.; from *decrepo*, to crackle.) A kind of crackling noise, which takes place when some bodies, especially salts, are exposed to a certain degree of heat.

DECU'BITUS. (From *decumbo*, to lie down.) The attitude or disposition of the body of a patient when in the horizontal posture. This forms an important feature in some diseases.

DECU'MBENS. (From *decumbo*, to lie down.) Lying down. Drooping: a term applied to flowers which incline to one side and downwards.

DECU'RRENT. (*Decurrens;* from *decurro*, to run down.) Applied to leaves which run down the stem in a leafy border or wing; as in *Onopordium acanthium*, and many thistles, great mullein, and comfrey: and to leafstalks; as in *Pisum ochrus*.

DECU'RSIVE. (*Decursivus;* from *decurro*, to run down.) Applied to leaves of which the middle nerve only runs down the stem; as in *Ruellia decurrens*. Also to a style the base of which descends on one side of the ovary, as in the genus *Rivinea*.

DECU'SSATE. (*Decussatus*; from *decusso*, to cross after the manner of an X.) Applied to leaves and spines which are in pairs, alternately crossing each other; as in *Veronica decussata*, and *Genista lusitanica*.

DECUSSA'TION. (*Decussatio, onis.* f.; from *decusso*, to cross each other.) When nerves or muscular fibres cross one another, this distribution is called decussation.

DECUSSO'RIUM. (*um, ii.* n.; from *decusso*, to divide.) An instrument to depress the dura mater, after trepanning.

DEFECA'TION. The separating or freeing any thing from its fæces.

DEFECTIO ANIMI. The same as *deliquium animi*.

DEFENSIVE. (*Defensivus;* from *defendo*, to preserve.) Defensive; applied to plasters and dressings of wounds; and formerly to cordial medicines, or such as resist infection.

DE'FERENS. (From *defero*, to convey; because it conveys the semen to the vesiculæ seminales.) See *Vas deferens*.

DEFI'XUS. (From *defigo*, to fasten; because it was supposed that every man thus defective was bewitched, or fastened by some charm.) Impotent; incapable of the generative act.

DEFLAGRA'TIO. (*o, onis.* f.; from *deflagro*, to burn.) Deflagration. 1. A rapid combustion, such as that which takes place when a mixture of sulphur and nitre is inflamed. 2. The intermission of a fever. — *Blancard.*

DEFLE'XUS. (*us, ûs.* m.; from *deflecto*, to turn or bend.) Deflex: bending outwards in a small degree.

DEFLORATE. (*Defloratus;* from *defloresco*, to shed the blossoms.) Applied, in *Botany*, to the anthers of flowers when they have shed their pollen; and also to plants when their flowers have fallen.

DEFLORA'TION. The extinction of the marks of virginity by connexion with the male. See *Virginity*.

DEFLUVIUM CAPILLORUM. Falling off of the hair. See *Baldness*.

DEFLU'XION. (*Defluxio, onis.* f.; from *defluo*, to run off.) A descent of humours from a superior to an inferior part. A term much used by the humoral pathologists.

DEFOLIA'TION. (*Defoliatio, onis.* f.; from *de*, and *folium*, a leaf.) The fall of the leaf. A term opposed to *frondescentia*, or the renovation of the leaf.

DEFORMA'TIO. A deformity of the body whether from original malformation or disease.

DEGENERATION. In natural history and physiology, this term is used to signify a gradual falling off or deterioration in any class of animals, or of any particular organ in the animal or vegetable body from the operation of natural causes. In *Pathology*, degeneration signifies a morbid change in the structure of parts.

DEGLUTI'TION. (*Deglutitio, onis.* f.; from *de*, and *glutio*, to swallow) The act of swallowing, or the passage of a substance, either solid, liquid, or gaseous, from the mouth to the stomach. Though deglutition is very simple in appearance, it is nevertheless the most complicated of all the muscular actions that serve for digestion. It is produced by the contraction of a great number of muscles, and requires the concurrence of many important organs.

All the muscles of the tongue, those of the *velum* of the palate, of the pharynx, of the larynx, and the muscular layer of the œsophagus, are employed in deglutition.

The *velum* is a sort of valve attached to the posterior edge of the roof of the palate; its form is nearly quadrilateral; its free or inferior edge is pointed, and forms the *uvula*. Like the valves of the intestinal canal, the *velum* is essentially formed by a duplicature of the digestive mucous membrane; there are many mucous follicles that enter into its composition, particularly in the uvula. Eight muscles move it: it is raised by the two internal *pterygoid*, the external *pterygoid* hold it transversely; the two *palato-pharyngei*, and the two *constrictores isthmi faucium* carry it downwards. These four are seen at the bottom of the throat, where they raise the mucous membrane, and form the pillars of the *velum* of the palate, between which are situated the *amygdalæ*, a mass of mucous follicles. The opening between the base of the tongue below, the *velum* of the palate above, and the pillars laterally, is called the isthmus of the throat. By means of its muscular apparatus, the *velum* of the palate may have many changes of position. In the most common state it is placed vertically; one of its faces is anterior, the other posterior: in certain cases it becomes horizontal: it has then a superior and inferior aspect, and its free edge cor-

responds to the concavity of the pharynx. This last position is determined by the contraction of the elevating muscles.

The *pharynx* is a vestibule into which open the nostrils, the Eustachian tubes, the mouth, the larynx, and the œsophagus, and which performs very important functions in the production of voice, in respiration, hearing, and digestion.

The pharynx extends from top to bottom, from the basilar process of the occipital bone, to which it is attached, to the level of the middle part of the neck.

Its transverse dimensions are determined by the os hyoides, the larynx, and the pterygomaxillary aponeurosis, to which it is fixed. The mucous membrane which covers it interiorly is remarkable for the development of its veins, which form a very apparent plexus. Round this membrane is the muscular layer, the circular fibres of which form the three constrictor muscles of the pharynx, the longitudinal fibres of which are represented by the stylo-pharyngeus and constrictores isthmi faucium. The contractions of these different muscles are not generally subject to the will.

The *œsophagus* is the immediate continuation of the pharynx, and is prolonged as far as the stomach, where it terminates. Its form is cylindrical; it is united to the surrounding parts by a slack and extending cellular tissue, which gives way to its dilatation and its motions. To penetrate into the abdomen, the œsophagus passes between the pillars of the diaphragm, with which it is closely united. The mucous membrane of the œsophagus is white, thin, and smooth; it forms longitudinal folds, very proper for favouring the dilatation of the canal: above it is confounded with that of the pharynx.

There are found in it a great number of mucous follicles, and at its surface there are perceived the orifices of many excretive canals of the mucous glands.

The muscular layer of the œsophagus is thick, its tissue is denser than that of the pharynx; the longitudinal fibres are the most external and the least numerous; the circular are placed in the interior, and are very numerous.

Round the pectoral and inferior portion of the œsophagus, the two nerves of the eighth pair form a plexus which embraces the canal, and sends many filaments into it.

The contraction of the œsophagus takes place without the participation of the will.

Mechanism of Deglutition. — Deglutition is divided into three periods. In the first, the food passes from the mouth to the pharynx; in the second, it passes the opening of the glottis, that of the nasal canals, and arrives at the œsophagus; in the third, it passes through this tube and enters the stomach.

Let us suppose the most common case, that in which we swallow at several times the food which is in the mouth, and according as mastication takes place.

As soon as a certain quantity of food is sufficiently chewed, it is placed, by the effects of the motions of mastication, in part upon the superior face of the tongue, without the necessity, as some think, of its being collected by the point of the tongue from the different parts of the mouth. Mastication then stops: the tongue is raised and applied to the roof of the palate, in succession, from the point towards the base. The portion of food, or the alimentary bolus, placed upon its superior surface, having no other way to escape from the force that presses, is directed towards the pharynx: it soon meets the velum of the palate applied to the base of the tongue, and raises it; the velum becomes horizontal, so as to make a continuation of the palate. The tongue, continuing to press the food, would carry it towards the nasal canals, if the velum did not prevent this by the tension that it receives from the external peristaphyline muscles, and particularly by the contraction of its pillars; it thus becomes capable of resisting the action of the tongue, and of contributing to the direction of the food towards the pharynx.

The muscles which determine more particularly the application of the tongue to the top of the palate, and to the velum of the palate, are the proper muscles of the organ, aided by the mylo-hyoideus. Here the first time of deglutition terminates. Its motions are voluntary, except those of the velum of the palate. The phenomena happen slowly and in succession: they are few and easily noticed.

The second period is not the same; in it the phenomena are simultaneous, multiplied, and are produced with such promptitude, that Boerhaave considered them as a sort of convulsion.

The space that the alimentary bolus passes through in this time is very short, for it passes only from the middle to the inferior part of the pharynx; but it was necessary to avoid the opening of the glottis and that of the nasal canals, where its presence would be injurious. Besides, its passage ought to be sufficiently rapid, in order that the communication between the larynx and the external air may not be interrupted, except for an instant.

Let us see how nature has arrived at this important result. The alimentary bole no sooner touches the pharynx than every thing is in motion. First, the pharynx contracts, embraces and retains the bole; the velum of the palate, drawn down by its pillars, acts in the same way. On the other hand, and in the same instant, the base of the tongue, the os hyoides, the larynx, are raised and carried forward to meet the bole, in order to render its passage more rapid over the opening of the glottis. Whilst the os hyoides and the larynx are raised, they approach each other, that is, the superior edge of the thyroid cartilage engages itself behind the body of the os hyoides; the epiglottic gland is pushed back; the epiglottis descends, inclines downwards and backwards, so as to cover the entrance of the larynx. The cricoid cartilage makes a motion of rotation upon the inferior horns of the thyroid, whence it results that the entrance of the larynx becomes oblique downwards and backwards. The bole slides along its surface; and being always pressed by the contraction of the pharynx and of the velum of the palate, it arrives at the œsophagus.

It is not long since the position that the epi

glottis takes in this case was considered as the only obstacle opposed to the entrance of the food into the larynx, at the instant of deglutition; but it has been shown, by a series of experiments, that this cause ought to be considered as only accessary. In fact, the epiglottis may be entirely taken away from an animal, without deglutition suffering any injury from it. What is the reason, then, that no part of the food is introduced into the larynx the instant that we swallow? The reason is this: in the instant that the larynx is raised and engaged behind the os hyoides, the glottis shuts with the greatest closeness. This motion is produced by the same muscles that press the glottis in the production of the voice; so that if an animal has the recurrents and nerves of the larynx divided, whilst the epiglottis is untouched, its deglutition is rendered very difficult, because the principal cause is removed which opposes the introduction of food into the glottis.

Immediately after the alimentary bole has passed the glottis, the larynx descends, the epiglottis is raised, and the glottis is opened to give passage to the air.

After what has been said, it is easy to conceive why the food reaches the œsophagus without entering any of the openings which end in the pharynx. The velum of the palate, which, in contracting, embraces the pharynx, protects the posterior nostrils and the orifices of the Eustachian tubes; the epiglottis, and particularly the motion by which the glottis shuts, preserves the larynx.

Thus, the second period of deglutition is accomplished; by the effects of which the alimentary bole passes the pharynx, and is engaged in the superior part of the œsophagus. All the phenomena which concur in it take place simultaneously, and with great promptitude: they are not subject to the will; they are then different in many respects from the phenomena that belong to the first period.

The third period of deglutition is that which has been studied with the least care, probably on account of the situation of the œsophagus, which is difficult to be observed except in its cervical portion. The phenomena which are connected with it are not complicated. The pharynx, by its contraction, presses the alimentary bole into the œsophagus with sufficient force to give a suitable dilatation to the superior part of this organ. Excited by the presence of the bole, its superior circular fibres very soon contract, and press the food towards the stomach, thereby producing the distension of those more inferior. These contract in their turn, and the same thing continues in succession until the bole arrives at the stomach. In the upper two thirds of the œsophagus, the relaxation of the circular fibres follows immediately the contraction by which they displaced the alimentary bole. It is not the same with the inferior third: this remains some moments contracted after the introduction of food into the stomach.

All the extent of the mucous surface that the alimentary bole passes, in the three periods of deglutition, is lubricated by an abundant mucosity. In the way that the bolus passes, it presses more or less the follicles that it meets in its passage, it empties them of the fluid that they contain, and slides more easily upon the mucous membrane. We remark that in those places where the bole passes more rapidly, and is pressed with greater force, the organs for secreting mucus are much more abundant. For example, in the narrow space where the second period of deglutition takes place, there are found the tonsils, the fungous papillæ of the base of the tongue, the follicles of the velum of the palate, and the uvula, those of the epiglottis, and the arytenoid glands. In this case the saliva and the mucosity fulfil uses analogous to those of the synovia.

The mechanism by which we swallow the succeeding mouthfuls of food does not differ from that which we have explained.

Nothing is more easy than the performance of deglutition, and, nevertheless, all the acts of which it is composed are beyond the influence of the will and of instinct. We cannot make an empty motion of deglutition. If the substance contained in the mouth is not sufficiently chewed, if it has not the form, the consistence, and the dimensions of the alimentary bole, if the motions of mastication which immediately precede deglutition have not been made, we will frequently find it impossible to swallow it, whatever efforts we make. How many people do we not find who cannot swallow a pill, and who are obliged to fall upon other methods to introduce it into the œsophagus? — *Magendie.*

DE'GMUS. (Δηγμος; from δακνω, to bite.) A bite. Applied in medical language to a gnawing pain, especially that which is sometimes felt in the stomach.

Dehene. *Dehim. Dem.* Barbarous words for blood. — *Ruland.*

Dehenez. *Duenec. Duhenec.* Vitriol. — *Ruland.*

Dehiscence. *Dehiscentia.* The state of a dehiscent capsule.

DEHI'SCENS. (From *dehisco*, to gape.) Dehiscent. Gaping. Applied in botany to capsules which split and gape wide when ripe, to give exit to the seed.

DEJECTION. (*Dejectio, onis.* f.; from *dejicio*, to go to stool.) A discharge of fæcal matter from the bowels, or the matter discharged.

Dejecto'rius. (From *dejicio*, to cast out.) Purgative.

De la Motte's golden drops. See *Gouttes du Général Lamotte.*

Dela'psio. Improperly written for *delapsus.*

Dela'psus. Synonymous with *prolapsus.*

DELETE'RIOUS. (*Deleterius*; from δηλεω, to hurt or injure.) Poisonous.

DELIGA'TIO. (From *deligo*, to bind up.) The application of a bandage.

DELIQUE'SCENCE. (*Deliquescentia, æ.* f.; from *deliquesco*, to melt down.) Deliquation, or the spontaneous assumption of the fluid state of certain saline bodies, when left exposed to the air, in consequence of their attracting water from it.

DELI'QUIUM. (*um, i.* n.; from *delinquo*, to leave.) 1. A fainting. See *Syncope.*

2. In *Chemistry* and *Pharmacy*, the same as deliquescence.

Deliquium animi. Fainting.

DELIRIUM. (*um*, *i.* n.; from *deliro*, to rave.) The confusion of ideas which occurs in the progress of diseases from disturbed function of the brain. Delirium is either violent and frantic, *delirium ferox*, as in acute inflammation of the membranes of the brain; or low and muttering, *typhomania*, as in low fever.

Delirium tremens. An affection of the brain nearly peculiar to drunkards.

It is important to distinguish this affection from inflammation of the brain. Delirium tremens almost always arises from the inordinate use of ardent spirits, wine, or strong malt liquors. Dr. Armstrong met with only one exception, and in that case it arose from the use of opium. Dr. Ayre has seen several cases arising from lead. Delirium tremens is very often connected with mental anxiety, night-watching, or copious evacuation. Dr. Armstrong once saw a patient who at the onset had laboured under inflammation of the tonsils and adjacent mucous membrane, for which he was bled, purged, and kept on a low diet; and in the state of exhaustion thus produced the attack of delirium came on. In drunkards the delirium generally comes on in the state of exhaustion from leaving off, either in part or entirely, the accustomed stimulus. In fact, to a confirmed drunkard, wine, spirits, and ale, are as food; he lives by a sort of suction. As we live on flesh and bread, so he lives by drink; and if you abstract his food, you will very likely induce this peculiar condition of the nervous system. Dr. Armstrong has known the fumes of spirits produce this affection. He once saw a case in an individual of remarkably temperate habits, but he had been, for some days previous to the attack, exposed to the fumes of ardent spirits, which affected him very much. He was at first exceedingly excited by them, and in the subsequent exhaustion the attack of delirium tremens came on.

A person having been much addicted to the use of considerable potations, omits his accustomed stimulus, and the approach of an attack of delirium tremens is almost invariably announced by the patient being remarkably irritable, with fretfulness of the mind, and mobility of the body. Watchfulness next occurs, and the patient gets little or no sleep. He has frightful dreams, sees remarkable sights, or hears extraordinary sounds. He then begins to fancy that some conspiracy is forming against him, entertains suspicions about certain persons or things, and imagines that some mischief is intended towards him. Then he is perpetually busied about his affairs, and so on.

Some patients in this affection are very much alarmed, and fancy that a person in the next room is waiting to assassinate them.

Sometimes the delirium turns on some matter of business, such as settling of accounts, or telling of money.

The patient generally is in a perpetual bustle; his hands are constantly full; in short, he becomes a perfect man of business. The skin is damp and relaxed, and there is a variable active expression of the eye, and almost always tremour of the hands. The pulse is soft, compressible, and seldom above one hundred, except under great bodily exertions.

It is to be remarked, with respect to this affection —

1. That it comes on in a state of weakness, and almost always after hard drinking.

Indeed, it always occurs after the excessive use of spirits, &c., as far as Dr. Armstrong's observations have gone, with the one exception already mentioned.

2. It is preceded and attended by irritability of mind and mobility of body.

There is a remarkable sensibility of the body, an incessant tendency to move from one place to another, and the patient is prone to be irritated by very slight circumstances.

3. It is preceded and attended by watchfulness during the day and night, compared with the natural habits as to sleep.

4. An incessantly active bustling delirium supervenes, when the disease is fully developed.

And the illusions which attend this delirium, however vague and unfounded, operate on the patient with all the force of realities till he becomes furiously mad. He has extraordinary activity of mind, and is busied in enumerating his misfortunes or in counting his wealth.

5. The countenance is quick, variable, and wild at times.

No single description will apply to the expression of the countenance in these cases; for it varies with the predominant impression on the mind of the individual.

6. The skin is damp and relaxed, especially on any exertion.

7. The hands are generally tremulous.

Dr. Armstrong has seen some cases in which the tremor was entirely absent. When it exists it is most obvious when the patient's hand is held out. It is like the tremour which you may see in the hands of a drunkard in the morning, before taking his accustomed dram.

8. The patient is inclined to constant motion.

And he generally is so unless he is tied down. There is activity, not only of the mind, but of the body also. The whole mind is put constantly in action, and the whole body in motion. The individual is perpetually changing his place and displays considerable power both of body and mind.

9. The face is pale, and the conjunctiva generally blanched.

10. The surface is rarely hotter than natural. It is almost always damp.

11. The tongue is but slightly furred and very moist.

12. The appetite is good.

The patient will take what is offered him except in those cases where he labours under an illusion, and suspects that some person is about to poison him; for then he will often refuse every thing.

13. The pulse is soft and compressible compared with the pulse which occurs in inflammation of the brain and its membranes. I

is seldom above one hundred, if the individual be quiet; but if he use much exertion, it is sometimes excessively rapid and small. In some cases there are convulsions; sometimes they are very dangerous, but often they are not fatal if the patient be properly managed.

Delirium tremens is distinguished from inflammation of the brain by attention to the following particulars: —

1. In inflammation of the brain and its membranes there is a peculiar mixed expression of the eye, made up of a combination of physical brightness with intellectual dulness.

In the delirium of drunkenness the expression of the eye is generally remarkably vivid and intelligent, except when the patient labours under an apprehension of the approach of some great mischief to himself.

In inflammation of the brain the look is wearied, anxious, and oppressed, except when there is high delirium, and then it is wild.

In delirium tremens the eye is rolling and restless, exceedingly variable according to the present impression.

2. In inflammation of the brain there is dropping of one or both eyelids: in the first stage the pupil is contracted; and in the last stage, if effusion have taken place, it is dilated.

But in the brain fever the pupil is not contracted; nor is it dilated, except under great exertion.

3. In inflammation of the brain the conjunctiva is injected.

In delirium tremens the conjunctiva is blanched.

4. In inflammation of the brain the heat is very high on the surface, especially over the head, neck, and face.

This is not the case in delirium tremens, in which the skin is sometimes warm, but often cool and even chilly, from the excessive perspiration and consequent evaporation from the surface of the body. Sometimes, however, the surface is hotter than natural from great exertion.

5. In delirium tremens, too, the pulse continues remarkably soft, in comparison with the pulse which occurs in inflammation of the brain; and is slow, except when the patient makes violent exertions.

6. The skin is remarkably relaxed in delirium tremens; but it is not so in inflammation of the brain.

7. In delirium tremens the hands are generally tremulous from the commencement.

In inflammation of the brain the hands are tremulous only in the last stage.

8. In inflammation of the brain the strength fails from the beginning, and the patient staggers when he attempts to walk.

But in delirium tremens at the beginning, and during the progress, the patient manifests very great muscular power. He looks, speaks, moves, and does every thing with very great rapidity and energy. With respect to this, however, exhaustion often comes on very rapidly after great exertion, and the patient falls down from fatigue.

9. In inflammation of the brain the appetite is prostrate.

In delirium tremens the appetite is often good, although the patient may refuse food from a suspicion of an intention to poison him.

10. Delirium tremens is mostly the consequence of hard drinking.

Inflammation of the brain can, on the contrary, generally be referred to other remote occasions.

11. In deliriums tremens the patient is first irritable, then watchful, then fanciful, and, lastly, furiously mad.

In inflammation of the brain the patient first complains of pain in the head, with general debility of mind and body.

12. In delirium tremens the patient is constantly changing his place. He is in the state called jactitation.

In inflammation of the brain he lies on his back, with but little muscular power, except in occasional fits of delirium, in which his strength is remarkable.

13. In delirium tremens the patient does not often complain of pain in the head; but in inflammation of the brain he almost always complains of acute pain in the first stage.

14. Delirium tremens comes on and goes off suddenly; but inflammation of the brain comes on and goes off for the most part gradually, though to this there are some exceptions, especially in hot climates. — *Armstrong.*

The pathology of delirium tremens is not understood, nor have any appearances been observed on dissection, which can be reasonably regarded as having any essential relation to the disease.

The prognosis is generally rather favourable, if the ordinary health of the patient be not very bad, and if he be not far advanced in life.

In the treatment of this disease, opium is our sheet anchor. It should be given in large doses, as sixty minims of the tincture every hour or two, its effect being cautiously watched. If sound sleep be thus induced, the patient usually wakes free from disease. In many cases, the judicious use of alkoholic stimulants is of signal service; and these means, with laxatives, gentle diaphoretics, and proper moral management, will generally bring the case to a successful issue. Bleeding, to a small extent, may be required at the commencement, when the patient is young and plethoric, and there are symptoms of determination of blood to the head; but, generally speaking, bleeding should be considered as out of the question in this disease; patients who are largely bled hardly ever recover.

If the patient express a desire for food, he may be allowed light articles of diet: in some cases even animal food has been given with advantage, and indeed it might not be easy to give any good reason why this should be refused, if the state of the stomach be such as to incline the patient to ask for it.

Delitescence. (From *delitesco*, to hide oneself, abscond.) A French term used to signify the sudden resolution or disappearance of an inflammation.

Delivery. See *Parturition.*

Delocatio. (From *de*, from, and *locus*, a place.) The same as *dislocatio.*

Delphia. See *Delphinia.*

DE'LPHINATE. A salt formed by the union of the delphinic acid with a base.

Delphine. See *Delphinia.*

DELPHI'NIA. (*a, æ.* f.; so called because obtained from the plant called *delphinium.*) Delphine: a vegetable alkali discovered by Lassaigne and Fenuelle, in the stavesacre. See *Delphinium staphysagria.*

DELPHI'NIC ACID. *Acidum delphinicum.* The name of an acid, extracted from the oil of the dolphin, *delphinus.* M. Chevreuil, who discovered it, has since proposed to call it *phocenic,* because the former name might lead to the supposition that it was derived from the plant *delphinium.* See *Phocenic acid.*

DELPHI'NIUM. (*um, ii.* n.; from δελφιν, the dolphin: so called from the likeness of the flower to the dolphin's head.) The name of a genus of plants in the Linnæan system. Class, *Polyandria;* Order, *Trigynia.*

Delphinium — nectariis monophyllis, caule subdiviso, of Linnæus. Many virtues have been attributed to this plant. The flowers are bitter, and a water distilled from them is recommended in ophthalmia. The herb has been administered in calculous cases, obstructed menses, and visceral diseases,

DELPHINIUM CONSOLIDA. The systematic name of the *Consolida regalis;* called also *Calcatrippa.*

DELPHINIUM STAPHISAGRIA. The systematic name of stavesacre; called also, *Staphisagria, Staphis,* and *Pedicularia.*

Delphinium staphisagria — nectariis tetraphyllis petalo brevioribus, foliis palmatis, lobis obtusis, of Linnæus. The seeds, which are the only parts directed for medicinal use, are usually imported here from Italy; they are large, rough, of an irregular triangular figure, and of a blackish colour on the outside, but yellowish within; their smell is disagreeable, and somewhat fœtid; to the taste they are very bitter, acrid, and nauseous. They were formerly employed as a masticatory, but are now confined to external use, in some kinds of cutaneous eruptions, but more especially for destroying lice and other insects: hence, by the vulgar, the plant is called louse-wort.

An alkali was discovered in this plant by Lassaigne and Fenuelle, which is called *Delphinia,* or *Delphine;* it is obtained in the following way: — The seeds, deprived of their husks, and ground, are to be boiled in a small quantity of distilled water, and then pressed in a cloth. The decoction is to be filtered, and boiled for a few minutes with pure magnesia. It must then be re-filtered, and the residuum left on the filter is to be well washed, and then boiled with highly rectified alkohol, which dissolves out the alkali. By evaporation, a white pulverulent substance, presenting a few crystalline points, is obtained.

It may also be procured by the action of dilute sulphuric acid on the bruised but unshelled seeds. The solution of sulphate, thus formed, is precipitated by subcarbonate of potash. Alkohol separates from this precipitate the alkali in an impure state.

Pure delphinia obtained by the first process is crystalline while wet, but becomes opake on exposure to air. Its taste is bitter and acrid. Its action on animals, in an over-dose, is that of producing great agitation, convulsions, and death.

DE'LPHYS. (*ys, yos.* f.; δελφυς.) The uterus, or pudendum muliebre.

DE'LTA. (The Greek letter Δ.) The pudendum muliebre has been so called, from its triangular shape.

DELTOI'DES. (*Deltoides* and *deltoideus;* from δελτα, the Greek letter Δ, and ειδος, a likeness: shaped like the Greek delta.)

1. The name of a muscle of the superior extremity, situated on the shoulder. It arises exactly opposite to the trapezius, from one-third part of the clavicle, from the acromion and spine of the scapula, and is inserted, tendinous, into the middle of the os humeri, which bone it lifts up directly; and it assists with the supra-spinatus and coraco-brachialis in all the actions of the humerus, except the depression; it being convenient that the arm should be raised and sustained, in order to its moving on any side.

2. A leaf is called *folium deltoides,* which is trowel-shaped, or like the letter delta, having three angles, of which the terminal one is much further from the base than the lateral ones; as in *Chenopodium bonus henricus.*

DELTOIDEUS. Improperly written for *deltoides.*

DEME'NTIA. (*a, æ.* f.; from *de,* from, and *mens,* mind.) A form of insanity in which unconnected and imperfectly defined ideas chase each other rapidly through the mind; the powers of continued attention and of reflection are lost, and even the perceptive power at length becomes indistinct. Dementia is sometimes an accompaniment of old age, and is a frequent termination of mania.

DEME'RSUS. A leaf which is naturally under water, and different from those above, is so called. *Folia immersa,* and *submersa,* are the same as *demersa.* See *Natans.*

Demiazygos. See *Semiazygos.*

Demimetal. See *Semimetal.*

DEMOTI'VUS LA'PSUS. A strange term that has been used to signify sudden death.

DEMU'LCENT. (*Demulcens;* from *demulceo,* to soften.) A medicine which obviates acrimony, not by correcting or changing its nature, but by involving it in a mild and viscid matter, which prevents it from acting upon the sensible parts of our bodies, or by covering the surface exposed to their action.

Where such medicines are directly applied to the parts affected, it is easy to perceive how benefit may be derived from their application; but where they are received by the medium of the stomach into the circulating system, it has been supposed that they can be of no utility, as they must lose that viscidity on which their lubricating quality depends. Hence it has been concluded that they can be of no service in gonorrhœa, and some similar affections. It is certain, however, says J. Murray, in his Elements of Materia Medica and Pharmacy, that many substances which undergo the process of digestion are afterwards separated, in their entire

state, from the blood, by particular secreting organs, especially by the kidneys; and it is possible, that mucilaginous substances, which are the principal demulcents, may be separated in this manner. There can be no doubt, however, but that a great share of the relief demulcents afford, in irritation or inflammation of the urinary passages, is owing to the large quantities of water in which they are diffused, by which the urine is rendered less stimulating from dilution. In general, demulcents may be considered merely as substances less stimulating than the fluids usually applied.

Catarrh, diarrhœa, dysentery, calculus, and gonorrhœa, are the diseases in which demulcents are employed. As they are medicines of no great power, they may be taken in as large quantities as the stomach can bear.

The particular demulcents may be reduced to the two divisions of mucilages and expressed oils. The principal demulcents are, the acacia vera, astragalus, tragacanth, linum usitatissimum, althæa officinalis, malva sylvestris, glycyrrhiza glabra, cycas circinalis, orchis mascula, maranta arundinacea, triticum hybernum, ichthyocolla, olea europæa; amygdalus communis, cetaceum, and cera.

DENARIUS. (*us, i.* m.) A Roman weight equal to the seventh part of an ounce.

DENDROI'DES. (From δενδρον, a tree or shrub, and ειδος, resemblance.) Applied generally in natural history to objects which have an arborescent or tree-like appearances.

DENDROLI'BANUS. (*us, i.* m.; from δενδρον, a tree, and λιβανος, frankincense.) See *Rosmarinus officinalis.*

DENS. (*s, tis.* m.; *quasi edens;* from *edo,* to eat, or from οδους, οδοντος.) 1. A Tooth. See *Teeth.*

2. Many herbs have this specific name, from their fancied resemblance to the tooth of some animal; as *Dens leonis,* the dandelion; *Dens canis,* dog's tooth, &c.

DENS CABALLINUS. Horse's tooth. A name of Henbane.

Dens canis. See *Erythronium.*

DE'NTAGRA. (*a, æ.* f. From *dens,* a tooth, and αγρα, a seizure.)

1. The toothache. See *Odontalgia.*

2. An instrument for drawing the teeth.

DE'NTAL. (*Dentalis;* from *dens,* a tooth.) Appertaining to the teeth.

DENTA'LIS LA'PIS. The crust, or tartar, as it is called, which forms round the teeth. See *Tartar.*

DENTA'LIUM. (*um, i.* n.; from *dens,* a tooth, which it resembles in shape.) A genus of univalve shells. They were anciently used in the composition of ointments and plasters.

DENTA'RIA. (*a, æ.* f.; from *dens,* a tooth: called because its root is denticulated.) See *Lumbago europæa.*

DENTARPA'GA. (*a, æ.* f.; from οδους, a tooth, and αρπαζω, to take away forcibly.) An instrument for drawing teeth.

DENTA'TA. The second vertebra of the neck. It differs from the other cervical vertebræ in having a tooth-like process at the upper part of the body, whence its name. See *Vertebræ.*

DE'NTATE. (*Dentatus;* from *dens,* a tooth.) Toothed: applied to roots, leaves, petals, &c. which are beset with projecting, horizontal, rather distant teeth, of their own substance; as in the leaf of *Atriplex lacinata,* and the perianth of the *Marrubium vulgare,* and *Erica denticulata,* and the petals of the *Silene lusitanica.* The *Ophris corallorhiza* has a toothed root.

Dentatus processus. See *Vertebræ.*

Dented. See *Retusus.*

DENTES ACUTI. The incisor teeth.

DENTES ADULTI. The teeth of the second dentition.

DENTES ADVERSI. The incisor teeth.

Dentes bicuspidati. See *Teeth.*

Dentes bicuspides. See *Teeth.*

Dentes canini. See *Teeth.*

DENTES COLUMELLARES. The molar teeth.

Dentes cuspidati. See *Teeth.*

Dentes incisores. See *Teeth.*

Dentes lactei. See *Teeth.*

Dens leonis. See *Leontodon taraxacum.*

Dentes molares. See *Teeth.*

DENTICULA'TUS. Denticulate, or set with little teeth. Applied, in natural history and anatomy, to various objects from their appearance.

DENTIDU'CUM. (*um, i.* n.; from *dens,* a tooth, and *duco,* to draw.) An instrument for the drawing of teeth.

DE'NTIFRICE. (*Dentrificum, i.* n.; from *dens,* a tooth, and *frico,* to rub.) A powder for cleaning the teeth.

DENTILLA'RIA. (So called because its root is denticulated.) Tooth-wort. See *Plumbago europæa.*

DENTISCA'LPIUM. (*um, i.* n.; from *dens,* a tooth, and *scalpo,* to scrape.) An instrument for scaling teeth.

DENTIST. One who addicts himself especially to the treatment of diseases of the teeth.

DENTI'TION. (*Dentitio, onis.* f.; from *dentio,* to breed teeth.) The breeding or cutting of the teeth. See *Teeth.*

DENTITION, DIFFICULT. *Dentitio difficilis.* Dentition is a natural process, which, under favourable circumstances, is unattended with any symptoms which can be considered as morbid; in many instances, however, it is otherwise, and disease of an alarming and even fatal character may take place.

The most violent symptoms of dentition are those produced during the growth and cutting of the milk teeth, for the system is then in its tenderest state of infancy. The immediate cause of the difficulty is the pressure of the teeth in the gum, and the degree of irritation depends on the particular temperament of the child. As the teeth push forward, the superincumbent gum wastes from absorption, and is at last cut through, and the tooth makes its appearance. This pressure is not, however, uniformly exerted through the whole course of teething, but is divided into distinct periods or stages: —

1. The first active stage of teething is usually about the third or fourth month of infancy, and constitutes what is called *breeding the teeth,* or the conversion of the pulpy rudiment, buried in

the gum, and formed during fœtal life, into a solid material, which at the same time shoots downwards, and gives to every tooth a neck or fang. The first and most usual symptom of this change, is the looseness with which the infant grasps the nipple, and the frequency with which it lets go its hold, accompanied with fretfulness and crying, and succeeded by a copious discharge of saliva, the salivary glands sympathising with the gums. Next, the uneasiness of the gums is found to be relieved by the pressure of any hard substance upon them, which benumbs their excited irritability. If the irritation becomes very considerable, the gums swell, the child grows still more fretful, and starts in its sleep; or, on awaking suddenly, there is heat, thirst, and other concomitants of fever, with perhaps dulness or drowsiness; the bowels are affected, and a rash appears on the skin, usually the *red gum*; and if the irritation extends to the muscles of the chest, there is a dry and troublesome cough. In about ten days or a fortnight these symptoms subside; and though the infant may occasionally be teased with uneasiness, it generally passes on without much inconvenience till the arrival of the second stage.

2. The period of cutting the teeth. This usually takes place between the seventh and the close of the ninth month. This is the usual progress; but here, as in many other organs of the system, there is in some cases a precocity, and in others a backwardness of action: hence a child is occasionally born with teeth; many cut their teeth soon after birth; while, with some, no tooth appears until a very late period. At this time the gum is often extremely sensible, and, instead of being eased by the pressure of a hard substance, cannot endure the slightest touch. At the base it is florid and distended, but paler and whiter at the edge or upper part; and when the tooth is on the point of protrusion, seems covered with a flat and whitish blister. The other symptoms are a repetition of those just described, with a scabby eruption about the lips or head, inflammation about the ears, and occasionally spasmodic movements of the mouth and jaws, and convulsions.

The grand point is here to moderate the local irritation. A diarrhœa, or full discharge of saliva, does this naturally, and hence these are favourable symptoms; and if the former be too violent, or accompanied with griping, it should be merely corrected by the subcarbonate of magnesia, or carbonate of lime. If the bowels be confined, cooling laxatives are to be employed; and the discharge of a small quantity of blood from the gums, in the first stage, by lancing them, will often afford effectual relief. If the symptoms of oppression or spasmodic action be severe, as drowsiness, difficulty of breathing, stertor, or irregular motions of the jaws, leeches should be resorted to; after which, a blister will be found useful behind the ears or on the back. When the bowels have been thoroughly emptied, anodynes will be very serviceable, though they should be employed with great judgment, and never trusted to nurses. In the second stage, or when the teeth are on the point of protrusion, the lancet will often afford immediate relief, — not by the discharge of blood, for the upper part of the gum is now become so thin or wasted that little or none will flow, — but by giving a direct opening to the tooth, which will frequently make its appearance in the course of a few hours.

In cutting the *second* or *permanent set of teeth*, and the wise teeth, there is very seldom any difficulty. When so, there is painful swelling of the gums, and fever, and all that is wanted is to subdue inflammation by the usual means.

DENUDA'TE. (From *denudo*, to make bare.) Denude: naked. An order of Linnæus's Fragments of a Natural Method, embracing those plants the flowers of which are naked, or without a flower-cup.

DENUDA'TIO. (From *denudo*, to make bare.) The laying bare any part: usually applied to a bone.

DEO'BSTRUENT. (*Deobstruens*; from *de*, and *obstruo*, to obstruct.) Having the power of removing any obstruction.

DEO'PPILANS. (From *de*, and *oppilo*, to stop.) *Deoppilativus*. Having the property of removing obstructions.

DEPARTI'TIO. (From *de*, and *partior*, to divide.) An old chemical name for the process of separating metals.

DEPA'SCENS. (From *depasco*, to eat down.) Eating away; corroding: applied formerly to phagedænic ulcers.

DEPE'NDENS. Dependent: hanging down. Applied chiefly in botany.

DEPERDI'TIO. (From *deperdo*, to lose.) Abortion. — *Castelli*.

DEPETI'GO. (From *de*, and *peligo*, a running scab.) A ring-worm, tetter, scurf, or itch, where the skin is rough. — *Turton*.

DEPHLEGMA'TION. (*Dephlegmatio, onis.* f.; from *de*, and *phlegma*, phlegm.) The operation of rectifying or freeing spirits from their watery parts, or any method by which bodies are deprived of their water.

DEPHLOGI'STICATED. (*Dephlogisticatus*; from *de*, and *phlogiston*, a particular principle so called.) A term formerly applied by chemists to bodies which were supposed to be deprived of *phlogiston* or the inflammable principle. See *Phlogiston*.

Dephlogisticated air. See *Oxygen gas*.

Dephlogisticated muriatic acid. See *Chlorine*.

DEPI'LATORY. (*Depilatorius*; from *de*, of, and, *pilus*, the hair.) Any application which removes the hairs from any part of the body is so named; thus, a pitch cap, which pulls the hair of the head out by the roots, is a depilatory application.

DEPLUMA'TIO. (From *de*, and *pluma*, feather.) A disease of the eyelids, which causes the hair to fall off.

DEPOSI'TIO. Deposition. The depression of the lens, in the operation of couching, has been so called.

DEPREHE'NSIO. (*o, onis.* f.; from *deprehendo*, to catch unawares.) This term has been applied. 1. To catalepsy.

2. To the *diagnosis* of a disease.

DEPRESSION. (*Depressio, onis.* f.; from *deprimo*, to press down.) The state of a part that has fallen down: thus we say, the depression of the lower jaw, or of the palate. The term is also applied to one of the operations for the cataract.

DEPRE'SSOR. (*or, oris.* m.; from *deprimo*, to press down.) A muscle, which depresses the part on which it acts.

Depressor alæ nasi. See *Depressor labii superioris alæque nasi.*

Depressor anguli oris. A muscle of the mouth and lip, situated below the under lip. *Triangularis*, of Winslow. *Depressor labiorum communis*, of Douglas. *Depressor labiorum*, of Cowper. It arises broad and fleshy, from the lower edge of the lower jaw, near the chin; and is inserted into the angle of the mouth, which it pulls downwards.

Depressor labii inferioris. A muscle of the mouth and lip. *Quadratus*, of Winslow. *Depressor labii inferioris proprius*, of Douglas and Cowper. It pulls the under lip and skin of the side of the chin downwards, and a little outwards.

Depressor labii superioris alæque nasi. A muscle of the mouth and lip. *Depressor alæ nasi*, of Albinus. *Incisivus medius*, of Winslow. *Depressor labii superioris proprius*, of Douglas. *Constrictores alarum nasi, ac depressores labii superioris*, of Cowper. It is situated above the mouth, draws the upper lip and ala nasi downwards and backwards. It arises, thin and fleshy, from the superior maxillary bone, immediately above the joining of the gums, with the two incisor teeth and cuspidatus; from thence it runs upwards, and is inserted into the upper lip and root of the ala of the nose.

Depressor labii superioris proprius. See *Depressor labii superioris alæque nasi.*

Depressor labiorum communis. See *Depressor anguli oris.*

Depressor oculi. See *Rectus inferior oculi.*

DEPRE'SSUS. Depressed: applied to the surface of a leaf when in a small degree concave, pressed down, flattened.

Folia depressa, as applied to radical leaves, means leaves which are pressed close to the ground, as is seen in *Plantago media*; but when applied to stem leaves, it regards their shape only, as being vertically flattened, in opposition to *compressa.*

Deprimens. See *Rectus inferior oculi.*

Deprimens Maxillæ Riverter. See *Digastricus.*

DEPU'RANS. (From *depuro*, to make clean.) Applied to a medicine, or article of diet which purifies the fluids of the animal body.

DEPURA'TION. (*Depuratio, onis.* f.; from *depuro*, to make clean.) 1. The defecation or clarification of a liquid.

2. The removal of impurities from the humours of the animal body.

DEPURATO'RIUS. (From *depuro*, to cleanse.) Depuratory: applied, 1. To certain diseases which were supposed to relieve the system from impurities. This idea was entertained with respect to agues, many cutaneous affections, &c.

2. To medicines or diet which were supposed to effect a similar depuration of the system.

Derbia. Impetigo has been so called.

Derbyshire neck. See *Bronchocele.*

DERIVATION. (*Derivatio, onis.* f.; from *derivo*, to drain off.) The drawing away any disease from its original seat to another part. Thus vesicatories epispastics, &c. were said to act by derivation.

Derivatives. *Deflectentia.* Medicines adapted to produce a *derivation.* See *Derivation.*

De'rma. (Δερμα, the skin.) See *Cutis.*

DERMATO'GRAPHY. (From δερμα, the skin, and γραφω, to describe.) The anatomical description of the skin.

DERMATOI'DES. (From δερμα, skin, and ειδος, a likeness.) Resembling skin. This epithet has been injudiciously applied by some writers to the dura mater.

DERMATO'LOGY. (*Dermatologia, æ.* f.; from δερμα, the skin, and λογος, a discourse.) A discourse or treatise on the skin.

Dermography. See *Dermatography.*

Dermoid. Improperly used for *dermatoid.*

Dermology. See *Dermatology.*

Derosne's Salt. See *Narcotine.*

De'rtron. Δερτρον. A word used by Hippocrates, as to the signification of which commentators differ, some making it the *omentum* or *peritonæum*, and others, the *small intestine.*

Descending aorta. See *Aorta, descending.*

Descenso'rium. (*um, ii.* n.; from *descendo*, to move downwards.) A furnace in which the distillation by descent is performed.

DESCE'NSUS. (From *descendo*, to move downwards.) *Destillatio per descensum.* The old chemists called it a distillation by descent, when the fire is applied at the top and round the vessel, the orifice of which is at the bottom.

DESCRIPTIVE ANATOMY. The name given by Bichat to that department of anatomy which treats of the form, appearance, position, distribution, and connexion of parts without reference to the particular textures of which they are composed. The consideration of *texture* belongs to *general anatomy.* See *Anatomy* and *General Anatomy.*

DESICCA'TION. (*Desiccatio*, from *desicco*, to dry up.) The drying up of anything moist.

DESI'CCATIVE. (*Desiccativus*; from *desicco*, to dry up.) Possessed of a drying property. Applied especially to medicaments used to dry up ulcers.

DESIPIE'NTIA. (*a, æ.* f.) This word properly means *folly*, but it has been used in medical language to signify *delirium.*

De'smos. (Δεσμος, from δεω, to bind.) A bandage.

DESPUMA'TION. (*Despumatio, onis.* f.; from *despumo*, to clarify.) The clarifying a fluid, or separating the scum from it.

DESQUAMA'TION. (*Desquamatio, onis.* f.; from *desquamo*, to scale off.) The separating of laminæ, or scales, from the skin or bones. It is more properly applied to the skin; in the case of bones it is generally called *exfoliation.*

Desquamato'rium tre'panum. *Trepanum exfoliativum.* A kind of trepan formerly used for detaching laminæ from exfoliating bones.

Destillation. See *Distillation.*

Destillatio per descensum. See *Descensus.*

DESUDA'TIO. (*o, onis.* f.; from *desudo*, to sweat much.) 1. Excessive sweating. 2. A miliary eruption to which children are chiefly subject. See *Sudamina.*

DETE'NTIO. (From *detineo*, to stop, or hinder: so called, from the suddenness with which the patient is seized.) Catalepsy.

DETE'RGENT. (*Detergens;* from *detergo*, to wipe away.) Applied to a medicine which cleanses foul wounds or ulcers.

DETERMINATE. *Determinatus.* Applied by botanists to branches and stems: *determinatè ramosus* abruptly branched, is when each branch, after terminating in flowers, produces a number of fresh shoots in a circular order from just below the origin of those flowers. The term occurs frequently in the latter publication of Linnæus, particularly the second *Mantissa;* but he does not appear to have any where explained its meaning. — *Smith.*

DETONA'TION. (*Detonatio, onis.* f.; from *detono*, to make a noise.) An explosion. See *Combustion.*

DETRA'CTOR. (*or, oris.* m.; from *detraho*, to draw.) *Detrahens.* Applied to a muscle, the office of which is to draw the part to which it is attached away from some other part.

De'trahens. See *Detractor.*

Detrahens quadratus. See *Platysma myoides.*

DETRU'SOR URI'NÆ. (*Detrusor*, from *Detrudo* to thrust out.) The muscular coat of the bladder, the office of which is to expel the urine from the bladder.

Deurens febris. An ardent fever.

DEUTE'RIA. (From δευτερος, second.) 1. A weak wine of second-rate quality used by the Greeks.

2. The bad symptoms arising from retention of the placenta. — *Vogel.*

DEUTE'RION. (From δευτερος, second; because it is discharged after the fœtus.) The secundines, or afterbirth.

DEUTEROPATHI'A. (*Deuteropatheia*, from δευτερος, second, and παθος, a suffering.) A sympathetic affection where a second part suffers, from consent with the part originally affected; as where the stomach is disturbed from an injury of the head.

DEUTEROPA'THIC. Appertaining to *Deuteropathia.*

Deutoxide. See *Oxide.*

Deutoxide of azote. See *Nitrogen.*

DEVALGA'TUS. (From *de*, and *valgus*, bow-legged.) Bandy-legged.

Devil's dung. See *Ferula assafœtida.*

DIABA'CANE. (Δια βακανου; from βακανον, a principal ingredient in it.) An hepatic remedy mentioned by Trallian.

DIABE'TES. (*es, is.* m.; Διαβητης; from διαβαινω, to pass through.) An immoderate flow of urine.

There are two species of this complaint: —

1. *Diabetes insipidus*, in which there is a superabundant discharge of limpid urine, of its usual urinary taste.

2. *Diabetes mellitus*, in which the urine is very sweet, and contains a great quantity of sugar.

Great thirst, with a voracious appetite, gradual emaciation of the whole body, and a frequent discharge of urine, containing a large proportion of saccharine and other matter, which is voided in a quantity even exceeding that of the aliment or fluid introduced, are the characteristics of mellitic form of the disease. Those of a shattered constitution, and those who are in the decline of life, are most subject to its attacks. It not unfrequently attends on hysteria, hypochondriasis, dyspepsia, and asthma; but it is always much milder when symptomatic, than when it appears as a primary affection.

Diabetes may be occasioned by the use of strong diuretic medicines, intemperance of life, and hard drinking; excess in venery, severe evacuations, or by any thing that tends to produce an impoverished state of the blood, or general debility. It has, however, taken place, in many instances, without any obvious cause.

Diabetes sometimes comes on slowly and imperceptibly, without any previous disorder; and it now and then arises to a considerable degree, and subsists long without being accompanied with evident disorder in any particular part of the system; the great thirst which always, and the voracious appetite which frequently, occur in it, being often the only remarkable symptoms; but it more generally happens, that a considerable affection of the stomach precedes the coming on of the disease; and that, in its progress, besides the symptoms already mentioned, there is a great dryness in the skin, with a sense of weight in the kidneys, and a pain in the ureters, and the other urinary passages.

Under a long continuance of the disease, the body becomes much emaciated, the feet œdematous, great debility arises, the pulse is frequent and small, and an obscure fever, with all the appearance of hectic, prevails.

The urine in diabetes mellitus, from being at first insipid, clear, and colourless, soon acquires a sweetish or saccharine taste, its leading characteristic; and, when subjected to experiment, a considerable quantity of saccharine matter is to be extracted from it. Sometimes it is so loaded with sugar, as to be capable of being fermented into a vinous liquor. Upwards of one twelfth of its weight of sugar was extracted from some diabetic urine by Cruickshank, which was at the rate of twenty-nine ounces troy a day, from one patient.

In some instances, the quantity of urine in diabetes is much greater than can be accounted for from all the sources united. Cases are recorded, in which 25 to 30 pints were discharged in the space of a natural day, for many successive weeks, and even months; and in which the whole ingesta, as was said, did not amount to half the weight of the urine. To account for this overplus, it has been supposed that water is absorbed from the air by the surface of the body; as also that a quantity of water is compounded in the lungs themselves.

Dissections of the bodies of those who have died of diabetes have often shown the kidneys to be much affected. In some instances, they have been found in a loose flabby state, much enlarged in size, and of a pale ash colour; in

others, they have been discovered much more vascular than in a healthy state, approaching a good deal to what takes place in inflammation, and containing, in their infundibula, a quantity of whitish fluid, somewhat resembling pus, but without any sign of ulceration whatever. At the same time that these appearances have been observed in their interior, the veins on their surface have been found to be much fuller of blood than usual, forming a beautiful network of vessels. Lastly, the kidneys frequently present no morbid appearances of any kind. In many dissections the whole of the mesentery has been discovered to be much diseased, and its glands remarkably enlarged; some of them being very hard, and of an irregular texture; others softer, and of an uniform spherical shape. Many of the lacteals have likewise been seen considerably enlarged. The liver, pancreas, spleen, and stomach, are in general perceived to be in a natural state; when they are not so, the occurrence is to be considered as accidental. The bladder, in many cases, is found to contain a considerable quantity of muddy urine.

With respect to the proximate cause of diabetes mellitus, many hypotheses have been advanced concerning it. The following are the principal: — That the disease depends upon,

1. A morbid action of the stomach and chylopoietic viscera.

2. A morbid crasis of the blood, produced by diseased action of the assimilating powers.

3. A retrograde motion of the lacteals.

4. A morbid condition of the kidneys.

The first of these opinions, though not the most ancient, originated with Dr. Mead, and has been lately supported by Drs. Dobson and Rollo, who fixed the seat of the disease in the stomach, and confined it to this organ, conceiving it to consist "in an increased action and secretion, with a vitiation of the gastric fluid, and probably too active a state of the lacteal absorbents; while the kidneys, and other parts of the system, as the head and skin, are only affected secondarily." According to this hypothesis, the blood is formed imperfectly from the first, and the sugar is formed in the stomach or its auxiliary organs. The experiments, however, of Drs. Wollaston and Marcet, and since Dr. Nicholas, Sory, Thénard, and Bostock, all prove that "there is no trace whatever of sugar in the blood."

The second hypothesis was started by Dr. Willis, who says, "Diabetes is rather an immediate affection of the blood than of the kidneys, and thence derives its origin; for the mass of blood becomes, so to speak, melted down, and too copiously dissolved into a state of serosity; which is sufficiently manifest from the prodigious increase of the quantity of urine, which cannot arise from any other cause than from the solution and waste of blood." Of this opinion was also Sydenham, and Place of Göttingen, and, of later date, Dr. Latham, who contends that the sugar, in respect to its elements, may exist in the blood, though the substance itself be not discoverable in it, being "so weakly and loosely oxygenated as to be again readily evolved by the secretory action of the kidneys, not from any fault in the kidneys themselves, but from the regular and natural exercise of their function, in separating from the imperfect blood such matters as are not properly combined with it."

Dr. Charles Darwin, a very acute and ingenious physiologist, brought forward the third hypothesis, which never had any support but from his father, the author of Zoonomia.

The fourth opinion places the disease in the kidneys, which were supposed, by the Greek writers, to be in a state of great relaxation and debility, and hence also of great irritability. To this irritability was ascribed their morbid activity, and the accumulation of blood with which they were overloaded; while their weakened and relaxed condition allowed the serous or more liquid parts of the blood to pass off through the patulous mouths of the excretories without restraint or change, and, consequently, in a crude and inelaborated form. Such was the explanation of Galen; and, of all the hypotheses, there is no one that seems to have been so generally received. It has been adopted by Bonet, Ruysch, Cullen, Cruickshank, Richter, Nicholas, Gueudeville, Dupuytren, Thénard, Satterly, &c.; several of whom, however, conceive the stomach or some other chylifactive organ to be affected at the same time, secondarily or sympathetically. Some of these writers regard the irritation of the kidneys as connected with inflammation, though several of them ascribe it to a spasm.

The formation of the saccharine matter, concerning which there has been much unsatisfactory discussion, is very generally believed to depend on a process in the stomach and bowels, somewhat analogous to fermentation, on materials which contain the principles of sugar, which are separated from their hidden form in the blood by a peculiar action of the kidneys, very different from all those which constitute the other forms of diabetes.

In the treatment of diabetes, we are led to that of the insipid species first, and then that of the mellitic.

1. Of the *insipid species.* This is mostly cured by tonics, stimulants, and mineral acids, as Peruvian bark, cascarilla, cortex quercûs, and the like, with sulphuric acid, taking care to invigorate the system by proper air, exercise, and diet. When symptomatic of any other disease, its remedies must also be conjoined. As a sympathetic affection, it very commonly attends hysteric and nervous diseases, against which the practitioner's attention must also be directed.

2. Of the *mellitic diabetes.* This is one of those affections in which almost every medicine and every plan has been resorted to, from which it is natural to infer that it is very little under the control of any. The indication of cure is,

To destroy that condition of the stomach and chylopoietic bowels, which permits the arrangement of the elements of sugar into those combinations that are received into the blood, and separated from it by the mellitic action of the kidneys.

To effect this, the following variety of plans and medicines have been adopted : —

1. To invigorate the debilitated organs, and give firmness and coagulability to the blood. The Greek physicians, and after them our countrymen Willis and Sydenham, held this always in view, and gave agglutinants and astringents, with a diet easy of digestion, and consisting of animal and vegetable substances, with wine; and this plan was generally followed until very lately. The warm gums and resins, bitters, and astringents, especially alum and alum whey, were then selected, and the cantharis; but these, like the former, mostly disappointed both patients and physicians.

2. The next mode of endeavouring to fulfil the leading indication was directing remedies and a diet, which the least favoured saccharine fermentation; and these were most of the medicines recommended for the cure of dyspepsia, and confining the patient to an animal diet, and enforcing an entire abstinence from every species of vegetable matter. To assist this, hepatised ammonia was given internally by Dr. Rollo, and phosphoric acid by Dr. Latham. The first was exhibited with a view of adding to the animal salts, which were thought deficient; and the latter, because in many cases there was an evident deficiency in the supply of phosphate of lime to the body.

3. To destroy the irritable, and, as some have imagined, the chronic inflammatory state of the kidneys, recourse has been had to copious and repeated bleedings. This practice is only justifiable in young persons with constitutions unimpaired, where there are no evidences of even a tendency to dropsy, much less when that disease is established in any part. In a few instances, under such circumstances, this plan has been successful.

4. Powerful narcotics, repeated in quick succession. Dover's powder has generally been given in preference to others; but the nauseating or sudorific power, in the doses which are resorted to, have induced those who selected narcotics to prefer pure opium, a grain two or three times a day, gradually and cautiously increased to three and four grains, twice a day. This plan, like the rest, has often failed.

It appears, from what has been said, that as the disease exists in different constitutions, it also requires different treatment.

Diaboli intestina. See *Cuscuta.*

Dia'bolus metallo'rum. A name given by the old chemists to tin, on account of the supposed intractability of its oxides.

DIABO'TANUM. (*um, i.* n. ; from δια, and βοτανη, an herb.) A plaster composed of a great number of herbs, used by the Greek physicians as a resolvent, suppurative, &c.

Diabro'sis. (From δια, and βρωσκω, to eat.) Erosion.

Diabro'tica. (Same etymon.) *Diabrotic.* Medicines which erode the parts to which they are applied. Some make diabrotics intermediate between escharotics and caustics.

Diaca'dmias. (From δια, and καδμια, cadmia.) A plaster, the basis of which was cadmia. — *Scribonius Largus.*

Diacalamin'thes. (From δια, and καλαμινθη, calamint.) An antidote, the chief ingredient in which was calamint. — *N. Myrepsus.*

Diaca'rcinon. (Δια καρκινων ; from δια, and καρκινος, a crab.) An antidote prepared from the flesh of crabs. It was used against the bite of a mad dog.

Diaca'ryon. (From δια, and καρυον, a nut.) Rob of nuts.

Diaca'ssia. (From δια, and κασσια, cassia.) Electuary of cassia.

Diacasto'rium. (From δια, and καστωρ, castor.) A compound medicine, the basis of which is castor. Two medicines bearing this name are mentioned by N. Myrepsus.

DIACATHO'LICON. (From δια, and καθολικος, universal.) A laxative electuary, so called from its general usefulness. It was composed of senna leaves, pulp of cassia and of tamarinds, root of male fern and of rhubarb, violets, aniseed, liquorice root, sweet fennel, and sugar.

Diacau'stic. (From διακαυω, to burn.) Applied to a double convex lens, or burning glass. Such lenses have been used to cauterize parts.

Diaceltatesson. *Diatessadelton.* Terms used by Paracelsus and his followers. They appear to have meant some emetic preparation of mercury, or the vomiting excited by such preparation.

Diacentau'rium. (From δια, and κενταυριον, centaury.) The Duke of Portland's powder was so called, because centaury was one of its ingredients.

Diacera'ton. (From δια, and κερας, a horn.) A collyrium mentioned by Celsus, of which hartshorn was the principal ingredient.

Diachalci'teos. (From δια, and χαλκιτις, chalcitis.) A plaster, the chief ingredient in which was chalcitis, or colcothar.

Diachari'sta. (From δια, and χριω, to anoint.) The epithet of certain medicines which were applied to the fauces, palate, tongue, &c. — *Paulus Ægineta.*

Diachelido'nium. (From δια, and χελιδων, a swallow.) A Greek medicine, of which burnt swallows were an ingredient.

Diachore'ma. (Διαχωρημα ; from διαχωρεω, to separate from.) *Diachoresis.* Any excretion, or excrement, but chiefly that by stool.

Diachore'sis. Διαχωρησις. See *Diachorema.*

Diachry'sum. (From δια, and χρυσος, gold.) A plaster for fractured limbs, so named from its yellow colour.

DIACHYLON. (Διαχυλων ; from δια, and χυλος, juice.) This name was given by the Greeks to an emollient plaster, composed of the juices of herbs. In modern pharmacy two diachylon plasters are known, one as *white*, or *simple diachylon*, the other as *yellow diachylon*, or *diachylon with gums.* See *Diachylon simplex*, and *Diachylon cum gummi.*

Diachylon cum gummi. Yellow diachylon. Gum diachylon. This is made with simple diachylon, lbiij., galbanum strained, ℥viij., common turpentine, frankincense, each, ℥iij.

Diachylon simplex. The plaster known by this name in the older dispensatories was the

mplastrum plumbi of the present day, with the ddition of vegetable matters, as linseed, marsh-nallow, cornflag, &c., which varied according o different formulæ. In this country the *em-lastrum plumbi* is universally substituted for it. See *Emplastrum plumbi.*

DIACINE'MA. (From δια, and κινεω, to move.) A subluxation.

DIACINNAMO'MUM. An antidote mentioned by N. Myrepsus.

DIACI'SSUM. (From δια, and κισσος, ivy.) An application containing ivy leaves.

DIACLY'SMA. (From διακλυζω, to wash out.) A gargle or wash for the mouth.

DIACOCCYME'LON. (From δια, and κοκκυμηλον, a prune.) An electuary made of prunes.

DIACO'DIUM. (From δια, and κωδια, poppy head.) Syrup of poppies.

DIACOLOCY'NTHIS. (From δια, and κολοκυνθις, the colocynth.) A preparation, the chief ingredient of which was colocynth.

DIA'COPE. (From διακοπτω, to cut through.) A deep cut or wound.

DIACOPRÆ'GIA. (From δια, κοπρος, dung, and αιξ, a goat.) A medicine prepared with goat's dung, and used against diseases of the spleen and swellings of the parotid gland. — *Blancard.*

DIACORONOPODIUM. A Greek antidote, of which the coronopus was the base.

DIA'CORUM. A confection, prepared with the acorus, or sweet flag, recommended by Mesue.

DIA'CRISIS. (*is, is.* f.; from διακρινω, to distinguish.) The distinguishing of diseases one from another by their symptoms. See *Diagnosis.*

DIACRO'CIUM. An electuary mentioned by Plater.

DIACURCU'MA. (From δια, and κυρκουμα, turmeric.) An antidote which contained turmeric.

DIACYDO'NIUM. (From δια, and κυδωνια, a quince.) Marmalade of quinces.

DIADAPHNI'DION. (From δια, and δαφνη, the laurel tree.) A drawing plaster, in which were bay berries.

DIADE'LPHIA. (*a, æ.* f.; from δις, twice, and αδελφις, a brotherhood: two brotherhoods.) The name of a class in the sexual system of plants, embracing those the flowers of which are hermaphrodite, and have the male organs united below into two sets of cylindrical filaments.

DIADE'MA. (*a, atis.* n. διαδημα; from διαδεω, to surround.) A diadem. A bandage for the head was so called, which was used in cases of headach, supposed to arise from relaxation of the sutures. — *Forest.*

DIADE'XIS. (From διαδεχομαι, to transfer.) *Diadoche.* A translation of humours from one place to another.

Dia'doche. See *Diadexis.*

DIA'DOSIS. (From διαδοσις.) 1. The distribution of nutritious matter throughout the system.

2. The remission or cessation of a disease.

DIÆ'RESIS. (*is, is.* f.; from διαιρεω, to divide or separate.) A solution of continuity, a wound or ulcer.

DIÆRE'TICUS. From διαιρεω, to divide.) Escharotic. Corrosive.

DIÆ'TA. (*a, æ.* f.; from διαιταω, to nourish.) Diet; food. See *Diet*, and *Aliment.*

Diætetic. See *Dietetic.*

DIAGLAU'CIUM. (From δια, and the herb γλαυκιον.) An eye-water in which the juice of the *glaucium* was an ingredient.

DIAGNO'SIS. (*is, is.* f.; from διαγινωσκω, to discern or distinguish.) *Diacrisis.* The art of recognising a disease by its symptoms, and of distinguishing one disease from another.

Diagry'dium. See *Dacrydium.*

DIAHERMODA'CTYLUM. (From δια, and ἑρμοδακτυλος, the hermodactyl.) A purging medicine, the basis of which was the hermodactyl.

DIAI'REOS. (From δια, and ιρις, the iris.) An antidote in which the iris was an ingredient.

DIAI'UM. (From δια, and ιον, a violet.) A troche, the chief ingredient of which was violets.

DIALAGO'UM. (From δια, and λαγως, a hare.) A medicine in which was the dung of a hare. It was thought deobstruent.

DIALEI'MMA. (Διαλειμμα; from διαλειπω, to intermit.) The intermission of a fever.

DIALI'BANUM. (From δια, and λιβανον, frankincense.) A medicine in which frankincense was a chief ingredient.

DIA'LOES. (From δια, and αλοη, the aloe.) A name given by the ancients to several medicines, in which aloes were a principal ingredient.

DIALTHÆ'A. (From δια, and αλθαια, the marsh-mallow.) An ointment composed chiefly of marsh-mallows.

DIA'LYSES. (The plural of *dialysis.*) The name of an order in the class *Locales* of Cullen's Nosology, embracing diseases in which there is solution of continuity manifest to the eye or touch.

DIA'LYSIS. (*is, is.* f.; from διαλυω, to dissolve.) Relaxation or weakness of the limbs.

DIAMARGARI'TON. (From δια, and μαργαριτης, a pearl.) An antidote in which pearls were the chief ingredient. — *N. Myrepsus.*

DIAMASSE'MA. (*a, æ.* f.; from διαμασσαομαι, to chew.) *Diamastema.* A masticatory, or substance put into the mouth, and chewed to excite a discharge of saliva.

DIA'MBAR. The name of a stomachic and cordial medicine, which consisted of amber, musk, various aromatics, and other ingredients. — *N. Myrepsus.*

DIAMI'SYOS. (From δια, and μισυ, misy.) A composition in which misy was an ingredient.

Diamnes. See *Diapne.*

Diamond. See *Adamas.*

DIAMOND-SHAPED. Applied to leaves which resemble the figure of a diamond as painted on cards. See *Leaf.*

DIAMO'RON. (From δια, and μωρον, a mulberry.) A syrup used by the Greeks, made of honey and the juice of mulberries.

DIAMOTO'SIS. (From δια, and μοτος, lint.) The introduction of lint into an ulcer or wound.

DIA'NA. (*a, æ.* f.) The moon. A name formerly given to silver from its white shining appearance.

DIANANCA'SMUS. (Διαναγκασμος; from δια, and αναγκαζω, to force.) The reduction of a dislocation.

DIA'NDRIA. (*a, æ.* f.; from δις, twice; and ανηρ, a man.) The name of a class in the sexual system, consisting of hermaphrodite plants which have flowers with two stamina.

DIA'NTHUS. (*us, i.* m.; from Δις, Διος, Jove, and ανθος, a flower: so called, from the elegance and fragrance of its flower.) The name of a genus of plants in the Linnæan system. Class, *Decandria;* Order, *Digynia.*

DIANTHUS CARYOPHYLLUS. The systematic name of the clove-pink. Clove gilliflower. Clove July flower. *Caryophyllum rubrum, Tunica, Vetonica, Betonica, Coronaria, Caryophyllus hortensis.* This fragrant plant, *Dianthus —floribus solitariis, squamis calycinis subovatis, brevissimis, corollis crenatis,* of Linnæus, grows wild in several parts of England; but the flowers, which are pharmaceutically employed, are usually produced in gardens: they have a pleasant aromatic smell, somewhat allied to that of clove-spice; their taste is bitterish and sub-astringent. These flowers were formerly in extensive use, but are now merely employed in form of syrup, as a useful and pleasant vehicle for other medicines.

DIAPA'SMA. (*a, atis.* n.; from διαπασσω, to sprinkle.) A medicine reduced to powder, and sprinkled over the body, or any part.

DIAPEDE'SIS. (*is, is.* f.; from διαπηδαω, to leap through.) The transudation or escape of blood through the coats of a vessel.

DIAPE'NSIA. 1. An ancient name of the sanicle.

2. The name of a genus of plants. Class, *Pentandria;* Order, *Monogynia.*

DIAPE'NTE. (From δια, and πεντε, five.) A medicine composed of five ingredients. It was the same as the *diatessaron,* with the addition of ivory shavings. See *Diatessaron.*

DIA'PHANOUS. (*Diaphanosus;* from δια, through, and φαινω, to shine.) Transparent: applied to any substance which is transparent; as the hyaloid membrane covering the vitreous humour of the eye, which is as transparent as glass.

DIAPHŒ'NICUM. (From δια, and φοινιξ, a date.) The name of a plaster, and also of an electuary containing dates.

DIA'PHORE'SIS. (*is, is.* f.; from διαφορεω, to carry through.) A perspiration.

DIAPHORE'TIC. (*Diaphoreticus;* from διαφορεω, to carry through.) That which, from being taken internally, increases the discharge by the skin. When this is carried so far as to be condensed on the surface, it forms sweat; and the medicine producing it is named sudorific. Between diaphoretic and sudorific there is no distinction; the operation is in both cases the same, and differs only in degree from augmentation of dose, or employment of assistant means. This class of medicines comprehends five orders: —

1. *Pungent diaphoretics;* as the *volatile salts,* and *essential oils,* which are well adapted for the aged; those in whose system there is little sensibility; those who are difficultly affected by other diaphoretics; and those whose stomachs will not bear large doses of medicines.

2. *Calefacient diaphoretics;* such as *serpentaria contrayerva,* and *guaiacum:* these are given in cases where the circulation is low and languid.

3. *Stimulant diaphoretics;* as antimonial and mercurial preparations, which are best fitted for the vigorous and plethoric.

4. *Antispasmodic diaphoretics;* as *opium, musk,* and *camphire,* which are given to produce a diaphoresis, when the momentum of the blood is increased.

5. *Diluent diaphoretics;* as water, whey, &c. which are best calculated for that habit in which a predisposition to sweating is wanted, and in which no diaphoresis takes place, although there be evident causes to produce it.

Diaphoretic antimony. See *Antimonium diaphoreticum.*

Diaphoreticum joviale. See *Antihecticum poterii.*

DIAPHORETIC, MINERAL. The diaphoretic antimony. See *Antimonium diaphoreticum.*

Diaphoreticum martiale. See *Antimonium diaphoreticum martiale.*

DI'APHRAGM. (*Diaphragma, matis.* n.; from διαφρασσω, to separate by a partition.) *Phrenes. Septum transversum.* The midriff or diaphragm. A muscle that divides the thorax from the abdomen. It is composed of two muscles: the first and superior of these arises from the sternum, and the ends of the last ribs on each side. Its fibres, from this semicircular origination, tend towards their centre, and terminate in a tendon, or aponeurosis, which is termed the *centrum tendinosum;* and was called by the old anatomists, *centrum nerveum.* The second and inferior muscle comes from the vertebræ of the loins by two productions, of which that on the right side comes from the first, second, and third vertebræ of the loins; that on the left side is somewhat shorter; and both these portions join and make the lower part of the diaphragm, which joins its tendons with the tendon of the other, so that they make but one muscular partition. It is covered by the pleura on its upper side, and by the peritonæum on the lower side. It is pierced in the middle for the passage of the vena cava; in its lower part for the œsophagus, and the nerves, which go to the upper orifice of the stomach, and betwixt the productions of the inferior muscle, passes the aorta, the thoracic duct, and the vena azygos. It receives arteries and veins called phrenic or diaphragmatic, from the cava and aorta; and sometimes on its lower part two branches from the vena adiposa, and two arteries from the lumbares. It has two nerves which come from the third vertebra of the neck, which pass through the cavity of the thorax, and are lost in its substance. In its natural situation, the diaphragm is convex on the upper side towards the breast, and concave on its lower side towards the belly; therefore when its fibres swell and contract, it must become plain on each side, and consequently

the cavity of the chest is enlarged to give liberty to the lungs to receive air in inspiration; and the stomach and intestines are pressed for the distribution of their contents: hence the use of this muscle is very considerable: it is the principal agent in respiration, particularly in inspiration; for, when it is in action, the cavity of the thorax is enlarged, especially at the sides, where the lungs are chiefly situated; and as the lungs must always be contiguous to the inside of the thorax, and upper side of the diaphragm, the air rushes into them, in order to fill up the increased space. In expiration, it is relaxed and pushed up by the pressure of the abdominal muscles upon the viscera of the abdomen; and at the same time that they press it upwards, they pull down the ribs, by which the cavity of the thorax is diminished, and the air suddenly pushed out of the lungs.

DIAPHRAGMA'TIC. *Diaphragmaticus.* Appertaining to the diaphragm.

DIAPHRAGMATIC ARTERIES. *Arteriæ diaphragmaticæ. Arteriæ phrenicæ.* The diaphragm is supplied by four arteries: two superior, rising from the internal mammary artery, and distributed on the thoracic surface of the diaphragm; and two inferior rising from the abdominal aorta, or from the cœliac, and distributed to the abdominal surface of the diaphragm.

Diaphragmatic nerves. See *Phrenic nerves.*

DIAPHRAGMATIC VEINS. Four veins corresponding with the diaphragmatic arteries. They pour their blood into the vena cava above and below the diaphragm.

DIAPHRAGMATI'TIS. (From διαφραγμα, the diaphragm.) Inflammation of the diaphragm, which being formed of a large, flat, and strong muscle, covered above by the pleura, and below by the peritonæum, must be subject to inflammation of its upper and under membranes, and also to inflammation of its muscular structure, analogous to that of muscles in other parts. Inflammation beginning in, or being communicated to, the pleural covering must come under pleuritis; and so inflammation commencing in, or being communicated to, the peritonæum belongs to peritonitis; and in both these cases the inflammation dips into the cellular connecting tissue, and perhaps into the muscular or tendinous structure, and causes the same train of symptoms with those which result from an idiopathic inflammation of the muscular structure, which may, in like manner, extend into the investing membranes. The author does not recollect ever to have dissected a case of diaphragmatitis, in which the inflammation was evidently confined to the muscular structure, or appeared primarily to commence in it: whereas the *post mortem* examinations of those who died under diaphragmatitis, discovered extensive inflammation of either the pleura or peritonæum.

When the disease begins in the pleura over the diaphragm, or is communicated to it from the pleura near to it, the symptoms are very like to those of pleurisy, except that the pain is felt deeply seated between the sides, back, and stomach. There is a degree of fever commensurate with the extent of the inflammation and the state of the system. It is mostly violent; more so than when caused by inflammation of the costal pleura; the exacerbations are stronger. Some patients have cough, and there is a delirium of the low muttering kind. The breathing is always interrupted; the inspiration short of its natural depth; and, as the fever increases, the delirium becomes more violent; more like to that which inflammation of the brain produces: and hence the disease has been often called *paraphrenitis.* There is also frequently that spasmodic retraction of the angles of the mouth which is called *risus sardonicus.* The cough, difficult respiration, and delirium, continue as long as the inflammation exists purely as such; and the symptoms change as it may be resolved, or end in the formation and collection of a fluid in the cavity of the pleura, or by the fever being so violent as to kill.

When the peritonæum of the diaphragm is the seat of the inflammation, whether it commences there, or is communicated to it from other parts, the symptoms are nearly the same; for the diaphragm being the principal organ of respiration, the same interruption to its functions takes place, whether the disease is on its upper or lower surface; the fever is more violent than that from peritonitis elsewhere; there is difficult respiration, perhaps cough, and delirium takes place, as in inflammation of the pleural covering of the diaphragm. This delirium, which has been stated to be at first of the low, muttering kind, and becoming more violent, so as to simulate phrenitis, is supposed to be caused by the irritation that takes place in the phrenic nerve. The symptoms of inflammation of the diaphragm from the peritonæum, like those of the pleural disease, may depart, under a resolution of the inflammation; or they may vary from adhesions forming, or from the effusion of a fluid, or from the violence of the fever destroying life.

The treatment is the same with that of pleuritis and peritonitis; but the disease existing in a part, the office of which is so directly connected with an important and vital function, calls for the more prompt exhibition of the most active remedies. The lancet must be called for immediately, and large quantities of blood abstracted. After having cleared the bowels by a mercurial and saline purgative, full doses of antimonials, with submuriate of mercury, warm bath, and blisters, are the best remedies. As a symptomatic affection, diaphragmatitis results from pneumonia, carditis, hepatitis, and splenitis, and requires the same remedies with the primary disease.

Inflammation in the muscular structure of the diaphragm, or the true diaphragmatitis, produces the same symptoms, with the exception of the nature and seat of the pain. It exists chiefly as a secondary disease; being often produced by the retrocession of gout or rheumatism from the limbs. It is a most violent and dangerous affection, and often kills in a short time.

DIA'PHTHORA. (Διαφθορα; from διαφθειρω, to corrupt.) 1. The corruption of any part.

2. Abortion.

DIAPHYLA'CTICUS. (From διαφυλασσω, to preserve.) This term has been used in the same sense as *prophylactic.*

Dia'physis. (Διαφυσις; from διαφυω, to divide.) An interspace. In medical language the term has been applied,

1. By Ambrose Paré to a ligament of the knee joint; apparently what we call the crucial ligaments.

2. To the shaft of a long bone, to which the epiphyses are attached at each end.

Diapisselæ'um. (From δια, and πισσελαιον, the oil of pitch.) A medicine prepared with oil of pitch. — *Marcellus Empiricus.*

Dia'plasis. (From διαπλασσω, to form or shape.) The replacing a luxated or fractured bone in its proper situation.

DIAPLA'SMA. (*a, atis.* n.; from διαπλασσω, to anoint.) An unction or fomentation applied to the whole body or any part.

Dia'pne. *Diamnes.* Some writers of barbarous Latin have used these terms to signify an involuntary discharge of urine.

DIA'PNOE. (From διαπνεω, to breathe through.) A gentle perspiration or breathing moisture on the skin.

Dia'pnoic. (*Diapnoticus*, or *diapnoicus*; from διαπνεω, to transpire.) Applied to a medicine which promotes gentle perspiration.

Diapra'sium. (From δια, and πρασιον, horehound.) A composition in which horehound was an ingredient.

Diapru'num. (From δια, and προυνη, a prune.) An electuary of prunes.

Diapte'rnes. (From δια, and πτερνα, the heel.) An old composition made from cow heels and cheese.

Diapye'ma. (From δια, and πυον, pus.) Suppuration.

Diapye'ticus. (From διαπυημα, a suppuration.) Applied to a medicine which promotes suppuration.

DIA'RIUS. (From *dies*, a day.) Diary. Of one day's duration. Ephemeral. Applied to fevers.

Diaroma'ticum. (From δια, and αροματικον, an aromatic.) A composition of spices.

Diarrhodo'meli. (From δια, ῥοδον, a rose, and μελι, honey.) A composition of the juice of roses, scammony, agaric, pepper, and honey.

Dia'rrhodon. (From δια, and ῥοδον, a rose.) A name given by the Greeks to several collyra; and by the moderns to several powders and confections of which roses are an ingredient.

DIARRHŒ'A. (*a, æ.* f.; from διαῤῥεω, to flow through.) A purging.

A diarrhœa, purging, or looseness, consists in the too frequently passing the fæces, or contents of the great intestines; preceded generally by a murmuring noise, and a little pain; that little a griping, and without any fever. It is not, like dysentery, a contagious disease. The proximate cause is an increased peristaltic action throughout the whole, or a great part, of the intestinal canal; and, as this may be produced by various means, and under different circumstances, it must often stamp a peculiarity in the character of the disorder, and lay a foundation for numerous species.

The peristaltic motion of the intestines may be increased, and, consequently, looseness or diarrhœa occasioned,

1. By irritating materials thrown into them by the mouth.

2. By a morbid change in the fluids which are naturally secreted into the intestinal canal.

3. By an irritable state of the intestines themselves, or the membrane that lines their inner surface.

4. By the irritation of worms.

Independently of these causes, the peristaltic motion may be increased by the irritation of other diseases in the neighbourhod, as abscesses; by the readiness with which the intestines associate in the action of remote parts, as sudden passion or commotion of mind, the recession of rashes from the skin, &c.; in which, and many other like instances, the diarrhœa is not idiopathic, but sympathetic, or symptomatic.

The most common of all the species of diarrhœa is that in which the fæces pass of common quality, but immoderately loose and copious. Dr. Cullen calls it *diarrhœa crapulosa*, because it mostly takes place from overloading the stomach; Dr. Good, *diarrhœa fusa*. It generally effects its own cure, without any medicine; for its common causes are food eaten to excess, or intermixed with an undue proportion of irritating materials, saline, saccharine, or vinous, in consequence of which they pass rapidly, and not thoroughly digested, from the stomach, and urge the motion of the intestines to an undue activity: hence often, antecedently to the looseness, there is a sense of sickness, and perhaps a few slight pains; but, if the disorder do not prove its own remedy, it is easily removed by any common purgative. In weak stomachs, or where the intestines are sluggish, this kind of looseness is also occasionally produced by a retardation of the aliment till it irritates from acescency, putrescency, or superabundant accumulation; and where it is not checked in due time, it will occasionally, like several of its cognate species, run into a chronic form, and prove extremely troublesome and obstinate. This species is also produced occasionally by sudden exposure to cold, and especially by cold bathing; by great agitation of mind, and particularly that of fright or anger.

Almost as frequent as the former species, is the *bilious diarrhœa*, in which the fæces are loose, copious, and of a bright yellow colour. From the very bilious state of the dejections, there can be no doubt that the bile, in this species, is secreted in a greater quantity than usual, and perhaps with an unusual degree of pungency. The most common remote cause of this species of diarrhœa, is a great and sudden increase in the temperature of the atmosphere, or a less than mean degree of heat operating for some time. Dr. Lind has remarked, that a rapid change of climate, whether from a colder to a hotter, or from a hotter to a colder state, is equally apt to excite diarrhœa. But the complaints hereby produced are of very different characters: that occasioned by sudden cold, consists of an acrid mucous discharge; the diarrhœa excited by passing rapidly from a cold into a hot climate, depends upon an increased secretion of bile, in many cases worked up to a higher degree of acrimony. The calorific

rays of the sun exercise a peculiar influence upon the liver, and soon stimulate it to an augmented action. In the intertropical regions, the quantity of bile hereby secerned is even more than the bile ducts can conveniently carry off; whence some portion of it retrogrades, and is carried by absorption into the system, and is one of the causes, though not the only cause, of the darker hue of the skin in those quarters. In our own country, this species of purging is, therefore, found most commonly in the earlier part of the summer, when suddenly and vehemently bursting upon a cold spring; or in the autumn, when the liver has for many weeks been exposed to the effects of a very ardent sun, and the whole system has become relaxed and debilitated. If at this time the atmosphere be pure, the disease is simple, and may be subdued without much difficulty by a few doses of the submuriate of mercury, given with a view of emulging the bilious pores of the liver, correcting the irritation of the organ, and subduing its increased action, with the assistance of mild diluents and demulcents, as infusions of linseed, quince seeds, tragacanth, and acacia, with mild bitter infusions. If the diarrhœa do not give way under these, and light glutinous broths, with arrow-root and the like, for the diet, opiates may be employed with advantage.

Another species of diarrhœa consists in the dejections containing a quantity of mucus. It bears a striking resemblance to the defluxion from the nostrils in catarrh, and has been denominated *catarrhus intestinorum*, and *diarrhœa catarrhalis*. It has hitherto been described as a species of diarrhœa, though it more properly belongs to dysentery. Its common cause is cold, particularly in the feet, acting upon the mucous follicles of the bowels, which are predisposed to take on a peculiar morbid action. Purging here is highly injurious. The best plan is warmth to the surface of the body, by the occasional use of a warm bath, pediluvium, and fomentations to the bowels; the internal administration of saline medicines, with Dover's powders, and afterwards astringents, with light bitters. Opiates at bed-time are very serviceable. The diet should consist of glutinous broths, arrow-root, dilute brandy, and light animal food.

A looseness consists sometimes of white, milky, or what have been called chylous stools. The colour of the dejections in this species, affords evident proof that the bile, which gives the usual tinge to the fæces, is either not secreted, or impeded in its flow into the intestines; it has also been supposed that the chyle is not duly absorbed and carried into the system. This singular and not common disease has been described as the *affectio* or *passio cœliaca*, and *diarrhœa cœliaca*. On the presumption that the white discharge is owing to the presence of chyle, and that none is absorbed, it has been concluded that the disease is the consequence of some cause preventing the absorption of chyle, especially an inertness or torpitude of the absorbents, or some disease of the mesenteric glands; but it is very likely that we are not yet in possession of the real cause, and that the disease is symptomatic of some other.

There is another kind of looseness, in which the food passes rapidly through the primæ viæ, without having been digested, and in the same state nearly as it was received into the stomach. It is described in ancient writings by the name of *lienteria*, or lubricity of the intestines. The causes of this disease, besides the increased peristaltic movement, are to be sought after in the stomach also, the digestive power of which is not brought into action, owing either to a deficiency of gastric juice, or a want of power to retain the food which it receives. The bile also, as in the cœliac species, is either deficient, or secreted of such a quality as not to impart a proper colour to the contents of the bowels, nor to perfect the separation of the chyle from the chyme if chymification had taken place. This *diarrhœa lienteria* is far from common, and is mostly an affection symptomatic of gout, scirrhus, or some organic disease. As a genuine diarrhœa, its cure is to be attempted by tonics, bitters, and the remedies recommended against indigestion, to which disease it is nearly allied.

The *diarrhœa serosa*, which is also called *diarrhœa aquosa*, is that species in which the dejections are watery, almost entirely liquid and limpid. In some cases, the serous discharge resembles the washings of flesh, and it has been supposed to proceed from the liver; on which account it has been called a hepatirrhœa, or hepatic flux. The purging is here dependent upon a very irritable and relaxed state of the excretory vessels of the intestines. The disease occurs mostly to the leucophlegmatic and weak. Its cure is to be attempted by warm cordials, with astringents and tonics, as gentian, calumba, simarouba, orange peel, with the peppers, and warm tinctures.

When a loose state of the bowels is caused by worms, *diarrhœa verminosa*, which is sometimes the case with ascarides, their presence and irritation in the rectum establish the species; and the cure is to be effected by vermifuges.

From what has been advanced, it is evident that, in conducting the cure of a diarrhœa, the objects are to obviate the several causes, to lessen the inordinate peristaltic motion, and to give tone to the intestines. To fulfil these, it has been usual to exhibit emetics, purgatives, and astringents, according to the circumstances of the case. Emetics are very seldom serviceable, unless in strong subjects, with a loaded stomach; in which case an emetic may at first be useful in speedily removing its contents: it may also assist in emulging the ducts of the liver, and determining to the skin; but its secondary operation is that of weakening, and ought, therefore, to be resorted to with great caution. Cathartics are serviceable in expelling worms, or indurated or acrimonious fæces; but any acrimony in the intestine generally causes its own discharge; and where there is much irritability, they aggravate the disease: however, in protracted cases, the alvine contents speedily become vitiated, and renew the irritation; which may be best obviated by an occasional mild aperient, particularly rhubarb. If the liver do not perform its office, the intestine will hardly recover its healthy condition; and

that may most probably be effected by the cautious use of mercury. Likewise, articles which determine the fluids to other outlets, diuretics, and particularly diaphoretics, in many cases contribute materially to recovery; the latter, perhaps, assisted by bathing, warm clothing, gentle exercise, &c. Diluent, demulcent, and antacid medicines are employed to correct acrimony, according to its particular nature. In children teething, the gums should be lanced; and if the bowels have been attacked on the repulsion of some other disease, it may often be proper to endeavour to restore this. But a matter of the greatest importance is the due regulation of the diet, carefully avoiding those articles which are likely to disagree with or irritate the bowels, and preferring such as have a mild astringent effect. Food the least acescent, as rice, arrow-root, tapioca, sago, bread, &c., are best; and, for the drink, sherry or brandy, sufficiently diluted, rather than malt liquors.

Some of the means already noticed will help to moderate the excessive peristaltic movement, as a wholesome diet, exercise, diaphoretics, &c.: but there are others of more power, which must sometimes be resorted to. At the head of these is opium, a full dose of which frequently at once effects a cure; but where there is some more fixed cause, and the complaint of any standing, moderate quantities, repeated at proper intervals, will answer better, and other subsidiary means ought not to be neglected: aromatics may prevent its disordering the stomach, rhubarb obviate its causing permanent constipation, &c. Tonics are generally proper, the discharge itself inducing debility; and, where there is a deficiency of bile particularly, the lighter forms of the aromatic bitters will materially assist. In protracted cases, mild chalybeates are sometimes serviceable; astringents come in aid of the general plan, and, where opium disagrees, they may be more necessary; but the milder ones should be employed at first, the more powerful only where the patient appears sinking. Chalk and limewater answer best where there is acidity; otherwise the pomegranate, logwood, catechu, kino, tormentil, &c. may be given; where these fail, galls, alum, or sulphate of zinc.

Diarrhœa carnosa. A form of dysentery, in which flesh-like portions are eliminated.

Diarrhœa cholerica. A bilious diarrhœa.

Diarrhœa chylosa. The ileac passion has been so called.

Diarrhœa urinosa. See *Diabetes.*

Diarthro'dial. Relating to diarthrosis. (See *Diarthrosis.*) The cartilages covering the articular extremities of bones are called *Diarthrodial cartilages.*

DIARTHRO'SIS. (*is, is.* f.; from διαρθρω, to articulate.) A moveable connexion of bones. It is divided into five species, viz. *enarthrosis, arthrodia, ginglymus, trochoides,* and *amphiarthrosis.*

Diasapo'nium. (From δια, and σαπων, soap.) An ointment in which soap was the principal ingredient.

Diasaty'rium. (From δια, and σατυριον, the orchis.) An electuary made principally of the orchis root. — *N. Myrepsus.*

Diasci'llium. (From δια, and σκιλλα, the squill.) Oxymel and vinegar of squills.

Diasci'ncus. (From δια, and σκιγκος, a kind of lizard.) A name for the mithridate, in the composition of which there was a part of the lizard called *scincus.*

DIASCO'RDIUM. (From δια, and σκορδιον, the water germander.) *Confectio Fracastorii.* Electuary of scordium. This electuary was first introduced into practice by Hieronymus Fracastorius, whose name it generally bore. It was composed of cinnamon, cassia lignea, each half an ounce; scordium, an ounce; dittany of Crete, tormentil, bistort, galbanum, gum arabic, of each half an ounce; storax, four drachms and a half; opium, seeds of sorrel, each a drachm and a half; gentian, half an ounce; Armenian bole, an ounce and a half; Lemnian earth, half an ounce; long pepper, ginger, of each two drachms; clarified honey, two pounds and a half; sugar of roses, one pound; Canary wine, eight ounces. It is cordial and astringent, and was formerly much used in dysentery. The dose for an adult is from ℈j. to ʒij.

Diase'na. (From δια, and *sena.*) An electuary of senna.

Diase'ricos. (From δια, and σηρικος, silk.) The name of a Greek medicine in which silk was an ingredient.

Diasmy'rnum. (From δια, and σμυρνη, myrrh.) *Diasmyrnes.* A wash for the eyes which contained myrrh.

Diaso'stica. (From διασωζω, to preserve.) *Diasostics.* This word has been used by some synonymously with *hygiene,* or that branch of medicine which relates to the preservation of health.

Diaso'sticus. (Same etymon.) 1. Applied to that which preserves health.

2. It has been used synonymously with prophylactic.

Diaspe'rmaton. (Δια σπερματων; from δια, and σπερμα, seed.) Two kinds of cataplasms, composed chiefly of seeds, were anciently so called.

Diasphy'xis. (From δια, and σφυζω, to strike.) The pulsation of an artery. — *Aretæus.*

DIA'STASIS. (*is, eos.* f.; from διϊστημι, to separate.) *Diastema.* A separation by disease or violence of bones or cartilages which are naturally connected; as that which occasionally happens to the bones of the cranium in some cases of hydrocephalus.

Diaste'aton. (From δια, and στεαρ, fat.) An ointment made of the fat of the stag, hog, goose, and hen. — *Marcellus Empiricus.*

Diaste'ma. (*a, atis.* n.) See *Diastasis.*

DIA'STOLE. (*e, es.* f.; from διαστελλω, to separate.) The dilatation of the heart and arteries. See *Circulation.*

Diastomo'tris. (Διαστομωτρις; from διαστομοω, to dilate.) Any dilating instrument, as a *speculum ani.*

Diastre'mma. (From διαστρεφω, to turn aside.) *Diastrophe.* A distortion of any part.

Dia'strophe. See *Diastremma.*

Diasu'lphuris. The epithet of several medicines containing sulphur, used by the old chemical physicians. We read of a *Balsamum diasulphuris*, an *Emplastrum diasulphuris*, and a *Tinctura diasulphuris.*

Diata'rtari. The name of a purgative powder, of which cream of tartar was the basis.

Dia'tasis. (From διατεινω, to distend.) The extension of a fractured limb, in order to reduce it.

Diateco'lithum. (From δια, and τηκολιθος, the Jew's stone.) An antidote containing lapis Judiacus.

Diatere'ticus. (From διατηρεω, to preserve.) A medicine which preserves health and prevents disease.

Diatessadelton. See *Diacellatesson.*

Diate'ssaron. (Διατεσσαρων; from δια, and τεσσαρες, four.) 1. A medicine composed of the roots of gentian and aristolochia rotunda, of laurel berries and honey, made into a confection with extract of juniper. It was esteemed by the ancients as an alexipharmic.

2. The name of a plaster mentioned by Galen.

Diatettigon. (Δια τεττιγων; from δια, and τεττιξ, a grasshopper.) The epithet of a nephritic medicine in the composition of which were grasshoppers. — *Paulus Ægineta.*

DIA'THESIS. (*is, is.* f.; from διατιθημι, to dispose.) A natural predisposition to certain diseases, which is generally hereditary. The most remarkable diatheses are the *scrofulous, gouty, rheumatic, cancerous,* and *calculous.*

Diatragaca'nthum. (From δια, and τραγακανθα, tragacanth.) A demulcent medicine, composed of tragacanth, gum arabic, starch, sugar, and some other ingredients. The pulvis tragacanthæ compositus of the present pharmacopœia is a simplification of it.

Diatrion pipereon. (Το δια τριων πιπερεων.) The epithet of a medicine made of long pepper, white pepper, and black pepper.

Diatrita'rii. A name given to the methodic physicians from their practising the *diatritos.* See *Diatritos.*

Dia'tritos. (From δια, and τρεις, three.) An abstinence during three days was first recommended by the methodic physicians. This period, not the abstinence, was called *diatritos;* and, from this circumstance, the methodics had the name of *diatritarii.* On the third day they gave such medicines as they thought of importance. Cœlius Aurelianus gives this name, not only to the whole period, but to the third day in particular.

Dia'trium. (From δια, and τρεις, three.) A medicine composed of three simple ingredients.

Diatrium santalorum. Δια τριων σανταλων αντιδοτος. The epithet of an antidote composed of three kinds of sandal wood, and a number of other ingredients. — *N. Myrepsus.*

Diavoletti. *Diavolini.* An Italian name for lozenges made of cocoa and the most pungent aromatics, to excite venery.

Diaxyla'loes. (From δια, and ξυλαλοη, the lignum aloes.) A medicine containing lignum aloes.

DIAZO'MA. (From διαζωννυμι, to surround; because it surrounds the cavity of the thorax.) The diaphragm.

Diazo'ster. (From διαζωννυμι, to surround; because when the body is girded, the belt usually lies upon it.) The twelfth vertebra of the back.

Diacente'tum. (Διακεντητον; from διακεντεω, to prick.) A pungent wash for the eyes.

Dicha'lcum. An ancient weight equal to two æreoli.

Dichaste'res. (From διχαζω, to divide; because they divide the food.) The incisores, or foreteeth.

Dichophy'ia. (From διχα, double, and φυω, to grow.) That condition of the hairs in which they split and grow forked.

DICHO'TOMOUS. (*Dichotomus;* from δις, twice, and τεμνω, to cut: that is, cut in two.) Bifurcate; forked. Applied to stems, styles, &c. which are forked or divided into two parts.

DICOC'CUS. (*us, i.* m.; from δις, and κοκκος, a berry.) Dicoccous: having two capsules united, each with one cell.

DICOTYLE'DONES. (Having two cotyledons.) The plants forming the third great division in Jussieu's Natural Method are so called.

Dicotyledonous plants. Plants which have two cotyledons.

Dicræus. (Δικραιος; from δις, twice, and κραας, a head.) Bifid: cloven.

DICRO'TIC. (*Dicrotus;* from δις, twice, and κρουω, to strike.) Applied to a pulse in which the artery rebounds after striking, so as to convey the sensation of a double pulsation.

DICTAMNI'TES. (From δικταμνος, dittany.) Must fermented with dittany. It was believed to be emmenagogue.

DICTA'MNUS. (*us, i.* m.; from *Dicte,* a mountain of Crete, where the plant grew.) The name of a genus of plants in the Linnæan system. Class, *Decandria;* Order, *Monogynia.* Dittany.

Dictamnus albus. White fraxinella, or bastard dittany. *Fraxinella* of the shops. *Dictamnus albus — foliis pinnatis, caule simplici,* of Linnæus. The root of this plant is the part directed for medicinal use; when fresh, it has a moderately strong, not disagreeable smell. Formerly it was much used as a stomachic, tonic, and alexipharmic, and was supposed to be a medicine of much efficacy in removing uterine obstructions and destroying worms; but its medicinal powers became so little regarded by modern physicians, that it had fallen almost entirely into disuse, till Baron Stoerck brought it into notice, by publishing several cases of its success, viz. in tertian intermittents, worms (lumbrici), and menstrual suppressions. In all these cases, he employed the powdered root to the extent of a scruple twice a day. He also made use of a tincture, prepared of two ounces of the fresh root digested in 14 ounces of spirit of wine; of this 20 to 50 drops, two or three times a day, were successfully employed in

epilepsies; and, when joined with steel, this root, we are told, was of great service to chlorotic patients. The dictamnus, undoubtedly, says Dr. Woodville, is a medicine of considerable power; but notwithstanding the account of it given by Stoerck, who seems to have paid little attention to its modus operandi, we may still say with Haller, "*Nondum autem vires pro dignitate exploratus est*," and it is now fallen again into disuse.

Dictamnus Creticus. See *Origanum dictamnus.*

Didymæ'a. Διδυμαια. The name of a malagma or cataplasm mentioned by Galen.

Di'dymi. (Διδυμοι, twins.) The testicles have been so called; because they are two in number, and like each other. The name was also given by the Greek anatomists to the posterior corpora quadrigemina, which are still called *testes.*

Di'dymous. (*Didymus;* διδυμος, double.) Applied, in *Botany*, to the anthers and germens, &c. of flowers, when, upon one filament, there are two anthers united, like a double nut; as in *Ranunculus, Anemone, Galium*, &c.

DIDYNA'MIA. (*a, æ.* f.; from δις, two, and δυναμις, power or predominance.) The name of a class in the sexual system of plants, consisting of those with hermaphrodite flowers which have four stamina, two of which are long and two short.

Didyna'mic. *Didynamicus.* Applied to plants of the Class *Didynamia.*

Diecbo'lium. (From δια, and εκβαλλω, to cast out.) A medicine causing abortion. — *Hippocrates.*

Diele'ctron. (From δια, and ελεκτρον, amber.) The name of a troch, in which amber was an ingredient.

Dierenbach. A city of Bavaria, in the neighbourhood of which are sulphureous, chalybeate, and saline waters.

Diervi'lla. (*a, æ.* f.; named in honour of Mr. Dierville, who first brought it from Arcadia.) See *Lonicera diervilla.*

DIET. *Diæta.* The dietetic part of medicine is no inconsiderable branch, and deserves a much greater share of regard than it commonly meets with. A great variety of diseases might be removed by the observance of a proper diet and regimen, without the assistance of medicine, were it not for the impatience of the sufferers. However, it may on all occasions come in as a proper assistant to the cure, which sometimes cannot be performed without a due observance of the non-naturals. That food is, in general, thought the best and most conducive to long life, which is most simple, pure, and free from irritating qualities, and such as approaches nearest to the nature of our own bodies in a healthy state, or is capable of being easiest converted into their substance by the vis vitæ, after it has been duly prepared by the art of cookery; but the nature, composition, virtues, and uses of particular aliments can never be learned to satisfaction, without the assistance of practical chemistry. See *Aliment.*

DIET DRINK. An alterative decoction employed daily in considerable quantities, at least from a pint to a quart. The decoction of sarsaparilla and merzereon, the Lisbon diet drink, is the most common and most useful.

DIETE'TIC. (*Dietetícus;* from διαιταω, to nourish.) Relating to diet.

Dietetica. See *Dietetics.*

Dietetice. (*e, es.* f.) See *Dietetics.*

DIETETICS. *Dietetica. Dietetice.* That department of medicine which relates to the regulation of diet.

DIEU LE FILT. A large town in the department of Drome, in France. It has chalybeate mineral waters. The water of the spring called St. Louis, is employed successfully as a tonic in diseases of the eyes, and some cutaneous affections. It is said to contain sulphate of iron and alum.

Diffla'tio. (From *difflo*, to blow away.) Transpiration.

DIFFO'RMIS. Irregular in shape; of different shapes.

DIFFUSE. *Diffusus.* Applied, 1. In *Pathology*, to diseases which spread widely, and have no distinctively defined limits as opposed to those which are circumscribed.

2. In *Botany*, to panicles and stems. *Panicula diffusa*, that is lax, and spreading; as in *Saxifraga umbrosa*, the London pride, so common in our gardens; and many grasses, especially the common cultivated oat. The *Bunias kakile*, or sea-rocket, has the *caulis diffusus.*

Diffuse Abscess. See *Abscess.*

Diffuse inflammation of the cellular membrane. This name was given by the late Dr. Andrew Duncan, junior, to the affection before known under the appellation of *phlegmonoid erysipelas.* Dr. Duncan investigated the anatomical and pathological characters of this morbid state more minutely than had previously been done. Diffuse inflammation may occur in the cellular membrane of any part of the body, and may affect either the subcutaneous or the intermuscular and deep seated layers.

Diffused false aneurism. See *Aneurism.*

Diffusible. A term applied to that which is easily dissipated; thus the stimulus of ether is said to be a diffusible stimulus, because it very soon passes off.

DIGA'STRICUS. (From δις, twice, and γαστηρ, a belly: so called from its having two bellies.) *Biventer maxillæ*, of Albinus. A muscle situated externally between the lower jaw and *os hyoides.* It arises, by a fleshy belly, from the upper part of the processus mastoideus; and descending, it contracts into a round tendon, which passes through the stylohyoideus, and an annular ligament which is fastened to the os hyoides; then it grows fleshy again, and ascends towards the middle of the edge of the lower jaw, where it is inserted. Its use is to open the mouth by pulling the lower jaw downwards and backwards; and when the jaws are shut, to raise the larynx, and consequently the pharynx, upwards, as in deglutition.

Di'gerens. (From *digero*, to digest.) Digestive. Applied to medicines which promote the secretion of proper pus in wounds and ulcers: thus we speak of a digestive ointment.

DIGESTER. A strong and tight iron vessel or kettle, furnished with a valve of safety, in

which bodies may be subjected to the vapour of water, alkohol, or ether, at a pressure above that of the atmosphere.

DIGESTION. (*Digestio, onis.* f.; from *digero*, to dissolve.)

I. An operation in *Chemistry*, and *Pharmacy*, in which such matters as are intended to act slowly on each other are exposed to a heat, continued for some time.

II. In *Physiology*, the change that the food undergoes in the stomach, by which it is converted into chyme.

The immediate object of digestion is the formation of chyle, a matter destined for the reparation of the continual waste of the animal economy. The digestive organs contribute also in many other ways to nutrition.

If we judge of the importance of a function by the number and variety of its organs, digestion ought to be placed in the first rank; no other function of the animal economy presents such a complicated apparatus.

There always exists an evident relation between the sort of aliment proper for an animal, and the disposition of its digestive organs. If, by their nature, the aliments are very different from the elements which compose the animal, if, for example, it is graminivorous, the dimensions of the apparatus will be more complicated, and more considerable; if, on the contrary, the animal feeds on flesh, the digestive organs will be fewer and more simple, as is seen in the carnivorous animals. Man, called to use equally animal and vegetable aliments, keeps a mean between the graminivorous and carnivorous animals, as to the disposition and complication of his digestive apparatus, without deserving, on that account, to be called omnivorous.

We may represent the digestive apparatus as a long canal, variously twisted upon itself, wide in certain points, narrow in others, susceptible of contracting or enlarging its dimensions, and into which a great quantity of fluids are poured by means of different ducts. The canal is divided into many parts by anatomists: —

1. The mouth.
2. The pharynx.
3. The œsophagus.
4. The stomach.
5. The small intestines.
6. The great intestines.
7. The anus.

Two membranous layers form the sides of the digestive canal in its whole length. The inner layer, which is intended to be in contact with the aliments, consists of a mucous membrane, the appearance and structure of which vary in every one of the portions of the canal, so that it is not the same in the pharynx as in the mouth, nor is it in the stomach like what it is in the œsophagus, &c. In the lips and the anus this membrane becomes confounded with the skin. The second layer of the sides of the digestive canal is muscular; it is composed of two layers of fibres, one longitudinal, the other circular. The arrangement, the thickness, the nature of the fibres which enter into the composition of these strata, are different, according as they are observed in the mouth, in the œsophagus, or in the large intestine, &c. A great number of blood-vessels go to, or come from, the digestive canal; but the abdominal portion of this canal receives a quantity incomparably greater than the superior parts. This presents only what are necessary for its nutrition, and the inconsiderable secretion of which it is the seat; whilst the number and the volume of the vessels that belong to the abdominal portion show that it must be the agent of a considerable secretion. The chyliferous vessels arise exclusively from the small intestine.

As to the nerves, they are distributed to the digestive canal in an order inverse to that of the vessels; that is, the cephalic parts, *cervical* and *pectoral*, receive a great deal more than the abdominal portion, the stomach excepted, where the two nerves of the eighth pair terminate. The other parts of the canal scarcely receive any branch of the cerebral nerves. The only nerves that are observed, proceed from the *subdiaphragmatic* ganglions of the great sympathetic. We shall see, farther on, the relation that exists between the modes of distribution of the nerves, and the functions of the superior and inferior portions of the digestive canal.

The bodies that pour fluids into the digestive canal, are, —

1. The *digestive mucous membrane.*
2. *Isolated follicles* that are spread in great number in the whole length of this membrane.
3. The *agglomerated follicles* which are found at the isthmus of the throat, between the *pillars* of the *velum* of the palate, and sometimes at the junction of the œsophagus and the stomach.
4. The *mucous glands*, which exist in a greater or less number in the sides of the cheeks, in the roof of the palate, and around the œsophagus.
5. The *parotid*, the *submaxillary*, and *sublingual glands*, which secrete the saliva of the mouth, the liver, and the pancreas; the first of which pours the bile, the second the pancreatic juice, by distinct canals, into the superior part of the small intestine, called duodenum.

All the digestive organs contained in the abdominal cavity are immediately covered, more or less completely, by the serous membrane called the peritonæum. This membrane, by the manner in which it is disposed, and by its physical and vital properties, is very useful in the act of digestion, by preserving to the organs their respective relations, by favouring their changes of volume, by rendering easy the sliding motions which they perform upon each other, and upon the adjoining parts.

The surface of the mucous digestive membrane is always lubricated by a glutinous adhesive matter, more or less abundant, that is seen in greatest quantity where there exist no follicles, — a circumstance which seems to indicate that these are not the only secreting organs. A part of this matter, to which is given generally the name of *mucus*, continually evaporates, so that there exists habitually a certain quantity of vapours in all the points of the digestive canal. The chemical nature of this substance, as taken at the intestinal surface, is still very little known. It is transparent, with a light grey tint; it adheres to the membrane which forms it; its taste is salt, and its acidity is shown by the re-agents: its formation still continues some time after death. That which is formed in the mouth, in the

pharynx, and in the œsophagus, goes into the stomach mixed with the saliva, and the fluids of the mucous glands, by movements of deglutition, which succeed each other at near intervals. According to this detail, it would appear that the stomach ought to contain, after it has been some time empty of aliments, a considerable quantity of a mixture of mucus, of saliva, and follicular fluid. This observation is not proved, at least in the greatest number of individuals. However, in a number of persons, who are evidently in a particular state, there exist, in the morning, in the stomach, many ounces of this mixture. In certain cases it is foamy, slightly troubled, very little viscous, holding suspended some flakes of mucus: its taste is quite acid, not disagreeable, very sensible in the throat, acting upon the teeth, so as to diminish the polish of their surface, and rendering their motion upon each other more difficult. This liquid reddens paper stained with turnsole.

In the same individual, in other circumstances, and with the same appearances as to colour, transparency, and consistency, the liquid of the stomach had no savour, nor any acid property; it is a little salt: the solution of potash, as well as the nitric and sulphuric acids, produced in it no apparent change.

When we examine the dead bodies of persons killed by accident, the stomach not having received any aliments or drink for some time, this organ contains only a very few acid mucosities adhering to the coats of the stomach, part of which, in the pyloric portion of that viscus, appears reduced to chyme. It is, then, very probable, that the liquid which ought to be in the stomach is digested by this viscus, as an alimentary substance, and that this is the reason why it does not accumulate there.

In animals, the organisation of which approaches to that of man, such as dogs and cats, there is no liquid found in the stomach after one, or many, days of complete abstinence; there is seen only a small quantity of viscous mucosity adhering to the sides of the organ, towards its *splenic* extremity. This matter has the greatest analogy, both chemical and physical, with that which is found in the stomach of man. But, if we make these animals swallow a body which is not susceptible of being digested, as a pebble, for example, there forms, after some time, in the cavity of the stomach, a certain quantity of an acid liquid mucus, of a greyish colour, sensibly salt, which, in its composition, is nearly the same as that found sometimes in man.

This liquid, resulting from the mixture of the mucosities of the mouth, of the pharynx, of the œsophagus, and the stomach, with the liquid secreted by the follicles of the same parts and with the saliva, has been called the *gastric juice*, and to which particular properties have beenattributed.

In the small intestines there is also formed a great quantity of mucous matter, which rests habitually attached to the sides of the intestine; it differs little from that of which we have spoken above; it is viscid, tough, and has a salt and acid savour; it is renewed with great rapidity. If the mucous membrane of this intestine is laid bare, in a dog, and the layer of mucus absorbed by a sponge, it will appear again in a minute. This observation may be repeated as often as we please, until the intestine becomes inflamed by the contact of the air, and foreign bodies.

The mucus of the stomach penetrates into the cavity of the small intestine only under the form of a pulpy matter, grayish and opake, which has all the appearance of a particular chyme.

It is at the surface of this same portion of the digestive canal that the bile is delivered as well as the liquid secreted by the pancreas. In animals, such as dogs, the flowing of these liquids takes place at intervals; that is, about twice in a minute, there is seen to spring from the orifice of the ductus choledochus, or biliary canal, a drop of bile, which immediately spreads itself uniformly in a sheet upon the surrounding parts, which are already impregnated with it; there is, also, constantly found a certain quantity of bile in the small intestine.

The flowing of the liquid formed by the pancreas takes place much in the same manner, but it is much slower: sometimes a quarter of an hour passes before a drop of this fluid springs from the orifice of the canal which pours it into the intestine.

The different fluids deposited in the small intestine, which are the chymous matter that comes from the stomach, the mucus, the follicular fluid, the bile, and the pancreatic liquid, all mix together; but, on account of its properties, and, perhaps, of its proportions, the bile predominates and gives to the mixture its proper taste and colour. A great part of this mixture descends towards the large intestine, and passes into it; in this passage, it becomes more consistent, and the clear yellow colour which it had before becomes dark, and afterwards greenish. There are, however, in this respect, strong individual differences.

In the large intestine, the mucous and follicular secretion appears less active than in the small intestine; the mixture of fluids which comes from the small intestine acquires in it more consistence; it contracts a fœtid odour, analogous to that of ordinary excrements; it has, besides, the appearance of it, by its colour, odour, &c.

The knowledge of these facts enables us to understand how a person who uses no aliments can continue to produce excrements, and how, in certain diseases, their quantity is very considerable, though the sick person has been long deprived of every alimentary substance, even of a liquid kind. Round the anus exist follicles, which secrete a fatty matter of a singularly powerful odour.

We find gas almost always in the intestinal canal; the stomach contains only very little. The chemical nature of these gases has not yet been examined with care; but as the saliva that we swallow is always more or less impregnated with atmospheric air, it is probably the atmospheric air, more or less changed, which is found in the stomach: at least, it contains carbonic acid. The small intestine contains only a small quantity of gas; it is a mixture of carbonic acid, of azote, and hydrogen. The large in-

testine contains carbonic acid, azote, and hydrogen, sometimes carburetted, sometimes sulphuretted. Twenty-three per cent. of this gas was found in the rectum of an individual, whose large intestine contained no excrement.

The muscular layer of the digestive canal deserves to be remarked, in respect to the different modes of contraction it presents. The lips, the jaws, in most cases the tongue, and the cheeks are moved by a contraction, entirely like that of the muscles of locomotion. The roof of the palate, the pharynx, the œsophagus, and the tongue in certain particular circumstances, offer many motions which have a manifest analogy with muscular contraction, but which are very different from it, because they take place without the participation of the will.

This does not imply that the motions of the parts just named are beyond the influence of the nerves; experience proves directly the contrary. If, for example, the nerves that come to the œsophagus are cut, this tube is deprived of its contractile faculty.

The muscles of the velum of the palate, those of the pharynx, the superior two-thirds of the œsophagus, scarcely contract like digestive organs, but when they act in permitting substances to pass from the mouth into the stomach. The inferior third of the œsophagus presents a phenomenon which is important to be known: this is an alternate motion of contraction and relaxation, which exists in a constant manner. The contraction commences at the union of the *superior two-thirds* of the canal with the *inferior third;* it is continued, with a certain rapidity, to the insertion of the œsophagus into the stomach: when it is once produced, it continues for a time, which is variable; its mean duration is, at least, thirty seconds. Being so contracted in its inferior third, the œsophagus is hard and elastic, like a cord strongly stretched. The relaxation which succeeds the contraction happens all at once, and simultaneously in all the contracted fibres; in certain cases, however, it seems to take place from the superior to the inferior fibres. In the state of relaxation, the œsophagus presents a remarkable flaccidity, which makes a singular contrast with its state of contraction.

This motion of the œsophagus depends on the nerves of the eighth pair. When these nerves of an animal are cut, the œsophagus no longer contracts, but neither is it in the relaxed state that we have described; its fibres being separated from nervous influence, shorten themselves with a certain force, and the canal is found in an intermediate state between contraction and relaxation. The vacuity or distention of the stomach has an influence upon the duration and intensity of the contraction of the œsophagus.

From the inferior extremity of the stomach to the end of the intestine rectum, the intestinal canal presents a mode of contraction which differs, in almost every respect, from the contraction of the sub-diaphragmatic portion of the canal. This contraction always takes place slowly, and in an irregular manner: sometimes an hour passes before any trace of it can be perceived; at other times many intestinal portions contract at once. It appears to be very little influenced by the nervous system: for example, it continues in the stomach after the section of the nerves of the eighth pair; it becomes more active by the weakness of animals, and even by their death; in some, by this cause it becomes considerably accelerated; it continues though the intestinal canal is entirely separated from the body. The pyloric portion of the stomach, the small intestine, are the points of the intestinal canal where it is presented oftenest, and most constantly. This motion, which arises from the successive or simultaneous contraction of the longitudinal or circular fibres of the intestinal canal, has been differently denominated by authors: some have named it *vermicular*, others *peristaltic;* others again, *sensible organic contractility*, &c. Whatever it is, the will appears to exert no sensible influence upon it.

The muscles of the anus contract voluntarily.

The supra-diaphragmatic portion of the digestive canal is not susceptible of undergoing any considerable dilatation: we may easily see, by its structure, and the mode of contraction of its muscular coat, that it is not intended to allow the aliments to remain in its cavity, but that it is rather formed to carry these substances from the mouth into the stomach; this last organ, and the large intestine, are evidently prepared to undergo a very great distension: substances, also, which are introduced into the alimentary canal, accumulate, and remain for a time, more or less, in their interior.

The diaphragm, and the abdominal muscles, produce a sort of perpetual agitation of the digestive organs contained in the abdominal cavity; they exert, upon them, a continual pressure, which becomes sometimes very considerable.

The digestive actions which by their union constitute digestion, are, —

1. The apprehension of aliments.
2. Mastication.
3. Insalivation.
4. Deglutition.
5. The action of the stomach.
6. The action of the small intestines.
7. The action of the large intestines.
8. The expulsion of the fæcal matter.

All the digestive actions do not equally contribute to the production of chyle; the action of the stomach, and that of the small intestines, are alone absolutely necessary.

The digestion of solid food requires generally the eight digestive actions: that of drinks is much more simple; it comprehends only apprehension, deglutition, the action of the stomach, and that of the small intestine.

The mastication and deglutition of the food being effected, we have now to notice the action of the stomach on the aliment; chemical alterations will now present themselves to our examination. In the stomach, the food is transformed into a matter proper to animals, which is named *chyme*.

Before showing the changes that the food undergoes in the stomach, it is necessary to know the phenomena of their accumulation in this viscus, as well as the local and general effects that result from it.

The first mouthfuls of food swallowed are easily lodged in the stomach. This organ is not much compressed by the surrounding viscera; its sides separate easily, and give way to the force which presses the alimentary bole: but its distension becomes more difficult in proportion as new food arrives, for this is accompanied by the pressing together of the abdominal viscera, and the extension of the sides of the abdomen. This accumulation takes place particularly towards the right extremity and the middle part; the pyloric half gives way with more difficulty.

Whilst the stomach is distended, its form, its relations, and even its positions, undergo alterations: in place of being flattened on its aspects, of occupying only the epigastrium and a part of the left *hypochondrium*, it assumes a round form; its great *cul de sac* is thrust into this *hypochondrium*, and fills it almost completely; the greater *curvature* descends towards the umbilicus, particularly on the left side; the pylorus alone, fixed by a fold of the *peritonæum*, preserves its motion and its relations with the surrounding parts. On account of the resistance that the vertebral column presents behind, the posterior surface of the stomach cannot distend itself on that side: for that reason this viscus is wholly carried forward; and as the pylorus and the œsophagus cannot be displaced in this direction, it makes a motion of rotation, by which its great curve is directed a little forward; its posterior aspect inclines downwards, and its superior upwards.

Though it undergoes these changes of position and relation, it nevertheless preserves the recurved conoid form which is proper to it. This effect depends on the manner in which the three tunics contribute to its dilatation. The two plates of the serous membrane separate and give place to the stomach. The muscular layer suffers a real distension; its fibres are prolonged, but so as to preserve the particular form of the stomach. Lastly, the mucous membrane gives way, particularly in the points where the folds are multiplied. It will be noticed that these are found particularly along the larger curve, as well as at the splenic extremity.

The dilatation of the stomach alone produces very important changes in the abdomen. The total volume of this cavity augments; the belly juts out; the abdominal viscera are compressed with greater force; often the necessity of passing urine, or fæces, is felt. The diaphragm is pressed towards the breast, it descends with some difficulty; thence the motions of respiration, and the phenomena which depend on it, are more incommoded, such as speech, singing, &c.

In certain cases, the dilatation of the stomach may be carried so far that the sides of the abdomen are painfully distended, and respiration becomes difficult.

To produce such effects, the contraction of the œsophagus, which presses the food in the stomach, must be very energetic. We have remarked above the considerable thickness of the muscular layer of this canal, and the great number of nerves which go to it: nothing less than this disposition is necessary to account for the force with which the food distends the stomach. For more certainty, the finger has only to be introduced into the œsophagus of an animal by the cardiac orifice, and the force of the contraction will be found striking.

But if the food exerts so marked an influence upon the sides of the stomach and the abdomen, they ought themselves to suffer a proportionate re-action, and tend to escape by the two openings of the stomach. Why does this effect not take place? It is generally said that the cardia and pylorus shut; but this phenomenon has not been submitted to any particular researches.

The alternate motion of the œsophagus prevents the return of the food into this cavity. The more the stomach is distended, contraction becomes the more intense and prolonged, and the relaxation of shorter duration. Its contraction generally coincides with the instant of inspiration, when the stomach is most forcibly compressed. Its relaxation ordinarily happens at the instant of expiration.

We may have an idea of this mechanism by laying bare the stomach of a dog, and endeavouring to make the food pass into the œsophagus by compressing the stomach with both hands. It will be nearly impossible to succeed, whatever force is used, if it is done at the instant when the œsophagus is contracted: but the passage will take place, in a certain degree, of itself, if the stomach is compressed at the instant of relaxation.

The resistance that the pylorus presents to the passage of the aliments is of another kind. In living animals, whether the stomach is empty or full, this opening is habitually shut, by the constriction of its fibrous ring, and the contraction of its circular fibres. There is frequently seen another constriction in the stomach, at the distance of one or two inches, which appears intended to prevent the food from reaching the pylorus; we perceive, also, irregular and peristaltic contractions, which commence at the duodenum, and are continued into the pyloric portion of the stomach, the effect of which is to press the food towards the splenic part. Besides, should the pylorus not be naturally shut, the food would have little tendency to enter it, for it only endeavours to escape into a place where the pressure is less; and this would be equally great in the small intestine as in the stomach, since it is nearly equally distributed over all the abdominal cavity.

Amongst the number of phænomena produced by the food in the stomach, there are several, the existence of which, though generally admitted, do not appear sufficiently demonstrated: such is the diminution of the volume of the spleen, and that of the blood-vessels of the liver, or the *omenta*, &c.; such is also a motion of the stomach, which should preside over the reception of the food, distribute it equally by exerting upon it a gentle pressure, so that its dilatation, far from being a passive phænomenon, must be essentially active. Dr. Magendie has frequently opened animals, the stomachs of which were filled with food; he has examined the bodies of executed persons, a short time after death; and has seen nothing favourable to these assertions.

The accumulation of food in the stomach is accompanied by many sensations, of which it is necessary to take account: — At first it is an agreeable feeling, or the pleasure of a want satisfied. Hunger is appeased by degrees; the general weakness that accompanied it is replaced by an active state, and a feeling of new force. If the introduction of food is continued, we experience a sensation of fulness and satiety, which indicates that the stomach is sufficiently replenished; and if, contrary to this instinctive information, we still persist to make use of food, disgust and nausea soon arrive, and they are very soon followed by vomiting. These different impressions must not be attributed to the volume of the aliments alone. Every thing being equal in other respects, food very nutritive occasions, more promptly, the feeling of satiety. A substance which is not very nourishing does not easily calm hunger, though it is taken in great quantity.

The mucous membrane of the stomach, then, is endowed with considerable sensibility, since it distinguishes the nature of substances which come in contact with it. This property is very strongly marked if an irritating poisonous substance is swallowed: intolerable pain is then felt. We also know that the stomach is sensible to the temperature of food.

We cannot doubt that the presence of the aliments of the stomach causes a great excitement, from the redness of the mucous membrane, from the quantity of fluid it secretes, and the volume of vessels directed there; but this is favourable to chymification. This excitement of the stomach influences the general state of the functions.

The time that the aliments remain in the stomach is considerable, generally several hours: it is during this stay that they are transformed into chyme.

Changes of the aliments in the stomach. — It is more than an hour before the food suffers any apparent change in the stomach, more than what results from the perspiratory and mucous fluids with which they are mixed, and which are continually renewed.

The stomach is uniformly distended during this time; but the whole extent of the pyloric portion afterwards contracts, particularly that nearest the splenic portion, into which the food is pressed. Afterwards, there is nothing found in the pyloric portion but chyme, mixed with a small quantity of unchanged food.

The best authors have agreed to consider the chyme as a homogeneous substance, pultaceous, greyish, of a sweetish taste, insipid, slightly acid, and preserving some of the properties of the food. This description leaves much to be explained.

The result of Dr. Magendie's experiments are as follows: —

A. There are as many sorts of chyme as there are different sorts of food, if we judge by the colour, consistence, appearance, &c.; as we may easily ascertain, by giving different simple alimentary substances to dogs to eat, and killing them during the operation of digestion. He frequently found the same result in man, in the dead bodies of criminals, or persons dead by accident.

B. Animal substances are generally more easily and completely changed than vegetable substances. It frequently happens that these last traverse the whole intestinal canal without changing their apparent properties. He has frequently seen in the rectum, and in the small intestines, the vegetables which are used in soup, spinach, sorrel, &c., which had preserved the most part of their properties; their colour alone appeared sensibly changed by the contact of the bile.

Chyme is formed particularly in the pyloric portion. The food appears to be introduced slowly into it; and during the time they remain, they undergo transformation. The Doctor believes, however, that he has observed frequently chymous matter at the surface of the mass of aliments which fill the splenic portion; but the aliments in general preserve their properties in this part of the stomach.

It would be difficult to tell why the pyloric portion is better adapted to the formation of chyme than the rest of the stomach; perhaps the great number of follicles that are seen in it modify the quantity or the nature of the fluid that is there secreted. The transformation of alimentary substances into chyme takes place generally from the superficies to the centre. On the surface of portions of food swallowed, there is formed a soft layer easy to be detached. The substances seem to be attacked and corroded by a re-agent capable of dissolving them. The white of a hard egg, for instance, becomes in a little time as if plunged in vinegar, or in a solution of potash.

C. Whatever is the alimentary substance employed, the chyme has always a sharp odour and taste, and reddens paper coloured with turnsole.

D. There is only a small quantity of gas found in the stomach during the formation of chyme; sometimes there exists none. Generally it forms a small bubble at the superior part of the splenic portion. Once only in the body of a criminal a short time after death, he gathered with proper precautions a quantity sufficient to be analysed. Chevreuil found it composed of, oxygen, 11·00; carbonic acid, 14·00; pure hydrogen, 3·15; azote, 71·45; — total, 100·00. There is rarely any gas found in the stomach of a dog. We cannot then believe, with Professor Chaussier, that we swallow a bubble of air at every motion of deglutition, which is pressed into the stomach by the alimentary bole. Were it so, there ought to be found a considerable quantity of air in this organ after a meal: now the contrary is to be seen.

E. There is never a great quantity of chyme accumulated in the pyloric portion: the most that M. Magendie ever saw in it was scarcely equal in volume to two or three ounces of water. The contraction of the stomach appears to have an influence upon the production of chyme. The following is what he observed in this respect: — After having been some time immovable, the extremity of the duodenum contracts,

the pylorus and the pyloric portion contract also; this motion presses the chyme towards the splenic portion; but it afterwards presses it in a contrary direction, that is, after being distended, and having permitted the chyme to enter again into its cavity, the pyloric portion contracts from left to right, and directs the chyme towards the duodenum, which immediately passes the pylorus and enters the intestine.

The same phenomenon is repeated a certain number of times, but it stops to begin again, after a certain time. When the stomach contains much food, this motion is limited to the parts of the organ nearest the pylorus; but in proportion as it becomes empty, the motion extends farther, and is seen even in the splenic portion when the stomach is almost entirely empty. It becomes generally more strong about the end of chymification. Some persons have a distinct feeling of it at this moment.

The pylorus has been made to play a very important part in the passage of the chyme from the stomach to the intestine. It judges, they say, of the chymification of the food; it opens to those that have the required qualities, and shuts against those that have not. However, as we daily observe substances not digestible traverse it easily, such as stones of cherries, it is added, that becoming accustomed to a substance not chymified, which presents itself repeatedly, it at last opens a passage. These considerations, consecrated in a certain degree by the word *pylorus, a porter*, may please the fancy, but they are purely hypothetical.

F. All the alimentary substances are not transformed into chyme with the same promptitude.

Generally the fat substances, the tendons, the cartilages, the concrete albumen, the mucilaginous and sweet vegetables, resist more the action of the stomach than the caseous, fibrinous, and glutinous substances. Even some substances appear refractory; such as the bones, the epidermis of fruits, their stones, and whole seeds, &c.

In determining the digestibility of food, the volume of the portions swallowed ought to be taken into account. The largest pieces, of whatever nature, remain longest in the stomach; on the contrary, a substance which is not digestible, if it is very small, such as grape-stones, does not rest in the stomach, but passes quickly with the chyme into the intestine.

In respect of the facility and quickness of the formation of chyme, it is different in every different individual. It is evident, after what has been said, that to fix the necessary time for the chymification of all the food contained in the stomach, we ought to take into account their quantity, their chemical nature, the manner in which the mastication acts upon them, and the individual disposition. However, in four or five hours after an ordinary meal, the transformation of the whole of the food into chyme is generally effected.

The nature of the chemical changes that the food undergoes in the stomach is unknown. It is not because there have been no attempts at different periods to give explanations of them more or less plausible. The ancient philosophers said that the food became putrified in the stomach; Hippocrates attributed the digestive process to coction; Galen assigned the stomach attractive, retentive, concoctive, expulsive faculties, and by their help he attempted to explain digestion. The doctrine of Galen reigned in the schools until the middle of the seventeenth century, when it was attacked and overturned by the *fermenting chemists*, who established in the stomach an *effervescence*, a particular fermentation, by means of which the food was *macerated, dissolved, precipitated*, &c. This system was not long in repute, and digestion was next supposed to be only a trituration, a bruising, performed by the stomach; an innumerable quantity of little worms was supposed to attack and divide the food. Boerhaave thought he had found the truth by combining the different opinions that had reigned before him. Haller did not follow the ideas of his master; he considered digestion a simple *maceration*. He knew that vegetable and animal matters plunged into water are soon covered with a soft homogeneous layer; he believed that the food underwent a like change, by macerating in the saliva and fluids secreted by the stomach.

Réaumur and Spallanzani made experiments on animals, and demonstrated the falsity of the ancient systems: they showed that food, contained in hollow metallic balls pierced with small holes, was digested the same as if it was free in the cavity of the stomach. They proved that the stomach contains a particular fluid which they call *gastric juice*, and that this fluid was the principal agent of digestion; but they much exaggerated its properties, and they were mistaken when they thought to have explained digestion by considering it as a *solution*; because, in not explaining this solution, they did not explain the changes of food in the stomach.

In the formation of chyme, it is necessary to consider, 1st, The circumstances in which the food is found in the stomach. 2dly, The chemical nature of it.

The circumstances affecting the food in the stomach, during its stay there, are not numerous: 1st, It suffers a pressure more or less strong either from the sides of the abdomen, or from those of the stomach; 2dly, The whole is entirely moved by the motions of respiration; 3dly, It is exposed to a temperature of 30° to 32° degrees of Réaumur; 4thly, It is exposed to the action of the saliva, of the mucosities proceeding from the mouth and the œsophagus, as well as the fluid secreted by the mucous membrane of the stomach.

It will be remembered that this fluid is slightly viscous, that it contains much water, mucus, salts, with a base of soda and ammonia, and lactic acid of Berzelius.

With regard to the nature of the food, we have already seen how variable it is; since all the immediate principles, animal or vegetable, may be carried into the stomach in different forms and proportions, and serve usefully in the formation of chyme. Now, making allowance for the nature of the food, and the circumstances in which it is placed in the stomach,

shall we be able to account for the known phenomena of the formation of chyme? The temperature of 30° to 32°, R. = 100° to 104° F.; the pressure and the tossing that the food sustains, cannot be considered as the principal cause of its transformation into chyme; it is probable that they only co-operate in this: the action of the saliva and that of the fluid secreted in the stomach remain; but after the known composition of the saliva, it is hardly possible that it can attack and change the nature of the food; at most, it can only serve to divide, to imbibe it in such a manner as to separate its particles: it must then be the action of the fluid formed by the internal membrane of the stomach. It appears certain that this fluid, in acting chemically upon the alimentary substances, dissolves them from the surface towards the centre. To produce a proof of it, with this fluid of which we speak, there have been attempts made to produce what is called in physiology *artificial digestions*, that is, after having macerated food, it is mixed with gastric juice, and then exposed in a tube or any other vase to a temperature equal to that of the stomach. Spallanzani advanced that these digestions succeeded, and that the food was reduced to chyme; but, according to the researches of De Montègre, it appears that they are not; and that, on the contrary, the substances employed undergo no alteration analogous to chymification: this is agreeable to experiments made by Réaumur. But because the gastric juice does not dissolve the food when put with it into a tube, we ought not to conclude that the same fluid cannot dissolve the food when it is introduced into the stomach. The circumstances are indeed far from being the same: in the stomach, the temperature is constant, the food is pressed and agitated, and the saliva and gastric juice are constantly renewed; as soon as the chyme is formed, it is carried away and pressed in the duodenum. Nothing of this takes place in the tube or vase which contains the food mixed with gastric juice; therefore, the want of success in artificial digestions, proves nothing which tends to explain the formation of chyme.

But how does it happen that the same fluid can act in a manner similar upon the great variety of alimentary substances, animal and vegetable? The acidity which characterises it, though fit to dissolve certain matters, as albumen, for example, would not be suitable for dissolving fat.

To this it may be answered, that nothing proves the gastric juice to continue always the same; the small number of analyses that have been made of it demonstrate, on the contrary, that it presents considerable varieties in its properties. The contact of different sorts of food upon the mucous membrane of the stomach, may possibly influence its composition; it is at least certain, that this varies in the different animals. For example, that of man is incapable of acting on bones: and it is well known that the dog digests these substances perfectly.

Generally speaking, the action by which the chyme is formed prevents the re-action of the constituent elements of the food upon each other: but this effort takes place only in good digestions; in bad digestion, fermentation, and even putrefaction, may take place: this may be suspected by the great quantity of inodorous gases that are developed in certain cases, and the sulphuretted hydrogen which is disengaged in others.

The nerves of the eighth pair have long been considered to direct the act of chymification: in fact, if these nerves are cut, or tied in the neck, the matters introduced into the stomach undergo no alteration. But the consequence, says Dr. Magendie (from whose physiology this article is taken), that is deduced from this fact does not appear to me to be rigorous. Is not the effect produced upon the stomach by the injury done to respiration, confounded here with the direct influence of the section of the nerves of the eighth pair upon this organ? I am inclined to believe it; for, as I have many times done, if the two eighth pairs be cut in the breast *below* the branches which go to the lungs, the food which is introduced afterwards into the stomach is transformed into chyme, and ultimately furnishes an abundant chyle.

Some persons imagine that electricity may have an influence in the production of chyme, and that the nerves we mention may be the conductors: there is no established fact to justify this conjecture. The most probable use of the nerves of the eighth pair is, to establish intimate relations between the stomach and the brain, to give notice whether any noxious substances have entered along with the food, and whether they are capable of being digested.

In a strong person, the operation of the formation of chyme takes place without his knowledge; it is merely perceived that the sensation of fulness, and the difficulty of respiration, produced by the distension of the stomach, disappear by degrees: but frequently, with people of a delicate temperament, digestion is accompanied with feebleness in the action of the senses, with a general coldness, and slight shiverings; the activity of the mind diminishes, and seems to become drowsy; and there is a disposition to sleep. The vital powers are then said to be concentrated in the organ that acts, and to abandon for an instant the others. To those general effects are joined the production of the gas that escapes by the mouth, a feeling of weight, of heat, of giddiness, and sometimes of burning, followed by an analogous sensation along the œsophagus, &c. These effects are felt particularly towards the end of the chymification. It does not appear, however, that these laborious digestions are much less beneficial than the others.

From the stomach the food is received into the *small intestine*, which is the longest portion of the digestive canal; it establishes a communication between the stomach and the large intestine. Not being susceptible of much distension, it is twisted a great many times upon itself, being much longer than the place in which it is contained. It is fixed to the vertebral column by a fold of the peritonæum, which limits, yet aids, its motions; its longitudinal and circular fibres are not separated as in

the stomach; its mucous membrane, which presents many villi, and a great number of mucous follicles, forms irregular circular folds, the number of which is greater in proportion as the intestine is examined nearer the pyloric orifice: these folds are called *valvulæ conniventes.*

The small intestine receives many blood-vessels: its nerves come from the *ganglions* of the *great sympathetic.* At its internal surface the numerous orifices of the chyliferous vessels open.

This intestine is divided into three parts: called the *duodenum, jejunum,* and *ileum.* The mucous membrane of the small intestine, like that of the stomach, secretes abundance of mucus; viscous, thready, of a salt taste, and reddens strongly turnsole papers; all which properties are also in the liquid secreted by the stomach. Haller gave this fluid the name of *intestinal juice:* the quantity that is formed in twenty-four hours he estimated at eight pounds.

Not far from the gastric extremity of this intestine is the common orifice of the biliary and pancreatic canals, by which the fluid secreted by the liver and the pancreas flow into the intestinal cavity. If the formation of the chyme is still a mystery, the nature of the phænomena that takes place in the small intestine is little better known.

In the experiments which have been made on dogs and rabbits, the chyme is seen to pass from the stomach into the duodenum. The phænomena are these. At intervals, more or less distant, a contractile motion commences towards the middle of the duodenum; it is propagated rapidly to the site of the pylorus: this ring contracts itself, as also the pyloric part of the stomach; by this motion, the matters contained in the duodenum are pressed back towards the pylorus, where they are stopped by the valve, and those that are found in the *pyloric* part, are partly pressed towards the *splenic* part; but this motion, directed from the intestine towards the stomach, is very soon replaced by another in a contrary direction, that is, which propagates itself from the stomach towards the duodenum, the result of which is to make a considerable quantity of chyme pass the pylorus.

This fact seems to indicate that the valve of the pylorus serves as much to prevent the matters contained in the small intestine from flowing back into the stomach, as to retain the chyme and the food in the cavity of this organ.

The motion that has been described, is generally repeated many times following, and modified as to the rapidity, the intensity of the contraction, &c.; it then ceases to begin again after some time. It is not very marked in the first moments of the formation of the chyme; the extremity only of the pyloric part participates in it. It augments in proportion as the stomach becomes empty; and, towards the end of chymification, it often takes place over the whole stomach. It is not suspended by the section of the nerves of the eighth pair.

Thus the entrance of chyme into the small intestine is not perpetual. According as it is repeated, the chyme accumulates in the first portion of the intestine, it distends its sides a little, and presses into the intervals of the valves; its presence very soon excites the organ to contract, and by this means one part advances into the intestine: the other remains attached to the surface of its membrane, and afterwards takes the same direction. The same phenomenon continues down to the large intestine; but, as the duodenum receives new portions of the chyme, it happens at last that the small intestine is filled in its whole length with this matter. It is observed only to be much less abundant near the *cæcum* than at the pyloric extremity.

The motion that determines the progress of the chyme through the small intestine, has a great analogy with that of the pylorus: it is irregular, returns at periods which are variable, is sometimes in one direction, sometimes in another, takes place sometimes in many parts at once; it is always slow, more or less; it causes relative changes amongst the intestinal circumvolutions. It is beyond the influence of the will.

We should form a false idea of it were we merely to examine the intestine of an animal recently dead: it has then a much greater activity than during life. Nevertheless, in weak digestions it appears to acquire more than ordinary energy and velocity.

In whatever manner this motion takes place, the chyme appears to move very slowly in the small intestine: the numerous valves that it contains, the multitude of asperities that cover the mucous membrane, the many bendings of the canal, are so many circumstances that ought to contribute to retard its progress, but which ought to favour its mixture with the fluids contained in the intestine, and the production of the chyle which results from it.

Changes that the chyme undergoes in the small intestines. — It is only about the height of the orifice of the choledochus and pancreatic canal that the chyme begins to change its properties. Before this, it preserves its colour, its semi-fluid consistence, its sharp odour, its slightly acid savour; but, in mixing with the bile and the pancreatic juice, it assumes new qualities: its colour becomes yellowish, its taste bitter, and its sharp odour diminishes much. If it proceeds from animal or vegetable matters, which contained grease or oil, irregular filaments are seen to form here and there upon its surface; they are sometimes flat, at other times rounded, attach themselves quickly to the surface of the valve, and appear to consist of crude chyle. This matter is not seen when the chyme proceeds from matter that contained no fat; it is a greyish layer, more or less thick, which adheres to the mucous membrane, and appears to contain the elements of chyle. The same phenomena are observed in the *two superior thirds* of the small intestine: but in the *inferior third,* the chymous matter is more consistent; its yellow colour becomes more deep; it ends sometimes by becoming of a greenish brown, which pierces through the intestinal parietes, and gives an appearance to the *ileum,* distinct from that of the *duodenum* and *jejunum.* When it is examined near the *cæcum,* there are few or no whitish

chylous striæ seen; it seems, in this place, to be only the remainder of the matter which has served in the formation of the chyle.

After what has been said above, upon the varieties that the chyme presents, we may understand that the changes it undergoes in the small intestine are variable according to its properties; in fact, the phenomena of digestion in the small intestine vary according to the nature of the food. The chyme, however, preserves its acid property; and if it contains small quantities of food or other bodies, that have resisted the action of the stomach, they traverse the small intestine without undergoing any alteration. The same phenomena appear when the same substances have been used. Dr. Magendie has ascertained this fact upon the bodies of two criminals who, two hours before death, had taken an ordinary meal, in which they had eaten the same food nearly in equal quantity: the matters contained in the stomach, the chyme in the pyloric portion and in the small intestine, appeared to him exactly the same as to consistence, colour, taste, odour, &c.

There is generally gas found in the small intestine during the formation of chyle. Drs. Magendie and Chevreuil have made experiments upon the bodies of criminals opened shortly after death, and who, being young and vigorous, presented the most favourable conditions for such researches. In a subject of twenty-four years, who had eaten, two hours before his death, bread, and some Swiss cheese, and drank water reddened with wine, they found in the small intestine: — oxygen, 0·00; carbonic acid, 24·39; pure hydrogen, 55·53; azote, 20·08: total, 100·00.

In a second subject, aged twenty-three years, who had eaten of the same food at the same hour, and whose punishment took place at the same time: — oxygen, 0·00; carbonic acid, 40·00; pure hydrogen, 51·15; azote, 8·85: total, 100·00.

In a third experiment, made upon a young man of twenty-eight years, who, four hours before death, had eaten bread, beef, lentiles, and drank red wine, they found in the same intestine: — oxygen, 0·00; carbonic acid, 25·00; pure hydrogen, 8·40; azote, 66·60: total, 100·00.

They never observed any other gases in the small intestine. These gases might have different origins. They might possibly come from the stomach with the chyme; or they were, perhaps, secreted by the intestinal mucous membrane; they might arise from the reciprocal action of the matters contained in the intestine; or perhaps they might come from all these sources at once.

However, the stomach contains oxygen, and very little hydrogen, whilst they have almost always found much hydrogen in the small intestine, and never any oxygen. Besides, it is a daily observation, that the little gas that the stomach contains is generally passed by the mouth towards the end of chymification, probably because, at this instant, it can more easily advance into the œsophagus.

The probability of the formation of gases by the secretion of the mucous membrane could not be at all admissible, except for carbonic acid, which seems to be formed in this manner in respiration. With regard to the action of matters contained in the intestine, Dr. Magendie says he has many times seen the chymous matter let bubbles of gas escape very rapidly. This took place from the orifice of the ductus choledochus to the commencement of the *ileum*; there was no trace of it perceived in this last intestine, nor in the superior part of the duodenum, nor the stomach. He made this observation again upon the body of a criminal four hours after death: it presented no traces of putrefaction.

The alteration which chyme undergoes in the small intestine is unknown; it is easily seen to be the result of the action of the bile, of the pancreatic juice, and of the fluid secreted by the mucous membrane, upon the chyme. But what is the play of the affinities in this real chemical operation, and why is the chyle precipitated against the surface of the *valvulæ conniventes*, whilst the rest remains in the intestine to be afterwards expelled? This is completely unknown.

We have learned something more of the time that is necessary for this alteration of the chyme. The phenomenon does not take place quickly: in animals, it often happens that we do not find any chyle formed three or four hours after the meal.

After what has been said, we see that in the small intestine, the chyme is divided into two parts: the one which attaches itself to the sides, and which is the chyle still impure; the other, the true refuse, which is destined to be thrown into the large intestine, and afterwards entirely carried out of the body.

The manner in which drinks accumulate in the stomach differs little from that of the aliments: it is generally quicker, more equal, and more easy; probably because the liquids spread, and distend the stomach more uniformly. In the same manner as the food, they occupy more particularly its left and middle portion: the pyloric, or right extremity, contains always much less.

The distension of the stomach must not, however, be carried to a great degree, for the liquid would be expelled by vomiting. This frequently happens to persons who swallow a great quantity of drink quickly. When we wish to excite vomiting in persons who have taken an emetic, one of the best means is to make them drink a number of glasses of liquid quickly.

The presence of drinks in the stomach produces local phenomena like those which take place from the *accumulation of the aliments*; the same changes in the form and position of the organ, the same distension of the abdomen, the same contraction of the pylorus and the œsophagus, &c.

The general phenomena are different from those produced by the aliments: this depends on the action of the liquids upon the sides of the stomach, and the quickness with which they are carried into the blood.

Potations, in passing rapidly through the mouth and the œsophagus, preserve more than the food

their proper temperature until they arrive in the stomach. We therefore prefer them to those when we wish to experience in this organ a feeling of heat, or of cold: hence arises the preference that we give to hot drinks in winter, and cold drinks in summer.

Every one knows that the drinks remain much shorter time in the stomach than the aliments; but the manner of their passage out of this viscus is still very little known. It is generally supposed that they traverse the pylorus, and pass into the small intestine, where they are absorbed with the chyle; nevertheless, a ligature applied round the pylorus in such a manner as to hinder it from penetrating into the duodenum, does not much retard its disappearance from the cavity of the stomach.

Alteration of drinks in the stomach. — Fluids, in respect of the alterations that they prove in the stomach, may be divided into two classes: the one sort do not form any chyme, and the other are chymified wholly or in part.

To the first class belong pure water, alkohol, sufficiently weak to be considered as a drink, the vegetable acids, &c. During its stay in the stomach, water assumes an equilibrium of temperature with the sides of this viscus: it mixes at the same time with mucus, the gastric juice, and the saliva which are found in it; it becomes muddy, and afterwards disappears slowly without suffering any other transformation. One part passes into the small intestine; the other appears to be directly absorbed. There remains, after its disappearance, a certain quantity of mucus, which is very soon reduced to chyme, like the aliments. By observation we know that water deprived of atmospheric air, as distilled water, or water charged with a great quantity of salts, as well water, remain long in the stomach, and produce a feeling of weight.

Alkohol acts quite in a different manner. We know the impression of burning heat that it causes at first in its passage through the mouth, the pharynx, the œsophagus; and that which it excites when it enters the stomach: the effects of this action determine the contraction of this organ, irritate the mucous membrane, and augment the secretion of which it is the seat; it coagulates at the same time all the albuminous parts with which it is in contact; and as the different liquids in the stomach contain a considerable proportion of this matter, it happens that a short time after alkohol has been swallowed, there is in this viscus a certain quantity of concrete albumen. The mucus undergoes a modification analogous to that of the albumen; it becomes hard, forms irregular elastic filaments, which preserve a certain transparency.

In producing these phenomena, the alkohol mixes with the water that the saliva and the gastric juice contain; probably it dissolves a part of the elements that enter into their composition, so that it ought to be much weakened by its stay in the stomach. It disappears very quickly; its general effects are also very rapid, and drunkenness or death follow almost immediately the introduction of too great a quantity of alkohol into the stomach.

The matters coagulated by the action of the alkohol are, after its disappearance, digested like solid aliments.

Amongst the drinks that are reduced to chyme, some are reduced in part, and some wholly.

Oil is in this last case: it is transformed, in the pyloric part, into a matter analogous in appearance with that which is drawn from the purification of oils by sulphuric acid; this matter is evidently the chyme of oil. On account of this transformation, oil is, perhaps, the liquid that remains longest in the stomach.

Every one knows that milk curdles soon after it is swallowed: this curd then becomes a solid aliment, which is digested in the ordinary manner. Whey only can be considered as drink.

The greatest number of drinks that we use are formed of water, or of alkohol, in which are suspended or dissolved some immediate animal or vegetable principles, such as gelatine, albumen, ozmazome, sugar, gum, fecula, colouring or astringent matters, &c. These drinks contain salts of lime, of soda, of potash, &c.

The result of several experiments that have been made upon animals, and some observations that have been made on man, is, that there is a separation of the water and the alkohol in the stomach from the matters that these liquids hold in suspension or solution. These matters remain in the stomach, where they are transformed into chyme, like the aliments; whilst the liquids with which they were united are absorbed, or passed into the small intestine; lastly, they are conducted, as we have just now seen, in treating of water and alkohol.

Salts that are in solution in water do not abandon this liquid, and are absorbed with it. Red wine, for example, becomes muddy at first by its mixture with juices that are formed in, or carried into the stomach; it very soon coagulates the albumen of these fluids, and becomes flaky; afterwards, its colouring matter, carried, perhaps, by the mucus and the albumen, is deposited upon the mucous membrane: there is a certain quantity of it seen, at least, in the pyloric portion; the watery and alkoholic parts disappear with rapidity.

The broth of meat undergoes the same changes. The water that it contains is absorbed; the gelatine, the albumen, the fat, and, probably, the ozmazome, remain in the stomach, where they are reduced into chyme.

Action of the small intestine upon drinks. — After what has been said, it is clear that fluids penetrate, under two forms, into the small intestine: 1st, under that of liquid; 2dly, under that of chyme.

The liquids that pass from the stomach into the intestine remain but a short time, except under particular circumstances: they do not appear to undergo any other alteration than their mixture with the intestinal juice, the chyme, the pancreatic liquid, and the bile; they do not form any sort of chyle: they are generally absorbed in the duodenum, and the commencement of the jejunum; they are rarely seen in the ileum, and still more rarely in the large intestine. It appears that this last case does not happen, except in the

state of sickness; for example, during the action of a purgative.

The chyme that proceeds from drinks follows the same rule, and appears to undergo the same changes as that of the food; it therefore produces chyle.

Such are the principal phænomena of the digestion of drinks: we see how necessary it was to distinguish them from those that belong to the digestion of the aliments.

But we do not always digest the aliments and the drinks separately, as we have supposed; very frequently the two digestions take place at the same time.

Drink favours the digestion of the aliments: this effect is probably produced in various manners. Those that are watery, soften, divide, dissolve even certain foods; they aid in this manner their chymification and their passage through the pylorus.

Wine fulfils analogous uses, but only for the substances that it is capable of dissolving; besides, it excites by its contact the mucous membrane of the stomach, and causes a greater secretion of the gastric juice. Alkohol acts much in the same manner as wine, only it is more intense. It is thus that those liquors which are used after meals, are useful in exciting the action of the stomach. — *Magendie.*

DIGE'STIVE. (*Digestivus;* from *digero*, to digest.) A term applied by surgeons to those substances which, when applied to an ulcer or wound, promote suppuration: such are the *ceratum resinæ*, *unguentum elemi*, warm poultices, fomentations, &c.

Digestive salt of Sylvius. A muriate of potash.

Digesti'vum sal. See *Potassæ murias.*

DIGITA'LIS. (*is, is.* f.; from *digitale*, the finger of a glove, because the flower resembles the end of the finger of a glove.)

1. The name of a genus of plants in the Linnæan system. Class, *Didynamia;* Order, *Angiospermia.* Foxglove.

2. The pharmacopœial name of the common foxglove. See *Digitalis purpurea.*

Digitalis purpurea. The systematic name of the foxglove. *Digitalis — calycinis foliolis ovatis acutis, corollis obtusis, labio superiore integro,* of Linnæus. The leaves of this plant have a bitter nauseous taste, but no remarkable smell; they have been long used externally to ulcers and scrofulous tumours with considerable advantage. When properly dried, their colour is a lively green. They ought to be collected when the plant begins to blossom, to be dried quickly before the fire, and preserved unpowdered.

The leaves of foxglove yield their virtues both to water and alkohol. They contain a considerable quantity of ammonia. It is not known on what principle the medicinal activity of foxglove depends. An alkaloid was lately said to have been discovered in it, and was accordingly named *digitaline;* but this matter is now ascertained to consist merely of chlorophylle, resin, and a fatty matter.

Of all the narcotics, digitalis is that which diminishes most powerfully the actions of the system; and it does so without occasioning any previous excitement. Even in the most moderate dose, it diminishes the force and frequency of the pulse, and, in a large dose, reduces it to a great extent, as from 70 beats to 40 or 35 in a minute, occasioning, at the same time, vertigo, indistinct vision, violent and durable sickness, with vomiting. In a still larger quantity, it induces convulsions, coldness of the body, and insensibility; symptoms which have sometimes terminated fatally. As a narcotic, foxglove has been recommended in epilepsy, insanity, and in some acute inflammatory diseases. Some years ago it was very extensively employed in phthisis. The beneficial effects which it produces in that disease are probably owing to its narcotic power, by which it reduces the force of the circulation through the lungs and general system. It is administered so as to produce this effect. One grain of the powdered leaves, or ten drops of the saturated tincture, may be given night and morning. This dose is increased one half every second day, till its action on the system becomes apparent. As soon as the pulse begins to be diminished, the increase of dose must be made with more caution; and, whenever nausea takes place, it ought rather to be reduced, or, if necessary, intermitted for a short time. If the sickness become urgent, it is best relieved by stimulants, particularly large doses of brandy, with aromatics. The tincture has been supposed to be the best form of administering digitalis, when the remedy is designed to act as a narcotic: it is also more manageable in its dose, and more uniform in its strength, than the dried leaves.

Besides its narcotic effects, digitalis acts as one of the most certain diuretics in dropsy, apparently from its power of promoting absorption. It has frequently succeeded where the other diuretics have failed. Dr. Withering has an undoubted claim to this discovery; and the numerous cases of dropsy related by him, and other practitioners of established reputation, afford incontestable evidence of its diuretic powers, and of its practical importance in the cure of those disorders. From Dr. Withering's extensive experience of the use of the digitalis in dropsies, he has been able to judge of its success by the following circumstances: — "It seldom succeeds in men of great natural strength, of tense fibre, of warm skin, of florid complexion, or in those with a tight and cordy pulse. If the belly, in ascites, be tense, hard, and circumscribed, or the limbs, in anarsarca, solid and resisting, we have but little hope. On the contrary, if the pulse be feeble or intermitting, the countenance pale, the lips livid, the skin cold, the swollen belly soft and fluctuating, the anasarcous limbs readily pitting under the pressure of the finger, we may expect the diuretic effects to follow in a kindly manner." Of the inferences which he deduces, the fourth is, "that if it (digitalis) fails, there is but little chance of any other medicine succeeding." Although the digitalis is now generally admitted to be a very powerful diuretic, yet it is but justice to acknowledge that this medicine has more frequently failed than could have been reasonably expected from a com-

parison of the facts stated by Dr. Withering. The dose of the dried leaves in powder is from one to three grains twice a day. But if a liquid medicine be preferred, a drachm of the dried leaves is to be infused for four hours, in half a pint of boiling water, adding to the strained liquor an ounce of any spirituous water. One ounce of this infusion, given twice a day, is a medium dose. It is to be continued in these doses till it either acts upon the kidneys, the stomach, the pulse, (which, as has been said, it has a remarkable power of lowering,) or the bowels.

The administration of this remedy requires to be conducted with much caution. Its effects do not immediately appear; and when the doses are too frequent, or too quickly augmented, its action is concentrated so as to produce frequently the most violent symptoms. The general rules are, to begin with a small dose, to increase it gradually, till the action is apparent on the kidneys, stomach, intestines, or vascular system; and immediately to suspend its exhibition, when its effects on any of these take place.

The symptoms arising from too large a dose of digitalis are extreme sickness, vertigo, indistinct vision, incessant vomiting, and a great reduction of the force of the circulation, terminating sometimes in syncope, or convulsions. They are relieved by frequent and small doses of opium, brandy, aromatics, and strong bitters, and by a blister applied to the region of the stomach.

DIGITA'TION. This term is applied by anatomists to parts which are more or less finger-shaped; thus the *serratus magnus* muscle is said to arise by a number of fleshy *digitations*.

DIGITA'TO-PINNA'TUS. Applied to a digitate leaf, the leaflets of which are pinnated.

DIGITA'TUS. Digitate: fingered. Applied generally to whatever resembles a finger; to a leaf, *folium digitatum*, when several leaflets proceed from the summit of a common footstalk, as in *Potentilla verna*, and *reptans;* to the receptacle of the *Arum maculatum*, and *Calla æthiopica*.

DIGITIFO'RMIS. Finger-like. Applied synonymously with *digitatus*.

Digi'tium. (From *digitus*, a finger.) Linnæus gives this name to a whitlow.

DI'GITUS. (*us*, *i.* m.) A finger. *Digitus manus*, is a finger, properly so called; and *digitus pedis*, a toe.

Digitus manus. A finger. The *fingers* and thumb in each hand consist of fourteen bones, there being three to each *finger*, and two to the thumb; they are a little convex and round towards the back of the hand, but hollow and plain towards the palm, except the last, where the nails are. The bones which compose them are called first, second, and third *phalanx*. The first is longer than the second, and the second longer than the third. What has been said of the fingers, applies to the toes also.

Digitus pedis. A toe. The toes are formed of the same number of bones as the fingers, and, like them, are arranged into phalanges.

DIGLO'SSUM. (*um*, *i.* n.; from δις, double, and γλωσσα, a tongue: so called, because above its leaf there grows a lesser leaf, giving an appearance as of two tongues.) The *Laurus alexandrina*. See *Ruscus hypoglossum*.

Digno'tio. (From *dignosco*, to distinguish.) Synonymous with *diagnosis*.

DIGY'NIA. (*a*, *æ.* f.; from δις, twice, and γυνη, a woman.) The name of an order in several classes of the sexual system of plants, embracing those plants which to the character of the class, whatever it may be, add the circumstance of having two styles.

Dihæ'maton. (From δια, and αιμα, blood.) A Greek medicine prepared with the blood of several animals.

Diha'lon. (From δια, and ἁλς, salt.) A plaster prepared with salt and nitre. It used to be applied to foul ulcers.

Dikalegi. *Decalegi. Dekalem.* Alchemical names of tin.

DILATA'TION. (*Dilatatio*, *onis.* f.; from *dilato*, to widen.) The widening of any part, whether by a natural or diseased action.

Dilatation of the heart. See *Heart, diseases of.*

DILA'TOR. (*or*, *oris.* m.; from *dilato*, to widen.) The name of some muscles, the office of which is to dilate the parts on which they act.

Dilator alæ nasi. See *Levator labii superioris.*

DILATO'RIUM. (*um*, *i.* n.; from *dilato*, to widen.) A surgical instrument for dilating any part. It is more frequently called a *speculum*.

Dill. See *Anethum graveolens.*

Dills. See *Fucus palmatus.*

DILUENT. (*Diluens;* from *diluo*, to wash away.) Those substances are so named which increase the proportion of fluid in the blood. It is evident that this must be done by watery liquors. Water is, indeed, properly speaking, the only diluent. Various additions are made to it, to render it pleasant, and frequently to give it a slightly demulcent quality. But these are not sufficiently important to require to be noticed, or to be classed as medicines.

Diluents are merely secondary remedies. They are given in acute inflammatory diseases, to lessen the stimulant quality of the blood. They are used to promote the action of diuretics in dropsy, and to favour the operation of sudorifics.

Dilu'tus. Dilute or diluted.

DIMIDIA'TUS. Half round; extending halfway round. Applied, in *Botany*, to the parts of plants.

Dimness of sight. See *Caligo.*

Dimpled. See *Umbilicatus.*

Dinant. A small town six leagues from St. Malo in France, which has mineral waters containing carbonates of iron, muriates of soda and potash, &c. These springs are much resorted to.

Di'nicus. (From δινος, giddiness.) Applied to a medicine which relieves giddiness.

Dinos. See *Dinus.*

DI'NUS. (*us*, *i.* m.; δινος; from δινεω, to turn round.) Dizziness, giddiness. See *Vertigo.*

Dio'bolon. Διωβολον. An ancient weight of two oboli, or a scruple.

Diodonce'phalus. (From δις, twice, οδους a tooth, and κεφαλη, a head.) An ill constructed term used by G. St. Hilaire to designate a monstrosity in which there are double rows of teeth

DIŒ'CIA. (*a*, *æ*. f.; from δις, double, and οικος, a house.) The name of a class of plants in the sexual system of Linnæus, containing such as have barren, or male, flowers on one individual, and fertile, or female, ones on another of the same species.

Dicena'nthes. (From δια, and οινανθη, the œnanthe.) An epithem anciently used in cholera, into the composition of which the herb œnanthe or dropwort entered.

DIOI'CUS. (From δις, double, and οικος, a house.) Dicœcious. Plants and flowers are so called, when the barren and fertile flowers grow on separate individuals.

Dion'sia. An epithet of ivy.

Dionysi'scus. (From Διονυσος, Bacchus, who was of old represented as having horns.) Vogel gives this name to certain bony excrescences, near the temples.

Diopo'rum. (From δια, and οπωρα, autumnal fruits.) A medicine composed of ripe fruits, formerly used in quinsy.

Dio'ptra. (From διοπτομαι, to see through.) *Dioptron.* An instrument for dilating any natural cavity, the better to see its condition. A speculum.

Dioptri'smos. The operation of dilating a part with the dioptra.

Dioptrum. Διοπτρον. The lapis specularis. See *Lapis specularis.*

Dio'robum. (From δια, and οροβος, a vetch.) A Greek medicine, in the composition of which there were vetches.

Diorosis. See *Diorrosis.*

Diorrhe'sis. Διορρησις. The same as *Diorrhosis.*

Diorrho'sis. (Διορρωσις, διορωσις; from δια, and ορρος, the serum.) The conversion of any part into serum.

Diortho'sis. (From διορθοω, to correct.) The reduction of a fracture or dislocation.

DIOSCO'REA. (*a*, *æ*. f.; named in honour of Dioscorides.) The name of a genus of plants in the Linnæan system. Class, *Diœcia;* Order, *Hexandria.*

Dioscorea alata. The name of the plant which affords the esculent root, called the yam; which, however, is obtained from three species: the *alata*, *bulbifera*, and *sativa*. They grow spontaneously in both Indies, and their roots are promiscuously eaten as the potato is with us. There is great variety in the colour, size, and shape of yams; some are generally blue or brown, round or oblong, and weigh from one pound to two. They are esteemed when dressed as being nutritious and easy of digestion, and are preferred to wheaten bread. Their taste is somewhat like the potato, but more luscious. The negroes, whose common food is yams, boil and mash them. They are also ground, and made into bread and puddings.

When they are to be kept for some time, they are exposed upon the ground to the sun, as we do onions, and when sufficiently withered, they are put into dry sand in casks, and placed in a dry garret, where they remain often for many seasons without being any the worse for keeping.

Dioscorea bulbifera. See *Dioscorea alata.*

Dioscorea sativa. See *Dioscorea alata.*

Dioscu'ri. (*i. e.* Διος Κουροι, the sons of Jupiter, or Castor and Pollux: so named from their twin-like equality in shape and position.) The parotid glands.

DIO'SMA. (*a*, *æ*. f.; from Δις, Διος, Jove, and οσμη, a smell: on account of its divine smell.) The smell of some of the species, however, is so far from divine, that a division called *Barosma* has been formed to include them. A genus of plants in the Class, *Pentandria;* Order, *Monogynia.*

Diosma crenata. *Barosma crenata.* This plant grows at the Cape of Good Hope, and is called by the natives *Buchu.* The leaves are diuretic and anodyne, and have been found useful in cases of chronic inflammation of the kidney and urinary bladder, and in irritable and spasmodic states of the latter organ. Both water and alkohol extract the medicinal virtues of the buchu leaves, which seem to reside in a volatile oil and extractive matter. The best way of administering it is in infusion of one ounce of the leaves to a pint of water, half of which should be taken at divided doses in the twenty-four hours. The London Pharmacopœia orders an infusion, and the Dublin an infusion and a tincture.

Dio'smine. A bitter matter detected by Mr. Brandes in the leaves of the *Diosma crenata*, and supposed to be their active principle.

DIO'SPYROS. (*os*, *i*. f.; from Δις, Διος, Jupiter, and either πυρ, a flame, or fire, or else πυρος, wheat: the application of either is unintelligible.) The name of a genus of plants in the Linnæan system. Class, *Polygamia;* Order, *Diœcia.*

Diospyros ebe'num. The plant which yields the black ebony. See *Ebony.*

Diospyros lotus. The Indian date plum. The fruit, when ripe, has an agreeable taste, and is very nutritious; when unripe, it is very astringent.

Dio'ta. (From δις, double, and ους, gen. ωτος, the ear.) 1. A drinking cup with two ears.

2. A circulatory vessel with two ears, used by the old chemists.

3. A wooden cup lined with resin and aromatics, to give a flavour to what is drunk out of it.

Dioxelæ'um. (From δια, οξυς, acid, and ελαιον, oil.) A cataplasm which contained oil and vinegar, used by the Greeks.

Dio'xus. (From δια, and οξυς, acid.) A collyrium composed chiefly of vinegar.

DIPE'TALOUS. (*Dipetalus;* from δις, and πεταλον, a petal.) Two-petalled.

Di'phryges. Διφρυγες. Oxide of copper.

DIPHTHERI'TIS. (From διφθερα, a skin or membrane.) *Angina pellicularis.* This name has been given by M. Bretonneau to a peculiar variety of pharyngitis, accompanied by the formation of a false membrane which was epidemic at Tours in 1818 and the three succeeding years. There are two objections to the term *diphtheritis:* the one is that it already exists as a Greek word, with a very different signification, namely, that of a *person clad in a hide;* the other is that, according to the analogy of other medical terms of similar construction, it would signify not inflammation

accompanied with the formation of a membrane, but inflammation of the membrane itself.

DIPHY'LLOUS. (*Diphyllus, i.* m.; from δις, double, and φυλλον, a leaf.) Two-leaved; applied to the perianth of flowers, when there are two calyces; as in *Papaver rhœas.*

Diplasia'smus. (From διπλοω, to double.) The re-exacerbation of a disease.

DI'PLOE. (*e, es.* f.; from διπλοω, to double.) The cancellated substance between the two tables of the skull.

DIPLO'MA. (*a, atis.* n.; διπλωμα; from διπλοω, to double: so called, because usually written on parchment and folded up.) 1. A writing which confers some privilege, and especially as relates to medical affairs, a licence to practise physic or surgery.

2. A double vessel: to boil *in diplomate*, is to boil in what is called a water bath. See *Balneum.*

DIPLO'PIA. (*a, æ.* f.; from διπλοος, double, and οπτομαι, to see.) *Visus duplicatus.* A disease in which the person sees an object double. The causes of this affection are very imperfectly known. When idiopathic, it is produced by some structural disease or by debility. It is mostly symptomatic of indigestion, intoxication, worms, hysteria, &c.

Dippel's animal oil. See *Oleum animale Dippelii.*

Dipsacon. See *Dipsacus.*

Dipsacum. See *Dipsacus.*

DI'PSACUS. (*us, i.* m.; from διψα, thirst: so called from the concave shape of its leaves, which hold water, by which the thirst of the traveller may be relieved.)

1. The name of a genus of plants in the Linnæan system. Class *Syngenesia;* Order, *Polygamia.* The teasel.

2. A diabetes has been so called, from the continual thirst attending it,

Di'psas. (From διψα, thirst.) The Greek name of a serpent, the bite of which was mortal, and caused a parching thirst.

Dipse'ticus. (From διψα, thirst.) Productive of thirst.

Dipsoma'nia. (From διψα, thirst, and μανια, madness.) A name that has been given to a disease which consists in an unconquerable desire for spirituous drinks. This is a strange sort of disease, and seems to be nothing more than the well-known vice of ebriety.

Dipso'sis. (From διψα, thirst.) Morbid thirst. See *Polydipsia.*

DI'PTERA. (From δις, twice, and πτερον, a wing.) An order of insects characterised by having two wings.

DIPTEROCA'RPEA. A natural family of plants, the type of which is the genus *Dipterocarpus.*

Dipyri'tes. (From δις, twice, and πυρ, fire.) *Dipyros.* An epithet given by Hippocrates to bread twice baked, and which he recommended in dropsies.

DIRE'CTOR. (*or, oris.* m.; from *dirigo,* to direct.) 1. A grooved instrument for guiding the knife in some surgical operations.

2. The name of a muscle.

Director penis. See *Erector penis.*

Diringa. See *Acorus calamus.*

Disciform. (*Disciformis;* from *discus,* a quoit, and *forma,* likeness.) Resembling a disk, or quoit, in shape. Applied, in *Natural History, Anatomy,* and *Botany,* to various objects, from their shape.

DI'SCOID. (*Discoides;* from δισκος, a quoit, and ειδος, resemblance.) Synonymous with *disciform.*

Discreto'rium. The diaphragm has been so called, because it separates the thorax from the abdomen.

Discri'men. A kind of bandage formerly used in the operation of bleeding from the frontal vein. It seems to have been so called, because, in passing longitudinally in the direction of the sagittal suture, it *divided* the head into two equal parts.

DI'SCUS. (*us, i.* m.; from δισκος, a quoit or disk, and from its flat and round appearance like the circumference of the sun.) The disk, or central part of a leaf, and of a compound flower. In the common daisy, the white leaflets of the flower surround the disk.

The disk of a leaf is the whole flat surface within the margin, both above and below.

DISCU'TIENT. (*Discutiens;* from *discutio,* to shake to pieces.) *Discusorius; Diachyticus.* Applied to those substances which possess a power of repelling or resolving tumours.

DISEASE. *Morbus.* Any deviation from the natural and healthy actions of the whole system, or any particular organ.

Diseases may be,

Local. Affecting some particular part.

Constitutional. Affecting the whole system.

Specific. Marked by some disordered vital action, not common to diseases in general, but peculiar to the individual disease.

Idiopathic. Primary, and not dependent on any other disease.

Symptomatic, or *Sympathetic.* Dependent on and accompanying some other disease.

Periodical. Recurring at fixed periods.

Acute. Severe and of short continuance.

Chronic. Of long continuance.

Sporadic. Arising from adventitious causes affecting the individual.

Epidemic. Generally diffused among a population, and arising either from contagion, or some atmospheric or other cause, the influence of which is extensively felt.

Endemic. Peculiar to, or especially prevalent in, a certain region.

Intercurrent. Sporadic, but occurring during the prevalence of epidemic or endemic diseases.

Contagious, or *Infectious.* Communicable from one individual to another by personal contact, or by effluvia diffused through the air.

Congenital. Born with the individual.

Hereditary. Descending from parents to their offspring.

Acquired. Neither hereditary nor congenital, but dependent on some cause operating after birth.

Sthenic. Attended with strong activity of the vital powers.

Asthenic. Attended with sinking of the vital powers.

There are many other distinctions of diseases of more limited application: thus, diseases are *febrile*, attended with fever; *exanthematous*, consisting in an eruptive fever; *intermittent*, marked by a regular cessation and recurrence of the symptoms; *remittent*, marked by a regular diminution and exacerbation of the symptoms; *mild*, unaccompanied with any formidable symptoms; *malignant*, severely depressing the vital powers, dangerous, and intractable; the term malignant has no very definite signification, but is applied chiefly to febrile diseases of the asthenic kind, and to local affections of a cancerous nature; *infantile*, most frequent in childhood; *puerperal*, incident to women soon after parturition.

Diseases of artisans. Besides the common causes of disease to which all mankind are more or less subject, there are some connected with particular occupations and modes of life, the investigation of which is alike important in a practical and philosophical point of view. These causes of disease may, in a general way, be referred — 1. To confinement and bad ventilation. 2. To the effects of temperature and moisture. 3. To sedentary habits. 4. To over-fatigue. 5. To excessive exertion of some parts of the body, and inactivity of others. 6. To constrained and unnatural postures. 7. To the noxious influence of animal, vegetable, or mineral particles inhaled with the air, or otherwise applied to the body.

1. *Confinement and bad ventilation.* — The effects of these evils are most conspicuous in children, who suffer more severely from them than adults. In our manufacturing towns, where crowds of children are confined together in a close and impure atmosphere, it is found that the growth of the frame and the expansion of the mind are alike impeded, and the scrofulous diathesis induced; hence ensue deformity, defective development of the sexual system at puberty, and the various modifications of tubercular disease.

2. *Temperature and moisture.* — Constant exposure to either too high or too low a temperature is well known to debilitate the frame and impair the general health; and this effect is much increased, in either instance, by excessive moisture. It does not appear, however, that any ordinary exposure to these causes is productive of any particular diseases; and it is only when the body is subjected to sudden transitions from one to the other, that serious consequences ensue. These arise, chiefly, from the sudden obstruction of cutaneous perspiration, and rapid changes in the relative state of the circulation on the surface and in deep-seated organs. Brass and iron founders, glass-blowers, bakers, brewers, and various other artisans, are continually subjected to an injuriously warm atmosphere; and an imprudent transition to the open air, and still more an exposure to cold draughts, frequently gives rise to catarrhal and rheumatic affections, asthma, and visceral inflammations.

3. *Sedentary habits.* — The general effect of want of exercise is to diminish the tone of the muscles, to render the functions of the abdominal viscera torpid, and to induce languor and debility of the whole system, with a predominance of the lymphatic temperament: hence, dyspepsia, constipation, hæmorrhoids, obesity, and, in females, leucorrhœa, and derangements of the menstrual function. The sitting posture, also, when too long continued, is evidently inimical to the free performance of various important functions. Literary persons, clerks, weavers, sempstresses, and many others, are liable to suffer in their health from deficient exercise and the sitting posture. There are some occupations which combine an unnatural and constrained position of the body with sedentary habits: these cases will be presently noticed.

4. *Over-fatigue.* — An undue expenditure of muscular power doubtless tends to shorten the term of life, by gradually exhausting the vital energy; its effects, however, are seldom very appreciable, unless over-exertion be combined with intemperance, or habits otherwise unhealthy. Coal-heavers, porters, and various others are liable to suffer from over-exertion of the muscles.

5. *Excessive exertion of some parts of the body, and inactivity of others.* — The bad consequences of excessive exertion of particular organs is exemplified in diseases of the heart, lungs, and their great vessels, which are produced by over-exertion of the respiratory apparatus, in those who play on wind instruments, and in singers. Amaurosis, cataract, and other diseases of the eyes, are common among those whose occupation obliges them to exercise their vision for a length of time on very minute objects, or to expose their eyes to a glare of light; as watchmakers, engravers, those engaged about large furnaces, &c. To the combined influence of posture and local exertion, may be attributed the frequency of hernia at the groin in cavalry soldiers who ride with very long stirrups. The effect of inactivity on particular parts of the body seldom amounts to absolute disease; but muscular debility is the general result of insufficient exercise of any of the limbs: we have a familiar example in postilions, and others who are constantly riding, and who are frequently so weak in the legs, that, even when otherwise robust, they are unable to walk any distance without great fatigue.

6. *Constrained and unnatural postures.* — The evils arising from this cause are experienced by many classes of artisans. In tailors, shoemakers, button burnishers, and others, the bent position of the body weakens the spine, and interferes with the functions of the thoracic and abdominal viscera, while the strong pressure which is frequently made on the epigastrium is particularly injurious to the stomach: hence curvature of the spine, dyspepsia, gastrodynia, constipation, hæmorrhoids, asthma, and pulmonary diseases. Clerks in offices, who acquire the habit of leaning too much over the desk, and pressing the epigastrium against its edge, are subject to the same evils in a minor degree.

7. *The action of animal, vegetable, or mineral particles, inhaled with the air, or otherwise applied to the body.* — The principal morbific agents of this kind are mercury, lead, copper, arsenic, antimony, zinc, tin, the mineral acids, animal

putrefaction, vegetable putrefaction, soot, and fine powders of various kinds, which produce mechanical irritation.

Mercury. — Those who work in quicksilver mines, glass platers, and gilders of silver, brass, and copper, are the persons chiefly liable to suffer from the fumes of mercury. Many of the symptoms thus induced, are similar to those which result from the long continued use, or rather abuse, of mercury as a medicine; protracted salivation, extreme sensibility to cold, great nervous irritability, ulcerations of the mouth and fauces, pains resembling rheumatism, cachectic eruptions, and emaciation. There is one affection, however, common among workmen who are exposed to the fumes of mercury, and which is seldom if ever observed as a consequence of its medicinal use. This is a peculiar form of paralysis, which has been named the *mercurial palsy*. It sometimes comes on suddenly, but more frequently by slow degrees. The first symptom is usually a want of command over the muscles of the arms, which are affected also with slight convulsive twitchings; these symptoms increase to a continual tremor, which now extends to the lower limbs and to the whole body; the patient performs with difficulty any function in which the muscles are concerned, even that of mastication; the general health becomes greatly disordered; the patient is restless, depressed, and subject to headach, delirium, and disorders of the bowels. After a while the general health often improves somewhat, while the paralytic state of the muscles continues, and the patient lives many years in a helpless and miserable state. The disease under consideration generally arises from long continued exposure to mercurial vapours; but, in some instances, an exposure of only a few hours has been known to produce it. The treatment of this affection is little understood. An immediate removal from the source of the mischief is of course indispensable; and, in recent cases, is sometimes alone sufficient for the restoration of health. Persons who have once suffered from the mercurial palsy, are very liable to a relapse from the slightest exposure to the original cause.

Lead. — Those who suffer chiefly from the poison of lead, are the workmen in lead mines, those engaged in separating it from its ores, plumbers, painters, glaziers, colour-grinders, and type-founders. The poisonous effects of this metal constitute the disease called *Colica pictonum*, already treated of in the article *Colica*.

Copper. — It does not appear that artificers in copper are liable to suffer much from its poisonous effects. They are sometimes affected with a form of colic resembling the lead colic; but such cases are not frequent. Copper-filers are very liable to pulmonary diseases; but these are not referrible to the deleterious properties of the copper, considered as a metallic poison, but to the mechanical irritation of its finer particles inhaled into the lungs. Brass-founders also are very subject to asthma; but this may arise partly from the cause just referred to, and partly from the fumes of the zinc with which the copper is amalgamated.

Arsenic, antimony, zinc, and *tin.* — Arsenic, though of frequent use in the arts, is employed in small quantities, and for the most part in the metallic state: as it possesses no deleterious properties till oxidated, no particular bad consequences are known to result to the workmen. Antimony also is used, but in minute quantities, and seems to produce no bad effect. Those who are exposed to the fumes of zinc, do not usually suffer materially: it would seem, however, that they are not entirely harmless, as a case is given in Rust's Magazine of an apothecary's assistant, who, having inhaled them in large quantity, was seized with very alarming symptoms. (See *Poisons.*) Tin, in the metallic state, is largely used in the arts, but is then inert: the oxide and the muriates, which are poisonous, are employed by colour-makers and dyers, but not under circumstances in which any bad effects are likely to ensue.

Mineral acids. — The manufacturers of the mineral acids, and persons of other occupations who are exposed to their fumes, are liable, without due caution, to be asphyxiated, and to become subject to pulmonary diseases, from the irritating effects of the acrid vapours on the air-passages: these evils, however, are very easily avoided, by conducting such operations in a sufficiently free atmosphere, and other obvious precautions.

Animal putrefaction. — The influence of putrid animal effluvia in producing disease, was formerly much overrated, and they were regarded as a frequent cause of pestilential fevers. It is now well ascertained, that they have no particular tendency to engender fevers, and that serious effects of any kind arise from them only when they are in a concentrated state. The persons who suffer most from concentrated animal effluvia, are nightmen. From observations made at Paris, among the persons employed in emptying the extensive *fosses d'aisance* of that city, it appears that they are subject to several morbid affections caused by the evolution of different gases. Vapours consisting chiefly of ammoniacal gas are vulgarly called *La mitte*. They produce smarting in the eyes, accompanied with the sensation of a pungent and disagreeable smell; these are followed by pain, commencing in the orbit, and extending to the forehead, with discharge from the eyes, and sometimes blindness, which continues for several days. These symptoms are relieved by a flow of tears, and no treatment is required but shading the eyes from the light, and exposing them to the open air; in severer cases, cold water is applied, and the patient is kept in a dark room. The term *Le plomb* is applied to two kinds of effluvia; one consisting of sulphuretted hydrogen and hydrosulphuretted ammoniacal gases, which causes a convulsive affection; the other consisting of azotic gas, which produces asphyxia: the former is destroyed by the chlorides of lime and soda; the latter is rendered innocuous by a free circulation of fresh air.

The putrid effluvia evolved in dissecting-rooms, produces no other bad effects than indigestion, with depression of spirits, and frequently diarrhœa: these symptoms are only experienced

by those unaccustomed to the air of the dissecting-room, and they soon wear off.

The insertion of putrid matter into a wound, as often happens to anatomists, may be followed by very serious consequences: these are familiar even to the young student, and need not be enlarged upon here.

Vegetable putrefaction. — The noxious effects of the miasma arising from decomposing vegetable matter, are well known. The only persons who are particularly exposed to this cause by the nature of their occupation, are steepers of hemp, who are said to be very liable to intermittent fever.

Soot. — There is a disease of the scrotum, which, from its greater frequency among chimney-sweepers than any other class of persons, has been denominated *chimney-sweepers' cancer*. It was for some time supposed to arise exclusively from the application of soot to the part; but this is now generally disbelieved, because the disease has been observed to occur in persons who have not in any manner come in contact with soot. It commences as a wart-like excrescence on the lower part of the scrotum, which turns into a superficial, ragged, ill-looking, and painful sore, with hard and prominent edges. After a while it consumes the textures covering the testicle, and seizes on that organ, which becomes enlarged and indurated. It creeps along the spermatic cord into the abdomen, affecting the inguinal glands in its course; and finally attacks some of the viscera, and destroys the patient. The disease is not common. The only remedy is early extirpation of the part affected. The real cause of this disease is not understood.

Substances which act by the mechanical irritation of their particles. — A great variety of artisans suffer more or less from this cause; as needle-pointers, grinders of all kinds, filers of brass, iron, and other metals, stone-cutters, pearl and horn button makers, turners, sawyers, millers, starch-makers, flax-dressers, wool-carders, feather-dressers, weavers, and many others. Of these, needle-pointers and grinders suffer so frequently, that the chronic bronchitis which is the chief form of disease induced by all the occupations above enumerated, is vulgarly known by the names of *pointer's cough* and *grinder's rot*. The form of bronchial affection varies somewhat in different classes of artisans: in needle-pointers, grinders, and stone-cutters, it usually is of a purely inflammatory character; in horn and pearl button makers, it is frequently more or less of an asthmatic character.

The artisans mentioned above, as subject to pulmonary diseases from the effect of irritating powders, are also liable to ophthalmia from the same cause. Several contrivances have been proposed in this country and in France, for protecting the workmen from the effect of irritating powders. That of Mr. Abrahams, of Sheffield, is particularly valuable.

DISINFECTION. The process of dispelling and neutralising contagious miasmata. This is done by the copious admission of fresh air, and the use of certain chemical substances.

Disk. See *Discus.*

DISLOCA'TION. (*Dislocatio, onis.* f.) Luxation. The displacement of the articular extremity of a bone. When dislocation takes place as the result of violence, it is called *primitive*, or *accidental;* when it happens as a consequence of disease which has destroyed the textures forming the joint, it is called *consecutive*, or *spontaneous.*

DISPE'NSARY. (*Dispensarium, ii.* n.; from *dispendo*, to distribute.) 1. The shop or place in which medicines are prepared.

2. An institution, in which the poor are supplied with advice and medicines.

DISPE'NSATORY. (*Dispensatorium, ii.* n.; from *dispendo*, to distribute.) *Antidotarium.* A book which treats of the composition of medicines.

DISPE'RMUS. (From δις, twice, and σπερμα, a seed.) Dispermous, or two-seeded.

DISSE'CTION. (*Dissectio, onis.* f.; from *disseco*, to cut asunder.) The cutting to pieces of any part of an animal, or vegetable, for the purpose of examining its structure. See *Anatomy.*

DISSE'CTUS. Dissected. A term, applied by botanists synonymously with *incised* and *laciniated*, to leaves which are cut, as it were, into numerous irregular portions. See *Leaf.*

DISSEPIME'NTUM. (*um, i.* n.; from *dissepio*, to separate.) A partition. Applied by botanists to partitions which separate the cells of a capsule. See *Capsula.*

Disse'ptum. (From *dissepio*, to separate.) The diaphragm, or muscle which divides the cavity of the thorax from that of the abdomen.

DISSI'LIENS. (From *dissilio*, to burst.) Dissilient, or bursting suddenly asunder. Applied, in *Botany*, to capsules, &c.

Disso'lvent. (*Dissolvens*, from *dissolvo*, to loosen.) 1. Applied to a medicine which dissolves morbid concretions.

2. In *Chemistry*, a menstruum.

Dissolution. (*Dissolutio, onis.* f.; from *dissolvo*, to loosen.) 1. Death.

2. The humoral pathologists applied this term to a diminution of consistence in the blood.

Dissolu'tus. (From *dissolvo*, to loosen.) Loose. Dysentery has been called *dissolutus morbus* by some writers.

DI'STANS. Distant: applied to petals, stems, &c., which are directed away from each other.

Distempera'ntia. Synonymous with *Intemperies.*

Distended, See *Ventricosus.*

DISTE'NTIO. (From *distendo*, to stretch out.) Distension or dilatation.

Distentio nervorum. A spasm or convulsion. — *Celsus.*

Disti'chia. See *Distichiasis.*

DISTICHI'ASIS. (*is, is.* f.; from δις, double, and στιχος, a row.) *Distichiasis; Distichia.* A disease of the eyelid, in which there is a double row of eyelashes, one growing in the natural direction, and the other turned inwards, irritating the globe of the eye.

DI'STICHUS. (Same etymon.) Two-ranked. Applied to stems, leaves, &c., when they spread in two horizontal directions; as the

branches of the *Pinus picea*, or silver fir, and the leaves of the *Taxus baccata*, or yew.

Distillatio per descensum. See *Descensus.*

DISTILLA'TION. (*Distillatio, onis.* f.; from *distillo*, to drop little by little.) *Catastagmos.* 1. A chemical process, which consists in separating the volatile principles of bodies by subjecting them to heat in one vessel, and condensing the volatile part in another. Distillatory vessels are either alembics or retorts; the former consist of an inferior vessel called a cucurbit, designed to contain the matter to be examined, and having an upper part fixed to it, called the capital, or head. In this last, the vapours are condensed by the contact of the surrounding air, or, in other cases, by the assistance of cold water surrounding the head, and contained in a vessel called the refrigeratory. From the lower part of the capital proceeds a tube, called the nose, beak, or spout, through which the vapours, after condensation, are, by a proper figure of the capital, made to flow into a vessel called the receiver, which is usually spherical. These receivers have different names, according to their figure, being called mattresses, balloons, &c. Retorts are a kind of bottle of glass, pottery, or metal, the bottom being spherical, and the upper part gradually diminishing into a neck, which is turned on one side.

2. A defluxion of rheum; a catarrh.

DISTILLATION, DESTRUCTIVE. The decomposition of bodies by a strong heat in one vessel, and the collection of the products in another.

DISTILLATORIUS. Appertaining to distillation. — *Vasa distillatoria*, vessels used in distilling.

Distilled vinegar. See *Acetum.*

Distilled water. See *Water.*

DISTINCT. *Distinctus.* Applied, in *Botany*, to parts of plants which are free, not adherent to other parts.

DI'STOMA. (*a, atis.* n.; from δις, and στομα, a mouth.) Two-mouthed. The name of a genus of worms in Rudolphi's classification.

DISTOMA HEPATICUM. *Fasciola humana* of Gmelin and others. The liver fluke. A small flat flounder-like worm, about the size of the nail of the little finger; found very frequently in the bile ducts of sheep and oxen. They have been found by Pallas, Chabert, and Bucholz, in the human subject.

DISTORTION. (*Distortio*; from *distorqueo*, to wrest aside.) Properly, the wresting of any part from its natural position by violence; it is generally used, however, to signify an unnatural direction of parts, from whatever cause, as a curved spine, a wry mouth, squinting, &c.

Distortor oris. See *Zygomaticus minor.*

DISTRA'CTION. Chemists have used this term to signify the separation of the elements of bodies, when effected with difficulty.

DI'STRIX. (*ix, icis.* f; from δις, double, and θριξ, the hair.) A disease of the hair, in which it splits and divides at the end.

DISTYLUS. (From δις, twice, and στυλος, a style.) Distyle. Having two styles.

Dittander. See *Lepidium sativum.*

Dittany. See *Dictamnus.*

Dittany, bastard. See *Dictamnus albus.*

Dittany of Crete. See *Origanum.*

Dittany, white. See *Dictamnus albus.*

DIURE'SIS. (*is, is.* f. Διουρησις; from διουρεω, to void the urine.) The excretion of urine. It is frequently applied to a more than usually abundant excretion of urine, whether from disease or the operation of medicine.

DIURE'TIC. (Διουρητικος. *Diureticus*; from διουρησις, a discharge of urine.) Applied to any thing which, when taken internally, augments the flow of urine from the kidneys. It is obvious that such an effect will be produced by any substance capable of stimulating the secreting vessels of the kidneys. All the saline diuretics seem to act in this manner. They are received into the circulation; and passing off with the urine stimulate the vessels, and increase the quantity secreted.

There are other diuretics, the effect of which appears not to arise from direct application, but from an action excited in the stomach, and propagated by nervous communication to the secreting urinary vessels.

The diuretic operation of squill, and other vegetables, appears to be of this kind.

There is still, perhaps, another mode in which certain substances produce a diuretic effect; that is, by promoting absorption. When a large quantity of watery fluid is introduced into the circulating mass, it stimulates the secreting vessels of the kidneys, and is carried off by urine. If, therefore, absorption be promoted, and if a portion of serous fluid, perhaps previously effused, be taken up, the quantity of fluid secreted by the kidneys will be increased. In this way digitalis seems to act: its diuretic effect, it has been said, is greater when exhibited in dropsy than it is in health.

On the same principle (the effect arising from stimulating the absorbent system), may probably be explained the utility of mercury in assisting several diuretics.

The action of these remedies is promoted by drinking freely of mild diluents. It is also influenced by the state of the surface of the body. If external heat be applied, diuresis is frequently prevented, and diaphoresis produced. Hence the doses of them should be given in the course of the day, and the patient, if possible, be kept out of bed.

The direct effects of diuretics are sufficiently evident. They discharge the watery part of the blood; and, by that discharge, they indirectly promote absorption over the whole system.

Dropsy is the disease in which they are principally employed; and when they can be brought to act, the disease is removed with less injury to the patient than it can be by exciting any other evacuation. Their success is very precarious, the most powerful often failing; and, as the disease is so frequently connected with organic affection, even the removal of the effused fluid, when it takes place, only palliates, without effecting a cure.

Diuretics have been likewise occasionally used in calculous affections, in gonorrhœa, and with a view of diminishing plethora, or checking profuse perspiration.

Murray, in his Elements of Materia Medica, classes the super-tartrate of potash, or cream of tartar, and nitrate of potash, or nitre, the muriate of ammonia, or crude sal-ammoniac, potash, and the acetate of potash, or kali acetatum, among the *saline* diuretics; and selects the following from the *vegetable* kingdom: — scilla maritima, digitalis purpurea, nicotiana tabacum, solanum dulcamara, lactuca virosa, colchicum autumnale, gratiola officinalis, spartium scoparium, juniperis communis, copaifera officinalis, pinus balsamea, and pinus larix; and the blistering fly from the *animal* kingdom.

In speaking of particular diuretics, Dr. Cullen says, the diuretic vegetables mentioned by writers are of very little power, and are employed with very little success. Of the umbellatæ, the medicinal powder resides especially in their seeds; but he never found any of them very efficacious. The semen dauci sylvestris has been commended as a diuretic; but its powers as such are not very remarkable. In like manner, some of the *plantæ stellatæ* have been commended as diuretics; but none of them deserve our notice, except the *rubia tinctorum*, the root of which passes so much by the kidneys as to give its colour to the urine. Hence it may fairly be supposed to stimulate the secretories; but Dr. Cullen found its diuretic powers did not always appear, and never to any considerable degree; and as, in brute animals, it has always appeared hurtful to the system, he does not think it fit to be employed to any extent in human diseases. The bardana, lithospermum, ononis, asparagus, inula campana, are all substances which seem to pass, in some measure, by the kidneys; but their diuretic powers are hardly worth notice.

The principal articles included by Dr. Cullen, in his catalogue of diuretics, are dulcamara, digitalis, scilla; some of the alliaceæ and siliquosæ; the balsams and resins; cantharides, and the diuretic salts.

Divapora'tio. Evaporation.

DIVARICATION. The separation of two things previously united. Applied in Anatomy, Botany, &c.

DIVARICA'TUS. Straddling; standing wide from each other.

Divellent affinity. See *Affinity, quiescent.*

DIVE'RGENS. Diverging. Applied, in *Botany*, to branches which spread wide from the stem, almost horizontally.

Diversiflo'rus. (From *diversus*, different, and *flos*, a flower.) A term applied to umbels which have regular florets in the centre and irregular towards the circumference.

Diverso'rium. (An inn or lodging; from *diversor*, to resort to.) A whimsical name given to the receptaculum chyli.

DIVERTI'CULUM. (*um, i.* n.; a by-way.) A term generally applied by anatomists to any hollow appendage attached to and communicating with the intestinal tube.

Diverticulum Nuckii. The opening on each side through which the round ligament of the uterus passes. Nuck asserted that it remained open a long time after birth.

Dividing bandage. *Fascia dividens.* A bandage used to keep parts separate from each other, and prevent adhesion, as in cases of burns.

Divulsio urinæ. This term has been used to signify that state of the urine in which a nebulous deposit is diffused through it.

Dixon's antibilious pills. These are composed of aloes, scammony, rhubarb, and emetic tartar.

DOCIMA'SIA. (From δοκιμαζω, to examine.) The art of examining fossils, in order to discover what metals, &c. they contain.

DOCIMA'STIC. Appertaining to the *Docimasia.*

Dock. See *Rumex.*

Dock-cresses. See *Lapsana.*

Dock, sour. See *Rumex acetosa.*

Dock, water. See *Rumex hydrolapathum.*

Docna Sara. A place among the Carpathian mountains, where there is a mineral spring containing sulphate, carbonate, and muriate of soda, silica, and iron.

Dodder. See *Cuscuta.*

DODECADA'CTYLUS. (Δωδεκα δακτυλος; from δωδεκα, twelve, and δακτυλος, a finger: so named because its length is about the breadth of twelve fingers.) A Greek epithet of the duodenum. It must be observed, that, at the time this name was given, anatomy consisted in the dissection of brutes; and the length was therefore probably adjudged from the gut of some animal, and not of man.

DODECA'NDRIA. (*a, æ.* f.; from δωδεκα, twelve, and ανηρ, a man.) The name of a class of plants in the sexual system, embracing those with hermaphrodite flowers, and twelve stamina.

Dodecapha'rmacum. (From δωδεκα, twelve, and φαρμακον, a medicine.) A name formerly given to any ointment consisting of twelve ingredients, as the *unguentum apostolorum.*

Dodeca'theon. (From δωδεκα, twelve, and θεος, a god.) An antidote consisting of twelve simples: so named after the twelve principal deities of the Greeks.

Do'dra. A drink used by the ancients, which was made of nine ingredients.

DO'DRANS. (*s, tis.* m.) A measure called a palm, or the space between the end of the thumb and the end of the little finger, when fully extended: about nine inches. This is nearly the palm of foreign nations, and is something more than the quarter of an English yard.

Dog's-bane, Syrian. See *Asclepias Syriaca.*

Dog-days. See *Dies caniculares.*

Dog's-grass. See *Triticum repens.*

Dog's-mercury. See *Mercurialis.*

Dog-rose. See *Rosa canina.*

Dog-stones. See *Orchis mascula.*

DOGMATISTS. (*Dogmatici*; δογματικοι; from δογμα, a doctrine.) A set of ancient physicians, of whom Hippocrates is presumed to be the first, who supposed principles from which they drew conclusions, and applied those principles and conclusions to particular diseases: hence they were also called *logici*, logicians, and were distinguished from the *empyrici* and *methodici.*

DOLABRIFO'RMIS. (From *dolabra*, a hatchet, and *forma*, resemblance.) Hatchet-shaped. Applied to a leaf, which is compressed,

with a very prominent dilated keel, and a cylindrical base; as in *Mesembryanthemum dolabriforme*.

Dolet. An alchemical name of peroxide of iron.

DO'LICHOS. (*os*, *i.* m.; from δολιχος, long: so called from the length of its pods.) 1. The name of a genus of plants in the Linnæan system. Class, *Diadelphia*; Order, *Decandria*.

2. The pharmacopœial name of the cowhage. See *Dolichos pruriens*.

Dolichos pruriens. The systematic name of the *Dolichos*, or cowhage.

Dolichos — volubilis, leguminibus racemosis, valvulis subcarinatis hirtis, pedunculis ternis, of Linnæus. The pods of this plant are covered with sharp hairs, which are employed medicinally in form of electuary, as an anthelmintic. The manner in which these hairy spicula act, seems to be purely mechanical: for neither the tincture, nor the decoction, possess the least anthelmintic power.

Dolichos soja. The systematic name of the plant which affords the soy. It is much cultivated in Japan, where various culinary articles are prepared from it; but the two principal are a sort of butter, termed *miso*, and a pickle called *sooju*.

Several species of dolichos are used as food in different countries; as *D. ensiformis* in Jamaica, *D. tuberosus* in Martinique, *D. bulbosus* and *D. lignosus* in the East Indies.

DO'LOR. (*or*, *oris.* f.) Pain.

Dolo'res. Pains. The name given by some nosologists to a class of diseases of which pain is a prominent symptom.

Dolorosi morbi Linnæus thus designates the class of diseases called *dolores* by other nosologists.

Dolphin. See *Delphinus*.

Dolphin, acid of. See *Delphinic acid*.

Domestic medicine. Medicine as practised by unprofessional persons in their own families. Many treatises have been written on domestic medicine. In as far as these consist of general precepts for the preservation of health, and guarding against the causes of disease, they are highly useful; but when they attempt to teach those who are unacquainted with the structure and functions of the animal body, to recognise and treat its diseases, they are highly pernicious, and are, in effect, often written with sinister intentions by persons who are little better than quacks.

Dominarum aqua. An emmenagogue medicine prescribed by Mynsicht.

Donax. A Latin word for a reed, and also for a species of shellfish.

Doradilla. See *Asplenium ceterach*.

DORE'MA. (Δωρημα, a gift.) A genus of plants. Class, *Pentandria*; Order, *Digynia*.

Dorema ammoni'acum. This is now ascertained to be the plant which yields ammoniacum, which, till lately, was supposed to be the produce of the *Heracleum gummiferum*. The true plant, which is a native of Persia, has been brought home by Colonel Wright, and described by Mr. Don. It is a robust perennial plant, upwards of seven feet high, and about four inches in circumference at the lower part of the stem. It grows wild between Yerdekaust and Kumesha, in the province of Irauk. When the plant has attained perfection, it is perforated by swarms of beetles, and through these punctures the ammoniacum exudes. It is also procured from incisions, and allowed to drop on the ground, where it hardens by exposure to the air and sun. The best ammoniacum is brought from the East Indies; that from Barbary is contaminated with red earth.

Ammoniacum is of a yellowish colour externally, and white within; it has a peculiar faint and not unpleasant smell, and a sweetish bitter nauseous taste. It is brittle when cold, but becomes ductile by the heat of the hand. It is partially soluble in water, alkohol, ether, vinegar, and alkaline solutions. When triturated with water, it forms a milky fluid. According to Braconnot, ammoniacum consists of resin 70·0, gum 18·4, glutinous matter 4·4, water 6·0; loss 1·2.

Ammoniacum agrees generally in its medicinal properties with the rest of the fœtid gums. Its chief use is as a stimulating expectorant, in cases of chronic bronchitis, asthma, &c. Its antispasmodic action is very similar to that of assafœtida, but less powerful. It is used externally as a discutient. The dose of ammoniacum, in substance, is from ten to thirty grains. Its officinal preparations are, *Mistura ammoniaci*, L. D.; *Emplastrum ammoniaci*, L.; *Emplastrum ammoniaci cum hydrargyro*, L.; *Emplastrum gummosum*, E.; *Pilulæ scillæ compositæ*, L. E.

Do'ridis humor. Sea-water: so named from *Doris*, daughter of Oceanus and Thetis.

DORO'NICUM. (*um*, *i.* n.; from *dorongi*, Arab.) A genus of plants in the Linnæan system. Class, *Syngenesia*; Order, *Polygamia superflua*. Leopard's bane.

Doronicum germanicum. See *Arnica*.

Doronicum romanum. The pharmacopœial name of the Roman leopard's bane. See *Doronicum pardalianches*.

Doronicum pardalianches. The systematic name of the Roman leopard's bane; called also *Doronicum romanum*.

Doronicum — foliis cordatis, obtusis, denticulatis; radicalibus petiolatis; caulinis amplexicaulibus, of Linnæus. The root of this plant, in an overdose, is said to be an acrid poison: but instances are related of its efficacy in vertigo, epilepsy, and other nervous diseases.

DO'RSAL. (*Dorsalis*; from *dorsum*, the back.) Belonging to the back.

Dorsal vertebræ. See *Vertebræ*.

Do'rso-costa'lis. The name given by Chaussier to the *serratus posticus superior* muscle.

Do'rso-su'pra acromia'nus. The *trapezius* muscle. — *Chaussier*.

Do'rso-trachelia'nus. The *splenius colli* muscle. — *Chaussier*.

DORSTE'NIA. (*a*, *æ.* f.; named in honour of Dr. Dorsten.) The name of a genus of plants in the Linnæan system. Class, *Tetrandria*; Order, *Monogynia*.

Dorstenia braziliensis. The systematic name of a plant, the root of which is used by the natives of Brazil, internally and externally. They call it *Caa apia*. When chewed, it has the same effects as ipecacuanha. The wounds from poisoned darts are said to be cured with the juice of the root, which they pour into the wound.

Dorstenia contrayerva. The systematic name of the plant which affords the contrayerva root; called also, *Contrayerva; Drakena; Cyperus longus, odorus, peruanus; Bezoardica radix.* The contrayerva root was first brought into Europe about the year 1581, by Sir Francis Drake, whence its name Drakena. It is the root of a small plant found in Peru, and other parts of the Spanish West Indies. Dr. Houstoun observes, that the roots of different species of dorstenia are promiscuously gathered and exported for those of the contrayerva; and, as all the species bear a great resemblance to each other, they are generally used for medical purposes in this country. The tuberous parts of these roots are the strongest, and should be chosen for use. They have an agreeable aromatic smell; a rough bitter, penetrating taste; and, when chewed, they give out a sweetish kind of acrimony.

It is diaphoretic and stimulant, and was formerly much used in low fevers and other asthenic diseases.

By the assistance of heat, both spirit and water extract all its virtues; but they carry little or nothing in distillation; extracts made by inspissating the decoction, retain all the virtues of the root.

The compound powder of contrayerva is formed by combining five ounces of contrayerva root with a pound and a half of prepared shells. This powder was formerly made up in balls, and called *lapis contrayervæ*. See *Pulvis contrayervæ compositus*. The dose of the powdered root is from gr. x. to ʒ ss. It is seldom administered alone.

Dorstenia drakena. The systematic name for one sort of the contrayerva.

Dorstenia houstonii. A species of contrayerva. See *Dorstenia contrayerva*.

Dosis. (*is, is.* f.; from διδωμι, to give.) A dose. The determinate quantity in which any medicine is given.

Do'thien. Δοθιην. A Greek name of the furunculus.

DOTHINENTERI'TIS. (From δοθιην, a boil; and εντερον, an intestine.) An inflammatory enlargement of Peyer's and Brunner's glands, particularly described by M. Bretonneau, and regarded by him as the cause of those symptoms which constitute *typhus* and several other kinds of fever. This opinion has been very hastily adopted by many in France, and by some in this country. The term *dothinenteritis* is in all respects objectionable; δοθιην means a boil, not an enlarged mucous follicle, and the compound word would signify furuncular inflammation of the intestines, which is not the meaning intended.

Dotted. See *Punctatus.*

Double. See *Didymus.*

Dove. See *Columba.*

Dove's-foot. See *Geranium.*

Dover's powder. See *Pulvis ipecacuanhæ compositus.*

Down of seed. See *Pappus.*

DRA'BA. (*a, æ.* f. Δραβη.) The name of a genus of plants in the Linnæan system. Class, *Tetradynamia*; Order, *Siliculosa.*

Draba verna. The systematic name of a small plant, very common on most walls. The seed is hot and stimulating, and might be used for pepper.

DRACÆ'NA. The name of a genus of plants. Class, *Hexandria*; Order, *Monogynia.*

Dracæna draco. The dragon-tree. A huge tree of the Canary islands, which attains the height of fifty or sixty feet, and the stem of which is from forty to fifty feet in circumference. It is remarkable for its great age. A dragon-tree at Oratava, in Teneriffe, had attained the above proportions when the Spaniards first landed in the island in the fifteenth century, and it is alive now, though part of it fell in the year 1819. The inspissated sap of the *Dracæna draco* constitutes the purest kind of dragon's blood. See *Dragon's blood.*

Dracæna reflexa. This species inhabits the Isle of France and Madagascar. The young shoots are supposed to possess emmenagogue and abortive properties.

Dracæna terminalis. This tree is planted in India and China, to mark the boundaries of estates, whence its specific name. Its root is used against dysentery.

DRA'CO. (*o, onis.* m. Δρακων, the dragon.) This name was given by the ancients to a fabulous serpent, and also to a fish, otherwise called *araneus.* The term was afterwards applied to various objects by naturalists and chemists.

Draco herba. *Dracunculus esculentus.* The *Artemisia dracunculus* of Linnæus. It is slightly aromatic.

Draco mitigatus. The submuriate of mercury.

Draco sylvestris. See *Achillea.*

DRACOCE'PHALUM. (*um, i.* n.; from δρακων, a dragon, and κεφαλη, a head.) The name of a genus of plants in the Linnæan system. Class, *Didynamia*; Order, *Gymnospermia.*

Dracocephalum moldavicum. This plant affords by distillation a fragrant essential oil, known in Germany by the name of *oleum syriæ.* The whole herb is aromatic: it is recommended to give tone to the stomach, and to strengthen the nervous system.

Dra'conine. *Dracine.* A red substance found in dragon's blood by Melandri, and alleged to be alkaline.

Draco'nis sanguis. Dragon's blood.

DRACO'NTIUM. (*um, i.* n.; from δρακων, a dragon: so called because its roots resemble a dragon's tail.) The name of a genus of plants. Class, *Gynandria*; Order, *Polyandria.*

Dracontium fœtidum. *Pothos fœtida. Ictodes fœtidus. Symplocarpus fœtidus.* Skunk cabbage. This exhales a very fœtid odour, which

is impaired by keeping. The powder of the root is given as an antispasmodic, in doses of ten or twenty grains.

Dracontium pertusum. *Arum dracontium.* This is an extremely acrimonious plant. The Indians cover dropsical parts with the fresh leaves, which produce vesications, and an oozing of serum.

DRACU'NCULUS. (*us, i.* m.; from δρακων, a serpent.) 1. Synonymous with *Dracontium.*

2. The Guinea worm. See *Filaria medinensis.*

Dracunculus esculentus. See *Draco herba.*

Dracunculus pratensis. See *Achillea.*

Dragacantha. See *Astragalus.*

Dragant gum. See *Astragalus.*

Dragon. See *Draco.*

DRAGON'S BLOOD. *Sanguis draconis.* A resinous concrete substance of a blood red colour, and heterogeneous texture. Various kinds of it are found in the shops, which appear to be the produce of different trees. That in tears, *Sanguis draconis in lachrymis,* is obtained by incision from the *Dracæna draco;* that in sticks, *Sanguis draconis in cannis,* is from the *Pterocarpus draco, P. indicus,* and *P. santalinus;* that in balls or cakes, *Sanguis draconis in placentis,* is obtained by maceration from the fruit of the *Calamus draco.* The Surinam dragon's blood is obtained from the trunk and root of the *Ecastaphyllum monetarus.* Dragon's blood was formerly prized as an astringent; but it appears to be inert as a medicine, and is now only used as an ingredient in varnishes and dentifrices.

Dragon tree. See *Dracæna.*

Dragon's wort. See *Arum dracunculus.*

Drake'na. The contrayerva plant was once so named, after Sir Francis Drake, who first brought it over from America. See *Dorstenia contrayerva.*

DRA'STIC. (*Drasticus.* Δραστικος, active, brisk; from δραω, to effect.) A term generally applied to those medicines which are very violent in their action; thus, drastic purges, emetics, &c.

DRIVELLING. An involuntary flow of saliva, from a sluggishness of deglutition, without their being any increased flow of the saliva. It happens in infancy, in old age, and idiocy.

Dro'ma. The name of a plaster described by Myrepsus.

Drooping. See *Nutans.*

Dropaci'smus. (From δρεπω, to pluck.) *Dropax.* A stimulant plaster of pitch, wax, &c., to take off hair.

Dropax. Δρωπαξ. See *Dropacismus.*

Drop-serene. See *Amaurosis.*

Dropsy. See *Hydrops.*

Dropsy of the belly. See *Ascites.*

Dropsy of the brain. See *Hydrocephalus.*

Dropsy of the chest. See *Hydrothorax.*

Dropsy of the ovary. See *Ovarium.*

Dropsy of the skin. See *Anasarca.*

Dropsy of the testicle. See *Hydrocele.*

Dropwort. See *Œnanthe crocata,* and *Spiræa filipendula.*

Dropwort, hemlock. See *Œnanthe.*

Dropwort, water. See *Œnanthe.*

DRO'SERA. (*a, æ.* f.; from δροσος, dew; because the leaves are beset with glands resembling dew-drops.) The name of a genus of plants. Class, *Pentandria;* Order, *Hexagynia.* Sun-dew.

Drosera rotundifolia. The systematic name of the sun-dew: called also, *Ros solis,* and *Rorella.*

Drosera rotundifolia — scapis radicatis; foliis orbiculatis, of Linnæus. This elegant little plant is said to be so acrid as to ulcerate the skin, and remove warts and corns; and to excite a fatal coughing and delirium in sheep who eat it. It is seldom given medicinally in this country, but by the lower orders, who esteem a decoction of it as serviceable in asthmas and coughs.

Drosobo'tanum. (From δροσος, dew, and βοτανη, an herb: so called because it has been said to be covered with an aromatic dew.) The herb betony. See *Betonica officinalis.*

Droso'meli. (From δροσος, dew, and μελι, honey.) Honey-dew. See *Æromeli.*

Drowning. See *Asphyxia.*

DRU'PA. (*a, æ.* f.; from *drupæ,* over-ripe olives.) A stone fruit, formed of a fleshy or coriaceous seed-vessel, inclosing a nut.

It is distinguished into, *Drupa:* —

1. *Succosa,* when of a succulent fleshy consistence; as the cherry, plum, peach, and nectarine.

2. *Fibrosa,* the nut being fibrose; as in *Cocos nucifera.*

3. *Exsicca,* dry and subcoriaceous; as the almond and horse-chestnut.

4. *Dehiscens,* opening; as in *Juglans regia* and *Myristica moschata.*

From the number of nuts it contains, the *drupa* is said to be, —

1. *Monosperm,* when there is but one; as the olive and *pistachia.*

2. *Disperm,* when there are two; as *Styrax.*

DRUPA'CEOUS. (*Drupaceus;* from *drupa.*) Resembling a drupe, or stone fruit; as the pod of *Erucago* and *Bunias.*

Duck. See *Anas.*

Duct. See *Ductus.*

DUCTI'LITY. *Ductilitas.* A property by which bodies are elongated by repeated or continued pressure. It is peculiar to metals. Most authors confound the words malleability, laminability, and ductility together, and use them in a loose indiscriminate way; but they are very different. Malleability is the property of a body which enlarges one or two of its three dimensions by a blow or pressure very suddenly applied; laminability belongs to bodies extensible in dimensions by a gradually applied pressure; and ductility is properly to be attributed to such bodies as can be rendered long and thinner by drawing them through a hole of less area than the transverse section of the body so drawn.

Ductor. The same as *director.*

Ducts, biliary. See *Hepar.*

DU'CTUS. (*us, us.* m.) A canal or duct.

Ductus ad nasum. See *Ductus nasalis.*

Ductus aquosi. The lymphatics have been called.

Ductus arteriosus. *Canalis arteriosus.* An arterial tube forming a direct communication between the pulmonary artery and aorta of the fœtus. After birth it becomes impervious. See *Fœtus.*

Ductus auris palatinus. The Eustachian tube. See *Auris.*

Ductus bartholinia'nus. Duct of Bartholin. The duct of the sublingual gland.

Ductus biliaris. The biliary duct. See *Hepar.*

Ductus communis choledocus. See *Hepar.*

Ductus cy'sticus. The cystic duct. The duct by which the bile regurgitates into the gall bladder. See *Hepar.*

Ductus excretorius. Excretory duct. The duct which proceeds from a gland, and carries the secreted fluid to its destination, is called the excretory duct of that gland.

Ductus hepaticus. The hepatic duct. See *Hepar.*

Ductus hygroble'phari. (*Hygroblepharus;* from *ὑγρος*, moist, and *βλεφαρον*, the eyelid.) The Meibomian glands.

Ductus hygrophtha'lmici. (*Hygrophthalmicus;* from *ὑγρος*, moist, and *οφθαλμος*, the eye.) The Meibomian glands.

Ductus incisorius. The little canal leading from the foramen incisivum into the cavity of the nares.

Ductus lachrymalis. The lachrymal duct. See *Lachrymal apparatus.*

Ductus lactiferi. *Ductus galactophori.* The excretory ducts of the glandular substance composing the female breast. The milk passes along these ducts to the nipple.

Ductus nasalis. Nasal or lachrymal duct. The duct which conveys the tears from the lachrymal sac to the nose. See *Lachrymal apparatus.*

Ductus pancrea'ticus. The pancreatic duct. It is white and small, and arises from the left extremity of the pancreas, runs through the gland a little below its middle towards the duodenum, into which it pours its contents by an opening common to it and the *ductus communis choledochus.*

Ductus rori'ferus. The thoracic duct; absurdly so called by Ludovic de Bils.

Ductus salivalis inferior. The duct of the submaxillary gland. See *Ductus Warthonianus.*

Ductus salivalis superior. The parotid duct. See *Ductus Stenonis.*

Ductus stenonis. The Stenonian or parotid duct, which is so called after its discoverer, *Steno.* It arises from all the small excretory ducts of the parotid gland, and passing transversely over the masseter muscle, penetrates the buccinator, and opens into the mouth opposite to the space between the second and third molar tooth of the upper jaw.

Ductus thoracicus. See *Thoracic duct.*

Ductus veno'sus. *Canalis venosus.* A venous tube forming a communication in the fœtus between the umbilical vein and the left hepatic vein, just where the latter vein enters the vena cava. The ductus venosus becomes impervious after birth, and dwindles into a whitish cord. See *Fœtus.*

Ductus umbilicalis. The umbilical cord.

Ductus warthonia'nus. The excretory duct of the maxillary gland; so named after its discoverer. It passes forward between the mylohyoideus and genioglossus muscles, and under the sublingual gland, opening finally on each side the frænum linguæ.

Ductus wirtsungi. The pancreatic duct; so named after Wirtsung, the anatomist who first described it in the human body.

Duelech. *Dulech.* A term used by Paracelsus and Van Velmont, to signify a species of tartar which forms in the human body and causes divers evils.

Due'lla. An ancient weight of eight scruples.

Dulcama'ra. (*a, æ.* f.; from *dulcis*, sweet, and *amarus*, bitter.) The bitter sweet. See *Solanum dulcamara.*

Dulce. See *Fucus palmatus.*

Dulce, red. See *Fucus edulis.*

Dulce'do amo'ris. The clitoris.

DULCIFICA'TIO. (*o, onis.* f.; from *dulcis*, sweet, and *facio*, to make.) Dulcification. The mixing of the mineral acids with alkohol to render them milder, was thus named by the old chemists.

Dulesh. See *Fucus palmatus.*

Dumbness. See *Aphonia.*

Dumo'sæ. The name of an order of plants in Linnæus's Fragments of a Natural Method, consisting of shrubby plants, which are thick set with irregular branches, and bushy.

DUMO'SUS. (From *dumus*, a bush.) Dumose; bushy.

DUODE'NUM. (*um, i.* n.; from *duodeni*, twelve: so called because it was supposed not to exceed the breadth of twelve fingers; but as the ancients dissected only animals, this does not hold good in the human subject.) The first portion of the small intestines. See *Intestines.*

DU'PLEX. (From *duo*, two, and *plico*, to fold.) Double or two-fold. In *Botany*, applied to leaves, petals, perianths, &c. The *perianthum duplex* is seen in *Malva althæa* and *Hibiscus.*

DUPLICA'TUS. (From *duplex*, double.) Duplicate; doubled: applied, in *Botany*, to flowers which have two series or rows of petals.

DU'RA MA'TER. (*Durus*, hard; from its hardness as compared with the *pia mater.*) *Dura meninx; Membrana dermatoides.* The tough sero-fibrous membrane which invests the brain externally to the arachnoid membrane, and forms the internal periosteum of the cranium. See *Encephalos.*

Dura meninx. See *Dura mater.*

Dutch drops. The balsam of turpentine is sold under this name, which is also given to a preparation consisting of oil of turpentine, tincture of guaiac, spirit of nitric ether, and oils of amber, and cloves.

Dutch gold. An alloy of copper and zinc.

Dwale. See *Atropa belladonna.*

DWARF. *Nanus. Pumilio. Pumilo.* An animal or plant, the growth of which has been

stunted so that its stature is greatly inferior to the average height of the species to which it belongs. Absolute dwarfishness is not common in the human species, and it seems to be much rarer among the inferior animals, while in plants it is very common, when the individual grows in a soil ill adapted to it. The height of human dwarfs varies; but, in general, they have not been less than three feet. The famous Polish dwarf, Borulawski, was, however, but twenty-eight inches; and Bebe, kept by Stanislaus, King of Poland, measured only thirty-three inches. Their intellectual faculties are, in general, imperfect: they are lively, but simple; and sharp, but timorous. Borulawski, who was known to the author, possessed superior mental powers. For some ingenious views as to the causes of dwarfishness, see *I. G. St. Hilaire, sur les Anomalies de l'Organisation*, tom. i. p. 162. Paris, 1832.

Dwarf elder. See *Sambucus ebulus.*

Dyna'mic school. This name has been given to the physiologists who followed Stahl in believing that the vital phenomena proceeded from the operation of an internal force or *power* (δυναμις) acting in a great measure independently of external causes. This power was supposed to be the rational soul. See *Life.*

Dy'namis. (Δυναμις.) A power or faculty. Galen frequently uses this word to signify a medicine.

DYSÆSTHE'SIA. (*a*, *æ.* f.; from δυς, with difficulty, and αισθανομαι, to feel or perceive.) Hebetude of any of the senses, especially that of touch.

Dysæsthe'siæ. (The plural of *dysæsthesia.*) The name of an order in the class *Locales* of Dr. Cullen's Nosology, containing those diseases in which the senses are depraved or destroyed, from a defect of the external organs.

Dyscatabro'sis. (From δυς, with difficulty; and βρωσκω, to eat.) Difficult deglutition.

Dyscata'posis. (From δυς, and καταπινω, to drink.) A difficulty of swallowing liquids. Dr. Mead gives this name to hydrophobia.

DYSCINE'SIA. (*a*, *æ.* f.; from δυς, with difficulty, and κινεω, to move.) Diminution or abolition of the power of motion.

Dyscine'siæ. (The plural of *dyscinesia.*) The name of an order in the class *Locales* of Cullen's Nosology; embracing diseases in which the motion is impeded or depraved, from an imperfection of the organ.

DYSCRA'SIA. (*a*, *æ.* f.; from δυς, with difficulty, and κεραννυμι, to mix.) A bad *crasis* or habit of body.

DYSECŒ'A. (*a*, *æ.* f.; from δυς, with difficulty, and ακοη, hearing.) Deafness. Hearing diminished or destroyed. Dr. Cullen has two species of this genus: —

1. The *organic*, which arises from wax in the meatus, injuries of the membrane, or inflammation and obstruction of the tube.

2. The *atonic*, when without any discernible injury of the organ.

DYSENTERY. (*Dysenteria*, *æ.* f.; from δυς, with difficulty, and εντερα, the bowels.) The bloody flux. This disease is known by contagious fever; frequent griping stools; tenesmus; stools, chiefly mucous, sometimes mixed with blood, the natural fæces being retained or voided in small, compact, hard substances, known by the name of scybala; loss of appetite, and nausea. It occurs chiefly in summer and autumn, and is often occasioned by much moisture succeeding quickly intense heat, or great drought, whereby the perspiration is suddenly checked, and a determination made to the intestines. It is likewise occasioned by the use of unwholesome and putrid food, and by noxious exhalations and vapours: hence it appears often in armies encamped in the neighbourhood of low marshy grounds, and proves highly destructive. But the cause which most usually gives rise to it, is a specific contagion; and when it once makes its appearance, where numbers of people are collected together, it not unfrequently spreads with great rapidity. A peculiar disposition in the atmosphere seems often to predispose, or give rise to the dysentery, in which case it prevails epidemically.

It frequently occurs about the same time with autumnal intermittent and remittent fevers, and with these it is often complicated.

The disease, however, is much more prevalent in warm climates than in cold ones; and in the months of August, September, and October, which is the rainy season of the year in the West Indies, it is very apt to break out and to become very general among the negroes on the different plantations in the colonies. The body having been rendered irritable by the great heat of the summer, and being exposed suddenly to much moisture with open pores, the blood is thereby thrown from the exterior vessels upon the interior, so as to give rise to dysenteries.

An attack of dysentery is sometimes preceded by loss of appetite, costiveness, flatulency, sickness at the stomach, and a slight vomiting, and comes on with chills, succeeded by heat in the skin, and frequency of the pulse. These symptoms are, in general, the forerunners of the griping and increased evacuations which afterwards occur.

Inflammation soon takes place in the lower part of the intestinal tube: the stools then become more frequent, and less abundant; and, in passing through the inflamed parts, they occasion great pain, so that every evacuation is preceded by a severe griping, as also a rumbling noise.

The motions vary both in colour and consistence; being sometimes composed of frothy mucus, streaked with blood, and at other times of an acrid watery humour, like the washings of meat, and with a very fœtid smell. Sometimes pure blood is voided: now and then lumps of coagulated mucus, resembling bits of cheese, are to be observed in the evacuations; and in some instances a quantity of purulent matter is passed.

Sometimes what is voided consists merely of a mucous matter, without any appearance of blood; exhibiting that disease which is known by the name of dysenteria alba, or morbus mucosus.

Whilst the stools consist of these various matters, and are voided frequently, it is seldom

hat we can perceive any natural fæces among hem; and when we do, they appear in small ard balls, called scybala, which being passed, he patient is sure to experience some temporary elief from the griping and tenesmus.

It frequently happens, from the violent efforts which are made to discharge the irritating natters, that a portion of the gut is forced eyond the verge of the anus, which, in the rogress of the disease, proves a troublesome nd distressing symptom; as does likewise the enesmus, there being a constant inclination to go to stool, without the ability of voiding any hing, except, perhaps, a little mucus.

More or less fever usually attends with the symptoms which have been described, throughout the whole of the disease, where it is inclined o terminate fatally, and is either of an inflammatory or putrid tendency. In other cases, the ebrile state wholly disappears after a time, while he proper dysenteric symptoms probably will e of long continuance. Hence the distinction nto acute and chronic dysentery.

When the symptoms run high, produce great oss of strength, and are accompanied with a utrid tendency, and a fœtid and involuntary ischarge, the disease often terminates fatally n the course of a few days: but when they are ore moderate, it is often protracted to a conderable length of time, and goes off at last y a gentle perspiration, diffused equally over he whole body; the fever, thirst, and griping hen ceasing, and the stools becoming of a atural colour and consistence. When the isease is of long standing, and has become abitual, it seldom admits of an easy cure; and hen it attacks a person labouring under an dvanced stage of scurvy, or pulmonary conumption, or whose constitution has been much npaired by any other disorder, it is sure to rove fatal. It sometimes appears at the same me with autumnal intermittent and remittent evers, as has been observed, and is then more omplicated and difficult to remove.

Upon opening the bodies of those who die of ysentery, the internal coat of the intestines but more particularly of the colon and rectum) ppears to be affected with inflammation and its onsequences, such as ulceration, gangrene, and ontractions. The peritonæum, and other overings of the abdomen, seem likewise, in any instances, to be affected with inflammaon.

Dysentery often exists as a mild disease, being ttended with very little fever or constitutional erangement, and the excretions affording occaonally relaxed or scybalous fæcal matter, but ore frequently slimy, gelatinous, or sanguieous stools. In this form it is soon controlled y medicines and diet; and it may be doubted hether it is contagious. It was formerly the ractice to commence with blood-letting; but n the present day this is never thought of, nless a very plethoric state of the vascular ystem exists, or an inflammatory diathesis, or tual inflammation; in which latter state the isease of course requires the lancet. Mild perients, of sulphate of magnesia, tartarised da, senna, rhubarb, tamarinds, manna, and the like, are exhibited every or every other morning, and an opiate at night. Sydenham gave rhubarb, with tamarinds and senna, in preference to other aperients, and in full doses. "I prefer," says he, "the use of rhubarb in this form to giving it alone, or in a smaller quantity, because, unless it acts thoroughly, it does not much conduce to a cure; and because, also, though more powerful cathartics might be employed, they would but aggravate the gripings, and increase the general disorder, and especially the depression of spirits: and hence, even after the rhubarb purge, I commonly give the anodyne at an earlier hour than usual, — indeed, at any time in the afternoon, as soon as the laxative has ceased to operate, — and thus get rid of the excitement it has occasioned. This purgative I repeat twice every other day, always following up the dose with an anodyne, as above; and I resort to the anodyne every morning and evening, even when no aperient is given, that I may repress the violence of the symptoms, and gain a truce while I am evacuating the peccant humour. The anodyne I make use of, is sixteen or eighteen drops of laudanum in a dose of cordial water of any kind." Sydenham depended principally on his celebrated liquid laudanum: and so attached was he to it, and so persuaded of its permanent efficacy, that where the symptoms were more violent he increased the dose, and gave it three times a day instead of twice; prescribing also daily an opiate injection. In mild cases, indeed, he omitted evacuants, and trusted to opium alone. The principles on which this mode of practice is founded, are clear and rational, and indicate an attempt to diminish inflammatory action, to relax the spasmodic constriction, which both blocks up the fæces and produces the griping pains, and to assist the discharge of fæces, as the natural passage is sufficiently opened.

Rhubarb has been objected to on account of its astringency, but many advocate its employment as clearing the primæ viæ better than any other purgative. Its astringent effect may be well guarded against by giving a little carbonate of magnesia, tamarinds, or manna.

Castor oil is perhaps the best of all purgatives in dysentery: if this be given every other day, in a dose to clear the bowels, and some saline sudorific with the compound powder of ipecacuanha night and morning, the disease will soon vanish.

The other form of dysentery, which is highly contagious, and is attended with acute fever, is always an important and more complicated disease. The fæces, when discharged, are of various colours and consistence, highly fœtid, and mixed with putrid sanies, membranous films, and sanguineous coagula; and the fever which attends is either inflammatory or typhous. In one of these forms, the disease spreads with tremendous rapidity through camps, or crowds of any kind, consociating too closely together without sufficient ventilation, and particularly in swamps, or other moist lowlands. In the present day, Dr. Good observes, the accompanying fever is most commonly typhous. "I am induced to believe," he says, "that it is chiefly

in sporadic cases that the dysenteric fever is a cauma, — that is, inflammatory; while in those of epidemic or contagious origin, the fever is of a typhous, or at least of a synochous character; of a mixed breed, with a strongly marked tendency to run from a caumatic to a typhous type."

In laying down a curative plan for these more acute forms of dysentery, our first attention must be paid to the nature and degree of fever with which the disease opens. When, therefore, the pulse is hard and full, and particularly when there is a general pain and tension over the belly, indicating an inflammatory diathesis, blood should be drawn copiously, and with all possible speed, and the evacuation repeated according as circumstances may require. There is no disease that more requires the exercise of a sound judgment on this point, than dysentery: for if not typhous from the first, it has a general tendency to pass into this type; and the intestinal inflammation is perhaps of the erysipelatous kind; and hence, unless the indications for it are strong and prominent, this mode of cure had better not be ventured upon, and if blood is to be abstracted, it should be by leeches.

The next most probable means of diminishing the febrile action, is by the use of general relaxants, and particularly those which may operate equally on the skin and the whole range of the intestinal canal: these are emetics and sudorifics, and especially those medicines which produce both these effects at the same time. An emetic will, in many instances, be found extremely serviceable; and in public practice, in the navy and army, a solution of tartar emetic and sulphate of magnesia has been resorted to, in the beginning of acute and inflammatory dysentery, with decided benefit. Of two grains of tartar emetic, and six drachms of sulphate of magnesia, dissolved in eight ounces of any aromatic water, a fourth part should be given every two hours, until the desired effect takes place. After having by these or similar means cleared the primæ viæ, diaphoretics and opium are to be administered, resorting to local bleeding, fomentation, and blisters, if there be reason to think any tendency to inflammation exists, and occasionally administering saline or oleaginous purgatives. The best diaphoretics are, antimonial powder, submuriate of mercury, opium, or Dover's powder, in combination, every four or six hours: when the irritation is much in the lower bowels, and especially when there is tenesmus, and very frequent and loose motions, opium introduced into the rectum acts like a charm. Four ounces of the decoctum lini, or decoctum amyli, with a drachm of the tinctura opii, form the best injection, which may be used night and morning, or oftener, according to circumstances.

In the other acute forms of dysentery, in which the accompanying fever is typhous, as well as with those which, though in the commencement accompanied by a fever of an inflammatory or mixed type, have become typhous, the bowels are to be cleared from their putrescent fæcal contents from time to time, by solutions of sulphate of magnesia, with dilute mineral acids, and light infusions of roses, calumba, cascarilla, cinchona, simarouba, cortex conessi, liquor calcis: the nitric acid is much esteemed by some, the nitro-muriatic acid also, and the chlorides of lime and soda. With all these opium must be given, at the same time, either in combination, or a full dose night and morning. Five drops of dilute nitric acid, with ten of liquid laudanum, and twelve drachms of cinnamon water, every four or six hours, is a valuable compound. Ten drops of dilute sulphuric acid, with as much tincture of opium, and an ounce and a half of the infusion or decoction of any of the above-mentioned barks or roots, sweetened, is the proper dose and way of administering them. Some symptoms require particular attention in all cases of dysentery: — thus, a diarrhœal state will call for the addition of kino or catechu, or hæmatoxylum; — great pain is only relieved by large doses of opium, fomentations, and the warm bath; — flatulence, by the addition of carminatives, &c. &c.

The diet should consist of farinaceous decoctions, especially those of arrow-root, sago, salep, gruel, barley, and rice. In simple cases, a little light mutton, veal, or beef broth or tea will be useful; but in acute ones, no preparation of animal substances is permitted: for if there be a tendency to inflammation, or if synochous or typhous fever be present, it will prove too stimulating to the one, and increase the putrescent state of the contents of the intestinal canal in the other. Severe cases, especially where the spasmodic pains are severe, will be benefited by the free use of vegetable gluten, and isinglass. Wine, brandy, and the like, are serviceable in all cases where there is debility, or a typhous fever.

Great attention should also be given to the clothing: the feet must be kept warm, and the skin kept moist, if possible, but never so as to weaken by strong perspirations.

Dysepulo'ticus. (From δυς, with difficulty, and επυλοω, to cicatrise.) *Dysepulotus.* Difficult to be healed: applied to ulcers.

Dyshæmorrhœ'a. (From δυς, with difficulty, αἱμα, blood, and ῥεω, to flow.) The same as *dyshæmorrhois.*

Dyshæmorrho'is. (From δυς, with difficulty, and αἱμορῤῥοις, the piles.) Suppression of the bleeding from piles.

Dyslalia. (From δυς, with difficulty, and λαλια, speech.) Indistinct articulation.

DYSLOCHI'A. (*a, æ.* f.; from δυς, with difficulty, and λοχια, the lochia.) An imperfect excretion or suppression of the lochia.

DYSMENORRHŒ'A. (*a, æ.* f.; from δυς, with difficulty, and μηνορῤῥοια, the menses.) Difficult or painful menstruation, accompanied with severe pains in the back, loins, and bottom of the belly.

In most cases of difficult and painful menstruation, the secretion is scanty throughout the period, or particularly during the two first days, when the pain is often extremely severe, and, in some few cases, so much so as to produce convulsions, especially in hysterical women, for which state dysmenorrhœa often lays the foundation. The secretion, in some cases, becomes

more abundant after the two first days, and the pain subsides. In many cases the discharge is unhealthy, being mixed with flakes like an organised decidua, small portions of membrane, the size of a sixpence or larger, and sometimes mixed with coagula.

Cold, mental anxiety, and a natural debility of the uterus, are its common causes.

The treatment is directed to the disease when present, and to the prevention of its return, by remedies administered during the interval.

In the first instance, opium, ether, assafœtida, epid baths, and fomentations, with stimulants, ıave been found useful. A full dose of the ormer, taken just as the period is about to ırrive, sometimes relaxes the spasms, or destroys he susceptibility for pain, and the secretion goes on well. When the hip bath and foment-ıtions are beneficial, they are resorted to during he day of the first appearance, or persevered in or a day or two before. Opium applied to the oins is often serviceable; and so likewise is ıudanum and assafœtida, thrown into the rec-um in a glyster, or solid opium, with assafœtida ıtroduced as a suppository. Hyoscyamus, ex-ract of poppy, and other sedatives, are, in ıilder cases, sometimes sufficient to remove the isease.

The means to be resorted to in the interval etween the periods are very various. Occasion-lly cupping the loins, applying leeches to the erinæum, and the observance of an abstemious iet, is most advisable; and this plan is espe-ally indicated in those whose fibres are rigid, ıd who have a vascular plethora. In other and pposite states, where the patient is pallid, and ıere is reason to believe that laxity and debility revail, a generous and stimulating diet, with cha-beates, or tonics of bark and cascarilla, and the etid gums, and cold bathing, must be preferred.

DYSO'DES. (Δυσωδες; from δυς, bad, and ω, to smell.) Fœtid. The epithet of a malagma r a pleurisy, and an acopon, prescribed by alen and Paulus.

DYSO'DIA. (Δυσωδια, a bad smell.) A ınus in Sauvage's nosology, including diseases ıaracterised by fœtor.

Dysodonti'asis. (From δυς, with difficulty, ıd οδοντιασις, dentition.) Difficult dentition.

DYSO'PIA. (a, æ. f.; from δυς, badly, and ψ, an eye.) Bad sight. Sight depraved. Under is term are comprehended,

1. *Night-sight;* called by the Greeks Nycta-pia. See *Nyctalopia.*

2. *Day-sight;* or hemeralopia of the Greeks. e *Hemeralopia.*

3. *Longsightedness.* In this, near objects are en indistinctly, while those which are more stant are seen plainly. It occurs at every riod of life, but mostly in old age: and hence is usually denominated presbyopia. See *esbyopia.*

4. *Shortsightedness.* This is, in most re-ects, an opposite disease to the last. See *yopia.*

5. *Lateral vision,* or skewsightedness. The sion is here accurate only when the object is ıced obliquely, so that the person can only in an oblique direction, in consequence of some partial opacity of the cornea, which usually proceeds from slight scars, or of the humours through which the light is transmitted, or from a partial paralysis of the retina. It is a very different thing from squinting: for the axis of the eye affected usually coincides with that of the sound eye; whereas, in squinting, the two axes do not coincide, and the judgment is formed from the strongest eye.

Dysopia luminis. Day blindness. See *Nyctalopia.*

Dysopia tenebrarum. Night blindness. See *Hemeralopia.*

DYSORE'XIA. (a, æ. f.; from δυς, badly, and ορεξις, appetite.) A depraved appetite.

Dysorexiæ. The name of an order in the Class *Locales* of Cullen's Nosology, which he divides into two sections, *appetitus erronei*, and *deficientes.*

Dyso'smia. Diminution of the sense of smell. The proper term is *dysosphresia*, for οσμη signifies an *odour*, not the *sense* of smell.

DYSOSPHRE'SIA. (From δυς, with difficulty, and οσφρησις, the sense of smell.) An impaired state of the sense of smell.

Dyspathi'a. Δυσπαθεια. Indisposition to a disease. — *Galen.*

DYSPE'PSIA. (a, æ. f.; from δυς, with difficulty, and πεπτω, to concoct.) Indigestion. This very common disease consists generally in a want of appetite, a sudden and transient distension of the stomach, eructations of various kinds, heartburn, pain in the region of the stomach, perhaps vomiting, rumbling noise in the bowels, and frequently costiveness or diarrhœa. A long train of nervous symptoms are also frequent attendants.

In some cases a few only of the above symptoms are present, while in others many additional ones are experienced, such as severe pains in the head and chest, and various affections of the sight, as slight degrees of amaurosis, double vision, &c.

It occurs at all ages, but chiefly in persons between thirty and forty years of age, and is principally to be met with in those who devote much time to study, or who lead either a very sedentary or an irregular life. A great singularity attendant on it is, that it may and often does continue a great length of time, without any aggravation or remission of the symptoms.

Grief and uneasiness of mind, intense study, profuse evacuations, excess in venery, hard drinking, particularly of spirituous liquors, and the abuse of tea, tobacco, opium, and other narcotics, immoderate repletion, and over-distension of the stomach, and much exposure to moist and cold air, when without exercise, are the causes which usually occasion dyspepsia.

Dyspepsia never proves fatal, unless when, by a very long continuance, it gives rise to some other disease, as organic lesions of the viscera, dropsy, or phthisis; but it is at all times very difficult to remove, and particularly so in warm climates.

It is often a secondary and symptomatic disease, caused by structural alterations of some part of the stomach; and there are few organic diseases in the neighbouring viscera from which

the stomach does not become weakened, and indigestion result.

The term dyspepsia has been very vaguely used, and a great variety of symptoms, arising from a proportionate number of different morbid states, have been associated under the same name. The writings of Marcus and Broussais have led many to refer these symptoms universally to inflammatory states of different parts of the gastro-enteric membrane, a doctrine which, like most others of a similar exclusive character, is at once confuted by an appeal to actual observation; and which is especially pernicious in a practical point of view, in as much as it too often inflicts leeches and starvation, where they can very ill be borne. It is indeed true, that dyspeptic symptoms are often produced by the inflammatory states alluded to; and it is true, as illustrated by Dr. Wilson Philip, that when functional derangement has existed for a length of time, the vascular actions of the part become affected, and inflammation is set up; but if we are content to be guided simply by what is to be seen on the dissection of those, who when living have been subject to dyspepsia, we shall be convinced that chronic inflammation is far from being the general cause of this affection. The morbid states which give rise to dyspeptic symptoms appear to be atony and torpor of the organs; morbid irritability, distinct from an inflammatory state; depraved secretion; and chronic inflammation. To these, severally, or combined in various degrees, restricted to particular parts, or more extensively involving the alimentary canal, the diversity of symptoms, included under the term indigestion, may for the most part be traced.

The treatment of dyspepsia consists, 1. In obviating, as far as possible, the several causes. 2. In relieving urgent symptoms. 3. In restoring the tone of the chylopoietic viscera, and invigorating the general system. If the view we have taken of the subject be correct, it is obvious that no general rules can be given for the treatment of dyspepsia, considered as a single disease, because it involves widely different conditions. Atony is to be obviated by tonics, especially the vegetable bitters, and a careful adaptation of the diet, both in quantity and quality, to the digestive powers of the individual; disordered secretion is to be corrected by mild mercurials and laxatives, with the use of antacids where a morbid acrimony prevails; irritability and spasm are to be allayed by a bland but sufficiently nutritious diet, and the use of antispasmodics, and the liquor potassæ, which medicine has a well known, though unexplained power of allaying irritability of the mucous surfaces; inflammatory action is to be subdued by the occasional use of leeches, and abstinence from animal food, and all stimulating articles of diet. Since, however, these states are liable to be indefinitely combined in the same case, and since, in protracted cases, we are likely to encounter every one of them at some period or other, the practitioner is called upon to exercise his individual judgment as to the course most proper to be pursued in this or that particular case; and it is from the neglect of such discrimination, that we too often see, on the one hand, chronic inflammation aggravated to the most serious degree by bitters and brandy and water; and, on the other hand, atony increased by the repeated application of leeches, and the strength of the system impaired by an antiphlogistic regimen, when a generous though light diet would be much more appropriate. It is not to be forgotten, also, that maladies which may have their origin in the intestinal canal exert a sympathetic influence on distant surfaces, and are in their turn reacted upon by the state of those surfaces. This is particularly true with respect to the skin, the state of which always claims the attention of the practitioner in dyspeptic cases. There are many affections which frequently accompany indigestion, which are treated of in other parts of this work, as *Cardialgia*, *Constipation*, *Diarrhœa*, &c.

DYSPHA'GIA. (*a*, *æ*. f.; from δυς, with difficulty, and φαγω, to eat.) A difficulty of deglutition. This may arise from a great variety of causes. The organs principally concerned in the act of swallowing are the tongue, the parts constituting the fauces, the œsophagus; all of which, when diseased, may produce a difficulty of swallowing. It very seldom occurs as an idiopathic disease, but is common as a symptomatic and sympathetic affection. As the former, it occurs in paralytic states of the tongue, parts about the fauces, and œsophagus; in enlargements, natural or diseased, of the tongue; in diminished diameter of the œsophagus, from stricture, scirrhus, ossification, carcinoma of the tongue, œsophagus, and the cardiac opening of the stomach, and from the like diseases, and others, as aneurism, bronchocele, &c. around the fauces or œsophagus; from extraneous bodies lodging in the fauces and œsophagus; in inflammation of these and neighbouring parts. Sympathetic dysphagia frequently occurs in hysteria, tetanus, trismus, hypochondriasis, &c.

In the idiopathic disease, the uvula is relaxed and elongated, or the muscular coat of the pharynx and œsophagus is in an extremely relaxed and weak state; and the remedies are such as stimulate the œsophagus, as spices and dilute spirituous gargles, and the internal use of tonics and stimulants. In the symptomatic and sympathetic forms, the remedies must be derived from attention to the diseases of which this affection is a symptom.

DYSPHO'NIA. (*a*, *æ*. f.; from δυς, badly, and φωνη, the voice.) Dissonant voice. Nosologists comprehend, under this generic term, those alterations or states of the voice in which the sound is imperfect or depraved; as the weak, whispering, scarcely audible voice; the change of the voice which happens about the age of puberty; the rough and harsh voice; the nasal voice; the squeaking, whizzing, guttural, palatine voice.

DYSPHO'RIA. (*a*, *æ*. f.; from δυς, and φορεω, to bear.) The restlessness and anxiety that accompany many diseases.

DYSPNŒ'A. (*a*, *æ*. f.; from δυς, with difficulty, and πνεω, to breathe.) *Dyspnœon*. Difficult respiration. A permanent difficulty of breathing

or anhelation. There has been no small perplexity, Dr. Good observes, felt by nosologists in arranging the various diseases which are chiefly characterised by difficult breathing. The lungs, like the stomach, maintain a close connection with most of the functions of the body, and the organs which are instrumental to them: while the complaints affecting respiration, that originate in the chest, run so frequently into each other, as to require the utmost nicety in drawing the line between what ought to be regarded as genera, and what as species. There are three thoracic disorders that are particularly obnoxious to this remark: those which are described under the names of dyspnœa, orthopnœa, and asthma. Celsus, following the Greek physicians, regards them as only modifications of the same malady, merely differing from each other in degree. "Each," says he, "consists in difficulty of breathing. When this difficulty is moderate, and not suffocative, it is called dyspnœa; when it is more vehement, so that the breathing is sonorous and wheezing, it constitutes asthma; and when it can only take place in an erect position it is denominated orthopnœa. The first is usually a chronic affection, the two latter acute." Almost all the continental physicians make each affection a separate genus. Cullen makes a genus of dyspnœa, as well as of asthma, and merges orthopnœa in the former. In his first lines, he expresses doubts, whether, under almost every modification, it is to be regarded otherwise than as a vicarious or symptomatic affection.

Chronic dyspnœa, or an uniformly short and difficult breathing, is mostly accompanied by a little cough. The causes of it may exist in the chest, or at the origin of the respiratory nerves; they are inbred, or the result of accident, arising from original deformity, acquired disease, or accidental injury. In the majority of cases there is some obvious vice of conformation, or organic disease in the chest; and, even where there has originally been no organic disease of the thoracic viscera, the long continued disturbance of function generally produces it at last. In all these cases little is to be expected from our art. The most perfect tranquillity of mind and body, gentle exercise, a mild diet, with total abstinence from every kind of food that proves flatulent, and an undeviating habit of regular hours, comprises, perhaps, all that can be recommended by the physician, with any prospect of advantage.

Various artizans are subject to dyspnœa from the effects of irritating particles, inhaled with the air they breathe. See *Diseases of artizans.*

The breathing is sometimes permanently difficult in persons of a phlegmatic temperament whose vascular action is very sluggish. In such persons, whatever depresses the living power will affect the breathing; and taking cold in the feet, and checking the perspiration, are almost sure to do so. Tonic and gently stimulating medicines are here decidedly useful; as the warm gums, camphire, terebinthinate preparations, bitters, and iron, and the like, combined with squills. The warm bath is also serviceable in these cases; and good exercise, with a moderately stimulating diet.

Another cause of permanent difficult respiration is corpulency. Abstinence from spirits, wines, and fermented drinks, and a scanty allowance of animal food, with strong exercise, and occasional purges, are the most likely to afford relief.

Chronic difficulty of breathing appears also as a symptom or sequel in various other diseases, as chronic bronchitis, hydrothorax, and morbid conditions of the lungs, heart, and aorta.

In cases of permanent dyspnœa, produced in the above-mentioned ways, it must be remarked, that the difficulty of breathing is occasionally very much increased; there being, as it were, paroxysms or exacerbations of it, which state is widely different from asthma. This is mostly produced by some accidental augmentation of the ordinary cause, or by some sudden excitement of body or mind, or some diseased action that is capable of uniting with the primary one, directly or remotely. In asthma, the returns are for the most part strictly periodical, and, in the intervals, the breathing is not difficult. Much good, in an increased state of dyspnœa, is often effected by position, volatile alkali, camphire, and a small blister to the chest, and unloading the bowels.

Dr. Cullen arranges dyspnœa into the eight following species: —

1. *Dyspnœa catarrhalis*, when with a cough there are copious discharges of viscid mucus: called also *asthma catarrhale*, *pneumodes*, *pneumonicum*, and *pituitosum*.

2. *Dyspnœa sicca*, when there is a cough without any considerable discharge.

3. *Dyspnœa aërea*, when much increased by slight changes of the weather.

4. *Dyspnœa terrea*, when earthy or calculous matters are spit up. See *Calculus, pulmonary.*

5. *Dyspnœa aquosa*, when there is a scarcity of urine and œdematous feet, without the other symptoms of a dropsy in the chest.

6. *Dyspnœa pinguedinosa*, from corpulency.

7. *Dyspnœa thoracica*, when parts surrounding the chest are injured, or deformed.

8. *Dyspnœa extrinseca*, from manifest external causes.

Dyspnoon. See *Dyspnœa.*

Dysrachi'tis. The name of a plaster, described by Galen. It was used in cases of fistula.

Dysspermasia. Used synonymously with *Dysspermatismus.*

Dysspermati'smus. (*us, i.* m.; from δυς, with difficulty, and σπερματισμος, emission.) Slow or impeded emission of semen during coition, insufficient for the purpose of generation. According to Cullen, the species of *dysspermatismus* are,

1. *Urethralis*, when the obstruction is in the urethra.

2. *Nodosus*, when a tumour is formed in either corpus cavernosum penis.

3. *Præputialis*, when the impediment is from a straitness of the orifice of the præpuce.

4. *Mucosus*, when the urethra is obstructed by a viscid mucus. (A very doubtful cause.)

5. *Hypertonicus*, when there is an excess of erection of the penis.

6. *Epilepticus*, from epileptic fits coming on during coition.

7. *Apractodes*, from a want of vigour in the genitals.

8. *Refluus*, in which the semen is thrown back into the urinary bladder.

DYSTHERAPEU'TOS. (From δυς, difficulty, and θεραπευω, to heal.) Difficult to heal.

DYSTHY'MIA. (*a*, *æ*. f.; from δυς, bad, and θυμος, mind.) Despondency. Melancholy.

DYSTOCHIA. Improperly written for *Dystocia*.

DYSTO'CIA. (*a*, *æ*. f.; from δυς, with difficulty, and τικτω, to bring forth.) Difficult parturition.

DYSTŒCHI'ASIS. (*is*, *is*. f.; from δυς, badly, and στοιχος, order.) An irregular disposition of the hairs in the eyelids. Castelli cites this term from Forest. It is improperly formed, and does not express the meaning.

DYSU'RIA. (*a*, *æ*. f.; from δυς, with difficulty, and ουρον, urine.) Difficulty in discharging the urine. When there are frequent, painful, or uneasy urgings to discharge the urine, and it passes off only by drops, or in very small quantities, the disease is called strangury. When a sense of pain or heat attends the discharge, it passes with difficulty, and is styled ardor urinæ, heat of the urine. Dysuria is acute, or chronic. Dr. Cullen enumerates six species: —

1. *Dysuria ardens*, with a sense of heat, without any manifest disorder of the bladder.

2. *Dysuria spasmodica*, from spasm.

3. *Dysuria compressionis*, from a compression of the neighbouring parts.

4. *Dysuria phlogistica*, from violent inflammation.

5. *Dysuria calculosa*, from stone in the bladder.

6. *Dysuria mucosa*, from an abundant secretion of mucus.

The causes which give rise to these diseases are an inflammation of the urethra, occasioned either by gonorrhœa, or by the use of acrid injections, tumour or ulcer of the prostate gland, inflammation of the kidneys or bladder, considerable enlargements of the hæmorrhoidal veins, a lodgment of indurated fæces in the rectum, spasm at the neck of the bladder, the absorption of cantharides applied externally or taken internally, and excess in drinking either spirituous or vinous liquors; but particles of gravel sticking at the neck of the bladder, or lodging in the urethra, and thereby producing irritation, prove the most frequent cause. A gouty affection of the neck of the bladder will sometimes occasion these complaints.

In dysury, there is a frequent inclination to make water, with a smarting pain, heat, and difficulty in voiding it, together with a sense of fulness in the region of the bladder. The symptoms often vary, however, according to the cause which has given rise to it. If it proceeds from a calculus in the kidney or ureter, besides the affections mentioned, it will be accompanied with nausea, vomiting, and acute pains in the loins and region of the ureter and kidney of the side affected. When a stone in the bladder, or gravel in the urethra, is the cause, an acute pain will be felt at the end of the penis, particularly on voiding the last drops of urine, and the stream of water will either be divided into two, or twisted like a corkscrew. If a scirrhus of the prostate gland has occasioned the suppression or difficulty of urine, a hard indolent tumour, unattended with any acute pain, may readily be felt in the perinæum, or by introducing the finger into the rectum. The cure of this disease, which is always symptomatic, requires the removal of the several causes, and the administration of those medicines and means which are recommended for the removal of the primary affection.

E.

EAGLE. See *Falco*.

Eagle stone. See *Aëtitis*.

Ear, inflammation of. See *Otitis*.

Ear-shaped. See *Auriculatus*.

Ear-wax. See *Cerumen*.

Earache. See *Otalgia*.

EARTH. (*Terra*, *æ*. f.) Although there seems to be an almost infinite variety of earthy substances scattered on the surface of this globe, analysis has shown that the various stony or pulverulent masses which form our mountains, valleys, and plains result from the combination or intermixture, in various numbers and proportions, of nine primitive earths, namely, Baryta, Strontia, Lime, Magnesia, Alumina, or clay, Silica, Glucina, Zirconia, Yttria, Thorina. The earths were long considered as simple bodies, but the discovery by Sir H. Davy, in 1808, of the metallic bases of potash, soda, baryta, strontia, and lime, subverted this idea, and taught us to regard the earths as all belonging, by most probable analogies, to the metallic class.

Chemically considered, the earths are those solid bodies composing the mineral strata, which are incombustible, colourless, not convertible into metals by the ordinary methods of reduction, and, when reduced by more refined processes, possessing but an evanescent metallic existence, and which, either alone, or when combined with carbonic acid, are insipid and insoluble in water.

Earth, absorbent. See *Absorbent*.

Earth, aluminous. See *Alumina*.

Earth, argillaceous. See *Alumina*.

Earth-bath. See *Balneum.*

Earth of bones. Phosphate of lime. See *Os.*

Earth, bolar. See *Bole.*

Earth, fuller's. See *Fuller's earth.*

Earth, heavy. See *Barytes.*

Earth, Japan. See *Acacia catechu.*

Earth, sealed, Terra sigillata. See *Bole.*

Earth-nut. See *Bunium.*

Earth-worm. See *Lumbricus terrestris.*

Eaton's styptic. A solution of green vitriol in alkohol, with the addition of some other ingredients.

Eau d'arquebusade. *Aqua vulneraria spirituosa.* A vulnerary water formerly in great repute, especially for gun-shot wounds, whence its name. It is composed of the dried tops of sage, wormwood, fennel, hyssop, marjoram, savory, thyme, rosemary, calamint, balm, peppermint, scordium, fresh angelica leaves, leaves of basil, lavender flowers, of each four ounces, steeped for a fortnight in two gallons of proof spirit and distilled, only one gallon and a half being brought over.

Eau de belloste. A mixture of equal parts of muriatic acid, brandy, and saffron, with or without the addition of water. It was formerly employed as a resolvent.

Eau des carmes. *Aqua melissæ composita.* A preparation much esteemed in France as a stomachic, stimulant, &c. It consists of spirit of balm, eight parts; spirits of rosemary, thyme, and canella, of each one part; spirit of nutmeg, two parts; spirit of anise, marjoram, hyssop, sage, angelica, and cloves, of each one part; spirit of orange peel, four parts; spirit of coriander, two parts.

Eau de Javelle. See *Aqua Alkalina Oxymuriatica.*

Eau-de-luce. See *Spiritus ammoniæ succinatus.*

Eau de rabel. *Aqua Rabelii.* A mixture of one part of concentrated sulphuric acid with three of alkohol. It is used as an astringent.

Eau de Vie. See *Brandy.*

Eau medicinale. *Aqua medicinalis Hussonii.* A nostrum long celebrated for the cure of gout. It is generally believed to be a vinous infusion of the root of colchicum, and does not differ in its operation from the *vinum colchici* of our pharmacopœias. Some say it is a vinous infusion of the flowers of colchicum.

Eau vegeto-minerale. See *Aqua vegeto-mineralis.*

Ebeaupin. A place about a league from Nantes, where there is a mineral spring which contains carbonic acid, carbonates of lime, magnesia, and iron muriates of lime, magnesia and soda, &c.

Ebel. The seeds of sage, or of juniper.

Ebenaceæ. The name given by Jussieu to a family of plants allied to the tree which produces ebony, *Diospyros ebenum.*

E'benum. (*um, i.* n.) *Ebenus. Hebenus.* Ebony.

Ebes'mech. Quicksilver.

Ebiscus. See *Hibiscus abelmoschus.*

E'BONY. A name given to various hard woods, the principal of which are the *black* ebony, and the *green* or American ebony. The black is the produce of the *Diospyros ebenum*, of most botanists, or *Ebenoxylon verum* of Loureiro, and is brought from Madagascar, Ceylon, and the Mauritius. The green ebony is the produce of a tree which has been referred to the genus *Pterocarpus*, and several others, to none of which, however, it properly belongs. The late professor Burnet has proposed to name the genus *Wheeleria*, in honour of Mr. Wheeler of St. Bartholomew's Hospital. Ebony is used chiefly for mechanical purposes, but has also been esteemed in medicine as a diaphoretic and alterative.

EBRACTEA'TUS. Ebracteate; without a bractea, or floral leaf.

Ebriecasum. A name given by Paracelsus to an affection of the mind resembling that produced by drunkenness.

Ebriety. See *Intoxication.*

Ebsemech. Quicksilver.

EBULLI'TION. (*Ebullitio, onis.* f.; from *ebullio*, to bubble up.) Boiling. This takes place during the change which a fluid undergoes from a state of liquidity to that of an elastic fluid, in consequence of the application of heat, which dilates and converts it into vapour.

E'bulus. See *Sambucus ebulus.*

Ebur. See *Ivory.*

Ebur fossile. Fossil unicorn. See *Unicornu.*

Ebur Ustum Nigrum. See *Ivory black.*

Ecalcula'tus. Without a spur, or horn.

Ecbo'licus. (From εκβαλλω, to cast out.) Applied to medicines which cause abortion or facilitate labour.

Ecbra'smata. (Εκβρασμα; from εκβραζω, to expel with ebullition.) Hippocrates gives this name to an eruption of fiery pimples.

Ecbyrso'ma. (*a, atis.* n.; from εκ, and βυρσα, the skin.) A protuberance of a bone at the joints, appearing through the skin.

Eccatha'rticus. (From εκκαθαιρω, to purge outwards.) According to Gorræus, eccathartics are medicines which open the pores of the skin. Sometimes expectorants are thus called, and also purgatives.

Ecchylo'ma. (From εκ, and χυλος, juice.) An extract.

Ec'chyma. (From εκχυω, to pour out.) Synonymous with *eczema.*

Ecchymoma. The same as *ecchymosis.*

Ecchymoma arteriosum. The false aneurism.

ECCHYMO'SIS. (Εκχυμωσις; from εκχυω, to pour out.) *Ecchymosis.* Extravasation. A black and blue swelling, either from a bruise or spontaneous extravasation of blood. It is removed by the application of leeches and cold stimulating lotions.

E'CCLISIS. (*is, is.* f.; from εκκλινω, to turn aside.) A luxation, or dislocation.

E'CCOPE. (*e, es.* f.; from εκκοπτω, to cut off.) The cutting off any part.

Ecco'peus. (From εκκοπτω, to cut off.) An ancient instrument, the raspatory, used in trepanning.

ECCOPRO'TIC. (*Eccoproticus*; from εκ, and κοπρος, dung.) A term applied to laxatives which evacuate merely the natural contents of the bowels, without occasioning any liquid discharge; this is generally the case with rhubarb and aloes.

ECCRINO'LOGY. (*Eccrinologia*, *æ*. f.: from εκκρινω, to excrete, and λογος, a discourse.) The doctrine of excretions. The term is ill formed. It should have been *eccriseology*.

E'CCRISIS. (*is*, *eos*, f.; from εκκρινω, to secrete.) An excretion of any kind.

ECCRI'TICA. (Same etymon.) Diseases of the excernent function. The sixth class in Dr. Good's Nosology.

ECCYE'SIS. (From εκ, and κυησις, *gravidity*.) Extra uterine fœtation.

Eccymosis. See *Ecchymosis*.

E'CDORA. (*a*, *æ*. f.; from εκδερω, to excoriate.) An excoriation: and particularly an excoriation of the urethra. — *James*.

ECDO'RIUS. (From εκδερω, to excoriate.) Applied to that which excoriates and eats through the skin.

ECHECO'LLON. (From εχω, to have, and κολλα, glue.) *Echecollum*. Any topical glutinous remedy.

ECHETRO'SIS. The white bryony.

ECHINA'TUS. (*Echinatus*, from εχινος, a hedge-hog.) Bristly; set with prickles: applied, in *Botany*, to any thing beset with bristles; as the pod of *Glycyrrhiza echinata*, and the seed-vessel of the gourd.

ECHINOCO'CCUS. (*us*, *i*. m.) Rudolphi calls the small granular bodies, found in the acephalocysts, by the name of echinococci.

ECHINODE'RMA. (From εχινος, a sea-urchin, and δερμα, a skin.) A class of radiated animals with hard skins like that of the echinus, or sea-urchin. The term *echinodermata* has been very generally, but improperly, substituted for this: echinodermata signifies simply the skins of echini, not animals having skins like the echinus.

Echinodermata. See *Echinoderma*.

ECHINOMELOCA'CTOS. (From εχινος, a hedge-hog, μηλον, an apple, and κακτος, a thistle.) The melon-thistle.

ECHINOPHTHA'LMIA. (*a*, *æ*. f.; from εχινος, a hedge-hog, and οφθαλμια, an inflammation of the eye.) An inflammation of that part of the eyelids where the hairs bristle out like the quills of a hedge-hog.

ECHINOPO'DIUM. (*um*, *ii*. n.; from εχινος, a hedge-hog, and πους, a foot: so named because its flowers resemble the foot of a hedge-hog.) A species of broom, probably the *Spartium scoparium*.

ECHI'NOPS. (*ops*, *opis*. m.; from εχινος, a hedge-hog, and ωψ, appearance.) The name of a genus of plants. Class, *Syngenesia*; Order, *Polygamia segregata*.

ECHINOPS SPHÆROCE'PHALUS. The systematic name of the globe-thistle; called also, *Crocodilion*, *Acanthabruca*, *Scabiosa cardnifolia*, *Sphærocephala elatis*, and *Echinopus*. It is raised in our gardens. The root and seeds are moderately diuretic, but seldom used.

Echinopus. See *Echinops*.

ECHINORHY'NCUS. (From εχινος, a hedge-hog, and ρυγχος, a beak.) A very numerous genus of intestinal worms, belonging to the order *Acanthocephaliæ* of Rudolphi: only one species has been found in man, namely, the *echinorhyncus bicornis*.

ECHI'NUS. (*us*, *i*. m.) Εχινος. 1. The hedgehog. See *Erinaceus*.

2. The sea-urchin.

3. Formerly applied to several plants, which are beset with spines or thorns.

4. A genus in the Linnæan system, included in the molusca order of vermes.

5. The prominent points on the surface of the *pileus*, or upper part of mushrooms, are called *echini*. See *Fungus*.

ECHINUS MARINUS. The sea hedge-hog, or urchin, the petrified spine of which is called *amygdaloides*, from its shape.

ECHIOI'DES. (From εχις, a viper, and ειδος, resemblance.) The trivial name of some plants, from their supposed resemblance to the *Echium*.

E'CHIUM. (*um*, *ii*. n.; from εχις, a viper: so called because it was said to heal the sting of the viper.) The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Monogynia*. Viper's bugloss.

ECHIUM ÆGYPTIACUM. Wall bugloss, the root of which is sudorific, and was used with oil as a dressing for wounds.

ECLACTI'SMIA. (Εκλακτισμα.) Convulsive agitation of the limbs in children. — *Hippocrates*.

ECLA'MPSIA. (From εκλαμπω, to shine.) See *Eclampsis*.

ECLA'MPSIS. (*is*, *is*. f.; from εκλαμπω, to shine.) *Eclampsia*. Splendour, brightness. Applied 1. To the appearance of flashes of light before the eyes, common in many diseases.

2. To the epilepsy of infants: the reason of the latter application is not obvious.

ECLE'CTIC. (*Eclecticus*; from εκλεγω, to select.) Archigenes and some others selected from all other sects what appeared to them to be the best and most rational: hence they were called *Eclectics*, and their medicine *Eclectic medicine*.

ECLE'CTOS. Synonymous with *eclegma*.

ECLE'GMA. (From εκλειχω, to lick.) *Eclectos*. *Ecleictos*. A linctus, or form of medicine of a semifluid consistence, which is licked off the spoon.

E'CLYSIS. (*is*, *eos*. f.; from εκλυω, to dissolve.) An universal faintness.

ECONOMIC. Appertaining to economy, or the useful distribution and application of things. Thus economic botany means the application of botany to medicine, cookery, or other useful arts.

ECONOMY. In scientific language the orderly arrangement of things with a view to an useful end; thus the total of the parts which constitute a living being is called the *animal* or *vegetable* economy.

ECPHLYSIS. (*is*, *is*. f. Εκφλυσις; from εκφλυζω, to boil, or bubble up or over.) A vesicular eruption.

ECPHRA'CTIC. (*Ecphracticus*; from εκφρασσω, to remove obstructions.) Synonymous with *deobstruent*.

ECPHRA'XIS. (*is*, *is*. f.; from εκφρασσω, to remove obstruction.) The opening of obstructed pores.

ECPHRO'NIA. (*a*, *æ*. f. Εκφρονη, o

εκφροσυνη; from εκφρων, *extra mentem*, out of one's mind.) Insanity. Craziness.

E'CPHYAS. (From εκ, and φυω, to produce.) 1. An appendix, or excrescence.

2. The appendicula cæci vermiformis.

ECPHYMA. (*a, atis.* n.; from εκφυω, *educo, egero.*) A cutaneous excrescence.

ECPHYSE'SIS. (From εκφυσαω, to breathe through.) A quick expulsion of the air from the lungs.

E'CPHYSIS. (From εκφυω, to produce.) 1. An apophysis, appendix, or process of any kind.

2. The duodenum.

ECPIE'SMA. (From εκπιεζω, to press out.) 1. A fracture of the skull, with depression of the bone. — *Galen.*

2. An expressed juice. — *Dioscorides.*

ECPIE'SMOS. (From εκπιεζω, to press, or press out.) A disorder of the eye, in which the globe is almost pressed out of the socket by an afflux of humours.

ECPLERO'MA. (From εκπληροω, to fill.) In Hippocrates they are hard balls of leather, or other substances, adapted to fill the arm-pits, while by the help of the heels, placed against the balls, and repressing the same, a luxated os humeri is reduced into its place.

ECPLE'XIS. (*is, is.* f.; from εκπλησσω, to terrify or astonish.) A stupor or astonishment, from sudden external accidents.

E'CPNOE. (From εκπνεω, to breathe.) Expiration.

ECPTO'MA. (From εκπιπτω, to fall out.) *Ecptosis.* A falling down of any part: applied to a luxation; the expulsion of the placenta; the falling off of gangrenous parts; to hernia of the uterus, &c.

ECPY'CTICUS. (From εκπυκαζω, to condense.) Rendering the fluids more solid.

ECPYE'MA. (*a, atis.* n.; from εκ, and πυον, pus.) A collection of pus.

ECPYE'SIS. (*is, is.* f.; from εκπυω, to suppurate.) Humid scalp.

ECPYE'TIC. (Same etymon.) Suppurative.

ECRE'GMA. (From εκρηγνυμι, to break.) A rupture.

ECRE'XIS. (From εκρηγνυμι, to break.) A rupture: applied by Hippocrates to a rupture or laceration of the womb.

ECRHY'THMOS. (From εκ, and ρυθμος, rhythm.) Irregular: anciently applied to the pulse.

E'CROE. (From εκρεω, to flow out.) An efflux, or the course by which any humour which requires purging is evacuated.

E'CRYSIS. (Εκρυσις; from εκρυω, to flow out.) In Hippocrates it is an efflux of the semen before it receives the conformation of a fœtus, and therefore is called an efflux, to distinguish it from abortion.

ECSARCO'MA. (*a, atis.* n.; from εκ, and σαρξ, flesh.) A fleshy excrescence.

E'CSTACY. (*Ecstasis, cos.* f. Εκστασις; from εξισταμαι, to be out of one's senses.) 1. An ecstacy. This disease consists in a total suspension of sensibility and voluntary motion, and mostly of mental power; the muscles are rigid, the body erect and inflexible; the pulsation of the heart is felt, and the breathing not affected. The exciting cause of this disease is generally some mental affection. It differs from catalepsy and trance in the inflexible and rigid state of the muscles, and the obvious continuance of the breathing and the heart's action. It occasionally exists with a plethoric state of the blood-vessels; in which case bleeding and depletions are found useful. In other more obviously nervous states, the nervous stimulants and aperients are to be preferred.

2. In Hippocrates it signifies a delirium.

ECSTRO'PHIUS. (From εκστρεφω, to invert.) An obsolete epithet for any medicine that makes the blind piles appear outwardly.

ECTHELY'NSIS. (From εκθηλυνω, to render effeminate.) Softness. Applied formerly to the skin and flesh, when lax and soft, and to bandages, when not sufficiently tight.

ECTHLI'MMA. (From εκθλιβω, to press out.) An ulceration of the skin caused by pressure.

ECTHLI'PSIS. (From εκθλιβω, to press out.) Elision, or expression. Kraus would make it signify abrasion, or the wounding of a part by pressure. The truth is, it is not a medical term at all, but simply a Greek word signifying squeezing out or expression.

E'CTHYMA. (*a, atis.* n. Εκθυμα; from εκθυω, to break out.) An eruption of phlyzacious pustules, which are usually distinct, arising at a distance from each other, seldom very numerous, unaccompanied by fever, and not contagious.

This eruption, unconnected with any other disease, does not very frequently demand the assistance of medicine. It shows itself under three or four varieties, and is usually attributed to long continued exertion and fatigue, to much watching, to imperfect nutrition, to the influence of cold, to a state of pregnancy, or to the debilitating effects of previous malignant fevers, especially of small-pox, measles, and scarlatina. It occurs chiefly on the extremities. The diagnosis of this eruption, from the contagious pustular diseases, as well as from some of the secondary appearances of syphilis, is of considerable importance in practice. There are three species in this genus. 1. The *Ecthyma vulgare* is the slightest form of the disorder, and consists of a partial eruption of small hard pustules, on some part of the extremities, or on the neck and shoulders, which is completed in three or four days. In the course of a similar period, the pustules successively enlarge, and inflame highly at the base, while pus is formed in the apex; and in a day or two more they break, pour out their pus, and afterwards a thinner fluid, which speedily concretes into brown scabs. In a week more, the soreness and inflammation subside, and the scabs soon afterwards fall off, leaving no mark behind.

This eruption commonly supervenes a state of languor, of some continuance, with loss of appetite, irregularity of the alvine evacuations, and pains in the stomach or limbs. Young persons are principally subject to it, and children are sometimes affected with it, especially in the spring or summer after being overheated, or fatigued, or disturbing the digestive organs by improper food. The constitutional

derangement is not immediately relieved on the appearance of the eruption, but ceases before its decline. The use of gentle purgatives, in the early stage, and of the decoction of cinchona, after the maturation of the pustules, appears to comprehend all that is requisite in regard to medicine.

2. The *Ecthyma infantile* occurs in weakly infants, during the period of lactation, when sufficient nutriment is not afforded them. The pustules are, in appearance, the same as those of the preceding species, and go through similar stages of progress in the same time. But the disorder does not terminate here: fresh eruptions of phlyzacia continue to rise in succession, and to a much greater extent than in the ecthyma vulgare, appearing not only over the extremities and trunk, but on the scalp, and even on the face; in which situation the pustules do not occur in the other varieties of ecthyma. Hence, also, the duration of the eruption is much greater than in the preceding species, being sometimes protracted for several months. Yet the patients usually remain free from fever, and the pain and irritation seem to be inconsiderable, except when a few of the pustules become very large and hard, with a livid base, and ulcerate to some depth: in this case, also, a slight whitish depression is permanently left on the seat of the pustule.

The principal means of cure will be found in changing the nurse; and the advantages of better aliment will be aided by proper clothing and exercise, as well as by moderate alteratives, and by the cinchona, or chalybeates.

3. *Ecthyma luridum.* The most obvious peculiarity of this variety of the phlyzacious pustules is the dark red colour of their base, which is likewise hard and elevated. But they differ also from the two preceding varieties in being of a larger size; and, from the first, in the slow but long succession in which they arise, and in the extent of surface over which they spread, the face alone being exempt from their occurrence. This form of the disease is most frequently seen in persons of an advanced age, who have injured their constitutions by hard labour, intemperance in the use of spirits, and night-watching; and it is most severe in the winter season. Under these circumstances, the pustules, as might be expected, are slow in healing. They break in the course of eight or ten days, and discharge a curdly, sanious, or bloody matter: the ulcerated cavities, extending beyond the original boundary, soon become filled with hard, dark scabs, and remain surrounded by a deep-seated hardness in the flesh, and dark inflamed borders, until the scabs are about to separate; a period generally of several weeks, and sometimes of many months. The scabs generally adhere firmly; but, if removed by violence, they are not speedily reproduced: on the contrary, tedious ulcers, with callous edges, and a sanious discharge, are often thus produced.

The treatment must be chiefly directed to the amendment of the constitution, by means of good diet, by the occasional use of the warm bath, and by the bark and decoction of the woods internally.

Ecthymo'sis. (From εκθυζω, to effervesce.) Effervescence or agitation of the blood.

Ectillo'ticus. (From εκτιλλω, to pull out.) Applied to that which eradicates tubercles or corns, or destroys superfluous hair.

Ectomon. Εκτομον. Black hellebore.

ECTO'PIA. (*a*, *æ*. f.; from εκτοπος, out of place.) A displacement of any part.

Ectopiæ. An order in the class *Locales* of Cullen's Nosology.

Ectoprotic. Improperly written for *ecoprotic*.

Ectri'mma. (From εκτριβω, to rub off.) An excoriation.

Ectro'ma. (Εκτρωμα; from εκτιτρωσκω, to miscarry.) An abortion.

E'ctrope. (From εκτρεπω, to divert, pervert, or invert.) 1. A duct by which morbid humours are diverted and drawn off.

2. In Paulus Ægineta it is the same as *Ectropium*.

ECTRO'PIUM. (*um*, *ii*. n.; from εκτρεπω, to evert.) An eversion of the eye-lids, so that their internal surface is outermost.

There are two species of this disease: one produced by an unnatural swelling of the lining of the eyelids, which not only pushes their edges from the eyeball, but also presses them so forcibly, that they become everted; the other arising from a contraction of the skin covering the eyelid, or of that in the vicinity, by which means the edge of the eyelid is first removed for some distance from the eye, and afterwards turned completely outward, together with the whole of the affected eyelid.

The morbid swelling of the lining of the eyelids, which causes the first species of ectropium, arises mostly from a congenital laxity of this membrane, afterwards increased by chronic ophthalmies, particularly of a scrophulous nature, in relaxed, unhealthy subjects; or else the disease originates from the small-pox affecting the eyes.

The second species is not unfrequently a consequence of puckered scars, produced by a confluent small-pox, deep burns, or the excision of tumours, without saving a sufficient quantity of skin. This disease is only to be cured by a surgical operation. Caustics have been tried by Mr. Ware, Scarpa, and many able surgeons; but, they all acknowledge, with uncertain effect. The operation proposed and practised by Sir William Adams is now generally resorted to. It consists, first, in removing the whole of the fungous growth by a small curved bistoury; next, in stripping away a piece of the edge of the tarsus, in the form of the letter V; afterwards, in separating the eyelid from the cheek, whenever it adheres to it; and, finally, in supporting the lid, now raised into the proper place, and confining the edges of the cut eyelid, brought into a state of juxtaposition by a proper bandage. The divided edges heal by the first intention; and the cure is often completed in a fortnight, with a restoration of the eyelid to its healthy form.

ECTRO'SIS. (*is*, *is*. f. Εκτρωσις; from εκτιτρωσκω, to miscarry.) A miscarriage.

Ectro'ticus. (From εκτιτρωσκω, to mis-

carry.) *Ectyroticus, Ectyloticus.* Causing an abortion.

Ectylolicus. See *Ectillolicus.*

Ectyroticus. See *Ectrolicus.*

ECZEMA. (Εκζεμα; from εκζεω, to boil out.) *Eczesma.* A cutaneous disease, characterised by an eruption of small vesicles on various parts of the skin, usually set close or crowded together, with little or no inflammation round their bases, and unattended by fever. It is not contagious.

This eruption is generally the effect of irritation, whether internally or externally applied, and is occasionally produced by a great variety of irritants, in persons whose skin is constitutionally very irritable. It differs from miliaria, inasmuch as it is not the result of fever; and, unless it be very extensively diffused, is not accompanied with any derangement of the constitution: even in the most violent cases, the functions of the sensorium and of the stomach are seldom disturbed. When limited to the fingers, hands, and part of the fore-arm, it is not unfrequently mistaken for itch: but it may be distinguished by the appearance of its acuminated and pellucid vesicles; by the closeness and uniformity of their distribution; by the absence of surrounding inflammation, and of subsequent ulceration; and, in many cases, by the sensations of smarting and tingling, rather than of itching, which accompany them. According to the nature of the irritating cause, the extent and form of the disease are somewhat various. The species of this affection are,

1. *Eczema solare,* which occurs in the summer season, and is the effect of irritation from the direct rays of the sun, or from the heated air. Hence it affects almost exclusively those parts of the surface which are exposed to their influence; as the face, the neck, and fore-arms in women, but more particularly the back of the hands and fingers. They are popularly termed *heat-spots.*

This eruption is successive, and has no regular period of duration or decline: it commonly continues for two or three weeks, without any particular internal disorder. The included lymph becomes more milky, and is gradually absorbed, or dried into brownish scales, which exfoliate, or into brownish yellow scabs, of the size of a small pin's head, especially when the vesicles are broken. But successive eruptions of the vesicles are liable to appear, which terminate in a similar manner by exfoliation or scabbing; and in those persons who, by the peculiar irritability of their skin, are much predisposed to the disorder, it is thus continued many weeks, to the end of autumn, or even prolonged to the winter. When this happens, the vesicles generally pour out an acrid serum, bywhich the surface is inflamed, rendered tender, and even slightly ulcerated, and the disease assumes the form of impetigo.

The course of this disorder does not appear to be materially shortened by the operation of medicine. The mineral acids, with a decoction of cinchona, or other vegetable tonic, and a light but nutritious diet, seem to be most effectual in diminishing the eruption. Simple ablution with tepid water contributes to relieve the smarting and tingling of the parts affected, which do not bear unguents, or any stimulant application.

2. *Eczema impetiginodes.* A local eczema is produced by the irritation of various substances; and, when these are habitually applied, it is constantly kept up in a chronic form, differing from the impetigo only in the absence of pustules. Small separate vesicles, containing a transparent fluid, and, like the psydracious pustules, but slightly elevated, arise, and slowly increase: they are attended with pain, heat, smarting, and often with intense itching. When they break, the acrid lymph that is discharged irritates and inflames the surrounding cuticle, which becomes thickened, rough, reddish, and cracked, as in the impetiginous state. The alliance, indeed, of this affection with impetigo is further proved by the circumstance, that, in some cases, vesicles and pustules are intermixed with each other; and, in different individuals, the same irritant will excite a pustular or a vesicular eruption respectively; the vesicular disease being always the most painful and obstinate.

The first step towards the cure of this species of eczema is to remove the irritating cause, where that is obvious. The eruption, however, is not easily removed: but the painful sensations connected with it are greatly alleviated by simple poultices; lotions containing hydrocyanic acid or acetate of lead are also useful. Where there is any other evidence of a cachectic condition of the patient, similar treatment must be prescribed for the improvement of the general health as is recommended in ecthyma.

3. *Eczema rubrum.* The most remarkable variety of the eczema rubrum is that which arises from the irritation of mercury; whence it has been called *eczema mercuriale,* and *erythema mercuriale,* and *hydrargyria.* But the disease is not exclusively occasioned by this mineral, either in its general or more partial attacks: it has been observed to follow exposure to cold, and to recur in the same individual at irregular intervals, sometimes without any obvious or adequate cause.

It is preceded by a sense of stiffness, burning heat, and itching, in the part where it commences, which is most frequently the upper and inner surface of the thighs, and about the scrotum in men; but sometimes it appears first in the groins, axillæ, or in the bend of the arms, or about the wrists and hands, or in the neck. These sensations are soon followed by an appearance of redness, and the surface is somewhat rough to the touch. This, however, is not a simple erythema: for on examining it minutely between the light and the eye, or with a convex glass, the roughness is found to be occasioned by innumerable minute and pellucid vesicles, which have been mistaken for papulæ. In two or three days, these vesicles, if they are not ruptured, attain the size of a pin's head; and, the included serum then becoming somewhat opake and milky, the character of the eruption is obvious. It soon extends itself over the body and limbs in successive large patches,

and is accompanied by a considerable swelling of the integuments, such as is seen in small-pox, and other eruptive fevers, and by great tenderness of the skin, and much itching. When the vesicles begin to lose their transparency, they generally burst, and discharge, from numerous points, a thin acrid fluid, which seems to irritate the surface over which it passes, and leaves it in a painful, inflamed, and excoriated condition. The quantity of this ichorous discharge is very considerable, and it gradually becomes thicker and more adhesive, stiffening the linen which absorbs it, and which thus becomes a new source of irritation: it emits also a very fœtid odour. This process takes place in the successive patches of the eruption, until the whole surface of the body, from head to foot, is sometimes in a state of painful excoriation, with deep fissures in the bends of the joints, and in the folds of the skin of the trunk; and with partial scaly incrustations, of a yellowish hue, produced by the drying of the humour, by which also the irritation is augmented. The extreme pain, arising from the pressure of the weight of the body upon an extensive portion of such a raw surface, is sufficient to give rise to an acceleration of the pulse, and white tongue; but the functions of the stomach and of the sensorium commune are not evidently disturbed by this disease.

The duration of this excoriation and discharge is uncertain and irregular: when only a small part of the body is affected, it may terminate in ten days; but, when the disorder has been universal, the patient seldom completely recovers in less than six weeks, and is often afflicted to the end of eight or ten weeks. By so severe an inflammation, the whole epidermis is destroyed in its organisation; and, when the discharge ceases, it lies loose, assuming a pale brown colour, which changes almost to black before it falls off in large flakes. As in other superficial inflammations, however, the new red cuticle that is left is liable to desquamate again, even to the third or fourth time, but in smaller branny scales, of a white colour; and a roughness sometimes remains for a considerable period, like a slight degree of psoriasis. In some instances, not only the cuticle, but the hair and nails are also observed to fall off; and the latter, when renewed, are incurvated, thickened, and furrowed, as in lepra.

The eczema rubrum, however, even from the irritation of mercury, is often limited to a small space; and then the discharge is slight, and its whole duration short. Similar local attacks of it occur in irritable constitutions, especially in hot weather, affecting the hands and wrists, the neck and external ear, and other parts, but without any constitutional disorder. Successive crops of the vesicles arise, in irregular patches, with a red blush around them, which produce partial incrustations, as the ichor, that issues, is dried: and by these vesications and desiccations of the matter the affection is kept up for some weeks.

The treatment of this species of eczema may be comprised in few words; for it is principally palliative. But although medicine may not possess the power of shortening the period of its duration, yet the omission of the palliative measures will allow an extreme aggravation of the sufferings of the patient to take place, and probably prolong it beyond its natural course, as well as contribute to wear out the powers of the constitution.

The misery and exhaustion, resulting from the excessively tender and irritated state of the skin, may be greatly alleviated by frequent ablution or fomentation with warm gruel, or strained bran and water; or by the frequent use of the warm bath, which has the advantage of cleansing the surface, without occasioning any abrasion by friction. A constant application of poultices has produced considerable ease to the patient, when the affection was confined to the extremities. Where the cuticle has exfoliated, Mr. Pearson recommends the application of a mild cerate, consisting of litharge plaster, wax, and oil, spread thickly on linen rollers, and renewed twice a day. With the same view of diminishing the irritation of the surface, the bed and body linen of the patient, which becomes hard and stiff as the discharge dries upon it, should be frequently changed.

Every additional irritation from stimulating food and drink should be avoided; the bowels should be kept open by the administration of occasional laxatives; and some saline diaphoretic, or an antimonial, should be given regularly, to which an opiate may be added, for the purpose of soothing the sensations of the patient. The sulphuric acid is grateful and refreshing; and, in the decline of the swelling and discharge, it may be combined advantageously with the liberal exhibition of cinchona and sarsaparilla.

Eczema mercuriale. See *Eczema.*

EDENTA'TA. The fifth order of the Class *Mammalia* in Cuvier's System of Zoology. It comprises animals all of which are without incisor teeth, and some without any teeth.

EDES. Amber.

EDE'SSENUM. An old collyrium, made with tragacanth, gum-arabic, opium, &c.

EDETZ. Amber.

EDIC. *Edich; Edir.* Iron.

EDU'LCORANT. (*Edulcorans;* from *edulco*, to make sweet.) Applied to a medicine which purifies the fluids by depriving them of their acrimony.

EDULCORA'TION. (*Edulcoratio, onis.* f.) 1. The affusion of water on any substance to remove from it saline or other particles which are soluble in water.

2. The sweetening of a medicine with sugar.

Eel. See *Muræna anguilla.*

Eel, conger. See *Muræna conger.*

EEL FAT. *Adeps anguillæ.* This is obtained from eels while roasting, and is used as an ointment for stiff joints.

EFFERVESCENCE. (*Effervescentia, æ.* f.; from *effervesco*, to grow hot.) 1. That agitation which is produced by mixing substances together which cause the evolution of a gas.

2. A small degree of ebullition.

EFFIDES. Cerusse. — *Ruland.*

E'FFILA. Freckles.

EFFLORESCENCE. (*Efflorescentia*, *æ*. f.; from *effloresco*, to blow as a flower.) 1. In *Pathology*, a morbid redness of the skin.

2. In *Chemistry*, that effect which takes place when bodies spontaneously become converted into a dry powder. It is almost always occasioned by the loss of the water of crystallisation in saline bodies.

3. In *Botany*, the evolution of the flower.

EFFLU'VIUM. (*um*, *ii*. n.; from *effluo*, to flow out.) An exhalation. The term is generally applied to such exhalations as are noxious, or disagreeable to the senses; thus we speak of contagious effluvia, and the effluvia of putrefying animal and vegetable substances. See *Ague*, *Contagion*, and *Febris*.

EFFRACTU'RA. (From *effringo*, to break down.) A fracture of the cranium, in which the bone is much depressed. — *Ambrose Paré*.

EFFUSION. (*Effusio*, *onis*. f.; from *effundo*, to pour out.) In *Pathology*, the escape of any fluid out of the vessel, or viscus, naturally containing it, and its lodgment in another cavity, in the cellular substance, or in the substance of parts. Effusion also sometimes signifies the morbid secretion of fluids from the vessels; thus pathologists frequently speak of coagulable lymph being effused on different surfaces.

EGE'RIES. (From *egero*, to carry out.) *Egestio*. An excretion, or evacuation.

Egg. See *Ovum*.

Egg-shaped. See *Ovatus*.

Eighth pair of nerves. See *Nervous system*.

EILAMIDES. (From ειλεω, to involve.) The membranes involving the brain.

EILE'MA. (Ειλημα; from ειλεω, to convolute.) In Hippocrates it signifies painful convolutions of the intestines from flatulence. Vogel applies the term to a fixed pain in some part of the bowels, as if a nail were driven in.

Ei'leon. See *Ilium*.

Ei'leos. See *Ileus*.

EI'SPNOE. (From εισπνεω, to inspire.) Inspiration of air.

EJA'CULANS. (From *ejaculor*, to cast out.) *Ejaculatorius*. The vessels which convey the seminal matter secreted in the testicles to the penis are called *ejaculantia*. These are the epididymis, the vasa deferentia, and the vesiculæ seminales, which are the receptacles of the semen.

Ejaculator seminis. See *Accelerator urinæ*.

ELACA'LLI. The Indian name of the *Euphorbia nerrifolia* of Linnæus, which is cathartic.

ELÆA'GNON. (From ελαιον, oil, and αγνος, chaste.) See *Vitex agnus castus*.

ELÆO'MELI. (From ελαιον, oil, and μελι, honey.) A sweet purging oil, the produce of a Syrian tree. — *Dioscorides*.

ELÆOSA'CCHARUM. (*um*, *i*. n.; from ελαιον, oil, and σακχαρον, sugar.) A mixture of an essential oil with sugar. The chief use of such preparations is to render the oil soluble in water; for this purpose the sugar must exceed thirteen times the weight of the oil.

ELÆOSELI'NUM. See *Eleoselinum*.

ELAÏDATE. A salt formed by the *elaidic acid* with a base.

ELAÏDIC ACID. The name given by Boudet to an acid resulting from the saponification of elaidine.

ELAÏDINE. The name given by Boudet to a substance resembling stearine, which results from the action of hyponitric acid upon olive, almond, and some other oils.

ELAIN. (From ελαιον, oil.) The oily principle of solid fats. See *Adeps*.

ELAIODATE. A salt formed by the elaiodic acid with a base.

Elaiodic acid. See *Oleoricinic acid*.

ELAIODON. (From ελαιον, oil.) A name given by Herberger to the fluid part of volatile oils.

ELAIS GUINEE'NSIS. A species of palm, which grows spontaneously on the coast of Guinea, but is much cultivated in the West Indies. It is from this tree that the oil, called in the West Indies *Mackaw fat*, is obtained. It affords, also, an oil which is considered as an emollient and strengthener in all kinds of weakness of the limbs. It also is recommended against bruises, strains, cramps, pains, swellings, &c.

ELAMBICA'TIO. A method of analysing mineral waters. See *Castelli Lexicon*, *in voce*. Ed. Lipsiæ, 1713.

ELANULA. Alum.

ELAPHOBO'SCUM. (*um*, *i*. n.; from ελαφος, a stag, and βοσκω, to eat: so called because deer eat it greedily.) A name given by the ancient botanists to several umbelliferous plants.

ELAPHOSCO'RODON. (From ελαφος, the stag, and σκοροδον, garlic.) Stag's or viper's garlic. A species of allium.

ELAQUIR. Red vitriol.

ELA'SMA. (From ελαυνω, *impello*; *ductile opus facio*.) A lamina of any kind. A clyster-pipe.

ELASTIC. (*Elasticus*; from ελαστης, *impulsor*, which is from ελαυνειν, to impel, to push.) Springy; having the power of returning to the form from which it has been forced to deviate, or from which it is withheld: thus, a blade of steel is said to be elastic, because if it is bent to a certain degree, and then let go, it will of itself return to its former situation; the same will happen to the branch of a tree, a piece of Indian rubber, &c. See *Elasticity*.

Elastic fluid. See *Gas*.

Elastic gum. See *Caoutchouc*.

ELASTICITY. *Elasticitas*. A force in bodies by which they endeavour to restore themselves to the posture from which they were displaced by any external force. To account for this property, many have recourse to the universal law of nature, attraction, by which the parts of solid and firm bodies are caused to cohere together: whereby, when hard bodies are struck or bent, so that the component parts are a little moved from one another, but not quite disjoined or broken off, nor separated so far as to be out of the power of the attracting force, by which they cohere together, they certainly must, on the cessation of the external violence, spring back with a very great velocity to their former state. But in this circumstance, the atmospherical pressure will account for it as well; because such a violence, if it be not great

enough to separate the constituent particles of a body far enough to let in any foreign matter, must occasion many vacuola between the separated surfaces, so that upon the removal of the external force, they will close again by the pressure of the aërial fluid upon the external parts, *i. e.* the body will come again into its natural position. The included air, likewise, in most bodies, gives the power of resilition upon their percussion.

If two bodies perfectly *elastic* strike one against another, there will be or remain in each the same relative velocity as before, *i. e.* they will recede with the same velocity as they met together. For the compressive force, or the magnitude of the stroke in any given bodies, arises from the relative velocity of those bodies, and is proportional to it, and bodies perfectly *elastic* will restore themselves completely to the figure they had before the shock; or, in other words, the restitutive force is equal to the compressive, and therefore must be equal to the force with which they came together, and consequently they must by elasticity recede again from each other with the same velocity. Hence, taking equal times before and after the shock, the distances between the bodies will be equal; and therefore the distances of them from the common centre of gravity will, in the same times, be equal. And hence the laws of percussion of bodies perfectly elastic are easily deduced.

Elaterine. A crystallisable matter distinct from elatin, found by Mr. Hennel in the juice of elaterium. See *Momordica elaterium.*

ELATE'RIUM. (*um, i.* n. Ελατηριον; from ελαυνω, to stimulate or agitate.) This name was given by the Greeks to any drastic purgative, and to the juice of the wild cucumber in particular. At present, it signifies a peculiar substance deposited from the juice of the wild cucumber. See *Momordica elaterium.*

Elathe'ria. (*a, æ.* f.) A name of the cascarilla bark.

E'LATIN. The active principle of elaterium. See *Momordica elaterium.*

Elati'ne. (*e, es.* f.; from ελαττων, smaller, being the smaller species.) See *Antirrhinum elatine.*

Elati'tes. Bloodstone.

ELCO'SIS. (*is, eos.* f.; from ελκος, an ulcer.) Ulceration. Sauvages applies this term especially to a cachectic disease attended with fœtid, carious, and chronic ulcers.

Elder. See *Sambucus.*

Elder, dwarf. See *Sambucus ebulus.*

Elecampane. See *Inula.*

Elective affinity, double. See *Affinity.*

Elective attraction. See *Affinity.*

Elective attraction, double. See *Affinity.*

ELECTRICITY. (*Electricitas, atis.* f.) When certain substances, such as amber, glass, sealing-wax, and sulphur, are rubbed, and then brought near small fragments of paper, cork, or other light bodies, the latter move rapidly towards the former, and adhere during a longer or shorter interval to their surface. If the body which is thus excited by friction is light and freely suspended, it will move towards the substances in its vicinity. After a while the excited body loses its influence; but it may be renewed for any number of times by friction. The movement observed in these instances is attributed to a peculiar kind of attraction, and the unknown cause of this attraction is called *Electricity*, from the Greek word ηλεκτρον, amber, because the electric property was first noticed in this substance.

The ancients were aware that amber and the *lyncurium* (supposed to be our tourmalin), may be rendered electric by friction, but it was not known that other bodies may be similarly excited until the commencement of the seventeenth century, when Dr. Gilbert, of Colchester, detected the same property in a variety of other substances. Of those which he has enumerated in his treatise *de Magnete*, the principal are the diamond, rock crystal, and several of the precious stones, glass, sulphur, mastic, sealing-wax, and resin; and in making this discovery he laid the foundation of the science of Electricity. A few additional facts were noticed during the course of the same century by Boyle, Otto de Guericke, and Dr. Wall, and in 1709 Mr. Hawkesbee published an account of many curious electrical experiments; but no material progress was made in this department of knowledge till between the years 1729 and 1733, when the discovery of new and important facts by Mr. Stephen Grey in this country, and M. Dufay in France, attracted general attention to the subject, and speedily acquired for it the regular form of a science.

The most important fact established by Mr. Grey was the fundamental one, that electricity passes freely along certain substances, and that its progress is more or less entirely arrested by others. Dufay, in repeating the experiments of Grey, observed that an electrified substance not only attracts light bodies, but causes them after contact to fly off from its surface as if by a principle of repulsion. This singular phenomenon, which is termed *electrical repulsion*, had been previously noticed by Otto de Guericke, but the merit of original observation seems also justly due to the French philosopher. Dufay likewise noticed that the electricity excited on glass is different from that of resin, and he hence inferred the existence of two kinds of electricity, the *vitreous* and *resinous*, the former belonging to glass, and the latter to resin. He established an excellent mode of distinguishing them, by finding that substances possessed of the same kind of electricity always repel each other; and that attraction is as uniformly exerted between substances which are in opposite states of electrical excitement.

Another fact of consequence, relative to the excitement of electricity by friction, was discovered in 1759 by Mr. Symmer (*Philos. Trans.* li. 340.), who found that when two bodies are rubbed together, both are excited, and that one always possesses vitreous and the other resinous electricity. This induced Symmer to modify the doctrine of the two electricities. Dufay conceived vitreous electricity to be peculiar to some substances, and resinous electricity to others. Symmer, on the contrary, maintained, that bodies in their ordinary un

excited condition contain both kinds of electricity in a state of combination; and, as they then neutralise or counteract each other's effects, no electrical phenomena are apparent; that friction produces excitement by separating the two principles; and that excitation continues until that kind of electricity, which has been withdrawn, is restored.

Dufay's doctrine of the two electricities, as modified by Symmer, is at present extensively adopted. Agreeably to this theory, as now understood, there exists two electric fluids, both equally subtile and elastic, universally diffused, and therefore present in all bodies, each highly repulsive to particles of its own kind, and attractive to those of an opposite nature. An unexcited substance possesses both fluids in an equal degree and in a state of combination; whereas any circumstance, such as friction, contact, or chemical action, which disunites the combined electricities, and thereby occasions the whole or part of a body to have more of one electricity than of the other, causes electric excitement. The repulsion exerted among the particles of each electricity to those of its own kind diminishes as the squares of the distance; and the mutual attraction of dissimilar electricities is regulated by the same law. This accounts for the inaction of unexcited contiguous bodies: for, though each electricity in each body repels that electricity of the same kind in the other with a force varying as the squares of the distance, attraction to exactly the same amount is exerted between the opposite electricities; and, therefore, as the two substances are reciprocally attracted and repelled in an equal degree, no effect whatever is apparent. When either of the electric fluids is in excess, its particles by their repulsion recede from each other as much as possible, and would escape from the excited body altogether, unless their passage were impeded by a non-conductor, that is, by a substance through which electricity is transmitted with difficulty. If, for instance, an excited substance be enveloped in dry air, the electricity, after reaching the surface of the body, will be retained by the air, and be accumulated at that surface: its effort to escape gives rise to pressure against the air, and is often productive of motion. This is familiarly shown by suspending near each other light substances, such as pieces of paper or pith balls, and communicating electricity to them. If similarly electrified, the effort of the electric fluid to pass off in contrary directions causes the substances themselves to fly asunder; and, when oppositely excited, they are drawn together by the effort which the fluids make to coalesce. Should the oppositely electrified bodies be fixed instead of easily movable, and their mutual attraction overcome the resistance of the air, the two fluids rush together with violence, causing heat, light, and noise in their passage, and the electric equilibrium is thereby instantly restored.

The celebrated Dr. Franklin proposed a different theory of electricity, which, as subsequently extended by Æpinus and Cavendish, affords an elegant explanation of electrical phenomena, and, though scarcely so philosophical as that of Dufay, is strongly recommended by its simplicity. It is founded on the supposition of a single electric fluid, the particles of which repel each other with a force diminishing as the squares of the distance, and are attracted by matter in general according to the same law. Material substance in its unelectric state is a compound of electricity and matter, saturated and neutralised with each other. It is also an assumption, shown to be necessary by Æpinus and Cavendish, but properly considered as the weak part of the doctrine, that ponderable bodies repel each other with the same force and according to the same law as the particles of electricity. From the nature of these postulates it will be easy to anticipate their application. Unelectric bodies are such as have their natural quantity of electricity, which precisely suffices to saturate and neutralise the matter of which they consist. They are then electrically indifferent; because the repulsion exerted between the electricity and matter of contiguous bodies is exactly counteracted by the attraction of the electric fluid in each for the matter of the other. Electrical excitement is occasioned either by increase or diminution of the natural quantity of electricity. On rubbing a tube of glass with a woollen cloth, the electrical condition of both is disturbed: the glass acquires more electricity than it naturally possesses, or is overcharged with electric fluid; and the cloth, losing what the glass gained, contains less than its natural supply, or is undercharged. These opposite states are denoted by the algebraic terms *positive* and *negative*, the former corresponding to the vitreous, the latter to the resinous, electricity of Dufay. Bodies positively excited repel each other by reason of the repulsion among the particles of the electricity with which they are surcharged; and the equal tendency of negatively excited bodies to separate is ascribed to the mutual repulsion among the particles of matter. The electric equilibrium in excited substances is restored by the electricity escaping from those where it is in excess, and passing to those where it is defective.

The theory of Dufay has a manifest advantage over that of Franklin in the simplicity of its postulates, being founded solely on the assumption of two different fluids, universally diffused, each highly repulsive to its own particles, and attractive of one another. The foundation of the Franklinian doctrine is more complex, and involves the assumption of matter being repulsive to itself, or containing a principle which causes repulsion, a supposition which has been thought at variance with the laws of gravitation, and therefore irreconcileable with the known properties of matter. The only plausible mode of meeting this objection is by supposing matter, considered apart from electricity, to be repulsive to its own particles; but when combined with the electric fluid, as it always is more or less in its ordinary state, that it is subject to gravity. But, though less satisfactory than the other in its basis, the theory of a single fluid gives an equally complete explanation of electrical phenomena, and in point

of facility of application is even entitled to a preference. On this account we shall continue to employ the language of Franklin.

It will be remembered that, in both the theories above explained, electricity is regarded as essentially material, though so light and subtile as not to exhibit to our senses the ordinary attributes of matter. It is, however, possible, as with light and heat, to account for electrical phenomena, not by the agency of a specific substance, but by some property or state of common matter, just as sound is produced by a vibrating medium. But the effects of electricity are so similar to those of a mechanical agent, it appears so distinctly to emanate from substances which contain it in excess, and rends asunder all obstacles to its progress so exactly like a body in rapid motion, that the impression of its materiality forces itself irresistibly on the mind. All nations, accordingly, have spontaneously concurred in considering electricity as a material principle; and scientific men give a preference to the same view, because it offers an easy explanation of every phenomenon, and suggests a natural language easily intelligible to all.

Electricity may be excited in all solid substances by friction. This assertion seems at first view contrary to fact. It is well known that a metallic substance, if held in the hand, may be rubbed for any length of time without exhibiting the least sign of electricity, — an observation which led to the division of bodies into such as may be excited by friction, and into those that, under the same circumstances, give no sign of electrical excitement. The former were called *Electrics*, the latter *Non-electrics*. But the distinction is not founded in nature. A metallic substance does not indeed exhibit any trace of electricity when rubbed in the same way as a piece of glass; but if, while it is rubbed with the dry fur of a cat, it is supported by a glass handle, it may then be readily excited.

The difficulty and apparent impossibility of exciting metallic bodies receives an explanation from the fact observed by Grey, that the electric fluid passes with great facility along the surface of some substances, and with difficulty over that of others; and this discovery has led to the division of bodies into *conductors* and *non-conductors* of electricity. If an excited conductor, such as a metallic wire, be made to communicate at one of its extremities with the earth, the electricity will pass to it from the opposite end in an instant, even though it were several miles in length; so that, when the equilibrium is disturbed, it will be at once restored along the whole wire, just as effectually as if every point of it communicated with the ground. But an excited stick of glass or resin is not affected in the same manner; for, as electricity does not obtain a free passage along them, the equilibrium is restored in those parts only which are actually touched. For this reason a non-conductor of electricity, though held in the hand, may be readily excited; but a good conducting body cannot be brought into that state, unless it be *insulated*, that is, cut off from communication with the earth by means of some non-conductor. This is generally effected either by supporting a body with a handle of glass, or by placing it on a stool made with glass feet.

To the class of conductors belong the metals, charcoal, plumbago, water, and most substances which contain water in its liquid state, such as animals and plants. The conductive power of these substances is different. Of the metals, according to the experiments of Mr. Harris, silver and copper are the best conductors of electricity; and then follow gold, zinc, platinum, iron, tin, and lead. (*Philos. Trans. for* 1827, Part I. 21.) To the list of non-conductors belong glass, resins, sulphur, the diamond, dried wood, precious stones, silk, hair, and wool. Atmospheric air is also a non-conductor If it were not so, no substance could retain its electricity when surrounded by it. Aqueous vapour suspended in the air injures the non-conducting property of the latter, and hence electrical experiments do not succeed so well when the air is charged with moisture as when it is dry. The presence of a little moisture communicates conducting properties to the most imperfect conductor; and hence it is impossible to excite glass by rubbing it with a moist substance.

A knowledge of the different conducting power of bodies is required for explaining some circumstances which appear contradictory to a preceding statement. It is above mentioned, that when two bodies are excited by friction they are rendered oppositely electric; but, if a tube of glass be rubbed by a person communicating with the ground, the glass will become positively electrical, while the hand of the operator manifests no sign whatever of excitement. The cause of this is obvious. The operator is not electrified, because the earth restores the electric fluid as soon as it is withdrawn by the glass; but, if he is insulated, the indications of negative electricity will immediately appear. Hence it is a rule to insulate a conductor, whenever it is wished to examine its electrical condition.

The experiments which have been made concerning the effects of friction have demonstrated that the same substance is not always similarly electrified. Its electricity is influenced partly by the state of its surface, and partly by the nature of the body with which it is rubbed. Thus smooth glass is rendered positive by friction with woollen cloth; whereas, if its surface be rough, it becomes negative from the same treatment. Smooth glass, which is positive with woollen cloth, is rendered negatively electrical by being rubbed with a cat's fur. The following table, from Cavallo's Complete Treatise on Electricity, shows the kind of excitement produced by the friction of various substances.

	Is rendered	By Friction with
The back of a cat	Positive	Every substance with which it has been hitherto tried
Smooth glass	Positive	Every substance hitherto tried except the back of a cat.

	Is rendered	By Friction with
Rough glass	Positive	Dry oiled silk, sulphur, and metals.
	Negative	Woollen cloth, quills, wood, paper, sealing-wax, white wax, the human hand.
Tourmalin	Positive	Amber, a current of air.
	Negative	Diamond, the human hand.
Hare's Skin	Positive	Metals, silk, loadstone, leather, the hand, paper, baked wood.
	Negative	Other finer furs.
White silk	Positive	Black silk, metals, black cloth.
	Negative	Paper, hand, hair, weasel's skin.
Black silk	Positive	Sealing-wax.
	Negative	The skin of the hare, weasel, and ferret, loadstone, brass, silver, iron, and the hand.
Sealing-wax	Positive	Metals.
	Negative	The skin of the hare, weasel, and ferret, the hand, leather, woollen cloth, paper.
Baked wood	Positive	Silk.
	Negative	Flannel.

Mr. Singer states that sealing-wax is not rendered positive by friction with all metals; — iron, steel, lead, and bismuth, as also plumbago, leave it negative. Mr. Cavallo's statement with respect to white silk and paper does not agree with my observation. The effect of white paper is variable; but in a number of trials I found that by coarse brown paper white silk was invariably rendered positive.

The foregoing remarks on the effects of friction will render intelligible the principle of the electrical machine. In the time of Grey a supply of electricity was obtained for experimental purposes by rubbing a glass tube with the dry hand. Glass globes made to revolve by machinery were afterwards substituted for the tube, the friction being at first produced with the hand, and subsequently by means of a fixed rubber. As now constructed, the electrical machine is formed either with a cylinder or plate of glass, which is pressed during its rotation by cushions stuffed with hair. The cushion is usually covered with an amalgam of tin and zinc, which, partly by increasing the friction, and partly by the oxidation of the metals, materially assists the action of the machine. The electricity developed on the glass is conducted away by an insulated bar of brass placed close to it, called the *prime conductor*, on which it is collected in considerable quantity. By this means the electricity spread over the whole surface of the prime conductor may be carried off at the same instant, and thus act with far greater power than if accumulated on glass or any other imperfectly conducting substance.

The electricity, which is so freely and unceasingly evolved during the action of a good electrical machine, is derived from the great reservoir of electricity, the earth. This is obvious from the fact that, if the whole apparatus be insulated, the evolution of electricity immediately ceases; but that the supply is as instantly restored, when the requisite communication with the ground is re-established. In the state of complete insulation the glass and prime conductor are positive as usual, and the rubber is negatively excited; but, as the electricity then developed is derived solely from the machine itself, its quantity is exceedingly small. When the machine is used, therefore, the rubber is made to communicate with the earth. As soon as friction is begun, the glass becomes positive, and the rubber negative; but, as the latter communicates with the ground, it instantly recovers the electricity which it had lost, and thus continues to supply the glass with an uninterrupted current. If the rubber be insulated, and the prime conductor communicate with the ground, the electricity of the former and all conductors connected with it is carried away into the earth, and they are negatively electrified.

Friction is not the only cause of electrical excitement. Bodies are sometimes excited by elevation of temperature, a property first noticed in certain crystallised minerals, such as tourmalin and boracite, which do not possess that symmetric arrangement of parts commonly existing in crystals. The electric equilibrium is disturbed in metallic rods or wires by one extremity having a different temperature from that of the other, as was first observed by Professor Seebeck, and since shown to be true of all metals by Professor Cumming. (*Annals of Phil.* v. 427. N.S.) The experiment is usually made by heating the point of junction of two metallic wires, which are soldered together; but M. Becquerel has proved that the contact of one metal with another is not essential. (*An. de Ch.* xli. 353.)

Another and apparently very fruitful source of electricity is chemical action. This was strongly denied by the late Sir H. Davy in his Bakerian lecture for 1826; but the experiments of Becquerel, De la Rive, and Pouillet, afford decisive proof that chemical union and decomposition are both attended with electrical excitement. (*An. de Ch. et Ph. T.* 35, 36, 37, 38, and 39.) Pouillet, in particular, has demonstrated that the gas arising from the surface of burning charcoal is positive, while the charcoal itself is negative; and he has proved that similar phenomena are produced by the combustion of hydrogen, alkohol, oil, and other inflammables of the same kind. In all these instances the combustible, in the act of burning, renders contiguous particles negative; while the oxygen imparts electricity to the products of combustion, which thereby become positive. The fact, with respect to charcoal, was originally noticed by Volta, La Place, and Lavoisier, but was subsequently denied by Saussure and Sir H. Davy. Pouillet has reconciled these conflicting statements by showing that the result depends on the mode in which the experiment is conducted. For if the carbonic acid be completely removed from the burning mass at the instant of its formation, both are found to be electrical; but if, on the contrary, the carbonic acid subsequently flows over the surface of the charcoal, the equilibrium will instantly be restored; and of course no sign whatever of excitement be perceptible.

Another reputed source of electricity is contact of different substances, especially of metals; a source originally suggested by Volta, who founded on it a theory of galvanism. The facts on which Volta rested his opinion were of this nature. Well-cleaned plates of zinc and cop-

per were furnished with glass handles, by which they could be both supported and insulated: the zinc plate, held by its glass handle, was laid repeatedly on the copper, which at the time need not be insulated, and after each contact the zinc was made to touch the instrument, shortly to be described, called the *condenser*. A positive charge was gradually accumulated; and, on operating in the same manner with the insulated plate of copper, it was found to communicate a negative charge. From such experiments it was inferred, that the contact of zinc and copper disturbs the electric equilibrium in both metals, the latter yielding electricity to the former and becoming negative, while the zinc is thereby rendered positive. But the inference is not free from objection. In fact, so long as contact continues, there is no electric appearance whatever; and the metals are assumed to be differently electrified *at that time*, in consequence of the phenomena which they exhibit *after* their separation. There is, therefore, an obvious assumption. But, on the other hand, the absence of the indications of excitement is not conclusive against the doctrine; because, consistently with the laws of electricity, the oppositely electrical state of the two metals, while they continue together, must counteract the effect to which either separately would give rise.

The excitement of electricity by contact has been denied by some philosophers, and of late this doctrine has been attacked by De la Rive of Geneva. (*An. de Ch. et Ph.* xxxix. 297.) He there contends that the phenomena ascribed to metallic contact are really due to slight oxidation produced by moisture and the oxygen of the air acting on the plate of zinc. He has adduced experiments to prove, that if the oxidation of the zinc be increased by acid fumes, the electric charge is proportionally augmented; and that the same effects arise when a very oxidable metal, such as potassium, is substituted for the zinc. He further states that when the experiment is made in a vessel of hydrogen or nitrogen, no electricity whatever is developed. This last observation, however, the only decisive argument adduced, has since been corrected by Professor Pfaff of Kiel, in whose experiments the contact of zinc and copper affected the electrometer as much when made in a jar of hydrogen or nitrogen as in atmospheric air; but Parrot of Petersburg contends that in the experiments of Pfaff, Volta, and others, the electricity ascribed to contact was in reality due to friction. On bringing the metallic plates into contact, and then after an interval separating them cautiously so as to avoid friction, he could discover with the most delicate instruments no trace whatever of electric disturbance. (*An. de Ch. et Ph.* xlvi. 361.) The evidence adduced by Volta in proof of excitement by contact is, therefore, unsatisfactory; and any arguments in favour of the doctrine should be drawn, not from the state of the metals after separation, but from their chemical agencies evinced during contact. Some curious facts will be mentioned on this subject in the section on Galvanism.

Change of form, such as liquefaction and the passage of liquids into the solid state, and the formation and condensation of vapour, is another reputed source of electricity. To processes of this nature, continually taking place in the atmosphere, the electricity of the clouds is generally ascribed. But the essays of Pouillet on the source of atmospheric electricity, tend to subvert the opinions hitherto received. He has proved the evaporation of water from a vessel of platinum to be unattended with electrical appearances; whereas if the process be accompanied with chemical decomposition, as in the evaporation of saline solutions, or if the vessel consist of iron or other oxidable material, which is more or less chemically attacked by the evaporating water, then the development of electricity is very decisive. From experiments of this kind Pouillet concludes that the electricity, hitherto referred to changes of form, is entirely owing to the chemical action by which they are generally attended; and these phenomena, of which the evaporation of water from the ocean, from rivers, and the surface of the earth, affords an instance, as also the chemical changes that attend the growth and nutrition of plants, he regards as a fertile source of the electricity of the atmosphere. (*An. de Ch. et Ph.* xxxv. 401. and xxxvi. 5.)

Another cause of excitement is proximity to an electrified body; and as the explanation of many electrical phenomena depends on a knowledge of this fact, it is of importance to understand it clearly. When a substance excited positively is brought near another in its natural state and insulated, the electric equilibrium of the latter is instantly disturbed; the parts nearest to the former become negative, and the distant parts positive. If the body be not insulated, it imparts electricity to the earth, and becomes negatively electrical. If, on the contrary, the exciting substance be negative, the adjacent parts of a body in its vicinity become positive. Hence it may be established as a law, that an electrified body tends to produce in contiguous substances an electric state opposite to its own. The electricity developed in this way is said to be *induced*, or to be excited by *induction*. The movement of light bodies towards an excited stick of sealing-wax, or glass tube, is accounted for on this principle. Thus, the vicinity of the negative sealing-wax renders the surrounding objects positive, and therefore a mutual attraction is exerted. When the inside of a glass bottle is rendered positive by contact with the prime conductor of the electrical machine, the outside, if in communication with the earth, parts with electricity, and becomes negative. Both surfaces, therefore, are electrified, and are in opposite states; and, if a communication be established between them by means of a good conductor, the excess of electricity instantly passes along it, and both sides of the glass return to their natural condition. That the experiment may succeed in the most perfect manner, it is necessary to cover the bottle externally and internally, except to within three or four inches of its summit, with tinfoil or some

other good conductor, in order that every point of both sides of the glass may be brought into communication at the same moment. For without this precaution, the electric equilibrium of the two surfaces of the bottle, owing to the imperfect conducting power of glass, will be restored on those points only which are touched. The apparatus thus described is much employed by electricians, and has received the name of the Leyden phial, in consequence of its remarkable effects having been first exhibited at the University of Leyden. To render it more convenient for use, the aperture of the glass jar or phial is closed by some imperfect conductor, such as dry wood, through the centre of which passes a metallic rod that communicates with the tinfoil in the inside of the jar. The phial is electrified or *charged* by holding the outside in the hand, or placing it on the ground, while the metallic rod is made to receive sparks from the prime conductor of an electrical machine. If the jar is insulated, no charge will be received, or at least very slight indications of excitement will be manifested. By arranging a number of Leyden phials in a box lined with tinfoil, so that they may all communicate freely by their outer surfaces, and then bringing their inner surfaces into communication by wires, the whole series may be charged and discharged in the same manner as a single phial. This arrangement is known by the name of the *electrical battery*.

Some of the phenomena of lightning are explained on the principle of induced electricity. When, for instance, a negatively electrified cloud approaches the earth, all objects in its vicinity are positively excited; and when it comes within what is called the *striking distance*, that is, so near that the effort of the electricity to pass from the positive to the negative body overcomes the resistance of the intermediate stratum of air, the equilibrium is restored with a report and flash of light, exactly as in the discharge of a Leyden phial. A similar effect is produced by an electrified cloud on other clouds within the sphere of its influence.

The principle of induced electricity was ingeniously applied by Volta in the construction of the condenser. This apparatus consists of two brass plates, which we shall call A and B, supported on a common stand. One of the plates is attached to the stand by means of a joint, so that it admits of being moved from a perpendicular to a horizontal position, and thus withdrawn from the vicinity of the plate, the support of which is made of glass. On communicating electricity to the insulated plate by contact with a positively excited body, the plate B, which for that purpose is placed close to A, is rendered negative by induction, electricity passing along the stem into the earth; and, as happens in the Leyden jar, the excitement of B will be proportional to that of A. The negative charge of B tends to preserve the positive charge of A, which will consequently receive electricity from any positive surface without losing what it had previously acquired. Thus is electricity accumulated or *condensed* on A; so that a substance too feebly excited to produce any appreciable effects of itself, may, by repeated contact with the insulated plate of a condenser, communicate a charge of considerable intensity. The effect of the accumulation is made apparent by withdrawing B, and bringing A in contact with a delicate electrometer. The condenser is much employed in experiments of delicacy, and the plate A. is often permanently fixed on the gold leaf electrometer invented by Bennett.

The passage of electricity is frequently attended with the production of heat and light, effects which invariably ensue when it meets with an impediment to its progress, as in passing through an imperfect conductor. The most familiar illustration of this is afforded by its passage through the air, when it gives rise to a spark accompanied with a peculiar snapping noise, if in small quantity; or to the phenomena of thunder and lightning, when it takes place on a large scale. On the contrary, it passes along perfect conductors, such as the metals, without any perceptible warmth or light, provided the extent of their surface is in proportion to the quantity of electricity to be transmitted by them; but if the charge is too great in relation to the extent of the conducting surface, intense heat will be produced.

Electricity acts with surprising energy on the animal system. When a large quantity of the electric fluid passes through the body, the vital functions cease on the instant, as is exemplified by the numerous accidents on record of persons being killed by lightning. Even the small quantity of electricity contained in a Leyden phial gives a very powerful shock, exciting a sudden spasm of the muscles along which it passes, so violent as to produce a disagreeable or even painful sensation. The shock from a large electrical battery is much more severe, and smaller animals, such as rabbits and fowls, are destroyed by its action.

It is very important, in conducting electrical experiments, to possess an easy method of discovering when any substance is electrified, of ascertaining its *intensity* or the degree to which it is excited, and distinguishing the kind of excitement. The mode of effecting these objects is founded on electrical attraction and repulsion, and the instruments employed for the purpose are called *Electroscopes* and *Electrometers*, the latter denoting the intensity of electricity, the former merely indicating excitement, and the electrical state by which it is produced. The term electrometer, however, is often indiscriminately applied to all such instruments, since the methods of ascertaining the kind of excitement give at the same time some idea of its intensity. A body is known to be excited by its power of attracting light substances; and a small ball made of the pith of elder, suspended on a silk thread, affords a convenient material for the experiment. Another mode of acquiring the same information is by means of two pith balls suspended from the same point by silk threads of equal length. When all the surrounding objects are unexcited, the pith balls remain in contact; but on the approach of any electrified body, the two balls are excited by induction, and, having the same electricity, diverge or retreat from each other. A more delicate con-

trivance, but of a similar kind, was invented by Mr. Bennett, and is known by the name of the *Gold Leaf Electrometer*. It consists essentially of a cylindrical glass bottle, with its aperture closed by a brass plate, from the centre of which two slips of gold leaf are suspended. The brass plate, with its slips of gold leaf, are thus insulated, and the latter prevented from being moved by currents of air by the glass with which they are surrounded. The approach of any electrified body, even though feebly excited, to the brass plate, is immediately detected by the divergence of the leaves.

A very simple method of distinguishing the kind of excitement is the following. If a piece of white silk be drawn a few times rapidly between the fingers, it will become negative; and if in this state it is suspended in the air, it will be attracted by a body positively excited, and repelled by one which is negative. When rubbed on black cloth the silk is rendered positive, and will then of course retreat from a substance similarly electrified, and be attracted by one in an opposite state. The indications of the gold leaf electrometer are still more delicate. If the leaves are diverging with positive electricity, the approach of a positively excited body to the brass plate increases the divergence; because the electric equilibrium is immediately disturbed, and while the plate becomes negative, the gold leaves acquire a still greater excess of electricity. The approach of a negatively excited body would of course be productive of a change precisely opposite, and the divergence, if produced by positive electricity, would be diminished, or even entirely destroyed. To prepare the electrometer for an observation, it is however necessary to communicate to it a known state of excitement. This may be done by touching the electrometer with an electrified body, such as an excited glass tube or stick of sealing-wax, when the whole metallic surface of the electrometer is electrified in the same manner as the substance by which it was touched. A more convenient method is to communicate electricity permanently by induction. Thus, on placing a negatively excited body, as for example a stick of sealing-wax after friction on woollen cloth, near the brass plate of the electrometer, the electric equilibrium of its whole metallic surface is disturbed: the brass plate becomes positive, and the slips of gold leaf diverge from being negative. On withdrawing the sealing-wax, the excess of electricity accumulated on the plate returns to the leaves, and the equilibrium is restored; but if, while the sealing-wax is near the top of the instrument, the plate be touched with the finger, a portion of electricity is supplied to the gold leaves from the earth, and the divergence ceases more or less completely, while the excess of electricity is preserved on the plate by the vicinity of the negative sealing-wax. On removing *first* the finger, and *then* the sealing-wax, the brass is left with an excess of electricity, which extends over the whole metallic surface of the electrometer, and thus produces a divergence which continues for a considerable time if the glass be dry, and the atmosphere moderately free from moisture.

The electrometer most frequently used for estimating the intensity of electricity in ordinary experiments, is that invented by Mr. Henley, and called the *quadrant electrometer*. It consists of a smooth round stem of wood, about seven inches long, to the upper part of which, and projecting from its side, is attached a semicircular piece of iron. In the centre of the semicircle is fixed a pin, from which is suspended, to serve as an index, a slender piece of wood or cane, four inches in length, and terminated by a small ball. When the apparatus is screwed on the prime conductor of the electrical machine, or placed on any electrified body, it indicates differences of electric intensity by the extent to which the index recedes from the stem; and in order to express the divergence in numbers, the lower half of the semicircle, which is traversed by the index, is divided into 90 equal parts called *degrees*. But this instrument, though convenient for experiments of illustration, is not suited to researches of delicacy, wherein the object is to examine the effects of substances feebly electrified, and ascertain their relative forces with accuracy. For such purposes the electrometer invented by Coulomb, commonly called the *electrical balance*, should be employed. It consists of a small needle of gum-lac or other non-conducting substance, suspended horizontally by a silk thread as spun by the silk-worm, or by a fine silver wire; on the point of the needle is fixed a small gilt ball made of the pith of elder; and the whole is covered with a glass case to protect it from moisture and currents of air. The pith ball, when the apparatus is at rest, is in contact with the knob of a metallic conductor, which passes through a hole in the glass case, and is secured in its place by cement; but when an excited body is made to touch the conductor, the pith ball in contact with it is similarly excited, and recedes from it to an extent proportional to the degree of excitement. The needle consequently describes the arc of a circle, and in its revolution twists the supporting thread more or less according to the length of the arc described. The torsion thus occasioned calls into play the elasticity of the thread, — a feeble but constant force, which opposes the movement of the needle, measures by the extent to which it is overcome the intensity of the excited body, and brings back the needle to its original position as soon as the electric equilibrium is restored.

In some of the preceding remarks a term has been employed which requires explanation. By electric *tension* or *intensity* is meant that state of a body which is estimated by an electrometer. When a body acts feebly on the electrometer its intensity is low, and it differs but little from its natural state; and, on the contrary, if it affects the electrometer powerfully, its electric tension is great. The higher the intensity of a body the more is it removed from its natural state and the greater its tendency to return to an equilibrium. *Intensity* is distinct from *quantity* of electricity. That intensity is not dependent on quantity alone, is proved by the fact that the tension of a charged Leyden phial may be equal to that of a large battery containing twenty

times more electricity. The tension appears to depend on the quantity of electricity accumulated or deficient on a given space; so that the intensity of those substances is greatest, which have the greatest excess or deficiency of electricity in proportion to their surface.

This accounts for the freedom with which electricity is conducted away by pointed surfaces. For the electricity accumulated on a sharp point, though its quantity may be very small, is nevertheless large compared with the surface: the electric tension of the point is therefore very great; and hence, if positive, it gives off electricity to surrounding objects, and if negative receives it from them with extreme velocity.

Electricity appears to diffuse itself over the surface of bodies; and the quantity contained on the same substance, all other circumstances being the same, depends on the extent of surface, and is not connected with quantity of matter. Thus a solid sphere of brass cannot contain more electricity than a hollow sphere of the same diameter. — *Turner*.

ELE'CTRO-MA'GNETISM. The name given to a class of very interesting phenomena, first observed by M. Oersted, of Copenhagen, in the winter of 1819–20, and which have since received great illustration from the labours of M. Ampere, M. Arago, Sir H. Davy, Dr. Wollaston, Mr. Faraday, M. de la Rive, and several other philosophers. The following is an outline merely of the fundamental principles of the new science which has sprung from these observations.

Let the opposite poles of a voltaic battery be connected by a metallic wire, which may be left of such length as to suffer its being bent or turned in various directions. This is the conjunctive wire of M. Oersted. Let us suppose that the rectilinear portion of this wire is extended horizontally in the line of the magnetic meridian. If a freely suspended compass needle be now introduced, with its centre *under* the conjunctive wire, the needle will instantly deviate from the magnetic meridian; and it will decline towards the *west*, under that part of the conjunctive wire which is nearest the negative electric pole, or the copper end of the voltaic apparatus. The amount of this declination depends on the strength of the electricity, and the sensibility of the needle. Its *maximum* is 90°.

We may change the direction of the conjunctive wire, out of the magnetic meridian, towards the east or the west, provided it remains above the needle, and parallel to its plane, without any change in the above result, except that of its amount. Wires of platinum, gold, silver, brass, and iron, may be equally employed; nor does the effect cease though the electric circuit be partially formed by water. The effect of the conjunctive wire takes place across plates of glass, metal, wood, water, resin, pottery, and stone.

If the conjunctive wire be disposed horizontally *beneath* the needle, the effects are of the same nature as those which occur when it is *above* it; but they operate in an inverse direction; that is to say, the pole of the needle under which is placed the portion of the conjunctive wire which receives the negative electricity of the apparatus, declines in that case towards the *east*.

To remember these results more readily, we may employ the following proposition: — *The pole* ABOVE *which the negative electricity enters, declines towards the* WEST; *but if it enters* BENEATH *it, the needle declines towards the* EAST.

If the conjunctive wire (always supposed horizontal) is slowly turned about, so as to form a gradually increasing angle with the magnetic meridian, the declination of the needle increases, if the movement of the wire be towards the line of position of the disturbed needle: it diminishes, on the contrary, if it recede from its position.

When the conjunctive wire is stretched alongside of the needle in the same horizontal plane, it occasions no declination either to the east or west; but it causes it merely to incline in a vertical line; so that the pole adjoining the negative influence of the pile on the wire dips when the wire is on its west side, and rises when it is on the east.

If we stretch the conjunctive wire, either above or beneath the needle, in a plane perpendicular to the magnetic meridian, it remains at rest, unless the wire be very near the pole of the needle; for, in this case, it rises when the entrance takes place by the west part of the wire, and sinks when it takes place by the east part.

When we dispose the conjunctive wire in a vertical line opposite the pole of the needle, and make the upper extremity of the wire receive the electricity of the negative end of the battery, the pole of the needle moves towards the *east*; but if we place the wire opposite a point betwixt the pole and the middle of the needle, it moves to the *west*. The phenomena are presented in an inverse order, when the upper extremity of the conjunctive wire receives the electricity of the positive side of the apparatus.

It appears from the preceding facts, says M. Oersted, that the electric conflict (action) is not enclosed within the conducting wire, but that it has a pretty extensive sphere of activity round it. We may also conclude from the observations, that this conflict acts by revolution; for without this supposition we could not comprehend how the same portion of the conjunctive wire, which, placed *beneath* the magnetic pole, carries the needle towards the east, when it is placed *above* this pole, should carry it towards the west. But such is the nature of the circular action, that the movements which it produces take place in directions precisely contrary to the two extremities of the same diameter. It appears also, that the circular movement, combined with a progressive movement in the direction of the length of the conjunctive wire, ought to form a kind of action which operates *spirally* around this wire as an axis.

The most remarkable discovery on this subject, after Oersted's, is unquestionably that of Mr. Faraday's on the electro-magnetic movement. He has demonstrated, by experiments, that the electro-magnetic polarity depends on its producing, in one of the poles of the magnet, a

tendency to move continuously to the right hand round the electric current, while the other pole tends to move to the left in the opposite direction. Consequently, since both of them tend with equal force towards opposite points, the axis of polarization of the needle must arrange itself so as to make a right angle with the electric current. If the metallic wire by which the discharge of the battery is effected, instead of being placed in a horizontal direction between the opposite poles of the pile, be directed from above downwards, terminating below in a vessel filled with mercury, into which a second wire conducts the electricities to the other pole; and if a light magnet, a magnetized sewing needle for instance, be so loaded with a bit of platina wire at one of its ends as to dip a little into the mercury standing vertically, this needle begins to move in a circle round the pole, when the voltaic current is terminated through the vertical wire. The motion continues while the electro-motion is active. If the positive electricity comes from above, and if the upper end of the magnetized sewing needle be its north pole, the needle will revolve from right to left. If the pole of the needle, or the direction of the electricity in the wire of communication, be changed, the needle will come to revolve from left to right. If the magnetized needle be fixed in the mercury, so that it cannot revolve while the wire is mobile, the latter will revolve round the magnet, agreeably to the same laws. This phenomenon may be exhibited by placing at the end of a large flat magnetic bar, laid horizontally, a small glass or porcelain dish filled with mercury, from which issues a metallic wire that communicates with one pole of a voltaic battery, while the wire conducting to its other pole ends in an eye or minute ring, a few inches above the quicksilver dish. To this eye a platina wire is suspended, which dips into the mercury, and is tipped at its lower end with a bit cork, to prevent its sinking too deeply into the liquid metal. As soon as the voltaic circuit is completed, this wire moves round the point of the pole of the magnet, which does not lie at the very end of the bar, but a little within it. This motion continues as long as the electrical current is sustained.

The electro-magnetic motion may, however, be represented in a still simpler and easier manner. Take a glass tube, four inches long and about half an inch diameter, and close its two ends with cork. Through one of these pass an iron wire, which may project an inch on each side; then turn down this end of the tube, and pour mercury into it till merely the point of the wire remain visible. Introduce through the upper cork a metallic wire, which terminates in the interior of the tube by an eye, to which is hung a platina wire reaching to the mercury. If now the lower wire be connected to one end of a voltaic battery, and the upper wire to the other, the electricities will be discharged by communication through the mercury and the moveable wire in the tube. Place, at this time, the pole of a very powerful magnet near the outer end of the iron wire: this wire will acquire polarity, and the platina wire suspended within the tube will begin to move in a circle round the inner tip of the iron wire. On changing the pole of the magnet, the wire turns round on its axis, and begins to revolve in an opposite direction. Mr. Faraday has succeeded by means of suitable apparatus, to make the conjunctive wire describe circular movements, under the influence of the magnetic polarity of the earth. In this case it always describes circles, whose plan intersects at a right angle the line including the inclination of the magnetic needle.

The *calorimeter* of Hare is the best form of voltaic battery for these experiments; or Mr. Pepys's large voltaic coil of zinc and copper sheets. For further information, Mr. Faraday's able paper, in the Journal of Science, xii. 74. may be consulted; as also M. Ampère's several ingenious memoirs in the Annales de Chimie et de Physique, vol. xv. *et seq.* — *Ure.*

No less curious and important than Oersted's discovery of the production of magnetism by electricity, is that of Mr. Faraday, with respect to the production of electricity by magnetism, constituting another branch of the science of electricity, which is called *Magneto-electricity.* See *Magneto-electricity.*

Electro'meter. (*Electrometrum*, *i.* n.; from ελεκτρον, and μετρον, a measure.) See *Electricity.*

Electro-puncture. See *Acupuncture.*

Ele'ctroscope. (From ελεκτρον, and σκοπεω, to observe.) Synonymous with *Electrometer.*

ELE'CTRUM. (*um*, *i.* n. Ελεκτρον.) *Succinum.* Amber.

Electrum minerale. The tincture of metals. It is made of tin and copper, to which some add gold, and double its quantity of martial regulus of antimony melted together; from these there results a metallic mass, to which some chemists have given the name of *electrum minerale.* This mass is powdered and detonated with nitre and charcoal to a kind of scoria; it is powdered again whilst hot, and then digested in spirit of wine, whence a tincture is obtained of a fine red colour.

ELECTUA'RIUM. (*um*, *i.* n.) An electuary. The London Pharmacopœia refers those articles which were formerly called electuaries to confections. See *Confectio.*

Electuarium antimonii. R. Electuary sennæ, ℥j.; guaiaci gummi, hydrargyri cum sulphure, antimonii ppti. sing. ℥ss.; syrupi simplicis q. s.; misce. This electuary was formerly used in chronic cutaneous diseases, generally in conjunction with decoction of elm bark, or of sarsaparilla. The dose is one or two drachms twice a day.

Electuarium cassiæ. See *Confectio cassiæ.*

Electuarium catechu compositum. *Confectio japonica.* Electuary of catechu, formerly called Japonic confection. Take of mimosa catechu, four ounces; kino, three ounces; cinnamon, nutmeg, each one ounce; opium, diffused in a sufficient quantity of Spanish white wine, one drachm and a half: syrup of red roses, boiled to the consistence of honey, two pounds and a quarter. Reduce the solids to powder, and, having mixed them with

opium and syrup, make them into an electuary. A very useful astringent, and perhaps the most efficacious way of administering catechu. Ten scruples of this electuary contain one grain of opium.

Electuarium cinchonæ cum soda. R. Sodæ carbonatis, ʒij.; pulveris cinchonæ, unciam; mucilaginis gummi arabici, q. s.: misce. In this composition, mucilage is preferred to syrup on account of its covering the taste of the bark much more advantageously. It should for this purpose, however, be made thin, otherwise it will increase the bulk of the electuary too much. The dose is two drachms, twice or thrice a day.

Electuarium opiatum. See *Confectio opii.*

Elel'sphacos. Ελελισφακος. The Greek name of a species of sage.

E'LEMENT. (*Elementum, i.* n.) A substance which can no further be divided or decomposed by chemical analysis. The ancients believed earth, air, water, and fire, to be of this simple nature; and hence they are still called, in common language, the four elements. The three first are now well known to be compound bodies.

E'lemi. (Indeclinable; an Ethiopian name.) Gum-elemi. See *Amyris elemifera.*

Eleochry'sum. (*um, i.* n.; from ηλιος, the sun, and χρυσος, gold: so called from its shining gold-like appearance.) Goldilocks. See *Gnaphalium stœchas.*

Eleoseli'num. (*um, i.* n.; from ελος, a lake, and σελινον, parsley.) Smallage. See *Apium graveolens.*

Elephantia. See *Elephantiasis.*

ELEPHANTI'ASIS. (*is, is.* f. Ελεφαντιασις, from ελεφας, an elephant.) It has already been stated in the article *Barbadoes leg*, that two very different diseases have passed under the name of *Elephantiasis.* That at present to be treated of is the *Elephantiasis Græcorum.* It is chiefly a disease of warm climates, as Africa, the East and West Indies, Madeira, and the Isle of France; but occasional instances of it seem to occur in all climates. A learned history of this affection has been given by Dr. Bateman, in his work on cutaneous diseases; and from this, the greater part of the present article is taken.

The *Elephantiasis*, as described by the Greeks, is principally characterised by the appearance of shining tubercles, of different sizes, of a dusky red, or livid colour, on the face, ears, and extremities; together with a thickened and rugous state of the skin, a diminution or total loss of its sensibility, and a falling off of all the hair, except that of the scalp.

The disease is described as very slow in its progress, sometimes continuing for several years, without materially deranging the functions of the patient. During this continuance, however, great deformity is gradually produced. The alæ of the nose become swelled and scabrous, and the nostrils dilate; the lips are tumid; the external ears, particularly the lobes, are enlarged and thickened, and beset with tubercles; the skin of the forehead and cheeks grows thick and tumid, and forms large and prominent rugæ, especially over the eyes: the hair of the eyebrows, the beard, the pubes, axillæ, &c., falls off; the voice becomes hoarse and obscure; and the sensibility of the parts affected is obtuse, or totally abolished, so that pinching or puncturing them gives no uneasiness. This disfiguration of the countenance suggested the idea of the features of a satyr or a wild beast; whence the disease was by some called *Satyriasis*, and by others *Leontiasis.*

As the malady proceeds, the tubercles begin to crack, and at length to ulcerate: ulcerations also appear in the throat, and in the nose, which sometimes destroy the palate and the cartilaginous septum; the nose falls; and the breath is intolerably offensive: the thickened and tuberculated skin of the extremities becomes divided by fissures, and ulcerates, or is corroded under dry sordid scabs, so that the fingers and toes become gangrenous, and separate, joint after joint.

Aretæus and the ancients in general consider Elephantiasis as an universal *cancer* of the body, and speak of it with terror: they depict its hideous and loathsome character, its contagious qualities, and its unyielding and fatal tendency, in strong metaphorical language, which, indeed, tends to throw some doubt on the fidelity of their description. The very appropriation of the name is poetical; and Aretæus has absurdly enough prefixed to his description of the disease an account of the elephant, in order to point out the analogy between the formidable power of the beast, and of the disease. It is probable, that his terrors led him to adopt the popular opinion respecting the malady, without the correction of personal observation; for, although his account has been copied by subsequent writers, and the same popular opinions have been constantly entertained, there is much reason to believe that some of the prominent features of his portrait are incorrectly drawn.

Notwithstanding the care with which the separation and seclusion of lepers have been enforced, in compliance with the ancient opinion, there is great reason to believe that Elephantiasis is *not contagious.* M. Vidal long ago controverted that opinion, having never observed an instance of its communication from a leprous man to his wife, or *vice versâ*, although cohabiting for a long series of years. Dr. T. Heberden daily observed many examples of the same fact in Madeira, and affirms that "he never heard of any one who contracted the distemper by contact of a leper." And Dr. Adams has more recently given his testimony to the same truth, remarking that none of the nurses in the lazar-house at Funchall have shown any symptoms of the disease; and that individual lazars have remained for years at home, without infecting any part of their family.

With respect to the *libido inexplebilis*, which is said to be one of the characteristics of Elephantiasis, the evidence is not so satisfactory. Its existence is affirmed by most of the modern writers. MM. Vidal and Joannis mention it among the symptoms of the disease at Martigues. Dr. Bancroft senior states its occurrence in the Elephantiasis of South America: and

Prof. Niebuhr asserts, that it appears in the Dsjuddam of Bagdat. Dr. Adams, however, affirms that the genitals become wasted if the disease occur after puberty, and interrupted in their development if it occur before. The latter appears to have happened in a case detailed by Mr. Lawrence, in the Medico-chirurgical Transactions. In the four cases which came under the observation of Dr. Bateman, the sexual power was abolished, and the appetite extinguished.

The morbid anatomy of Elephantiasis has been little investigated. The cuticle is much thickened. The subcutaneous tubercles are described by some as solid fatty tumours, by others as cysts containing a reddish glutinous fluid. The cutis vera has been found inflamed only at those points where the tubercles have been softened, and in a state of suppuration. The immediate cause of death, in most cases, appears to be inflammation of the mucous lining of the air-passages and lungs.

It is generally affirmed, that the Elephantiasis was extensively prevalent in Europe, in the middle ages, especially subsequent to the crusades; and it is certain, that every country abounded with hospitals, established for the exclusive relief of that disease, from the tenth to the sixteenth century; and that an order of knighthood, dedicated to an imaginary St. Lazarus, was instituted, the members of which had the care of lepers, and the control of the lazarettoes assigned to them, and ultimately accumulated immense wealth. From these facts, however, nothing satisfactory is to be collected respecting the actual prevalence of Elephantiasis at those periods. For although it is obvious, from the nature of the examination instituted by the physicians of those lazarettoes, that the tubercular disease was the object of their inquiry; yet it is also evident, that, in consequence of the general application of the term *leprosy* to the Elephantiasis, to the leprosy of the Jews, to the proper scaly Lepra, and even to other cutaneous affections, which have no affinity with either of the diseases just mentioned, almost every person, afflicted with any severe eruption or ulceration of the skin, was deemed *leprous*, and was received into the lazarettoes. This fact, indeed, is acknowledged by many of the physicians to these hospitals, in the sixteenth century and subsequently. Greg. Horst, who was one of the appointed examiners at Ulm, towards the close of that century, and who has given a minute detail of his investigations, admits that "where the tubercles of the face, the thick lips, acuminated ears, flattened nose, round eyes (the essential symptoms of Elephantiasis), are absent; yet if the patients are affected only with a dry and foul scabies, with pustular eruptions, fissures, and branny exfoliations, which constitute the *Psora* of the Greeks, — or even with great itching, emaciation, ulceration, and exfoliations of thicker scales, which are the *Lepra* of the Greeks, — nevertheless they are sent to the lazarettoes, if they are poor, for the means of subsistence. Hence it happens," he adds, "that here and elsewhere, *very few instances of real Elephantiasis* are found in the lazarettoes, while *many* are there affected only with an obstinate Psora or Lepra græcorum." Forestus, who held a similar office at Alcmaer and Delft, in the same century, affirms that a very small proportion of the persons who wandered about the Low Countries, as lepers and beggars, were true lepers; but were merely affected with scabies, or some external defœdation of the skin. "Nay," he says, "not one in ten of them is truly a leper, or afflicted with the legitimate Elephantiasis." Riedlin makes a similar observation respecting the patients admitted into the leper-hospital at Vienna. Indeed there is little doubt, that every species of cachectic disease, accompanied with ulceration, gangrene, or any superficial derangement, was deemed *leprous;* and hence that, in the dark ages, when the desolation of repeated wars, and the imperfect state of agriculture, subjected Europe to almost constant scarcity of food, the numerous modifications of Scurvy and Ignis sacer, which were epidemic during periods of famine, and endemic wherever there was a local dearth, were in all probability classed among the varieties of leprosy; more especially as the last stage of the Ignis sacer was marked by the occurrence of ulceration and gangrene of the extremities, by which the parts were mutilated, or entirely separated.

Under the head of Elephantiasis, Dr. Winterbottom appears to have described the *Leuce*, and not the Elephantiasis of the Greeks; the *Baras*, and not the *Juzam* of the Arabians. The principal symptoms which he witnessed, were the *pale* colour of the skin (in black subjects) and its loss of sensibility, which are distinctly stated as the leading symptoms of Leuce, by Celsus, and by the other Roman and Greek physicians, as well as of Baras by the Arabians. Some of the Greeks and Arabians, indeed, seem to consider the Leuce, or Baras, as possessing an affinity with Elephantiasis, and sometimes terminating in it; and, if they be not modifications of the same disease, it is probable that some of the symptoms of the one (Leuce), such as the insensibility, and change of the colour and strength of the hair, may have been transferred in description to the other. The numerous large tubercles of the nose, forehead, and ears, which are deemed characteristic of Elephantiasis, did not appear in the disease seen by Dr. Winterbottom. The swellings or tuberosities of the joints of the hand and feet, which terminate in ulcerations that occasion the fingers and toes to drop off, appear also to belong to the two diseases in common, and afford another proof of their affinity. Nevertheless, as we have no where any account of the regular succession of the tubercular state (Elephantiasis or Juzam) to that of mere discoloration and insensibility (Leuce or Baras), we are not warranted in drawing the conclusion, that they are but degrees or stages of the same disease. Accurate histories of the Elephantiasis, Leuce, and other modifications of the formidable cutaneous diseases that occur in hot climates, and especially where agriculture and the arts of civilisation are imperfectly advanced, must be deemed still among the *desiderata* of the pathologist.

Dr. Bateman, in corroboration of this view,

xtracts the following account of the *Baras*, as ccurring in Hindustan, from a paper by Mr. Robinson, since published in the Medico-chirurgical Transactions: —

"One or two circumscribed patches appear pon the skin (generally the feet or hands, but ometimes the trunk or face), rather lighter oloured than the neighbouring skin, neither aised nor depressed, shining and wrinkled, the urrows not coinciding with the lines of the ontiguous sound cuticle. The skin thus circumscribed is so entirely insensible, that you ay with hot irons burn to the muscle, before he patient feels any pain. These patches pread slowly until the skin of the whole of he legs, arms, and gradually often the whole ody, becomes alike devoid of sense: wherever is so affected, there is no perspiration; no ching, no pain, and very seldom any swelling. Until this singular apathy has occupied the reater part of the skin, it may rather be considered a blemish than a disease: nevertheless it s most important to mark well these appearnces, for they are the invariable commencement f one of the most gigantic and incurable iseases, that have succeeded the fall of man; nd it is in this state chiefly (though not exlusively) that we are most able to be the means f cure. The next symptoms (which occur in ome patients at two months, but in others not ll after five or six years) are the first which enote internal disease or derangement of any unctions. The pulse becomes very slow (from 0 to 60), not small but heavy, 'as if moving hrough mud;' the bowels are very costive, the oes and fingers numbed, as with frost, glazed nd rather swelled, and nearly inflexible. The ind is at this time sluggish and slow in appreension, and the patient appears always half sleep. The soles of the feet and the palms of he hands then crack into fissures, dry, and hard s the parched soil of the country; and the exremities of the toes and fingers under the nails re incrusted with a furfuraceous substance, and he nails are gradually lifted up, until absorption nd ulceration occur. Still there is little or no ain; the legs and fore-arms swell, and the skin s every where cracked and rough. Cotemporary ith the last symptoms, or very soon afterwards, lcers appear at the inside of the joints of the oes and fingers, directly under the last joint of he metatarsal or metacarpal bones, or they corode the thick sole under the joint of the os alcis, or os cuboides. There is no previous umour, suppuration, or pain, but apparently a imple absorption of the integuments, which lough off in successive layers of half an inch n diameter. A sanious discharge comes on; he muscle, pale and flabby, is in turn destroyed; nd the joint being penetrated as by an auger, he extremity droops, and at length falls a victim o this cruel, tardy, but certain poison. The wounds then heal, and other joints are attacked n succession, whilst every revolving year bears with it a trophy of this slow march of death. Thus are the limbs deprived one by one of their xtremities, till at last they become altogether pseless. Even now death comes not to the elief of, nor is it desired by, the patient, who, 'dying by inches,' and a spectacle of horror to all besides, still cherishes fondly the spark of life remaining, and eats voraciously all he can procure: he will often crawl about with little but his trunk remaining, until old age comes on, and at last he is carried off by diarrhœa or dysentery, which the enfeebled constitution has no stamina to resist. Throughout the progress of this creeping but inveterate complaint, the health is not much disturbed, the food is eaten with appetite, and properly though slowly digested. A sleepy inertness overpowers every faculty; and seems to benumb, almost annihilate, every passion as well of the soul as of the body, leaving only sufficient sense and activity to crawl through the routine of existence."

Mr. Robinson adds, that he has never seen this disease attack the larger joints, destroy the nose, nor affect any of the bones, except those of the hands and feet; and that the tuberculated Elephantiasis, though it sometimes supervenes, is by no means connected with, caused by, or necessarily subsequent to it.

Mr. Robinson affirms that the cure of this disease may be generally accomplished in the early stage, by the use of a plant which grows abundantly in India, and which appears to possess remedial qualities which entitle it to an introduction into the Pharmacopœias of Europe, namely, the *Asclepias gigantea*, especially in combination with alterative doses of mercury and antimony, and with topical stimulants.

Elephantiasis Italica. See *Pelagra.*

Elephantinum emplastrum. See *Emplastrum elephantinum.*

E'LEPHAS. (*as, antis.* m. Ελεφας, the elephant.) 1. The name of an animal.

2. The name of a disease. See *Elephantiasis.*

3. An alchemical name of *aqua fortis.*

Elersna. An alchemical name of molybdenum.

Elesmatis. An alchemical name of burnt lead.

Elettari. (A Malabar word.) The lesser cardamom. See *Elettaria.*

ELETTA'RIA. (*a, æ.* f.; from *elettari.*) The name of a new genus of plants formed by Dr. Maton, and to which he referred the lesser cardamom plant, under the name of *Elettaria cardamomum.* It is now referred to the genus *Alpinia.* See *Alpinia cardamomum,* in the Supplement.

Eleutheria. See *Croton.*

Eleva'tio. (From *elevo,* to lift up.) Elevation; sublimation.

ELEVA'TOR. (*or, oris.* m.; from *elevo,* to lift up.) 1. A muscle is so called, the office of which is to lift up the part to which it is attached.

2. A chirurgical instrument, with which surgeons raise any depressed portion of bone, especially of the cranial bones.

Elevator labii inferioris proprius. See *Levator labii inferioris.*

Elevator labii superioris proprius. See *Levator labii superioris alæque nasi.*

Elevator labiorum. See *Levator anguli oris.*

Elevator nasi alarum. See *Levator labii superioris alæque nasi.*

Elevator oculi. See *Rectus superior.*

Elevator palpebræ superioris. See *Levator palpebræ superioris.*

Elevator scapulæ. See *Levator scapulæ.*

ELEVATO'RIUM. (*um*, *i.* n.; from *elevo*, to lift up.) The surgical instrument generally called an elevator.

ELI'BANUM. The same as olibanum.

ELICHRY'SUM. (*um*, *i.* n.; from ηλιος, the sun, and χρυσος, gold: so called from its gold-like, or shining yellow appearance.) See *Gnaphalium stœchas.*

ELI'DRION. *Elidrium.* This name has been given, 1. To gum mastich.

2. To the rhaponticum.

3. To mercury.

4. To an alloy of silver, gold, and brass.

ELI'GMA. A linctus. See *Eclegma.*

Elioselinum. See *Eleoselinum.*

ELIQUA'TION. An operation by means of which a more fusible substance is separated from another which is less fusible. It consists in the application of a degree of heat, sufficient to fuse the former, but not the latter.

Elithroid. See *Elytroid.*

ELIXA'TIO. (From *elixo*, to boil.) The process of seething, or boiling.

ELI'XIR. (*Elixir*, n. ind.; from *elekser*, an Arabic word, signifying quintessence.) A term formerly applied to many preparations, and chiefly to compound tinctures.

ELIXIR ANTIASTHMATICUM BOERHAVII. *Boerhaave's antiasthmatic elixir.* This is composed of alkohol, aniseed, and the roots of orris, assarabacca, sweet flag liquorice, and elecampane. The dose is twenty or thirty drops.

ELIXIR PAREGORICUM. See *Tinctura camphoræ composita*, and *Tinctura opii ammoniata.*

ELIXIR PROPRIETATIS. An old preparation nearly corresponding with the compound tincture of aloes now in use.

ELIXIR PROPRIETATIS CUM ACIDO. The elixir proprietatis, acidulated with sulphuric acid.

ELIXIR PROPRIETATIS TARTARIZATUM. The elixir proprietatis, with the addition of salt of tartar.

ELIXIR SACRUM. A tincture made principally of rhubarb and aloes.

Elixir salutis. See *Tinctura sennæ.*

ELIXIR STOMACHICUM. The compound tincture of gentian.

ELIXIR VITÆ MATTHIOLI. This was composed of a great number of aromatic and stimulant substances, digested in alkohol.

ELIXIR VITRIOLI. The same with the *Acidum sulphuricum aromaticum*, of the present Edinburgh and Dublin Pharmacopœias. See *Acidum sulphuricum aromaticum*, in the supplement.

ELIXIVIA'TIO. (From *lixivium*, a lye.) The extraction of a fixed salt from vegetables, by the affusion of water. See *Lixiviation.*

ELLA'GIC ACID. *Acidum ellagicum.* The deposit which forms in infusion of nut-galls, left to itself, is not composed solely of gallic acid and a matter which colours it. It contains besides a little gallate and sulphate of lime, and a peculiar acid on which Braconnot has made observations, and calls it *ellagic*, from the word *galle* reversed. Probably this acid does not exist ready formed in nut-galls.

Elleborum. See *Helleborus.*

ELLI'PTIC. (*Ellipticus.* ελλειπτικος; from ελλειψις, an ellipse.) Applied, in *Botany*, to leaves which are of an elliptical shape.

Elm. See *Ulmus.*

Elm-leaved sumach. See *Rhus coriaria.*

ELO'DES. (From ελος, a swamp.) An epithet of the sweating fever or sweating sickness. See *Sudor anglicus.*

ELONGA'TIO. (From *elongo*, to lengthen out.) 1. An imperfect luxation, where the ligaments are only lengthened, and the bone not put out of its socket.

2. The extension of a limb for the purpose of reducing a dislocation or fracture.

ELUTRIA'TION. (*Elutriatio*; from *elutrio*, to cleanse.) The pouring a liquor out of one vessel into another, in order to separate the clear fluid from the sediment. Synonymous with *decantation.*

ELU'VIES. (*es*, *ei.* f.; from *eluo*, to wash out.) A swamp or quagmire. Some writers give this name to the discharge of a fluid, and especially to fluor albus.

ELUXA'TIO. The same as *luxatio.*

ELYMAGRO'STIS. (From ελυμος, the herb panic, and αγρωστις, wild.) Wild panic. See *Panicum.*

E'LYMUS. (*us*, *i.* m. ελυμος; according to some from ελυω, to fold up, in allusion to the sheath which incloses the spike; according to others, from ελος, a marsh, because it grows in marshy places.) 1. The herb panic.

2. The name of a genus of grasses, in the Linnæan system. Class, *Triandria*; Order, *Monogynia.*

ELYTRI'TIS. This term has been introduced to signify inflammation of the vagina, but improperly, as the word ελυτρον, a sheath, is never used by any Greek writer as meaning the vagina of the female.

ELYTROCE'LE. (*e*, *es.* f.; from ελυτρον, the vagina, and κηλη, a tumour.) A hernia in the vagina. The term is ill derived. See *Elytritis.*

ELY'TROID. (*Elytroides*; from ελυτρον, a sheath, and ειδος, form.) Like a sheath. The tunica vaginalis is so called by some writers, because it includes the testis like a sheath. This epithet is also given to a pessary invented by M. Jules Cloquet.

ELY'TRON. (*Elytrum*, *i.* n.; a sheath, from ελυω, to involve.) 1. The membranes involving the spinal cord are called ελυτρα, by Hippocrates.

2. The wing sheath of an insect.

3. The word has been incorrectly used to signify the female vagina.

ELYTROPTO'SIS. (From ελυτρον, the vagina, and πτωσις, a falling down.) A name given by Callisen to inversion of the vagina. The term is not correct. See *Elytritis.*

Emaciation. See *Atrophy* and *Marasmus.*

EMANSIO MENSIUM. Retention of the menses. See *Amenorrhœa* and *Chlorosis.*

EMA'RGINATE. *Emarginatus.* Nicked; that is, having a small acute notch at the sum-

nit; as the leaf of the bladder senna, *Colutea arborescens*, and the petals of the *Allium roseum*.

EMA'SCULATE. *Emasculatus.* Applied to a male deprived of the generative power.

EMASCULA'TION. The act of destroying the generative power in the male by lesion or removal of the organs on which it depends.

Embalming. See the Supplement.

EMBA'MMA. (Εμβαμμα; from εμβαπτω, to dip in.) The Greek name of any liquid condiment in which the food was dipped.

E'MBOLE. (From εμβαλλω, to put in.) The setting of a dislocated bone.

EMBRE'GMA. An embrocation.

EMBROCA'TIO. (*o*, *onis.* f.; from εμβρεχω, to moisten or soak in.) An embrocation: a fluid application to rub any part of the body with. The following embrocations are in general use: —

EMBROCATIO ALUMINIS. R. Aluminis, ʒij. Aceti, spiritus vinosi tenuioris, sing. ℔ss. For chilblains and diseased joints.

EMBROCATIO AMMONIÆ. R. Embrocationis ammoniæ acetatis, ℥ij. Aquæ ammoniæ puræ, ʒij. For sprains and bruises.

EMBROCATIO AMMONIÆ ACETATIS. R. Liquoris ammoniæ acetatæ, solutionis saponis, sing. ʒj. M. For bruises with inflammation.

EMBROCATIO AMMONIÆ ACETATIS CAMPHORATA. R. Solutionis saponis cum camphora, liq. ammoniæ acetatæ, sing. ℥j. Aquæ ammoniæ puræ, ℥ss. For sprains and bruises. It is also frequently applied to disperse chilblains which have not suppurated. It is said to be the same as Steer's opodeldoc.

EMBROCATIO CANTHARIDIS CUM CAMPHORA. R. Tinct. cantharidis, spiritus camphoræ, sing. ʒj. M. This may be used in any case in which the object is to stimulate the skin. The absorption of cantharides, however, may bring on a strangury.

E'MBROCHE. An embrocation.

E'MBRYO. (*o*, *onis.* m.; from εμβρυω, to send forth.) 1. The germ of a plant; called by Linnæus the *corculum*. See *Corculum* and *Cotyledon*.

2. The *fœtus in utero* is so called before the fifth month of pregnancy, because its growth resembles that of the budding of a plant.

EMBRYO'CTONY. (From εμβρυον, a fœtus, and κτεινω, to kill.) Synonymous with embryotomy.

EMBRYO'GRAPHY. (From εμβρυον, the fœtus, and γραφω, to describe.) The anatomical description of the fœtus.

Embryon. See *Embryo*.

EMBRYOTHLA'STES. (From εμβρυον, the fœtus, and θλαω, to break.) *Embryorectes.* An instrument for breaking the bones of a dead fœtus to promote its delivery.

EMBRYO'TOMY. (*Embryotomia*, *æ.* f.; from εμβρυον, a fœtus, and τεμνω, to cut.) The dismemberment of the fœtus whilst *in utero*, to extract it.

EMBRYU'LCIA. (*a*, *æ.* f.; from εμβρυον, the fœtus, and ἑλκω, to draw.) 1. The obstetric art.

2. The extraction of the dead fœtus, in particular, has been so called; and many use the term synonymously with *embryotomy*.

EMBRYU'LCUS. (From εμβρυον, a fœtus, and ἑλκω, to draw.) The blunt hook or forceps, for drawing the child from the womb.

EME'RSUS. (From *emergo*, to rise up or appear out of the water.) Raised above the water; as the upper leaves accompanying the flowers of the *Meriophyllum verticillatum*, while its lower ones are *demersa*.

EMERUS. A name of the bastard senna. See *Colutea arborescens*.

EME'SIA. (*a*, *æ.* f.; εμεσια; from εμεω, to vomit.) *Emesma*; *Emesis.* The act of vomiting.

EMESIS. Εμεσις. See *Emesia*.

EME'TIC. (*Emeticus*, εμετικος; from εμεω, to vomit.) 1. As an adjective; possessed of the power of exciting vomiting.

2. Used substantively; a medicine which has the power of exciting vomiting. Any substance taken into the stomach in too great quantity, or any thing which has an intolerably nauseous taste or smell, may occasion vomiting; but the term emetic is applied only to substances which excite vomiting by a specific action on the stomach, independently of their quantity, taste, or odour.

The susceptibility of vomiting is very different in different individuals, and is often considerably varied by disease.

Emetics are employed in many diseases.

When any morbid affection depends upon, or is connected with, over-distension of the stomach, or the presence of acrid, indigestible matters, vomiting gives speedy relief. It is also highly useful in some cases of impaired appetite, acidity in the stomach, in intoxication, and where poisons have been swallowed.

From the pressure of the abdominal viscera in vomiting, and the relaxation which they occasion, emetics are serviceable in jaundice, arising from biliary calculi obstructing the ducts.

The expectorant power of emetics, and the relief which they give in spasmodic affections of the air passages, is well known but not easily explained.

Emetics were formerly much used at the commencement of fever, with a view of cutting it short; but their utility is little confided in by practitioners of the present day, and those of the antimonial kind are sometimes injurious, by exciting inflammation of the gastro-enteric mucous membrane.

Emetics given in such doses as only to excite nausea, are frequently very useful in restraining hæmorrhage, and diminishing the force of the pulse.

Different species of dropsy have been cured by vomiting, from its having excited absorption. To the same effect, perhaps, is owing the dispersion of swelled testicle, bubo, and other swellings, which has occasionally resulted from this operation.

The operation of vomiting is dangerous, or hurtful, in the following cases: where there is determination of the blood to the head, especially in plethoric habits; in visceral inflammation, or where there is a probability of its occurrence; in the advanced stage of pregnancy; in hernia, and prolapsus uteri. The frequent use of emetics weakens the tone of the stomach. An

emetic should always be administered in the fluid form. Its operation may be promoted by drinking any tepid diluent, or light bitter infusion.

The individual emetics may be arranged under two heads, — those derived from the vegetable, and those from the mineral kingdom. From the vegetable kingdom are numbered, ipecacuanha, scilla maritima, anthemis nobilis, sinapis alba, asarum europæum, nicotiana tabacum. From the mineral kingdom, antimony, the sulphates of zinc and copper, and the subacetate of copper. To these may be added ammonia and its hydrosulphuret.

EMETIN. *Emetina.* Digest ipecacuan root, first in ether and then in alkohol. Evaporate the alkoholic infusion to dryness, redissolve in water, and drop in acetate of lead. Wash the precipitate, and then diffusing it in water, decompose by a current of sulphuretted hydrogen gas. Sulphuret of lead falls to the bottom, and the emetin remains in solution. By evaporating the water, this substance is obtained pure.

Emetin forms transparent brownish-red scales. It has no smell, but a bitter acrid taste. At a heat somewhat above that of boiling water, it is resolved into carbonic acid, oil, and vinegar. It affords no ammonia. It is soluble both in water and alkohol, but not in ether; and uncrystallisable. It is precipitated by protonitrate of mercury and corrosive sublimate, but not by tartar emetic. Half a grain of emetin acts as a powerful emetic, followed by sleep; six grains cause violent vomiting, and produce stupor and death. The lungs and intestines are inflamed. — *Pelletier* and *Magendie.*

EMETOCATHA'RTIC. (*Emetico-cathartieus;* from εμεω, to vomit, and καθαιρω, to purge.) Operating both by vomit and stool.

Eminentiæ quadrigeminæ. See *Tubercula quadrigemina.*

EMISSARIA DURÆ MATRIS. The processes of the dura mater, which accompany the cerebral nerves through the foramina of the cranium.

EMISSA'RIUM. (*um, i.* n.) A canal through which any fluid passes out.

EMISSORIA SANTORINI. *Venæ emissoriæ santorini.* The different small veins which pass through the foramina of the cranium, forming communications between the external veins of the head, and the sinuses of the dura mater; as those which pass through the *foramina parietalia,* and *foramina mastoidea.*

EMISSORIÆ VENÆ SANTORINI. Emissory veins of *Santorin.* See *Emissora santorini.*

EMISSO'RIUS. Emissory. Applied to that which conducts any fluid out of the body; especially to certain veins. See *Emissoriæ venæ santorini.*

EMME'NAGOGUE. (*Emmenagogus;* from εμμηνια, the menses, and αγω, to move.) Whatever possesses the power of promoting that monthly discharge by the uterus, which, from a law of the animal economy, should take place in certain conditions of the female system. The articles belonging to this class may be referred to four orders: —

1. *Stimulating emmenagogues,* as *mercurial* and *antimonial preparations,* which are principally adapted for the young, and those with peculiar insensibility of the uterus.

2. *Irritating emmenagogues,* as *aloes, savine,* and *Spanish flies:* these are to be preferred in torpid and chlorotic habits.

3. *Tonic emmenagogues,* as *ferruginous preparations, cold bath,* and *exercise,* which are advantageously selected for the lax and phlegmatic.

4. *Antispasmodic emmenagogues,* as *assafœtida, castor,* and *pediluvia:* the constitutions to which these are more especially suited are the delicate, the weak, and the irritable.

EMME'NIA. (From εν, in, and μην, a month.) The menses.

E'MMOTOS. (Εμμοτος; from εν, in, and μοτος, lint.) 1. Any medicament which is spread on lint and applied to a wound.

2. Hippocrates seems also to designate by the same word, an ulcer requiring the application of lint.

EMO'LLIENT. (*Emolliens;* from *emollio,* to soften.) Possessing the power of relaxing the living animal fibre, without producing that effect from any mechanical action. The different articles belonging to this class of medicines may be comprehended under the following orders: —

1. *Humectant emollients,* as *warm water* and *tepid vapours,* which are fitted for the robust and those in the prime of life.

2. *Relaxing emollients,* as *althæa, malva,* &c. These may be employed in all constitutions, while at the same time they do not claim a preference to others from any particular habit of body.

3. *Lubricating emollients,* as *bland oils, fat,* and *lard.* The same observation will hold of this order as was made of the last mentioned.

4. *Atonic emollients,* as *opium* and *pediluvia.* These are applicable to any constitution, but are to be preferred in habits where the effects of this class are required over the system in general.

Empalement. See *Calyx.*

EMPAS'MA. (Εμπασμα; from εμπασσω, to sprinkle upon.) A powder sprinkled upon the body, to restrain sweat. Compare *Catapasma.*

EMPATHE'MA. (*a, atis.* n. Εμπαθης; from παθμηα, *passio, affectio.*) Ungovernable passion. A genus of disease in Good's Nosology.

EMPEI'RIA. (From εν, and πειρω, to endeavour.) Empirical medicine, or that founded on experience alone.

EMPHILYSIS. (*is, is.* f.; from εν, in, and φλυσις, a vesicular tumour or eruption.) A vesicular tumour or eruption.

EMPHRA'CTIC. (*Emphracticus;* from εμφραττω, to obstruct.) A medicine which, applied to the skin, shuts up the pores.

EMPHYMA. A tumour originating below the integuments, and unaccompanied with inflammation, at least in its commencement, such as fleshy, bony, and other morbid growths. — *Good.*

EMPHYSE'MA. (*a, atis.* n.; from εμφυσαω, to inflate.) See *Pneumatosis.*

E'MPHYTON THE'RMON. (Εμφυτον θερμον. *Ca-*

lidum innatum. Innate heat.) Animal or vital heat.

EMPI'RIC. (*Empiricus.* Εμπειρικος; from εν, in, and πειρα, experience.) One who practises the healing art upon experience, and not theory. This name was borne by an ancient sect of Greek physicians, founded according to some by Acron, and according to others by Serapion. The term is now applied, in a very different sense, to those who deviate from the line of conduct pursued by scientific and regular practitioners, and vend nostrums, or sound their own praise in the public papers.

EMPLA'STICUS. (From εμπλασσω, to obstruct.) Emplastic. Applied to medicines which, when spread upon the skin, stop the pores.

EMPLA'STRUM. (*um, i.* n.; from εμπλασσω, to spread upon.) A plaster. Plasters are composed of unctuous substances, united either to powders or metallic oxides, &c. They ought to be of such a consistence as not to stick to the fingers when cold, but to become soft, so as to be spread out in a moderate degree of heat, and in that of the human body, to continue tenacious enough to adhere to the skin. They owe their consistence either to metallic oxides, especially those of lead, or to wax, resin, &c. They are usually kept in rolls wrapped in paper, and spread, when wanted for use, upon thin leather; if the plaster be not of itself sufficiently adhesive, it is to be surrounded at its margin by a boundary of resin plaster.

Emplastrum adhesivum. See *Emplastrum resinæ.*

EMPLASTRUM ALEXANDRIUM. An old plaster, called also *Emplastrum viride*, described by Celsus, and made of wax, alum, &c.

EMPLASTRUM AMMONIACI. Take of purified ammoniacum, five ounces; acetic acid, half a pint. Dissolve the ammoniacum in the acid, then evaporate the liquor with a slow fire, constantly stirring it, until it acquires a proper consistence. This plaster is stimulant and discutient.

EMPLASTRUM AMMONIACI CUM HYDRARGYRO. Take of ammoniacum, a pound; mercury, three ounces; olive oil, a fluid drachm; sulphur, eight grains. Add the sulphur gradually to the heated oil, stirring constantly with a spatula till they unite; then rub the mercury with them till the globules disappear; lastly, add by degrees the ammoniacum, previously melted, and mix the whole together. This plaster is discutient, and is applied to nodes, indurated glands, and indolent tumours.

Emplastrum antihystericum. See *Emplastrum assafœtidæ.*

EMPLASTRUM ASSAFŒTIDÆ. *Emplastrum antihystericum.* Plaster of assafœtida. Take of plaster of semi-vitrified oxide of lead, assafœtida, each two parts; galbanum, yellow wax, each one part. This plaster is said to possess anodyne and antispasmodic virtues. It is, therefore, occasionally directed to be applied to the umbilical region in hysterical cases.

Emplastrum attrahens. See *Emplastrum ceræ.*

EMPLASTRUM CANTHARIDIS. Blistering-fly plaster. *Emplastrum vesicatorium.* Take of blistering flies, in very fine powder, a pound; wax plaster, a pound and a half; lard half a pound. Having melted the plaster and lard together, and removed them from the fire, a little before they become solid, sprinkle in the blistering flies, and mix the whole together. See *Blister* and *Cantharis.*

EMPLASTRUM CERÆ. Wax plaster. *Emplastrum attrahens.* Take of yellow wax, prepared suet, of each three pounds; yellow resin, a pound. Melt them together and strain. This is a gently-drawing preparation, calculated to promote a moderate discharge from the blistered surface, with which intention it is mostly used. Where the stronger preparations irritate, this will be found in general to agree.

Emplastrum commune. See *Emplastrum plumbi.*

EMPLASTRUM CUMINI. Cumin plaster. Take of cumin-seeds, caraway-seeds, bay-berries, of each three ounces; dried pitch, three pounds; yellow wax, three ounces. Having melted the dried pitch and wax together, add the remaining articles previously powdered, and mix. A warm stomachic plaster, which, when applied to the stomach, expels flatulency. To indolent scrofulous tumours, where the object is to promote suppuration, this is an efficacious plaster.

EMPLASTRUM ELEPHANTINUM. A plaster composed of cerusse, wax, oil, and water. — *Celsus.*

EMPLASTRUM GALBANI COMPOSITUM. Compound galbanum plaster, formerly called *Emplastrum lithargyri compositum*, and *Diachylon magnum cum gummi.* Take of galbanum eight ounces; lead plaster, three pounds; common turpentine, ten drachms; powdered resin of the spruce fir, three ounces. Having melted the galbanum with the turpentine, mix in first the resin of the spruce fir, and then the lead plaster, previously melted by a slow fire, and mix the whole. This plaster is used as a warm digestive and suppurative, calculated to promote maturation of indolent or scirrhous tumours, and to allay the pains of sciatica, arthrodynia, &c.

In the present London Pharmacopœia this is called simply *emplastrum galbani.*

EMPLASTRUM HYDRARGYRI. Mercurial plaster. *Emplastrum lithargyri cum hydrargyro.* Take of mercury, three ounces; olive oil, a fluid drachm; sulphur, eight grains; lead plaster, a pound. Add the sulphur by degrees to the heated oil, stirring them constantly with a spatula till they unite them; rub the mercury with them until the globules disappear; lastly, add, by degrees, the lead plaster melted by a slow fire, and mix the whole.

EMPLASTRUM LADANI COMPOSITUM. Take of soft labdanum, three ounces; of frankincense, one ounce; cinnamon and expressed oil of mace, each half an ounce; essential oil of mint, one drachm: add to the frankincense, melted first, the labdanum a little heated, till it becomes soft, and then the oil of mace; afterwards mix in the cinnamon with the oil of mint, and beat them together into a mass, in a warm mortar, and keep it in a vessel well closed. This may be used with the same intentions as the cumin-plaster, to which it is in no way superior, though composed of more expensive materials. For-

merly, it was considered as a very elegant stomach plaster, but it is now disused.

Emplastrum litharg̃yri. See *Emplastrum plumbi.*

Emplastrum litharg̃yri compositum. See *Emplastrum galbani compositum.*

Emplastrum litharg̃yri cum hydrarg̃yro. See *Emplastrum hydrarg̃yri.*

Emplastrum litharg̃yri cum resina. See *Emplastrum resinæ.*

Emplastrum lyttæ. See *Emplastrum cantharidis.*

Emplastrum opii. Plaster of opium. Take of hard opium, powdered, half an ounce; resin of the spruce fir, powdered, three ounces; lead plaster, a pound; water, eight fluid ounces. Having melted the plaster, add the resin of the spruce fir, opium, and water, and boil down the whole with a slow fire to a proper consistence. Opium is said to produce somewhat, though in a smaller degree, its specific effect when applied externally.

Emplastrum picis. *Emplastrum picis compositum.* Compound pitch plaster. *Emplastrum picis Burgundicæ.* Take of Burgundy pitch, two pounds; resin of spruce fir, a pound; yellow resin, yellow wax, of each four ounces; expressed oil of nutmegs, an ounce; olive oil, water, of each two fluid ounces. Having melted together the pitch, resin, and wax, add first the resin of the spruce fir, then the oil of nutmegs, the olive oil and the water; lastly, mix the whole together, and boil down to a proper consistence. From the slight degree of redness this stimulating application produces, it is adapted to gently irritate the skin, and thus relieve rheumatic pains. Applied to the temples, it is useful in pains of the head.

Emplastrum picis burgundicæ. See *Emplastrum picis.*

Emplastrum plumbi. Lead plaster. *Emplastrum litharg̃yri; Emplastrum commune; Diachylon simplex.* Take of oxide of lead, in very fine powder, six pounds; olive oil, a gallon; water, two pints. Boil them with a slow fire, constantly stirring until the oil and litharge unite, so as to form a plaster. A little boiling water is to be added, towards the end of the process, if required. Excoriations of the skin, slight burns, and the like, may be covered with this plaster: but it is in more general use, as a defensive, where the skin becomes red from lying a long time on the part. This plaster is also of great importance, as forming the basis by addition to which many other plasters are prepared.

Emplastrum resinæ. Resin plaster. *Emplastrum adhæsivum; Emplastrum litharg̃yri cum resinâ.* Take of yellow resin, half a pound; lead plaster, three pounds. Having melted the lead plaster over a slow fire, add the resin in powder, and mix. This adhesive plaster is chiefly used for keeping on other dressings, and for retaining the edges of recent wounds together.

Emplastrum roborans. See *Emplastrum thuris compositum.*

Emplastrum saponis. Soap plaster. Take of hard soap sliced, half a pound; lead plaster, three pounds. Having melted the plaster, mix in the soap; then boil it down to a proper consistence. Discutient properties are attributed to this elegant plaster, with which view it is applied to indolent tumours. It forms an admirable defensive and soft application, spread on linen, to surround a fractured limb.

Emplastrum thuris compositum. Compound frankincense plaster. Take of frankincense, half a pound; dragon's blood, three ounces; litharge plaster, two pounds. To the melted lead plaster, add the rest powdered. This plaster is said to possess strengthening, as well as adhesive powers. By keeping the skin firm, it may give tone to the relaxed muscles it surrounds, but cannot, in any way, impart more strength than the common adhesive plaster.

Emplastrum vesicatorium. See *Emplastrum cantharidis.*

Emplatto'mena. The same as *emplastica.*

Empneumato'sis. (From εν, in, and πνεω, to blow.) An inflation of the stomach and abdomen. — *Galen.* The term has also been used synonymously with *emphysema.*

Empo'rium. (*um, i.* n.; from εμπορεω, to negotiate.) A mart. The name formerly given to an imaginary reservoir in the brain in which the animal spirits were collected.

EMPRE'SMA. (From εν, in, and πρηθω, to influence.) Mason Good uses this as the generic name for visceral inflammation.

E'mprion. (From εν, and πριων, a saw.) Serrated. Applied by Galen to a particular kind of irregular pulse.

EMPROSTHOTONOS. (*os, i.* m.; from εμπροσθεν, before, or forwards, and τεινω, to draw.) That form of tetanus in which the body is bent forwards. See *Tetanus.*

E'mptysis. (*is, is.* f.; from εμπτυω, to spit out.) A discharge of blood from the mouth.

EMPYE'MA. (*a, atis.* n.; from εν, within, and πυον, pus.) A collection of pus in the cavity of the thorax. It is one of the terminations of pleuritis. There is reason for believing that matter is contained in the cavity of the chest, when, after a pleurisy, the patient has a difficulty of breathing, particularly when lying on the side opposite the affected one; and when an œdematous swelling is externally perceptible. Empyema is generally fatal, but is occasionally cured by the operation of making an opening into the chest at the most painful or tender part, or between the sixth and seventh ribs.

EMPYE'SIS. (*is, is.* f.; from εμπυω, or εμπυεω, *suppuro.*) Dr. Good has applied this term (found in the fifth book of Hippocrates's Aphorisms) to a genus of disease, characterised by phlegmonous pimples, which gradually fill with a purulent fluid; as small-pox.

Empyoce'le. (From εν, in, πυον, pus, and κηλη, a tumour.) A collection of pus within the scrotum has been so called.

Empyo'mphalus. (From εν, in, πυον, pus, and ομφαλος, the navel.) An abscess under the navel.

Empyreal air. Scheele gave this name to oxygen gas.

EMPYREU'MA. (*a, atis.* n.; from εμπυρευω, to kindle.) A peculiar and offensive smell that distilled waters and other substances receive from being exposed to heat in closed vessels, or when burned under circumstances which prevent the accession of air to a considerable part of the mass.

EMPYREUMA'TIC. (*Empyreumaticus;* from εμπυρευω, to kindle.) Smelling as it were burnt: thus empyreumatic oils are those distilled with a great heat, and impregnated with *empyreuma.*

EMU'LGENT. (*Emulgens;* from *emulgeo,* to milk out: applied to the artery and vein which go from the aorta, and vena cava to the kidneys, because the ancients supposed they drained, and, as it were, milked the serum through the kidneys.) The vessels of the kidneys are so termed. The emulgent artery is a branch of the aorta. The emulgent vein evacuates its blood into the ascending cava.

Emulsio acaciæ. See *Mistura acaciæ.*

Emulsio amygdalæ. See *Mistura acaciæ.*

EMU'LSIO CAMPHORA'TA. Take of camphire, one scruple; sweet almonds, blanched, refined sugar, of each half an ounce; water, a pint and a half. This is to be made in the same manner as the common emulsion. It is an elegant way of administering a larger dose of camphire than is contained in the mistura camphoræ.

EMU'LSION. (*Emulsio, onis.* f.; from *emulgeo,* to milk.) An emulsion. A soft and somewhat oily medicine resembling milk. An imperfect combination of oil and water, by the intervention of some other substance capable of combining with both these substances.

Emulsion, almond. See *Mistura amygdalæ.*

Emulsion, Arabic. See *Mistura acaciæ.*

Emulsion of assafœtida. See *Mistura assafœtida.*

Emulsion, camphorated. See *Emulsio camphorata.*

Emulsion of gum-ammoniac. See *Mistura ammoniaci.*

EMU'NCTORY. (*Emunctorium, ii.* n.; from *emungo,* to drain off.) The excretory ducts of the body, and the cavities containing fluids to be excreted, are so called.

EMU'NDANS. Applied to a liquid medicament which deterges a wound or ulcer, and at the same time washes away the sordes. — *Blancard.*

ENAE'MOS. (From εν, and αἱμα, blood.) So Hippocrates and Galen call any topical medicine which is applied to a wound to stop bleeding.

ENÆORE'MA. (From εν, and αιωρεω, to lift up.) A deposit which floats in the middle of the urine.

Enamel. See *Teeth.*

ENANTHE'SIS. (*is, is.* f.; from εν, *in,* ανθερα, and ανθεω, *floreo:* efflorescence from within, or from internal affection.) A rash: in opposition to *exanthesis,* an eruption on the skin, not connected with internal affection. — *Good.*

ENANTE'SIS. (From εν, and ανταω, to meet.) The near approach of ascending and descending vessels.

ENARTHRO'SIS. (*is, is.* f.; from εν, in, and αρθρον, a joint.) The ball and socket-joint. A species of diarthrosis, or moveable connexion of bones, in which the round head of one is received into a cavity of another, in such a manner as to admit of motion in every direction; as the head of the os femoris with the acetabulum of the os innominatum. See *Articulation.*

ENCA'NTHIS. (*is, is.* f.; from εν, and κανθος, the angle of the eye.) A disease of the caruncula lachrymalis, of which there are two species: *Encanthis benigna,* and *Encanthis maligna seu inveterata.* The encanthis, at its commencement, is nothing more than a small, soft, red, and sometimes rather livid excrescence, which grows from the caruncula lachrymalis, and at the same time from the neighbouring semilunar fold of the conjunctiva. This excrescence, on its first appearance, is commonly granulated, like a mulberry, or is of a ragged and fringed structure. Afterwards, when it has acquired a certain size, one part of it represents a granulated tumour, while the rest appears like a smooth, whitish, or ash-coloured substance, streaked with varicose vessels, sometimes advancing as far over the conjunctiva, covering the side of the eye next the nose, as where the cornea and sclerotica unite.

The encanthis keeps up a chronic ophthalmy, impedes the action of the eyelids, and prevents, in particular, the complete closure of the eye. Besides, partly by compressing and partly by displacing the orifices of the puncta lachrymalia, it obstructs the free passage of the tears into the nose. The inveterate encanthis is ordinarily of a very considerable magnitude; its roots extend beyond the caruncula lachrymalis and semilunar fold of the membranous lining of one or both eyelids. The patient experiences very serious inconvenience from its origin and interposition between the commissure of the eyelids, which it necessarily keeps asunder on the side towards the nose. Sometimes the disease assumes a cancerous malignancy. This character is evinced by the dull red, and, as it were, leaden colour of the excrescence: by its exceeding hardness, and the lancinating pains which occur in it, and extend to the forehead, the whole eyeball, and the temple, especially when the tumour has been, though but slightly, touched. It is also shown, by the propensity of the excrescence to bleed, by the partial ulcerations on its surface, which emit a fungous substance, and a thin and exceedingly acrid discharge.

ENCATALE'PSIS. (From εν, and καταλαμβανω, to seize.) Used by Hippocrates synonymously with *apolepsis* and *catalepsis.*

ENCATHI'SMA. (*a, atis.* n.; from εν, and καθιζομαι, to sit down.) A semicupium, or bath for half the body.

ENCAU'MA. (*a, atis.* n.; from εν, in, and καιω, to burn.) The mark left by a burn, or a vesicle raised by a burn.

ENCAU'SIS. (*is, is.* f.; from εν, and καιω, to burn.) A burn. See *Burn.*

ENCEPALOCE'LE. (*e, es.;* from εγκεφαλος, the brain, and κηλη, a tumour.) A hernia of the brain. See *Hernia cerebri.*

ENCEPHALI'TIS. (From εγκεφαλος, the

brain.) Inflammation of the brain. The word εγκεφαλος was used by the Greeks in the same manner as we use the word brain; sometimes in a lax signification to denote the whole contents of the cranium, but more generally in a restricted sense to denote the *cerebrum*, or brain proper. Till of late years, few attempts were made to distinguish accurately between the phenomena of inflammation in the substance, and in the membranes, of the brain, and they were all brought together under the term *phrenitis* — a singularly ill chosen one, since the Greek word φρην signifies the *mind*, not the brain. It is still doubted by some writers of high authority, whether valid distinctions can really be established between the symptoms of inflammation in the membranes, and in the substance of the brain; it seems probable, however, and consonant with analogy, that inflammation in these different textures is not without its diagnostic symptoms, and the difficulty of discerning them, in many cases, appears to arise from the fact, that it is much more common for the brain and its membranes to be simultaneously affected, than either of them separately, and hence that the greater number of cases which occur in practice are of a mixed character. We may then recognise three cases of inflammation within the head, viz. *meningitis*, or inflammation of the membranes; *cerebritis*, or inflammation of the substance of the brain; and *encephalitis* — the last term being used to signify that mixed case in which the membranes and substance of the brain, are both implicated in the inflammatory state.

1. *Meningitis.* — When this occurs in a separate form, it seems to present the general characteristics of membranous, as opposed to those of parenchymatous inflammation; that is to say, the pain is more acute, and the inflammatory excitement of the whole system greater. The ordinary symptoms of *acute* meningitis are sharp pains in the head, with great intolerance of light and sound; restlessness and violent delirium; a quick and hard pulse; thirst; a hot skin, flushed countenance, and injected conjunctiva; spasmodic twitchings of the muscles, or convulsions, terminating in somnolency, coma, and entire loss of muscular power. Vomiting is a very frequent attendant on meningitis; and a peculiar sharp quick cry, indicative of sudden and violent pain, is, when it occurs, a very characteristic symptom. Inflammation of the arachnoid membrane does not seem to be distinguishable, by its symptoms, from that of the pia mater. Acute meningitis is frequent in children, and is one of the various affections confounded together by authors under the name of acute hydrocephalus. Inflammation of the dura mater is not common, except as the result of mechanical injury of the head; and the best illustrations of it are to be found in surgical writings. It terminates, if not checked, in separation of the membrane from the bone, effusion of pus between them, and sloughing of the membrane itself. Chronic meningitis differs from the acute in the minor intensity of its symptoms, and the delirium is either absent or not violent.

The organic changes arising from inflammation of the membranes of the brain, consist chiefly in an injected state of the pia mater, sometimes with extravasation of blood in its tissue; loss of transparency, and thickening of the arachnoid membrane; adhesion of the membranes to each other, and effusions of serum and lymph between the membranes, in the ventricles of the brain, and at its base. Purulent effusions under the arachnoid, or between it and the pia mater, are sometimes observed, though not frequently, and ulceration and sloughing of these membranes are very rare.

2. *Cerebritis.* — Inflammation of the substance of the brain. This may be *general* or *partial*, *acute* or *chronic*. Acute inflammation affecting the whole or the greater part of the cerebral substance, is indicated by symptoms very similar to those of acute meningitis; the pain in the head is intense, and the febrile excitement high: it may be observed, however, that the attack is generally less sudden in cerebritis, and is more frequently preceded by premonitory symptoms, such as pain and sense of fulness in the head; vertigo; drowsiness; confusion of thought; deviation from ordinary habits; various derangements of sensation; muscular pain and debility; tendency to spasm; and other symptoms indicative of lesion of the cerebral functions. The symptoms of general cerebritis also usually terminate in coma, and a collapsed state of the system, much sooner than those of meningitis. It is however to be observed, that general cerebritis hardly ever takes place, without more or less affection of the pia mater; and hence that the case we are speaking of ought rather to be considered as a mixed one, with a predominance of cerebritis over the meningeal affection, than as one of pure inflammation of the substance of the brain. General cerebritis is almost always an acute affection, and terminates fatally in a very short time. The patient sometimes dies within twenty-four or even twelve hours, and seldom survives longer than a week.

Partial cerebritis may be acute, subacute, or chronic. The acute form is marked by those symptoms generally indicative of inflammation of the substance of the brain, the lesion of particular functions being more or less remarkable, according to the part of the organ principally implicated.

The subacute form, which is the most frequent, presents the general symptoms of the acute in a minor degree of intensity. Here the approach of the disease is usually very insidious, the symptoms often consisting, at first, of headach, which may not be very severe, slight dizziness; dimness of sight; some disposition to stammer or drawl in the speech; an unsteady gait; but all this without fever or delirium, so that the extent of the danger is little apprehended by the patient or his friends, till he is suddenly seized with coma and paralysis of a limb, or hemiplegia, under which he sometimes sinks rapidly; but at other times partially recovers, and eventually falls a victim to a second or third attack of palsy.

The chronic form of cerebritis generally begins with slight paralysis of one of the extremities, or of the muscles of one side of the

face, or dimness of sight in one of the eyes, or loss of command over the tongue — the pulse remaining natural, and the general health being little disturbed. The paralysis goes on increasing, the memory and intellect are impaired, and all the functions of the system debilitated. This state of things is protracted often for many months, and then terminates suddenly with fatal coma and convulsions, or the patient at last dies gradually emaciated and exhausted.

The structural changes occasioned by inflammation of the cerebral substance, vary according to its degree and duration. In *acute cerebritis* the only appearances usually observed are a florid injection of the diseased substance, which, when cut into, presents a number of red dots, proceeding from the capillary vessels, and bloody striæ and patches, proceeding from the rupture of the capillaries. Suppuration is seldom found in this case, nor does the rapidly fatal course of the disease afford time for those changes of structure, which are the common result of the less acute varieties. Mortification of the brain is not common, but more so where the inflammation results from injury than where it is idiopathic. The cerebral substance, in the state of mortification, is dissolved in its consistence, of various shades of brown or of a greyish black colour, and a fœtid smell.

The subacute forms of cerebritis give rise to *abscess*, which is most frequent in the hemispheres of the brain — *simple softness* or *flaccidity* of the texture of the brain — pulpy disorganisation, the *ramolissement* of the French pathologists — *induration* of the substance of the brain, which has been most frequently found in maniacs, and those who have died of typhoid fevers, *hypertrophy* and *atrophy* of the whole organ, or of particular parts.

The *chronic* cerebritis generally occasions simple softening or induration, but the lesions arising from the subacute form are also sometimes consequent on this.

3. *Encephalitis.* — Inflammation of the brain and its membranes: the disease commonly met with in practice under the name of *phrenitis*. In this, we find the symptoms of meningitis and cerebritis variously blended, according as the one or the other affection predominates; and hence the general inapplicability of the nosological definitions which have been given of inflammation of the brain. This disease, like others of an inflammatory nature, usually commences with rigors, to which succeed a morbid heat, particularly about the head. Pain, more or less acute, sometimes is felt extending over the whole head, but more frequently confined to some particular region. High inflammatory fever is soon developed, commonly attended with parching thirst, but sometimes with a morbid absence of that sensation. The countenance is flushed, the eyes bloodshot, the pupils contracted, and the brows knit. There is furious delirium, with the most distressing intolerance of light and sound: in some cases this state of cerebral excitement alternates with one of stupor. The external senses are variously disordered, giving rise to double vision, spectra, illusory sounds, imaginary odours, &c., and the faculties of speech and deglutition are impaired. These symptoms having continued for three or four days, the fever assumes a typhoid type; the tongue is covered with a dark fur; there is stupor, with low muttering delirium, and subsultus tendinum. The patient drawls when he attempts to speak, and often cannot articulate at all; and the mouth is drawn to one side, or some other paralytic symptoms are present. Trembling of the muscles, and convulsions, often occur at all periods of the disease; convulsions frequently make their appearance for the first time, when coma begins to supersede the stage of excitement. Encephalitis, in the acute form just described, is generally fatal within a week, unless checked by vigorous practice at its first onset. A natural crisis sometimes takes place, when the inflammatory symptoms are at their height, by means of a copious epistaxis, or the hæmorrhoidal or menstrual flux. Hæmorrhage, from the bowels and other parts, sometimes occurs at a more advanced stage of the disease, after the appearance of typhoid symptoms; but it is then never salutary, and resembles similar discharges which take place in cases of low fever. Encephalitis, like cerebritis and meningitis, may assume a subacute or a chronic form; but, when idiopathic, it is generally an acute disease. As a symptomatic or secondary affection, subacute cephalitis often forms a prominent feature of continued fever. In the acute, subacute, and chronic forms, it frequently occurs also in the course of maniacal affections. Cephalitis is liable to be confounded with *delirium tremens*: for the diagnosis between them, see *Delirium tremens*. When cephalitis occurs as an accompaniment of continued fever, it is of importance to distinguish it from an idiopathic affection, because the measures of active depletion, which are called for in the one case, might be highly injurious in the other. The diagnosis, however, will not generally be difficult, if due attention be paid to the history and circumstances of the case.

Encephalitis is a highly dangerous disease. The acute form may often be arrested at the commencement by judicious practice; but if the disorder be allowed to gain head, it generally goes on to a fatal termination. In the subacute and chronic forms, the prognosis is upon the whole unfavourable, because the approach of the disease is insidious, and it has frequently made dangerous progress before its presence is suspected.

In the acute form the treatment is simple. The patient must be bled as largely as his strength will admit of. Some recommend the temporal artery or jugular vein to be opened, with a view to a more immediate effect on the cerebral circulation; but in this, as in other cases, venesection in the arm will be found the most convenient and effectual way of abstracting blood from the system. This general evacuation is to be repeated, or topical blood-letting by cupping or leeches substituted for it, according to circumstances. The next measure is to cause a deriviation from the head, by an active and irritating purgative; which intention may be answered by a full dose of calomel and jalap,

followed up by saline purgatives. A remedy, the importance of which is second to none, is the application of cold to the head. In the early stage, while the vascular actions are still powerful, the *douche* or continued stream of cold water falling from a height upon the head, is by far the best way of applying cold. The effect of this is often very remarkable; the most inflammatory pulse is in a short time reduced to a thread, and the patient, who was before in a state of violent excitement, becomes pale, quiet, and almost fainting. This depressing effect, which renders the douche so valuable an agent in the early stage, forbids its use at a more advanced period; and cloths, dipped in cold water, should then be substituted for it. The application of blisters should be deferred till the vascular actions have been diminished by other means, and it will then be better to apply them to the extremities than to the head. Antimonials should be given to keep the skin moist, and the antiphlogistic regimen exactly enforced. In the comatose and sinking state, very little can be done; the object of the judicious practitioner is to prevent, if possible, the accession of this state, by subduing the inflammation at first: it is possible, however, that, by bringing the system under the influence of mercury, we may sometimes check an incipient disorganising process, or promote the absorption of fluids that may have been effused. Throughout the disease, the position of the patient should be such as least favours the determination of blood to the head.

The subacute and chronic forms of inflammation of the brain, afford less chance of success to the practitioner than the acute. In these, active depletion is not called for, and would be injurious. The repeated abstraction of small quantities of blood by the lancet, cupping, or leeches, according to circumstances — continued counter-irritation by blisters or setons — laxatives — attention to diet — and, in some instances, the cautious use of mercury, constitute the means which are most likely to prevail; but, as before said, we are not to be very sanguine of success in these cases.

ENCE'PHALOID. (From εγκεφαλος, the brain, and ειδος, resemblance.) *Cerebriform.* Resembling the matter of the brain. The epithet given by Laennec to that species of morbid matter which constitutes the mass of the disease called *fungus hæmatodes.* Encephaloid matter is found also irregularly blended with other morbid formations, in the substance of malignant tumours, as with schirrus, melanosis, &c.

Encephalon. See *Encephalos.*

ENCE'PHALOS. (Εγκεφαλος; from εν, in, and κεφαλη, the head.) A Greek word applied in a general sense to the contents of the cranium, comprehending the cerebrum and cerebellum, their processes and membranes, but more particularly to the *brain proper*, or *cerebrum*, the cerebellum being called παρεγκεφαλις; εγκρανιον; επικρανις; οπισθιος εγκεφαλος. In modern medical language the word *encephalon*, which is the accusative of *encephalos*, has been erroneously substituted for it. This error has been properly pointed out by Dr. Kühn, the very learned editor of Blancard's Lexicon. Since the brain proper is now always called *cerebrum*, and the lesser brain *cerebellum*, it is convenient to employ the term *encephalos* in a general sense, for the contents of the cranium, which is, in fact, its etymological meaning. The contents of the cranium are the *cerebrum*, *cerebellum*, *tuber annulare*, and *medulla oblongata*, with their investing membranes, their blood-vessels, and nerves. The whole nervous mass within the skull generally weighs in the human subject about forty-eight or fifty ounces, and is larger, in proportion to the nerves proceeding from it, than in any other animal. The cerebrum, cerebellum, and their appendages, are invested by three membranes — the dura mater, the tunica arachnoides, and the pia mater; these also pass down from the brain upon the spinal cord, and invest it to its termination.

The *dura mater* (μηνιγξ σχληρη), which is the most external of the three, is thick, firm, and resisting, and belongs to the class of fibrous, or rather fibro-serous membranes, as it is in reality a compound structure; the outer lamella being fibrous, the inner serous and derived from the arachnoid membrane. It is in close apposition with the cranium, which it lines, at the same time that it invests the brain, and sends inwards processes, which are interposed between its different parts, serving to sustain them. It is, moreover, prolonged in a tubular form through the spinal canal, but is separated from the bones by a lamella of adipose tissue and the great spinal veins. It adheres closely to the arch of the skull, particularly along the sutures, but at its base the points of connexion are multiplied by its passing over the inequalities of the surface, and still more so by sending tubular prolongations through the different foramina, serving to enclose and protect the nerves which they transmit. Along the spinal column similar prolongations pass out with the nerves through the inter-vertebral foramina: these constitute its chief connexion with the bones. But towards the lower part of the sacral canal it is fixed by some irregular fibrous bands.

The processes formed by the dura mater are the following: —

The *falx cerebri* is lodged in the longitudinal fissure between the hemispheres of the brain, forming a partition between them. It is narrow before, broad behind, and presents a curved border inferiorly, so that in shape it resembles a sickle: hence its name. It extends from the crista galli of the ethmoid bone, which is inserted between its lamellæ, to the internal occipital protuberance, on a level with which it branches out at each side, becoming blended with the tentorium cerebelli. It seems as if formed in the following manner: — The fibres of the dura mater, on approaching the sagittal suture from each side, divide into two lamellæ, one of which is continued uninterruptedly across, thereby maintaining the continuity of the membrane, but the other dips down, converging to that of the opposite side, by which means they enclose between them an angular interval, viz. the longitudinal sinus. After their

union they continue to descend to the margin of the falx, where they separate, and unite again, so as to form the inferior longitudinal sinus. A section of the upper sinus is found to be triangular, of the lower circular. On the surface of the dura mater, in the sinus, or upon the cerebral hemispheres, small albuminous masses occasionally exist, called glandulæ Pacchioni, apparently resulting from morbid action.

The *tentorium cerebelli* spreads out from the base of the falx, and serves to support the posterior lobes of the brain: one border of it is attached all around to the lateral grooves on the occipital bone, and to the margin of the pars petrosa; the other, concave and free, encloses an oval interval, which transmits the crura cerebri, processus ad testes, and basilar artery.

The *falx cerebelli* is a narrow fold placed between the lobes of the cerebellum, extending vertically from the under surface of the tentorium to the foramen magnum; its base lodges the occipital sinuses.

The arachnoid membrane has already been described. See *Arachnoid membrane.*

The *pia mater* in its anatomical characters differs considerably from the other membranes. It is made up of a thin lamella of cellular tissue, permeated by a multitude of minute capillary arteries, which ramify in it previously to their entrance into the cerebral substance. It invests the medulla spinalis, as well as the brain, and dips into the sulci between the convolutions of the latter: we also find it enclosed within the ventricles, where it is named "plexus choroides." Its inner surface is in close contact with the cerebral substance; the external is in apposition with the arachnoid membrane on the surface of the convolutions, but loses all connexion with it after passing into the sulci.

Plexus choroides. — In the fissure observable at the base of the brain, between the inner margin of its middle lobe and the crus cerebri, the pia mater, which invests the external surface, is continuous with that process of it (plexus choroides) which is found in the ventricles; so that when we trace it, we find it, as it were, entering at the inferior cornu of the ventricle, where it corresponds at first with the interstice between the corpus fimbriatum and the crus cerebri, and afterwards lies along the floor of the ventricle, in which it ascends upon the thalamus nervi optici, and unites at the foramen or fissure of Monro with the plexus of the other side. At its entrance into the ventricle the plexus is drawn together so as to resemble a small vascular bundle, and becomes invested by the arachnoid membrane, which, by its reflection from the sides of the ventricles to the plexus, maintains the integrity of the cavity.

Where the pia mater is prolonged on the medulla oblongata, it forms a small plexus, which enters into the fourth ventricle, and becomes also invested by a duplicature of the arachnoid. As the membrane descends into the spinal canal it becomes firm, resistant, and much paler in colour. Its inner surface is in close contact with the cord, the exterior is but slightly connected with the arachnoid; but the nerves, at the different points at which they pass outwards, derive from it their immediate investment, or neurilema. The difference of character here pointed out between the spinal and cerebral parts of the pia mater, appears to MM. Jules and Hippolite Cloquet sufficient to induce them to consider it as a distinct structure. But it would be difficult to show where the continuity of the membrane is interrupted; and as to any difference of character and consistence that may appear, they are merely such as may be supposed to arise from the different circumstances in which the membrane is placed. In the spine it is exposed, at least in some degree, to the influence of motion and pressure, which necessarily produce the same effect on it as on cellular tissues elsewhere; that is to say, they render it thick and lamellar. Again, in the skull it is in contact with gray substance, in the spine with white; so that we can readily account for the difference of the vascularity in the membrane, by recurring to the relative vascularity of the structures with which it is in contact.

The cerebrum. — The part of the central mass of the nervous system which is lodged within the skull, presents, even on a superficial inspection, a division into parts, which differ in position, size, and form, as well as in the arrangement of their components; these have been named cerebrum, cerebellum (or great and little brain), cerebral protuberance, and lastly, the connecting link between these and the spinal part, viz. the medulla oblongata.

The brain (*cerebrum*) forms the largest portion of the central mass of the nervous system, and occupies the principal part of the cranial cavity. It extends from the frontal bone to the occipital fossæ, resting on the orbital processes of the former, on the tentorium cerebelli posteriorly, and in the centre descends into the middle fossæ, at the base of the skull. Its superior surface is convex and arched, corresponding with the vault of the cranium, beneath which it is placed, and presents along the middle line a deep fissure, running from before backwards, by which it is divided into two equal parts (*hemispheres*). The surface of the brain is rendered unequal by several depressions and elevations marked upon it. The elevations are called *convolutions* (*gyri*), and are situated between the depressions (*sulci*). The course of the convolutions is winding and tortuous, as the name implies, and their size presents many varieties in different places. It should be observed, that the anterior extremity of the brain, which corresponds with the frontal bone, is narrower than the posterior, which is in apposition with the occipital bone.

Hemispheres. — The external surface of each hemisphere is convex in its general outline; the internal is flat and compressed, as it rests against its fellow of the opposite side, the falx major being interposed between them. The inferior surface presents several depressions and inequalities, corresponding with those of the base of the skull.

Lobes. — On the inferior surface of each hemisphere is observed its division into three *lobes*. The anterior lobe rests on the orbital process of the frontal bone and the smaller wing of the sphenoid bone; the posterior is supported

by the tentorium cerebelli; and the middle is received into the central fossa, at the base of the skull. The anterior is separated from the middle lobe by a deep fissure (*fissura Sylvii*); but there is no precise line of demarcation between the latter and the posterior.

The *Brain — its external surface.* — The relation of size, form, and situation of the different objects seen on the external surface of the brain, should be carefully noted, as allusions are constantly being made to them during the description of the parts deeply seated, and also when tracing the progress of its development in the human subject, or in the animal series, and particularly when, after the manner of Gall and Spurzheim, we follow the course of the nervous fibres through the successive steps of their expansion, as the phrase is, from the medulla upwards into the cerebral hemispheres. Nothing of consequence remains to be noticed on the superior and external surface, in addition to what has been already stated.

The *Brain — its base or inferior surface.* — When we turn to the inferior surface, we observe that it presents in the middle line, and in front, a fissure, being the continuation of the longitudinal one, which establishes the separation between the hemispheres. It lodges the anterior extremity of the falx cerebri, its depth being limited by the corpus callosum, which passes across from one hemisphere to the other. The inferior surface of each anterior lobe, as it corresponds with the orbital plate on which it rests, is slightly concave.

Sulcus olfactorius. — A few lines external to the longitudinal fissure, and parallel with it, is a groove, resembling one of the sulci, which lodges the olfactory nerve, and at its posterior extremity is a rounded papilla, from which one root of that nerve is derived.

Fissure of Sylvius. — Posterior to the groove just noticed is the fissure (fissura Sylvii) which marks the separation between the anterior and middle lobes, and lodges the middle artery of the brain. It inclines from within outwards and upwards, and gradually terminates amongst the convolutions on the exterior of the hemisphere, its direction corresponding with that of the small wing of the sphenoid bone. At its internal termination it forms a right angle with another fissure, which extends from before backwards, and which is bounded externally by the middle lobe, internally by the crus cerebri and tractus opticus, and deserves notice because it transmits the pia mater from the external surface into the lateral ventricle.

The angular part of the anterior lobe, which is included between the internal termination of the fissure of Sylvius, the longitudinal fissure, and the commissure of the optic nerves, has been named by Vicq-d'Azyr *substantia perforata antica*, and by Reil *lamina cribrosa*, because it presents several foramina for the transmission of vessels. It deserves attention, inasmuch as the white lines seen at its inner border are continuous with those of the corpus callosum.

Optic commissure. — Between the fissuræ Sylvii, and corresponding with the interval between their internal terminations, is situated the *commissure of the optic nerves.* It is flat and quadrilateral in its form: one surface looks upwards to the brain, and is connected with the anterior termination of the corpus callosum, which passes upon it in the form of a thin semi-transparent lamella; the other surface rests upon the depressed part of the sphenoid bone, which lies before the pituitary fossa; the lateral and anterior margins are free, but the posterior one is intimately connected with a delicate stratum of gray matter, which is inserted between the nerves as they converge to their commissure.

Tuber cinereum. — The piece of gray matter just referred to is called by Sœmmering *tuber cinereum:* it extends from the posterior margin of the optic commissure to the corpora albicantia, gradually becoming a little thicker and firmer; for in front it is so thin as to be torn by the slightest touch. Its superior surface forms part of the floor of the third ventricle; the inferior one is slightly convex, and gives attachment by its centre to a funnel-shaped process, called *infundibulum* (tige pituitaire). This is a thin elongated process of reddish gray matter, inclined obliquely downwards and forwards from the tuber cinereum to the pituitary gland: its extremities are slightly expanded, and its centre constricted, which gives it an hour-glass shape.

Pituitary gland or *body.* — The pituitary gland appears to have received its name from its being supposed, in the infancy of anatomy, to communicate with the nose, and to secrete the viscid mucus (pituita) of that cavity; it is lodged in the excavation in the upper surface of the body of the sphenoid bone, and is unequally divided into two portions or lobes: the anterior, which is larger and more firm than the other, is convex in front, and concave behind, so as to receive the other, whose border is round and convex. The situation of the pituitary gland is peculiar: it is interposed between the two lamellæ of the fibro-serous membrane. The dura mater will be found to line the surface of the bone on which the gland rests; but the arachnoid membrane, after having formed a funnel-shaped process round the infundibulum, is reflected off from it at its lower extremity, and stretched across the upper surface of the gland until it reaches the clinoid processes, where it becomes continuous with the inner lamella of the fibro-serous membrane. When cut into thin slices, it appears to consist of two substances, one being reddish gray, the other white.

Mammillary bodies. — Immediately behind the tuber cinereum are placed two small bodies, called corpora mammillaria (albicantia, pisiformia). Their size is about that of a pea, but they are not quite round, being slightly compressed on three sides. Placed in apposition with one another, they are connected by a delicate process of gray matter, of which substance the greater part of their mass consists; they are, however, invested by a lamella of white matter, derived from the anterior pillars of the fornix, of which they may be regarded as the termination.

Behind the mammillary bodies is situated a thin lamella of white substance, which is pierced

by a number of foramina for the transmission of vessels, and called *locus perforatus*, and sometimes *pons Tarini*. Its shape is triangular, the sides being formed by the crura cerebri, the base by the mammillary bodies, the apex being at the border of the pons Varolii; it forms part of the floor of the third ventricle.

The *crura cerebri* are two thick rounded bodies, about three-fourths of an inch long, and situated towards the centre of the base of the brain, from which they project rather prominently. They are extended from the pons Varolii forwards and upwards to the under surface of the hemispheres, into which they seem as if inserted. They are nearly in contact behind, but diverge as they pass forwards, so as to leave an interval, which is occupied by the locus perforatus. The external surface of the crura consists of white matter, which is about two lines thick, and presents a distinctly fibrous character; within this is enclosed a quantity of gray substance, so dark as to have received the name of *locus niger*. The arrangement of these structures can be readily seen by making a transverse section of the crus: the dark part is found to be convex inferiorly, and concave above, so that the section of it presents a lunated form. The optic nerves rest upon the external surface of the crura as they pass forwards to their commissure.

The *great commissure — corpus callosum*. — All the parts of the brain hitherto noticed can be examined without any division of its texture, as they are placed superficially; but several are enclosed within its interior, which cannot be seen without dissection. Between the hemispheres, and extending transversely from one to the other, is placed the *corpus callosum* (meso-lobe, commissura magna cerebri); its form is that of a broad layer of white fibres placed horizontally, but nearer to the anterior than to the posterior margin of the brain. Its extent from before backwards is about three inches, but its breadth from side to side cannot be assigned, as it becomes blended with the substance of the hemispheres. Its superior surface is convex in its general outline, and concealed by the hemispheres, which overlap it. When these are removed, a superficial linear impression will be perceived exactly in the middle line, and at each side of it a slight longitudinal elevation. To this the term raphé, or suture, is applied, as it indicates the point at which the union of the hemispheres takes place when their development is being completed. The fibres obviously are transverse from without inwards, for they commence at the circumference of the hemispheres, and terminate by their junction along the raphé. The inferior surface of the corpus callosum forms the roof of the lateral ventricles on each side, and towards the middle line it rests on the fornix, with which it is blended posteriorly: in front it gives attachment to the septum lucidum. Its anterior extremity, which, when viewed externally, presents a rounded border, is prolonged downwards and backwards to the base of the brain, where it forms a thin semi-transparent lamella. This reflected part is nearly horizontal in its direction, so that it lies beneath the corpora striata, and above the commissure of the optic nerves, to which it adheres but still passes backwards, and becomes continuous with the tuber cinereum in the middle line, whilst at each side its margins are blended with the substantia perforata. The posterior border of the corpus callosum is thick and rounded at the middle line, its thickness being greater (as may be seen when it is cut through perpendicularly) than that of the anterior border, owing to its receiving a greater number of converging fibres from the posterior lobes. A little more externally, the border of the corpus callosum gives off at each side two fasciculi of fibres, which can be traced, one into the posterior, the other into the descending cornu of the ventricle; one of these forms the medullary investment of the hippocampus minor, the other that of the hippocampus major.

Lateral ventricles (ventriculi tricornes). — Beneath the corpus callosum are situated the lateral ventricles, occupying the interior of the hemispheres. Their shape is very irregular, and can scarcely be said to bear a resemblance to any known figure. Each of them may be considered as divisible into a body or central portion, and three cornua or diverticula, which pass away in different directions. The central part lies horizontally: one cornu extends forwards from it into the anterior lobe, another backwards into the posterior, and the third downwards into the middle one; each of these presents certain peculiarities referable to the parts seen within them, which deserve notice. In the central part will be observed the corpus striatum, and thalamus nervi optici, and between them the tænia semicircularis; also the margin of the fornix, and part of the plexus choroides. These objects are for the present merely enumerated; each of them shall be noticed separately.

Septum inter ventriculos. — Previously to describing the objects just named, it may be observed that the lateral ventricles are separated by a partition (*septum lucidum*), which extends from the corpus callosum perpendicularly down to its reflected lamella in front, and to the fornix behind; it is round and broad before, but becomes narrowed to a point posteriorly. It consists of two thin lamellæ of white substance, between which is a fissure, or interval, called the *fifth ventricle*.

Fornix. — Beneath the corpus callosum and septum lucidum is a triangular lamella of white matter, which is extended from behind forwards over the third ventricle, and is thence termed *fornix*. Its upper surface gives attachment to part of the septum lucidum, and posteriorly becomes united with the corpus callosum; the inferior one overlays the third ventricle and the thalami nervorum opticorum, but is separated from them by the velum interpositum. Some oblique lines are traced on this surface, on which account it has been termed *lyra*, or *corpus psalloides*. The anterior extremity of the fornix is narrow, and divides into two fasciculi (*pillars of the fornix*), which curve downwards at the fore part of the third ventricle, immediately behind the anterior commissure, and terminate at the

base of the brain by investing the corpora mammillaria. The base or posterior extremity of the fornix gives off at each angle a thin flat process, which passes into the descending cornu of the ventricle, and assumes the name of *corpus fimbriatum*.

The *anterior cornu* of each ventricle inclines forwards and outwards, diverging from its fellow of the opposite side; the corpus striatum (its fore part) projects a little into its floor: the remainder of it resembles a groove in the cerebral substance. The *posterior cornu*, called the *digital cavity*, converges towards that of the opposite side, and presents in its floor the *hippocampus minor* (calcar unguis). This is a slight elevation, composed of a lamella of white matter (continuous with, or derived from, the corpus callosum), enclosing some cineritious substance; it gradually tapers to a point, and reaches to within an inch of the posterior extremity of the hemisphere.

The *inferior* or *descending cornu* passes at first backwards and outwards from the body of the ventricle; but after descending a little, it changes its direction altogether, and proceeds forwards and inwards, to terminate at the base of the brain, within a few lines of the fissure of Sylvius. This is the largest of the cornua: its convexity looks outwards and backwards, its concavity in the opposite direction: the under surface of the thalamus forms its roof, and the plexus choroides rests loosely on its floor, concealing the hippocampus major and corpus fimbriatum.

The *hippocampus major* (cornu ammonis) resembles in shape a cerebral convolution; it is curved so that its convex border looks outwards, and the concave inwards, conforming with the direction of the cavity in which it lies. Its anterior extremity expands somewhat, and presents two or three, and sometimes as many as five small prominences, separated by slight depressions, which make it to resemble somewhat the back of the hand when shut close. Some of the older anatomists called it *pes hippocampi*, from its resemblance to the clubbed foot of some of the lower animals. External to the part where the cornu makes its curve forwards, a slight elevation is observed, which is called *pes accessorius*.

Corpus fimbriatum. — Along the inner border of the cornu is a narrow falciform process of white substance (corpus fimbriatum), which is adherent by one edge to the floor of the cornu. It gradually becomes narrow, and ends in a point a little behind the pes hippocampi. Near the inner border of the corpus fimbriatum a narrow line of cineritious substance (*fascia dentata*) is placed; it is not perceptible until the middle lobe, together with the inferior cornu of the ventricle, is drawn outwards, as it is excluded from the cavity of the cornu by the reflection of the arachnoid membrane; its free border is marked by several transverse notches, giving it a dentated appearance, from which its name is derived.

The cornu ammonis consists externally of a lamella of white substance, which, if traced upwards into the body of the ventricle, will be found continuous with the corpus callosum. The corpus fimbriatum, in like manner, will be found continuous with the fornix.

The *corpora striata* (ganglions cérébraux supérieurs, Gall) are two in number, situated one in the body of each lateral ventricle. Each of these bodies is pyriform in its shape, the larger extremity being turned forwards and inwards, the smaller backwards and outwards. The superior surface is smooth and slightly prominent in the cavity, all the rest being embedded in the substance of the hemisphere. Their position is so oblique, that though in front they are separated by not more than three or four lines, their posterior extremities are from an inch and a half to two inches apart, the interval being occupied by the optic thalami and the third ventricle. Their external surface is composed of gray substance, but internally the gray and white are intermingled, so as to produce a striated appearance, whence the name is derived. The white fibres here found are continuous with those of the anterior pyramids and of the crura cerebri. They spread out considerably as they pass through the mass of gray matter of which the corpora striata consist, and appear to be at the same time enlarged and increased. Hence these bodies are considered by Dr. Gall to be ganglia of increase placed in the course of the fibres which are diverging to form the cerebral hemispheres.

The *optic thalami* (thalami nervorum opticorum, ganglions cérébraux postérieurs, Gall) are placed behind and between the corpora striata. The upper surface of each projects into the body of the corresponding ventricle; the inferior one forms the roof of its descending cornu, and the external is blended with the corpus striatum and the substance of the hemisphere. The internal surface of each thalamus, which is contiguous to that of the opposite side, is united to it by a soft lamella of gray substance called the *soft commissure* (commissura mollis). The union, however, may be called partial, for before and behind the commissure a small interval exists, where the thalami are unconnected, being merely in apposition.

Corpora geniculata. — On the posterior border of each thalamus are observed two slightly raised papillæ (*corpus geniculatum internum et externum*), which are connected by medullary striæ to the tubercula quadrigemina, the external one being also united to the origin of the optic nerve.

Tænia semi-circularis. — The contiguous borders of the optic thalamus and corpus striatum are separated by a thin fasciculus of nervous matter, of a pale straw colour (tænia semi-circularis), commencing near the anterior pillar of the fornix; it extends from before backwards between the bodies just named, and can be traced as far as the posterior border of the thalamus, and for a little way into the roof of the descending cornu, where it seems to cease.

Pineal gland and its peduncles. — Along the inner margins of the thalami two delicate white fasciculi arise, and pass backwards, converging to the pineal gland, whose *peduncles* they form,

and at the same time constitute its only bond of connexion with the substance of the brain. The pineal gland is a small mass of gray substance of a conical shape, and is sometimes called *conarium*, occasionally also *acervulus*. Its base rests on the tubercula quadrigemina; it usually contains in its interior some sabulous matter; at its first formation it consists of two masses, which unite into one.

The *third ventricle*. — The optic thalami enclose between them a narrow cavity (*third ventricle*), which corresponds exactly with the middle line, and resembles a longitudinal fissure. Its sides are formed by the thalami, its floor by the locus perforatus and tuber cinereum; the velum interpositum and fornix cover it in. The anterior commissure, and the pillars of the fornix, bound it in front. Into this cavity leads an aperture (*foramen commune anterius, foramen Monroi*), which is a rima between the anterior pillars of the fornix and the thalami, and which establishes a communication between the third and the lateral ventricles; a foramen leads out of it downwards and forwards (*iter ad infundibulum*). It may be observed that the infundibulum becomes imperforate at its middle, which appears to be owing to a small cul-de-sac of arachnoid membrane which is prolonged into it. From the posterior extremity of the ventricle another foramen opens into a canal (*iter à tertio ad quartum ventriculum; aquæductus Sylvii*), which leads obliquely downwards and backwards into the fourth ventricle.

Commissures, anterior and posterior. — Two cord-like fasciculi are stretched across the extremities of the third ventricle, and prolonged into the hemispheres which they connect, serving as commissures. The *anterior commissure* lies just before the pillars of the fornix, and as it extends laterally it will be found embedded in the substance of the corpora striata at each side, but does not become blended with them; its extremities arch backwards a considerable way, so as to form a curve whose convexity looks forwards. The *posterior commissure* is much shorter than the preceding, and extends but a few lines on each side into the thalami: it lies behind the ventricle, before the tubercula quadrigemina, and above the aqueduct of Sylvius.

The cerebellum. — The second division of the central mass of the nervous system is the cerebellum, which differs in situation and size, as well as in the arrangement of its component parts, from the cerebrum. It is lodged in the recess formed between the tentorium cerebelli and the inferior occipital fossæ, its weight as compared with that of the brain being as 1 to 16 in the infant and as 1 to 8 in the adult. Its surface, instead of convolutions, is divided into a number of concentric lamellæ (*folia cerebelli*), placed perpendicularly on their edges, and enclosed one within the other. If, however, the sulci between them be opened, several other lamellæ will be found enclosed within them, but smaller, more irregular, and with various degrees of inclination.

Lobes. — The cerebellum is divided into two lateral lobes, the division being established behind by a fissure, which receives the falx cerebelli, and in front by a deep excavation, which lodges the medulla oblongata.

Superior vermiform process. — The superior surface of the cerebellum is slightly depressed on each side where the tentorium rests upon it, but along the middle line a rounded ridge (processus vermiformis superior) runs from before backwards, and seems as if produced by the rippling up or admixture of the lamellæ of the lobes as they extend from without inwards. There appear to be from sixty to seventy lamellæ on the upper surface of the cerebellum, which are aggregated into five fasciculi.

Inferior vermiform process. — The inferior surface is convex, and dips down into the occipital fossæ; along the middle line runs the *inferior vermiform process*, interposed between the lateral lobes; it resembles a lobule formed of short transverse plates; its anterior extremity has been compared to a mamillary process.

The mass of medullary matter enclosed within the cerebellum is connected with three pairs of medullary fasciculi; viz. processus è cerebello ad testes, corpora restiformia, and crura cerebelli, which require a detailed notice.

Processus è cerebello ad testes. — From the interior of the lobes, two fasciculi of white fibres pass forwards and upwards to the lower pair of the tubercula quadrigemina; the name given to them indicates the points between which they lie; they converge in their ascent, and are connected by a semi-transparent medullary lamella, named the valve of Vieussens. The valve (*valvula Vieussini*) presents on its upper surface a slight groove, running from above downwards, and sometimes a linear ridge, like a raphè; it overhangs the fourth ventricle.

Posterior pyramids (corpora restiformia, pyramides postérieures). — Two white rounded processes pass obliquely upwards and outwards from the medulla oblongata into the cerebellum, named by Ridley "restiform" bodies, by Gall "posterior pyramids;" we have already noticed them as part of the medulla oblongata.

Peduncles of the cerebellum (crura cerebelli.) — These are the largest of the fasciculi here referred to; they are at first concealed within the lobes, and even when about to emerge from their substance, they are overlapped by some minor lobules. They incline forwards and inwards, descending somewhat, and become continuous with the fibres of the pons Varolii, which are thus derived from the crura cerebelli. The pons, from its mode of formation, bears the same relation to the cerebellum that the corpus callosum does to the cerebrum, as it is composed of converging fibres, and may therefore be called a commissure.

Fourth ventricle. — The cerebellum encloses a cavity called the "fourth ventricle," the roof of which is formed by the valve of Vieussens and processus ad testes, the sides by the lobes of the cerebellum; the dorsal surface of the medulla oblongata forms its floor, and it is completed inferiorly by a reflection of the arachnoid membrane: a process of pia mater projects into it at this situation, called *plexus choroides minor*.

Corpus dentatum. — If a vertical section be made of one of the lobes of the cerebellum, in

such a way as that two-thirds of its breadth shall lie external to the incision, an oval nucleus of gray substance (corpus dentatum, vel rhomboideum) will be exposed: its texture is usually firm, and its border notched, so as to give it a dentated appearance. Gall considers it as a ganglion of increase to the formative fibres of the cerebellum. The surface of the section here indicated presents rather a peculiar appearance: the white substance will be found so disposed as to represent the stalk and branches of a tree, hence called *arbor vitæ*. The branches project into the lamellæ of the cerebellum, which are not unfrequently in figurative phrase termed *folia*, for the gray substance invests them so as to make them resemble pinnatifid leaves. If a horizontal section be made, so as to divide the lobe into two equal parts, the quantity of white substance will appear considerably greater than that of the gray.

Tuber annulare. — *The cerebral protuberance* (nodus cerebri, pons Varolii, protuberantia annularis) is much the smallest portion of the central mass; its relative size being to that of the rest as 1 to 72. It is placed beneath the cerebrum, above the medulla oblongata, and before the cerebellum, having intimate relations with each by continuity of substance; hence it has been termed *nodus encephali*. It is a square mass, its depth being about equal to its length. Its anterior surface is convex, and rests against the basilar process of the occipital bone, and is composed of the converging fibres of the cerebellum, disposed so as to form a portion of a ring, which encloses the contiguous extremities of the crura cerebri and medulla oblongata; — it is termed *protuberantia annularis* or *pons Varolii*. Its upper border is bounded by a transverse line, marking its separation from the crura cerebri, and the lower by another line which divides it from the medulla oblongata; along its middle is a shallow groove, running from above downwards, which corresponds with the basilar artery.

Tubercula quadrigemina. — Upon the posterior surface of the cerebral protuberance, which is almost entirely concealed by the cerebellum, are placed four white rounded bodies (tubercula, vel corpora quadrigemina), disposed in pairs, one above the other, and separated by two decussating lines. The upper pair are the larger, and called *nates* — the lower *testes*: they are connected in front with the thalami, inferiorly with the processus ad testes and the valve of Vieussens, and between their upper surface and the corpus callosum is a rima or fissure (*fissure of Bichât*,) through which the arachnoid membrane enters to line the ventricles.

Communication between the ventricles of the brain. — The irregular vacuities disposed in the interior of the cerebellum and brain communicate freely with one another by certain constricted portions, or foramina. If, whilst the brain and cerebellum remain *in situ*, the latter be divided by a vertical incision made from the valve of Vieussens downwards through its substance, the fourth ventricle will be exposed. This cavity contracts towards its upper part into a tube (aqueduct of Sylvius,) which is directed upwards and forwards, under the tubercula quadrigemina and the posterior commissure, into the middle or third ventricle. The latter again communicates at each side with the lateral ventricles by a rima (*foramen Monroi*), situated between the pillars of the fornix and the thalami, on which they rest. When the ventricles have been distended with fluid, this rima assumes a rounded form, and then only represents a foramen. These vacuities, then, should be considered not as so many separate cavities, but as a series of compartments of one cavity contained within the cerebral mass; and this is the appearance they present during the earlier periods of fœtal life. The cavity, however, is not a shut sac, for the membrane which lines it is continuous with that which invests the external surface of the brain and cerebellum. It has been already stated, that the arachnoid membrane passes in through the fissure of Bichât. Two other fissures are situated, one on each side between the corpus fimbriatum and the crus cerebri, through which the pia mater enters, to form the plexus choroides. These may be considered as chinks between the portions of cerebral substance just referred to; but they are closed up by the manner in which the arachnoid membrane is reflected from the sides of the cornua of the ventricles upon the plexus choroides.

Medulla oblongata. — The upper part of the spinal cord, before it emerges from the cranium, is called medulla oblongata. It is broad and thick superiorly near the pons Varolii, but tapers gradually towards the occipital foramen. Its anterior aspect is rounded, the posterior is somewhat flattened, and each presents a continuation of the median sulcus (anterior and posterior) by which it is divided into two symmetrical parts. The lateral depressions, which correspond with the points of origin of the spinal nerves, are also continued upwards into the medulla oblongata. But though inferiorly the divisions established by these lines are so slightly marked as to have escaped notice, until Chaussier directed his attention to the subject, yet in the superior part (*medulla oblongata*) they are so well defined as to have been deemed deserving of particular names. The anterior and posterior pair have been called the anterior and posterior pyramids; the middle, from their shape, the corpora olivaria. These, according to Gall, are made up of the primitive or formative fibres of the cerebrum and cerebellum; for if they be traced upwards, the anterior pyramids and the corpora olivaria will be found continuous with the fibres which are expanded into the cerebral hemispheres, whilst the posterior pyramids (usually called, since Ridley's time, *corpora restiformia*) are evolved into the lobes of the cerebellum. Besides these parts, which have been noticed by all anatomists, Sir C. Bell has described another, which is situated between the corpus olivare and restiforme. This consists of a narrow line of white matter, which may be traced along the medulla oblongata, and from thence downwards between the anterior and posterior roots of the spinal nerves. It is but slightly marked in the lower part of its extent, but becomes more perceptible opposite the corpus olivare; after which it narrows, and ceases

altogether at the margin of the pons, "not being continued upwards into the cerebral mass." This may be termed *tractus respiratorius*, as it gives origin to the class of respiratory nerves is established by Sir C. Bell.

Structure. — A transverse section of the medulla shows it to consist of a thin lamella of white matter, enclosing the gray or cineritious substance. The latter is disposed in a very peculiar way; it presents two lateral portions, each of a crescentic form, their concavities looking outwards; the convex sides of each are turned towards the middle line, and are connected by a short transverse fasciculus of gray matter. The anterior cornua of the lateral masses are rather thick and rounded; the posterior extend as far as the corresponding collateral sulci.

The *anterior pyramids* (corpora pyramidalia) are close together, being separated only by the anterior sulcus, and extend, enclosed between the corpora olivaria, from the margin of the pons Varolii to the foramen magnum. Some of the fibres of each pyramid which are close to the sulcus pass across it obliquely, and so a decussation is produced between them. The rest continue their course uninterruptedly, so that only a part of the pyramids change place, or decussate.

The *olivary bodies* (corpora olivaria), when stripped of their medullary lamella, are found to consist each of an oblong mass of gray matter, surrounded by a fringed or scalloped border, and attached towards the middle line by a slight petiole. Owing to this arrangement, it presents, when divided by a transverse section, an arborescent appearance.

The *posterior pyramids* (corpora restiformia, pyramides postérieures, Gall) correspond with the posterior and lateral parts of the medulla; they diverge as they ascend towards the lobes of the cerebellum. The posterior aspect of the medulla oblongata is slightly concave, and divided into two lateral parts by the median sulcus, to which two oblique lines converge, giving it an indented appearance. This has been termed *calamus scriptorius*. One or two elongated cords are also observable on this surface, which have not as yet received names, "but whose offices may one day be discovered."

Intimate structure of the Brain. The cerebral hemispheres are considered by Gall as resulting from an expansion or evolution of the fibres of the medulla oblongata, which he therefore terms primitive, or formative fasciculi.

Diverging fibres. — The fibres of the anterior pyramids may be traced upwards to the margin of the pons, where they become somewhat constricted. From the inner border of each, some fibres pass across the middle sulcus, and mutually change place, or decussate; those of the right side passing to the left, and *vice versâ*. If an incision, a line or two in depth, be made through the pons, so that one lateral half of it may be turned outwards, the fibres of the pyramid will be observed to pass into a quantity of gray substance lodged in the interior of the nodus encephali. In this situation the fibres diverge and separate, and are also considerably increased: at the upper margin of the pons they become continuous with the crus cerebri. Here an additional increase is derived from their passage through the gray substance lodged in the interior of the crus, after which they proceed through the inferior cerebral ganglion (*thalamus nervi optici*), and in the next place through the superior one (*corpus striatum*), being successively increased and rendered still more divergent, until finally they reach the anterior and middle lobes, where they are evolved into their inferior, external, and anterior convolutions. The corpus olivare contains within itself a small ganglion; its fibres pass, without any decussation, into the gray substance lodged in the cerebral protuberance, where, like the pyramids, they receive additions, after which they pass into the crus cerebri, of which they form the posterior and inner part. Continuing their ascent, after being increased in the locus niger, they pass through the optic thalamus, and thence into the corpus striatum, receiving additions as they radiate through each, and finally are continued upwards into the convolutions at the summit of the hemisphere, and backwards into those of the posterior lobe. Previously to entering the optic thalamus, some fibres of the corpus olivare have been observed to turn inwards, so as to give to the tubercula quadrigemina their medullary investment, and also to unite with those of the opposite side, to form the valve of Vieussens. Finally, the diverging fibres traced up, as has been pointed out, through their successive steps of increase, terminate in the gray substance of the cerebral convolutions.

Converging fibres. — Another order of fibres may be observed quite distinct from those above noticed, and taking a different direction. These are called the "converging fibres," as they commence at the peripheral terminations of the preceding set, and pass from without inwards to the middle line, so as to connect the lateral parts, and bring them into relation with one another; on which account they are called commissures. The anterior and posterior commissures are formed in this way, as is also the corpus callosum; though the greater number of the fibres which compose the latter are transverse, those towards its extremities are oblique. This is owing to the manner in which the converging fibres of the anterior lobe are constrained to pass from before backwards, and those of the posterior lobe from behind forwards, in order to gain the corresponding borders of the corpus callosum. By this arrangement a greater number of fibres is collected to its extremities, which renders them thicker (particularly the posterior one) than any other part of its extent. Some of the inferior fibres thus traced from without inwards, instead of uniting with the corresponding set along the middle line, become reflected downwards from the under surface of the corpus callosum to the fornix, and so form the septum lucidum. The convolutions of the posterior lobe are brought into relation with those of the middle one by means of the fornix, the fibres of which are stretched from behind forwards, in such a way, that whilst its body is in a manner unattached, the extremities are identified with the parts just referred to.

Diverging fibres of the cerebellum. — The formative fibres of the cerebellum are derived from the posterior pyramids, or corpora restiformia; they pass upwards and outwards, and soon meet the corpus rhomboideum, which is considered as the ganglion of the cerebellum: the fibres are supposed to proceed through the gray substance of which it is composed, though it is difficult to demonstrate the fact; after which they pass outwards, diverging into the lobes of the cerebellum.

Converging fibres. — From the peripheral terminations of the diverging fibres in the folia, a new set arise, which incline inwards towards the middle line. These are the converging fibres, which, by their union, form the crura cerebelli; and the fibres of each crus, expanding as they pass downwards and inwards, constitute by their junction the pons Varolii, which brings the lateral lobes of the cerebellum into relation, and becomes thereby their commissure. The processus à cerebello ad testes bring the lobes of the cerebellum into intimate connexion with the cerebral hemispheres.

The weight of the brain in the adult is about three pounds; that of the cerebellum about four ounces and a half, and of the medulla oblongata half an ounce.

Vessels. — The brain is supplied with blood by the two internal carotid arteries, and the two vertebral; its residual blood is returned by the two internal jugular veins.

The preceding anatomical description of the encephalos is taken from Professor Quain's Manual of Anatomy. Nine, or, according to the arrangements of Sœmmering, twelve pair of nerves rise from the brain, and make their exit at the different foramina of the skull.

For the enumeration of these, see *Nervous System.*

ENCHARA'XIS. (*is, is.* f.; from εν, and χαρασσω, to scarify.) A scarification.

Enchiloma. See *Enchyloma.*

ENCHO'NDRUS. (From εν, and χονδρος, a grain, or a cartilage.) 1. Granular.

2. Cartilaginous.

ENCHO'RIOS. (Εγχωριος; from εν, and χωρος, a region.) Enchorial. Belonging to a particular country or district. Synonymous in medical language with *endemic.*

ENCHRI'STUM. (From εγχριω, to anoint.) An ointment or liniment.

Enchusa. See *Anchusa.*

ENCHYLO'MA. (From εν, and χυλος, juice.) An inspissated juice. An elixir, according to Lemery.

ENCHYMO'MA. (Εγχυμωμα; from εν, and χυμος, juice.) An infusion or pouring in of fluids. In the writings of the ancient physicians, this word expresses a sudden injection of blood into the cutaneous vessels, which arises from joy, anger, or shame: and, in the last instance, is what we usually call blushing.

ENCHYMO'SIS. Εγχυμωσις. The same as *enchymoma.*

E'NCHYTA. (Εγχυτα; from εγχυω, to pour in.) Applied to medicines which are dropped into the eyes. — *Galen.*

ENCLY'SMA. (From εν, and κλυζω, to cleanse out.) A clyster.

ENCOE'LIA. (From εν, within, and κοιλια, the belly.) The abdominal viscera.

ENCOLPI'SMUS. (From εγκολπεω, to insinuate.) The introduction of any medicament into the female vagina.

Encranis. See *Encranium.*

ENCRA'NIUM. (Εγκρανιον; from εν, within, and κρανιον, the skull.) The cerebellum.

ENCRASI'CHOLUS. (From εν, in, κερας, the head, and χολη, bile; because it was said to have the gall in its head.) The anchovy. See *Clupea.*

ENCY'STED. *Saccatus.* A term applied to those tumours which consist of a fluid or other matter, enclosed in a sac or cyst.

ENCY'STIS. (From εν, in, and κυστις, a bag.) An encysted tumour.

ENDE'MIC. (*Endemius; endemicus;* from εν, in, and δημος, people.) A disease is so termed which is peculiar to, or particularly prevalent in, a particular region. Enchorial is a preferable term.

ENDERMATIC. (*Endermaticus;* from εν, and δερματικος, cutaneous.) Applied to that method of using medicines in which they are rubbed into the skin.

ENDERMIC. Improperly written for *Endermatic.*

Endive. See *Cichorium.*

ENDI'VIA. (*a, æ.* f.) Blancard says this word is a Tuscan corruption of the Latin *Intubum.* See *Cichorium.*

ENDOBRANCHIA'TA. (From ενδον, within, and βραγχια, gills.) The name given by Dumeril to a family of the class annelides, which have no external gills.

ENDOCARDI'TIS. (From ενδον, within, and καρδια, the heart.) Inflammation of the lining membrane of the heart. See *Heart, diseases of the.*

ENDODONTI'TIS. (From ενδον, within, and οδους, a tooth.) Inflammation of the membrane lining the internal cavity of a tooth.

ENDOGASTRI'TIS. (From ενδον, within, and γαστηρ, the stomach.) Inflammation of the lining membrane of the stomach.

ENDO'GENOUS. (From ενδον, within, and γενναω, to engender.) Applied to plants, the vessels of which are dispersed through the whole stem, and are so disposed that the oldest are exterior, and hence the growth of the plant takes place from within.

E'NDONENTERI'TIS. (From ενδον, within, and εντερον, an intestine.) Inflammation of the lining membrane of the intestines.

E'NDOŒSOPHAGI'TIS. (From ενδον, within, and οισοφαγος, the gullet.) Inflammation of the lining membrane of the œsophagus.

E'NDOPHLEBI'TIS. (From ενδον, within, and φλεψ, a vein.) Inflammation of the lining membrane of a vein.

E'NDOSIS. Ενδοσις. The remission of a fever.

ENDOSMO'SIS. (From ενδον, within, and ωσμος, impulsion.) The passage of liquids through the membranes of the living bodies from the exterior to the interior.

ENE'CIA. (From ηνεκης, continuous.) The

generic name given by Mason Good to continued fever.

E'NEMA. (*a, atis.* n.; from *ενιημι*, to inject.) A glyster, or clyster. A liquid or gaseous form of medicine thrown into the rectum. The objects for which glysters are administered are several: —

1. For emptying the bowels of fæces, or as an aperient.

2. For relaxing the powers of the body, and producing fainting; as when tobacco fumes are sent into the rectum, in order to effect the reduction of a strangulated hernia.

3. For the purpose of killing worms that are nidulating in the rectum; as the thread-worm.

4. For defending the bowels from the irritation of the bile or acrimonious secretions.

5. For restraining a diarrhœa.

6. For nourishing the body, when aliment cannot be received or retained in the stomach.

7. For allaying spasms in various parts; as the intestines, the stomach, the lungs, kidneys, &c.

8. For allaying vomiting, caused by inverted peristaltic movements of the small intestines.

To answer these several purposes, the ingredients, of course, will be varied: — aloes, colocynth, senna, purging salts, and turpentine, and the like, with gruel, decoction of marshmallows, and linseed, are selected to procure motions, to bring the peristaltic movement of the bowels into its proper direction: these medicines will also kill worms. Tobacco infusion, or the smoke, will relax spasm, and produce syncope. Mild mucilage, and glutinous substances, will defend the irritated coats of the rectum; as decoctions of starch, gum acacia, isinglass, glue, &c., with opium; which are also likely to restrain diarrhœa, especially if logwood, catechu, or oak bark be combined with them. The shanks of mutton, veal, and beef, and glue, boiled in broth, will nourish the body. Opium, so administered as to be duly retained in the bowels, is best calculated to allay spasm of the bowels, stomach, uterus, bladder, &c. The following forms are in general use: —

ENEMA ANO'DYNUM. Take of starch jelly, half a pint; tincture of opium, forty to sixty drops. Mix. The whole to be injected by means of a clyster-syringe, in cases of dysentery or violent purging, and pain in the bowels.

ENEMA ANTISPASMODICUM. Take of tincture of assafœtida, half an ounce; tincture of opium, forty drops; gruel, half a pint. Mix. For spasmodic affections of the bowels.

ENEMA LAXATIVUM. Take of sulphate of magnesia, two ounces; dissolve in three quarters of a pint of warm gruel, or broth, with an ounce of fresh butter, or sweet oil.

ENEMA NICOTIANÆ. Take of the infusion of tobacco from a half to a whole pint. Employed in cases of strangulated hernia.

ENEMA NUTRIENS. Take of strong beef tea, twelve ounces; thicken with hartshorn shavings, or arrow-root.

ENEMA TEREBINTHINÆ. Take of common turpentine, half an ounce; the yolk of one egg, and half a pint of gruel. The turpentine being first incorporated with the egg, add to them the gruel. This clyster is generally used, and with great good effect, in violent fits of the stone.

E'NERGY. (*Energia, æ.* f.; from *ενεργεω*, to act.) A term conveniently applied in physiology to certain powers of which we see the operation but are ignorant of the nature: thus we speak of the *vital energy*, the *nervous energy*, &c.

ENE'RVIS. *Enervius.* Ribless: applied to leaves which are without lines or ribs.

ENGALA'CTUM. (From *εν*, and *γαλα*, milk; so called, because it was eaten by nurses to increase their milk.) Most probably the *Salsola kali* of Linnæus.

ENGASTRIMY'THUS. (*us, i.* m.; from *εν*, in, *γαστηρ*, the belly, and *μυθεομαι*, to discourse.) A ventriloquist; one who appears to speak from his belly. See *Ventriloquism.*

ENGEISO'MA. (*Εγγεισωμα*; from *γεισον*, the eaves or edges of a roof.) A fracture of the skull in which the broken portion of bone slides under the adjacent sound portion. — *Kühn.*

ENGHIEN. A small town near Paris, which has mineral waters, containing sulphuretted hydrogen gas, muriates of magnesia and soda, carbonates of lime and magnesia, free carbonic acid, &c.

English mercury. See *Mercurialis.*

ENGLO'TTO-GA'STOR. (From *εν*, *γλωττη*, the tongue, and *γαστηρ*, the belly.) A ventriloquist.

ENGOMPHO'SIS. (*is, is.* m.; from *εν*, and *γομφος*, a nail.) That species of articulation which resembles a nail driven into wood, as a tooth in its socket.

ENGO'NIOS. (From *εν*, and *γωνια*, an angle.) The flexure, or angle made by the bending of a joint.

ENGORGEMENT. A French term synonymous with congestion.

ENGOUMENT. A French term signifying obstruction. Thus, *engoument des bronches*, obstruction of the bronchi by effused mucus.

ENHÆMON. *Εναίμον.* The epithet of a plaster mentioned by N. Myrepsus.

ENI'XUM PARACELSI. The caput mortuum of the distillation of nitric acid, which is a super-sulphate of potash.

ENNEA'NDRIA. (*a, æ.* f.; from *εννεα*, nine, and *ἀνηρ*, a man.) The name of a class of plants in the sexual system, containing such as have hermaphrodite flowers with nine stamina.

ENNEAPHA'RMACUM. (From *εννεα*, nine, and *φαρμακον*, a medicine.) A medicine composed of nine simple ingredients.

ENNEAPHY'LLUM. (*um, i.* n.; from *εννεα*, nine, and *φυλλον*, a leaf: because its flower consists of nine leaves.) A name for helleboraster, or bear's-foot.

ENO'DIS. Without knots; without joints: jointless. Applied to stems of plants. — *Culmus enodis*; that is, a smooth culm, as in our common rushes.

ENORMON. (*Ενορμοῦν*; from *ενορμαω*, to impel.) *Impetum faciens.* A term used by Hippocrates to designate the vital principle. See *Impetum faciens.*

ENOSTO'SIS. (From *εν*, in, and *οστεον*, a bone.) A tumour formed in the medullary canal of a bone.

Enrythimus. (Ευρυθμος; from εν, and ρυθμος, number.) A Greek epithet of a pulse which follows some sort of order, although it may not be exactly ευρυθμος, that is, perfectly regular both as to frequency and force.

ENS. An entity, or thing actually existing. By this term Paracelsus signified a natural power capable of influencing the human body. Of such powers he enumerates five — an *ens astrale, ens venenale, ens naturale, ens spirituale,* and *ens Deale.* In imitation of this jargon, the old chemists applied the term *ens* to denote certain substances which they conceived to be particularly active and powerful.

Ens martis. An oxide of iron.

Ens primum solare. Antimony.

Ens veneris. The muriate of copper.

Ensa'tæ. (From *ensis,* a sword.) The name of a natural order of plants, consisting of such as have sword-shaped leaves.

Ensa'tus. (From *ensis,* a sword.) Shaped like a sword.

E'NSIFORM. (*Ensiformis;* from *ensis,* a sword, and *forma,* resemblance.) Sword-shaped: sword-like. 1. In *Anatomy,* applied to some parts from their resemblance; as the ensiform cartilage. See *Cartilago ensiformis.*

2. In *Botany,* a leaf is called *folium ensiforme,* which has two edges, and tapers to a point, like a sword. See *Leaf.*

Enста'ctum. (From εν, and σταζω, to instil.) A liquid medicine, which is applied *stillatim,* or drop by drop.

Entali. An alchemical name of the alumen plumosum.

ENTA'SIA. (*a, æ.* f.; from εντασις, *intentio vehementia.*) The generic name applied by Dr. Good to constrictive spasm, embracing trismus, tetanus, priapism, &c. &c.

Enta'ticus. (Εντατικυς; from εντεινω, to strain: provocative.) Applied to that which excites venereal inclination.

Enterade'nes. (From εντερον, an intestine, and αδην, a gland.) The intestinal glands.

Enteralgia. (From εντερον, the intestine, and αλγος, pain.) The generic name given by Swediaur to painful affections of the bowels.

Entere'nchyta. (From εντερα, the bowels, and εγχυω, to infuse into.) An instrument for administering clysters. A clyster-pipe.

Ente'ric. (*Entericus;* from εντερον, the intestine.) Appertaining to the intestines.

ENTERI'TIS. (*is, idis.* f.; from εντερον, an intestine.) Inflammation of the intestines. Inflammation may attack any portion of the intestinal canal, and any of the three textures, mucous, muscular, or serous, which enter into its formation. The term enteritis has been most frequently applied to the commonest form of acute inflammation of the intestines, namely, that in which all the three coats are more or less implicated. See *Inflammation of the Stomach and Intestines.*

ENTEROCE'LE. (*e, es.* f.; from εντερον, an intestine, and κηλη, a tumour.) An intestinal rupture, or hernia. Every hernia may be so called that is produced by the protrusion of a portion of intestine, whether it is at the groin, navel, or elsewhere.

E'ntero-epi'ploce'le. (From εντερον, an intestine, επιπλοον, the omentum, and κηλη, a tumour.) A rupture formed by the protrusion of part of an intestine, with a portion of the omentum.

E'ntero-epiplo'mphalus. (From εντερον, an intestine, επιπλοον, the omentum, and ομφαλος, the navel.) A very long word, used to designate an umbilical hernia, in which both intestine and omentum are protruded. Most umbilical herniæ are of this kind.

E'ntero-gastroce'le. (From εντερον, an intestine, γαστηρ, the belly, and κηλη, a tumour.) An abdominal hernia.

ENTERO'GRAPHY. (*Enterographia;* from εντερον, an intestine, and γραφω, to describe.) The anatomical description of the intestines.

E'ntero-hydroce'le. (From εντερον, an intestine, ὑδωρ, water, and κηλη, a tumour.) This may be applied either to a common scrotal hernia, with a good deal of water in the hernial sac; or to a congenital hernia (in which the bowels descend into the tunica vaginalis testis), attended with a collection of fluid in the cavity of this membrane.

E'ntero-hydro'mphalus. (From εντερον, an intestine, ὑδωρ, water, and ομφαλος, the navel.) An umbilical hernia, containing a portion of intestine and much serosity. This is sometimes the case when umbilical hernia co-exists with ascites, and the hernial sac communicates with the cavity of the abdomen.

E'ntero-i'schioce'le. (From εντερον, an intestine, ισχιον, the ischium, and κηλη, a tumour.) An intestinal hernia at the ischiadic foramen.

ENTERO'LITHUS. (*us, i.* m.; from εντερον, an intestine, and λιθος, a stone.) Intestestinal concretion, or calculus. This term embraces all those concretions which resemble stones, generated in the stomach and bowels. Intestinal calculi are common in many of the inferior animals, and they occur also in man, but much less frequently. For an account of the intestinal calculi in animals, see the article *Bezoar.*

The most common kind of intestinal calculi in the human subject are of large size, brown colour, and fibrous texture; they are somewhat soft and spongy to the feel, but yield very little to pressure. It is found that these concretions are formed chiefly of the fibrous matter of oats — a fact first suggested by Mr. Clift, and confirmed by Dr. Wollaston. They seem to be more frequent in Scotland than in England, from the more extensive use of oatmeal in the former country. In Lancashire, where oatmeal is also much used, intestinal calculus appears not to be uncommon. Besides the vegetable matter, these calculi contain albumen, muriate of soda, and phosphates of lime and soda.

Intestinal calculi are sometimes formed in the human intestines of other substances than those above described. The excessive and long-continued use of carbonate of magnesia has caused the formation of large calculi consisting of that substance. Some calculi, brought from Lancashire, were found by Mr. Children to consist of alternate layers of the fibrous matter of the

oat, and the triple phosphate, which is a common ingredient in the intestinal calculi of animals. In some instances the calculus is formed upon a nucleus, as a gall-stone, or the kernel of a fruit. Some intestinal calculi examined by Dr. Marcet consisted of a curdy, or caseous matter.

ENTEROLO'GY. (*Enterologia*, *æ*. f.; from εντερον, an intestine, and λογος, a discourse.) The part of anatomy which treats of the intestines.

E'NTERO-MEROCE'LE. (From εντερον, an intestine, μηρος, the thigh, and κηλη, a tumour.) A femoral hernia.

ENTERO'MPHALUS. (*us*, *i*. m.; from εντερον, an intestine, and ομφαλος, the navel.) An umbilical hernia, produced by the protrusion of a portion of intestine.

E'NTERON. (Εντερον, an intestine, and plural εντερα, the intestines; from εντος, within.) 1. An intestine, or the intestines in general.

2. Hippocrates calls the bag in which medicines for fomentations were formerly enclosed, by this name.

ENTERO'PHYTUM. (*um*, *i*. n.; from εντερον, an intestine, and φυτον, a plant.) A plant which grows in the form of a gut; the sea-chitterling. — *Turton.*

ENTERO'RAPHY. (*Enteroraphia*, *æ*. f.; from εντερον, an intestine, and ραφη, a suture.) A suture of the intestines, or the sewing together the divided edges of an intestine.

E'NTERO'SCHEOCE'LE. (*e*, *es*. f.; from εντερον, an intestine, οσχεον, the scrotum, and κηλη, a rupture.) A scrotal hernia, or descent of the intestines into the scrotum.

E'NTHLASIS. A depressed fracture of the skull. — *Galen.*

ENTHUSIASM. (*Enthusiasmus*; Ενθουσιασμος; from ενθυσιαζω, to rave.) Galen signifies by this term the delirious raving of those who fancy themselves inspired.

Entire. See *Integer.*

ENTOZO'A. (From εντος, within, and ζωον, an animal.) A general name for those parasitical animals which infest the bodies of other animals. The presence of such parasites in the intestinal canal has been known to physicians of all ages as the source of many diseased actions. Among modern nosologists these animals have passed under the name of worms, *vermes*; and the train of symptoms induced by their presence has obtained no proper designation. We therefore hear the expression "a case of worms," used as if the worms were the disease, instead of merely being the irritating cause which produces the disease. The term *vermes*, as applied to the animals in question, is very incorrect in a zoological point of view, as many of them bear no resemblance whatever to what have usually been called worms; and it is still more incorrectly applied as the designation of a disease: we shall therefore include intestinal worms, along with other parasites inhabiting the bodies of animals, under the term *entozoa*, which is unobjectionable, because it has reference merely to their common parasitical nature; and we shall consider the diseased actions to which they give rise under the head *Invermination*, — a term which has lately come into use, and is much preferable to the old one of "worms."

Parasites are found in all classes of animals, even the invertebrate; and many species are peculiar to particular animals: thus man, the horse, the dog, the cat, and other animals, have each their own particular species of tape-worm, which is not found in the rest.

The entozoa of the human body, of which alone it is here necessary to treat, may be divided into those which inhabit only the alimentary canal, and those which are found in other parts.

Of *alvine entozoa* there are two classes: —

First class. This contains those which are generated and nourished in the human intestinal canal, and which there propagate their species.

Second class comprehends those insects or worms that accidentally enter the human primæ viæ *ab externo*, and which never propagate their species in that canal, but are soon eliminated from the body.

The *first class*, from the variety it affords, may be divided into different orders, genera, and species.

Order I. Round worms.

Genus I. Intestinal ascarides.

Character. Body round, head obtuse, and furnished with three vesicles.

Species 1. *Ascaris lumbricoides.* The long round worm, or lumbricoid ascaris. The *Ascaris* of Rudolphi.

Character. When full grown, a foot in length. Mouth triangular.

2. *Ascaris vermicularis.* The thread or maw-worm. The *Oxyuris* of Rudolphi.

Character. When full grown, half an inch in length; tail terminates in a fine point.

Genus II. Intestinal trichurides.

Character. Body round, tail three times the length of the body, head without vesicles.

Species 1. *Trichuris vulgaris.* The trichuris, or long thread-worm. This worm is the *Trichocephalus dispar* of Rudolphi, whose account of the head and tail are probably the most correct.

Character. The head furnished with a proboscis.

Order II. The flat worms.

Genus I. Intestinal tape-worm.

Character. Body flat and jointed.

Species 1. *Tænia osculis marginalibus.* The long tape-worm. The *Tænia solium* of Rudolphi.

Character. The oscula are situated upon the margin of the joints.

2. *Tænia osculis superficialibus.* The broad tape-worm. The *Bothriocephalus latus* of Rudolphi.

Character. The oscula are placed upon the flattened surface.

These worms were all known to the ancients, the trichuris only excepted, and are mentioned in the works of Hippocrates, Galen, Celsus, Paulus Ægineta, and Pliny.

The second class embraces such as do not belong to the human body, but which are by accident carried there. Of these many have been found.

1. The *Fasciola hepatica*, or fluke, a flat worm like a flounder in miniature, of the size of the nail of the little finger. This worm is very common in the bile-ducts of rotten sheep, and in the alvine canal of many animals. It is very rarely found in man.

2. The *Scarabæus*. Several species of this genus have been found in the external openings of the body of man; as the *meatus auditorius externus*, the alvine canal, the rectum, the vagina, &c.

3. The *Œstrus*, a fly, the ovula of which are deposited under the skin in wounds in fetid ulcers, and where the larvæ or maggots produce great mischief.

4. The *Gordius*, or horse-hair worm, which inhabits soft stagnant waters, and is taken into the stomach with the water in many parts of Lapland.

5. The *Hirudo*, or leech, which is taken in the same way.

6. The *Musca*. Several of this genus deposit their eggs in the nose, antra of Highmore, and in the rectum: especially the *Musca carnaria*, or flesh-fly; the *M. vomitoria*, or blow-fly; the *M. cibaria*, or pantry-fly; the *M. putris*, or hopper-fly maggot.

The third class comprehends those animalcules which are found in other parts, as the viscera of the head, thorax, &c., and under the skin. These are,

1. The *Acephalocystis*, or animal hydatid. This very singular animal is formed like a bladder, and distended with an aqueous fluid. These animals are sometimes formed in the natural cavities of the body, as the abdomen and ventricles of the brain, but more frequently in the liver, kidney, and lungs, where they produce diseased actions of those viscera. If the vires naturæ medicatrices are not sufficient to effect a cure, the patient mostly falls a sacrifice to their ravages. Dr. Baillie gives the following interesting account of the hydatids, as they are sometimes found in the liver: — "There is no gland in the human body in which hydatids are so frequently found as the liver, except the kidneys, where they are still more common. Hydatids of the liver are usually found in a cyst, which is frequently of considerable size, and is formed of very firm materials, so as to give to the touch almost the feeling of cartilage. This cyst, when cut into, is obviously laminated, and is much thicker in one liver than another. In some livers it is not thicker than a shilling, and in others it is near a quarter of an inch in thickness. The laminæ which compose it are formed of a white matter, and on the inside there is a lining of a pulpy substance, like the coagulable lymph. The cavity of the cyst I have seen, in one instance, subdivided by a partition of this pulpy substance. In a cyst may be found one hydatid, or a greater number of them. They lie loose in the cavity, swimming in a fluid; or some of them are attached to the side of the cyst. They consist of a round bag, which is composed of a white, semi-opake, pulpy matter, and contain a fluid capable of coagulation. Although the common colour of hydatids be white, yet I have occasionally seen some of a light amber colour. The bag of the hydatid consists of two laminæ, and possesses a good deal of contractile power. In one hydatid this coat, or bag, is much thicker and more opake than in another; and even in the same hydatid, different parts of it will often differ in thickness. On the inside of an hydatid smaller ones are sometimes found, which are commonly not larger than the heads of pins, but sometimes they are even larger in their size than a gooseberry. These are attached to the larger hydatid, either at scattered irregular distances, or so as to form small clusters; and they are also found floating loose in the liquor of the larger hydatids. Hydatids of the liver are often found unconnected with each other; but sometimes they have been said to enclose each other in a series, like pill-boxes. The most common situation of hydatids of the liver is in its substance, and enclosed in a cyst; but they are occasionally attached to the outer surface of the liver, hanging from it, and occupying more or less of the general cavity of the abdomen. The origin and real nature of these hydatids are not fully ascertained; it is extremely probable, however, that they are a sort of imperfect animalcules. There is no doubt at all, that the hydatids in the livers of sheep are animalcules: they have been often seen to move when taken out of the liver and put into warm water; and they retain this power of motion for a good many hours after a sheep has been killed. The analogy is great between hydatids in the liver of a sheep and those of the human subject. In both they are contained in strong cysts, and in both they consist of the same white pulpy matter. There is undoubtedly some difference between them in simplicity of organisation; the hydatid in the human liver being a simple uniform bag, and the hydatid in that of a sheep having a neck and mouth appendant to the bag. This difference need be no considerable objection to the opinion above stated. Life may be conceived to be attached to the most simple form of organisation. In proof of this, hydatids have been found in the brains of sheep resembling almost exactly those in the human liver, and which have been seen to move, and therefore are certainly known to be animalcules. The hydatids of the human liver, indeed, have not, as far as I know, been found to move when taken out of the body and put into warm water: were this to have happened, no uncertainty would remain. It is not difficult to see a good reason why there will hardly occur any proper opportunity of making this experiment. Hydatids are not very often found in the liver, because it is not a very frequent disease there; and the body is allowed to remain for so long a time after death before it is examined, that the hydatids must have lost their living principle, even if there were animalcules, and it appears even more difficult to account for their production, according to the common theory of generation, than for that of intestinal worms. We do not get rid of the difficulty by asserting that the hydatids in the human liver are not living animals, because in sheep they are certainly such,

where the difficulty of accounting for their production is precisely the same."

2. The *Cysticercus*, or bladder-tail hydatid. See *Cysticercus*.

3. The *Polycephalus*, or many-headed worm. See *Polycephalus*.

4. The *Echino-coccus*. See *Echino-coccus*.

5. The *Filaria medinensis*, or Guinea worm. See *Filaria*.

6. The *Acarus* of the itch. See *Scabies*.

With respect to those entozoa, the origin of which cannot be traced from without, it has been supposed by some that they are produced by a spontaneous or equivocal generation within the body of the animal they inhabit; by others, that they have really been accidentally introduced from without, but so metamorphosed by the peculiarities of their parasitical life that they can no longer be identified with the species to which they originally belonged; by others, that the ova of these entozoary animals are transmitted from one individual to another of the same or different species, and from the parents to the offspring in the same species, the ova becoming evolved whenever they meet with a favourable nidus. The two latter hypotheses are extremely improbable, and ill supported by facts; and we must, for the present, rest contented with the supposition that these singular beings originate in the animal in which they are found — how or wherefore it is impossible to form the smallest notion. As to the hereditary tendency to the formation of worms, it throws no more light on their origin than an hereditary tendency to gout or scrofula throws light on the origin of those diseases.

The symptoms arising from the presence of entozoary animals in the intestines, and the treatment required for their removal, will be found under the head *Invermination*.

ENTRO'PIUM. (*um*, *i.* n.; from εν, and τρεπω, to turn.) A disease of the eyelids, in which the eyelashes and eyelid are inverted towards the bulb of the eye.

ENTYPO'SIS. (Εντυπωσις; from εντυποω, to make an impression.) The glenoid cavity of the scapula. — *Gorrhæus*.

E'NULA. (*a*, *æ.* f.; a corruption of *Helenium*.) See *Inula helenium*.

Enula campana. See *Inula helenium*.

ENU'LON. Ενουλον. The Greek name for the substance of the gums inside the teeth; that on the outside being called ουλον, and that between the teeth ἁρμος.

ENURE'SIS. (*is*, *is.* f.; from ενουρεω, to make water.) An incontinency or involuntary flow of urine. This disease usually proceeds either from relaxation or a paralytic affection of the sphincter of the bladder, induced by various debilitating causes, as too free a use of spirituous liquors, manustupration, and excess in venery; or it arises from compression on the bladder, from a diseased state of the organ, or from some irritating substance contained in its cavity. Dr. Cullen makes two species: — 1. *Enuresis atonica*, the sphincter of the bladder having lost its tone from some previous disease.

2. *Enuresis ab irritatione, vel compressione vesicæ*, from an irritation or compression of the bladder. It is often cured by the internal exhibition of the tinctura cantharidis, by tonics, and by stimulating the rectum with aloetic suppositories: blisters to the perinæum are also serviceable. When symptomatic of stone, or any other disease, it requires the remedies for such complaint.

E'ON. Ηων. A shore or bank. The circumference of the orbits of the eyes was so named. — *Julius Pollux*.

EPACMA'STICOS. (Επακμαστικος; from επακμαζω, to grow vigorous.) Applied by the Greeks to a fever which gradually increases in severity till it arrives at the crisis. — Compare *Acmasticos*.

EPA'CME. (Επακμη; from επακμαζω, to increase.) The increase, or exacerbation of a disease.

EPAGO'GIUM. (Επαγωγιον; from επαγω, to cover.) The præpuce.

EPANADIPLO'SIS. (Επαναδιπλωσις; from επαναδιπλοω, to reduplicate.) Reduplication: applied to the return of the cold fit of an ague before the hot fit is ended.

EPANA'STASIS. (Επανασταση; from επανιστημι, to excite, to erect.) A tubercle, or small pustule. — *Hippocrates*.

EPANCYLO'TUS. (Επαγκυλωτος; from επι, and αγκυλος, crooked.) A sort of serpentine bandage.

EPANE'TUS. (From επανιημι, to remit.) A generic term applied by Dr. Mason Good to remittent fevers.

EPAPHÆ'RESIS. Επαφαιρεσις. A Greek term signifying repeated evacuation, and especially that of blood.

EPA'RMA. (From επαιρω, to elevate.) *Eparsis*. A tumour of any part. It has usually been more especially applied to a tumour of the parotid gland — according to Blancard, "*eo quod aures hoc vitio eriguntur*." With the Greek writers it seems merely to mean a tumour.

Eparsis. See *Eparma*.

EPE'NCRANIS. (Επεγκρανις; from επι, εν, in, and κρανιον, the skull.) The name given by Erisistratus to the cerebellum. — *Galen*.

EPHEBÆ'UM. (Εφηβαιον; from επι, and ηβη, the groin.) The parts above the pubes.

E'PHEDRA. (From εφεζομαι, to sit upon.) *Ephedrana*. 1. The buttocks.

2. A species of horse-tail.

Ephe'drana. See *Ephedra*.

EPHE'LCIS. (From επι, upon, and ελκος, an ulcer.) 1. The crust of an ulcer.

2. Hardened purulent expectoration.

EPHE'LIS. (*is*, *idos.* f.; from επι, and ἡλιος, the sun.) This term denotes not only the freckles, or little yellow lentigines or spots, which appear on persons of fair skin, and the larger brown patches, which likewise arise from exposure to the direct rays of the sun, as the name imports; but also those large dusky patches, which are very similar in appearance, but occur on other parts of the surface which are constantly covered. The best applications to such blemishes are very dilute alkohol, mineral acids, and potash, — so dilute as just to be sensible to the tongue.

EPHE'MERA. (*a, æ.* f.; from επι, upon, and ημερα, a day.) A fever of a day's duration.

EPHE'MERIS. (*is, idis.* f.; from εφημερις, an almanack: so called because, like the moon's age, it may be foretold by the almanack.) Van Helmont thus names any disease, the return of which is determined by the movements of the moon or stars.

Ephe'sium empla'strum. A stimulating plaster described by Celsus, and recommended to be applied to bites.

EPHIA'LTES. (*es, is.* m.; from εφαλλομαι, to leap upon: so called because it was thought a dæmon leaped upon the chest.) Night-mare. Distressing sensations during sleep, mostly preceded by a fearful dream, in which some known or unknown enemy is in close pursuit, and from whom the person who is affected cannot escape, and is unable to speak, though he is constantly endeavouring so to do: in this struggle a great oppression or weight is felt on the chest, as if some dæmon were sitting upon the patient, who attempts to cry out, but makes only a horrible noise: he fancies that he is falling down precipices, and is threatened with destruction by wild beasts, monsters, and divers indescribable apparitions. The causes of this affection are mental irritation from fatigue, and a dyspeptic state of the stomach.

It sometimes arises from flatulence, caused by indigestible matter in the stomach, after too heavy a supper; which, pressing the stomach against the diaphragm, impedes respiration, or renders it short and convulsed. Inflated intestines may likewise produce similar effects, or mental perturbations.

There is another species of night-mare mentioned by authors, which has a more dangerous tendency; and this arises from an impeded circulation of blood in the lungs, when lying down, or too great relaxation of the heart and its impelling powers. Epilepsy, apoplexy, or sudden death, are sometimes among the consequences of this species of disturbed sleep.

Ephia'ltia. (From *ephialtes*, the night-mare: so called because it was said to cure the night-mare.) The herb peony.

EPHIDRO'SIS. (*is, is.* f.; from εφιδροω, to perspire.) A violent and morbid perspiration.

Ephi'ppium. (*um, ii.* n. A saddle, which it is thought to resemble.) See *Sella turcica.*

E'phodos. (Εφοδος; from επι, and οδος, a way.) In Hippocrates it hath three significations: — 1. The ducts or passages, by which the excrements of the body are evacuated.

2. The periodical attack of a fever, from the common use of it to express a hostile incursion.

3. The access of similar or dissimilar things, which may be useful or hurtful to the body.

Epialtes. See *Ephialtes.*

Epi'alos. (From ηπιον, gently, and αλεαζω, to heat.) The name given by the Greeks to a fever in which the morbid sensation of heat is accompanied with irregular shiverings. The Latin writers call it *Quercera.*

Epica'nthis. (From επι, and κανθος, the angle of the eye.) The angle of the eye.

Epica'rpium. (Επικαρπιον; from επι, upon, and καρπος, the wrist.) A medicament in the form of a plaster or cataplasm, applied to the wrist. Such applications, of various composition, were anciently used with a view of affecting the pulse. They were employed in intermittent fever, in cases of great debility, convulsions, &c.

Epica'rpium. (From επι, upon, and καρπος, fruit.) The outer covering or skin of a fruit is thus called by M. Richard.

Epica'uma. (From επι, and καιω, to burn.) The same as *encauma.*

Epi'ceras. (*as, atis.* n.; επικερας; from επι, and κερας, a horn: so called because its pods are shaped like a horn.) See *Trigonella fœnum græcum.*

Epicera'sticus. (From επι, and κερανυμι, to mix.) Applied to medicines which obtund acrimony of the humours.

Epi'cholus. (Επιχολος; from επι, and χολη, the bile.) Bilious.

Epicho'rdis. (Επιχορδις; from επι, upon, and χορδη, a gut.) The mesentery.

Epicho'rion. (From επι, upon, and χωριον, the chorion.) The *tunica decidua uteri* is thus named by M. Chaussier.

Epicho'rios. (From επι, and χωρα, a region.) The same as *enchorios.*

EPICHRO'SIS. (*is, is.* f. επιχροσις; from επιχρωζω, to tinge superficially.) Mason Good applies this term to maculæ on the skin.

E'picline. (*Epiclinus;* from επι, upon, and κλινη, a bed.) An adjective term, applied by Mirbel to the nectary when it is placed on the receptacle of the flower.

Epicœ'lis. (From επι, upon, and κοιλις, the eyelid.) The margin of the eyelid, or the eyelashes; synonymous with *cilium.*

Epico'lic. (*Epicolicus;* from επι, upon, and κωλον, the colon.) That part of the surface of the abdomen which lies over the colon on each side was named by Glisson the epicolic region.

Epico'ndyle. (*Epicondylus;* from επι, upon, and κονδυλος, a condyle.) Chaussier gives this name to the protuberance at the outer side of the distal extremity of the humerus, from which the extensor and supinator muscles of the forearm and hand rise by a common tendon.

Epico'ndylo-cubita'lis. Chaussier's name for the anconeus muscle.

Epico'ndylo-radia'lis. The *supinator radii brevis.*

Epico'ndylo-su'pra-metacarpia'nus. The *extensor carpi radialis brevior.*

Epico'ndylo-su'pra-phalenge'ttianus communis. The *extensor digitorum communis.*

Epico'ndylo-su'pra-phalangettia'nus minimi digiti. The *extensor proprius minimi digiti.*

Epicophio'sis. (From επι, and κωφος, deaf.) The same as *cophosis;* deafness. Castelli says that it applies more particularly to deafness supervening in the course of another disease.

EPICRA'NIUM. (*um, i.* n.; from επι,

and κρανιον, the cranium.) This term is most usually applied to the tendinous expansion of the occipito-frontalis muscle; but some writers apply it to the skin of the head, and others to the whole of the soft parts which form the scalp.

Epicra'nius. See *Occipito frontalis.*

EPI'CRASIS. (From επι, and κερανυμι, to temper.) A critical evacuation of bad humours. When a cure is performed in the alterative way, it is called *per Epicrasin.*

EPICTE'NIUM. (From επι, about, and κτεις, the pubes.) The parts above and about the pubes.

EPICYE'MA. (From επι, upon, and κυω, to conceive.) *Epicyesis.* Superfœtation.

Epicye'sis. See *Epicyema.*

EPIDE'MIC. (*Epidemicus;* from επι, upon, and δημος, the people.) Applied to a disease which attacks a multitude of persons at the same time and in the same place. Epidemic diseases may arise from contagion or from some atmospheric cause, or from both combined, which last is probably the case in most instances.

EPI'DEMY. (Same etymon.) An epidemic disease. The word epidemic is sometimes improperly used for this; *epidemic* is an adjective term.

EPIDE'NDRUM. (*um, i.* n.; from επι, upon, and δενδρον, a tree: because all this genus of plants grow parasitically on the trunks or branches of trees.) The name of a genus of plants in the Linnæan system. Class, *Gynandria;* Order, *Monandria.*

EPIDENDRUM VANILLA. The systematic name of the vanelloe plant; called also, *Vanilla, Banilia, Banilas,* and *Aracus aromaticus.*

Epidendrum — scandens, foliis ovato oblongis nervosis sessilibus caulinis, cirrhis spiralibus, of Linnæus. The vanelloe is a long flattish pod, containing, under a wrinkled brittle shell, a reddish brown pulp, with small shining black seeds, which have an unctuous aromatic taste, and a fragrant smell, like that of some of the finer balsams heightened with musk. Although chiefly used as perfumes, they are said to possess aphrodisiac virtues.

EPIDERIS. (Επιδερις; from επι, and δερας, the skin.) The clitoris.

EPIDE'RMIC. (*Epidermicus;* from επιδερμις, the scarf skin.) Relating to the epidermis.

EPIDE'RMIS. (*is, idis.* f. Επιδερμις; from επι, upon, and δερμα, the skin.) The scarf skin, or cuticle of an animal or plant. See *Cutis,* and *Bark.*

EPIDE'RMOID. (From επιδερμις, and ειδος, resemblance.) Resembling the epidermis. This word, though introduced by Bichat, and in general use, is ill constructed. It should be *epidermatoid.* Compare *Dermatoid.*

EPI'DESIS. (From επι, upon, and δεω, to bind.) The arresting of a discharge of blood by means of a bandage.

EPIDE'SMUS. (From επι, upon, and δεω, to bind.) A bandage by which splints, bolsters, &c. are secured.

EPIDI'DYMIS. (*is, is.* m.; from επι, upon, and διδυμος, a testicle.) A hard, vascular, oblong substance, that lies upon the testicle, formed of a convolution of the *vas deferens.* It has a thick end, which is convex, and situated posteriorly; and a thin end, which is rather flat, and situated inferiorly. The epididymis adheres to the testicle by its two extremities only, for its middle part is free, and the tunica vaginalis dips between it and the testicle, forming a little pouch.

EPI'DOSIS. (Επιδοσις; from επιδιδωμι, to grow upon.) The Greek writers use this word to signify either the natural growth of the body, or the increase of a disease. Sagar, in his Nosological System, applies this term to the preternatural magnitude of any part without disease, as of the ears, penis, &c.

EPI'DROME. (From επιδρεμω, to run upon.) An afflux of humours.

EPIGA'STRIC. (*Epigastricus;* from επι, upon, or above, and γαστηρ, the stomach.) Appertaining to the *epigastrium.*

EPIGASTRIC ARTERY. A branch given off by the external iliac artery just where it passes under Poupart's ligament. The epigastric artery, having made a curve downwards towards the ligament, ascends first between the rectus muscle and the peritoneum, and then within the sheath of the rectus. It inosculates with the internal mammary. The epigastric artery is an important object in the surgical anatomy of inguinal and crural hernia.

Epigastric region. See *Abdomen.*

EPIGA'STRIUM. (*um, i.* n.; from επι, upon, or above, and γαστηρ, the belly.) The part immediately over the stomach.

EPIGASTROCE'LE. This term has been applied to abdominal herniæ, situated at or near the epigastrium. The word should have been *epigastriocele.*

EPIGENE'MA. (From επιγινομαι, to generate upon.) The same as *epiginomenon.* See *Epiginomena.*

EPIGE'NESIS. (Επιγενεσις; from επιγινομαι, to generate upon.) A name given to that theory of generation which consists in regarding the fœtus as the joint production of matter afforded by both sexes. This use of the term is of modern origin: with the Greek writers it is only used synonymously with *epigenema.*

EPIGINO'MENA. (Επιγινομενα; from επιγινομαι, to succeed or supervene.) Adventitious symptoms occurring in the course of a disease, but not necessarily connected with it.

EPIGLO'SSUM. (*um, i.* n.; from επι, upon, and γλωσσα, the tongue: so called because a lesser leaf grows above the larger in the shape of a tongue.) The Alexandrian laurel. See *Ruscus hypoglossum.*

EPIGLOTTIC GLAND. *Periglottis. Caro glandulosa.* A collection of minute glands situated at the base of the anterior surface of the epiglottis.

EPIGLO'TTICUS. Relating to the *epiglottis.*

EPIGLO'TTIS. (*is, idis.* or *is, is.* f.; from επι, upon, and γλωττις, the tongue.) The cartilage at the root of the tongue that falls upon the glottis, or superior opening of the larynx.

Its figure is nearly oval; it is concave posteriorly, and convex anteriorly. Its apex, or superior extremity, is loose; and is always elevated upwards by its own elasticity. While the back of the tongue is drawn backwards in swallowing, the epiglottis is put over the aperture of the larynx: hence it shuts up the passage from the mouth into the larynx. The base of the epiglottis is fixed to the thyroid cartilage, the os hyoides, and the base of the tongue, by a strong ligament.

Epiglo'ttum. (*um*, *i.* n.; from επιγλωττις, the epiglottis, which it resembles in shape.) An instrument mentioned by Paracelsus for elevating the eyelids.

Epiglou'tis. (From επι, upon, and γλουτος, the buttocks.) The superior parts of the buttocks.

Epigo'natis. (From επι, upon, and γονυ, the knee.) The patella, or knee-pan.

Epigo'nides. (From επι, and γονυ, the knee.) About the knees: formerly applied to the muscles inserted into the knees.

Epi'gonum. (Επιγινον; from επιγινομαι, to succeed; to be produced in addition to something else.) A superfœtation.

Epila'mpsis. The same as *eclampsis*.

Epilempsis. See *Epilepsy*.

E'PILEPSY. (*Epilepsia*, *æ.* f. Επιληψια; from επιλαμβανω, to seize upon: so called from the suddenness of its attack.) *Morbus comitialis*. *Morbus sacer*. *Morbus caducus*. The disease vulgarly called falling sickness, from the patient, when attacked, suddenly falling to the ground. It consists of convulsions, with coma, and usually foaming at the mouth. Cullen divides the disease into three species: —

1. *Epilepsia cerebralis;* attacking suddenly, without manifest cause, and not preceded by any unpleasant sensation, unless, perhaps, some giddiness or dimness of sight.

2. *Epilepsia sympathica;* without manifest cause, but preceded by a sensation of an aura ascending from some part of the body to the head.

3. *Epilepsia occasionalis;* arising from manifest irritation, and ceasing on the removal of this. It comprehends several varieties: —

E. traumatica, arising from an injury of the head.

E. à dolore, from pain.

E. verminosa, from the irritation of worms.

E. à veneno, from poisons.

E. exanthematica, from the repulsion of cutaneous eruptions.

E. à cruditate ventriculi, from crudities of the stomach.

E. ab inanitione, from debility.

E. uterina, from hysterical affections.

E. ex onanismo, from onanism, &c.

This disease attacks by fits, and, after a certain duration, goes off, leaving the person most commonly in his usual state: but sometimes a considerable degree of stupor and weakness remain behind, particularly where the disease has frequent recurrences. It is oftener met with among children than grown persons, and boys seem more subject to its attacks than girls. Its returns are periodical, and its paroxysms commence more frequently in the night than in the day, being somewhat connected with sleep. It is sometimes counterfeited, in order to extort charity or excite compassion.

Epilepsy is properly distinguished into idiopathic and sympathetic. It is often manifestly sympathetic, and dependent upon some other affection, such as acidities in the stomach, worms, teething, &c.; but it also appears very frequently as an idiopathic, or primary disease, neither dependent on, nor proceeding from, any other.

The causes which give rise to epilepsy are blows, wounds, fractures, and other injuries done to the head by external violence, together with lodgments of water in the brain, tumours, concretions, and polypi. Violent affections of the nervous system, sudden frights, fits of passion, great emotions of the mind, acute pains in any part, worms in the stomach or intestines, teething, the suppression of long-accustomed evacuations, too great emptiness or repletion, and poisons received into the body, are causes which likewise produce epilepsy. Sometimes it is hereditary, and at others it depends on a predisposition, arising from mobility of the sensorium, occasioned either by plethora, or a state of debility.

An attack of epilepsy is now and then preceded by a heavy pain in the head, dimness of sight, noise in the ears, palpitations, flatulency in the stomach and intestines, weariness, and a small degree of stupor, and, in some cases, there prevails a sense of something like a cold vapour or *aura*, proceeding from some part of the body towards the head, and well known under the name of *aura epileptica;* but it more generally happens that the patient falls down suddenly without much previous notice; his eyes are distorted, or turned so that only the whites of them can be seen; his fingers are closely clinched, and the trunk of his body, particularly on one side, is much agitated; he foams at the mouth, and thrusts out his tongue, which often suffers great injury from the muscles of the lower jaw being affected; he loses all sense of feeling, and not unfrequently voids both urine and fæces involuntarily. The spasms abating, he recovers gradually; but, on coming to himself, feels languid and exhausted, and retains not the smallest recollection of what has passed during the fit.

When the disease arises from an hereditary disposition, or comes on after the age of puberty, or where the fits recur frequently, and are of long duration, it will be very difficult to effect a cure; but when its attacks are at an early age, and occasioned by worms, or any accidental cause, it frequently yields to judicious treatment. In some cases, it has been entirely carried off by the occurrence of a fever, or by the appearance of a cutaneous eruption. It has been known to terminate in apoplexy, and in some instances to produce a loss of the powers of the mind, and to bring on idiotism.

Morbid anatomy has hitherto thrown no light on the proximate cause of epilepsy. A vast variety of morbid appearances within the cranium and spinal canal have been recorded and

insisted on by different authors as the cause of the disease. There is some organic lesion of these parts in a large proportion of cases; but since there is no uniformity in the nature of such lesion, and since, in many cases, there are no morbid appearances at all, it is fair to infer that none of those hitherto observed have any essential relation to the disorder.

During the epileptic paroxysm in general, little or nothing is to be done, except using precautions that the patient may not injure himself; and it will be prudent to remove any thing which may compress the veins of the neck, to obviate congestion in the head. Should there be a considerable determination of blood to this part, or the patient be very plethoric, it may be proper, if you can keep him steady, to open a vein, or the temporal artery; and, in weakly constitutions, the most powerful antispasmodics might be tried in the form of clyster, as they could hardly be swallowed; but there is very seldom time for such measures. In the intervals the treatment consists: 1. In obviating the several exciting causes. 2. In correcting any observable predisposition. 3. In the use of those means which are most likely to break through the habit of recurrence.

I. The manner of fulfilling the first indication requires little explanation: after an injury of the head, or where there is disease of the bone, an operation may be necessary, to remove irritation from the brain; in children teething, the gums ought to be lanced; where the bowels are foul, or worms suspected, active purgatives should be exhibited, &c. In those instances, in which the aura epileptica is perceived, it has been recommended to destroy the part where it originates, or divide the nerve going to it, or correct the morbid action by a blister, &c.; such means would certainly be proper when there is any disease discoverable in it. Making a tight ligature on the limb above has sometimes prevented a fit; but, perhaps, only through the medium of the imagination.

II. Where a plethoric state appears to lay the foundation of the disease, which is often the case, the patient must be restricted to a low diet, frequent purges exhibited, and the other excretions kept up; and he should take regular moderate exercise, avoiding whatever may determine the blood to the head; and, to counteract such a tendency, occasional cupping, blisters, issues, &c. may be useful, as well as the shower-bath; but, in urgent circumstances, the lancet ought to be freely used. If, on the contrary, there are marks of inanition and debility, a generous diet, with tonic medicines, and other means of strengthening the system, will be proper. The vegetable tonics have not been so successful in this disease as the metallic preparations, particularly the sulphate of zinc, the nitrate of silver, and the ammoniated copper; but the last cannot, perhaps, be so safely persevered in: where the patient is remarkably exsanguious, chalybeates may answer better; and, in obstinate cases, the arsenical solution might have a cautious trial. In irritable constitutions, sedatives are indicated, as digitalis, opium, &c.; but the free use of opium is restricted by a tendency to congestion in the head. Where syphilis appears to be concerned, a course of mercury is proper; in scrofulous habits, bark, or steel, with iodine, soda, and sea-bathing; and so on.

III. The third division of remedies comes especially in use, where the fits are frequent, or where their recurrence can be anticipated: emetics will often prevent them, or a full dose of opium; also other powerful antispasmodics, as ether, musk, valerian, &c.; or strong odours, and, in short, any thing producing a considerable impression on the system. Bark taken largely might perhaps be more successful on this principle. The disease has sometimes been cured, especially when originating from sympathy, by inspiring fear or horror; and many frivolous charms may, no doubt, have taken effect through the medium of the imagination. Also, long voyages have removed it, which might especially be hoped for at the age of puberty, particularly if a considerable change in the mode of life were made in other respects; those who had lived indolently being obliged to exert themselves, the diet properly adapted to the state of the system, &c.

On these several plans, the following observations should be attended to: — Colocynth, croton oil, gamboge, sulphates of soda and magnesia, with senna and calomel, are the best purgatives; and, where worms are suspected, rectified oil of turpentine: which has also been found serviceable, in small doses, against epilepsy excited by other causes. When the purgative plan is determined on, whatever medicine may be selected, it will be necessary to give an active dose about twice a week. Many practitioners have found purgatives of great benefit; and the good appears to have resulted from removing, by their use, some visceral congestion. The bug agaric, *Amanita muscaria*, was once used as a purgative against epilepsy; but, in the present day, it is never thought of.

The *emetic* plan consists in giving the sulphate of zinc, or ipecacuanha, in effective doses early in the morning, when the stomach is empty, twice a week. De Haen gave a vomit every day, for a week or fortnight. In some, but few cases, this operation has emulged the liver, and seemed in this way to have contributed with other means to remove the disease; but, in the generality, it has not done any good.

Sedatives and *tonics* are now very universally given, with a view of overcoming the irritability of the nervous system. Of these medicines, opium, conium, musk, camphor, valerian, hyosciamus, stramonium, and oleum cajeputæ, are selected in their turn, and given first singly, in full doses, and where they fail, which they too often do, in combination. The stramonium, a few years since, cured several patients at Stockholm, under the direction of Dr. Odhelius, who gave the extract and powder in pills. In this country it has not answered. The *viscus quercinus*, or misletoe of the oak, was at one time highly extolled, as a specific against epilepsy. It was exhibited in full doses, from one to two drachms of the powder of the fruit

three times a day, in any carminative distilled water, as peppermint or caraway. This remedy is now discarded. Peruvian bark, orange-peel, and orange-flowers, are to be given in full doses. From five to ten grains of the sulphate of quinine, with infusions of orange-peel or flowers, three times a day. Of less efficacy are cascarilla and the bitters. The metallic tonics are in very general use, especially preparations of steel, zinc, copper, arsenic, mercury, and silver. Mercury has been tried in almost every form, as an alterative, purgative, and sialagogue; but no essential benefit has resulted, except from the removal of some local disease. The sulphate of zinc is to be given in doses of from one to ten grains, three times a day: it is thought well of by many practitioners. If no good results from it when given alone, Peruvian bark, cascarilla, and other tonics, may also be given at the same time; and if they fail, the sedatives in their turn. The oxide of zinc, in the dose of from five to ten grains three times a day, frequently mitigates the violence of the fits, and renders them less frequent: it may, also, be given with other tonics and sedatives. Arsenite of potash has occasionally been found serviceable in the dose of from eight to twelve minims of the liquor arsenicalis, three times a day. The cuprum ammoniatum has been found not only to diminish the frequency of epilepsy, but also, in several instances, to effect a radical cure. The *pilula ammoniureti cupri*, of the Edinburgh pharmacopœia, is a good formula for its exhibition: each of these pills contains half a grain of the ammoniated copper, and one pill may be given for a dose night and morning at first, and the dose gradually increased to four or five of the pills. The nitrate of silver has been given in the dose of from one grain to two or three, in pill or solution, every six hours, in some cases with decided benefit; but, like all the other medicines, in most cases without any advantage; and there is one singular effect of this medicine, which is so frequent as almost to prevent its exhibition, namely, that of giving a livid or blue colour to the skin, which in some cases disappears in a year or two, but in others is permanent. See *Argenti nitras*. The best preparations of steel are the compound mixture of the pharmacopœias of its sulphate with an alkali; the peroxide; the sulphate; and a solution of the muriate in ether.

EPILEPTIC. *Epilepticus*. Affected with epilepsy, or of the nature of epilepsy; thus we speak of an epileptic patient, and an epileptic fit. Some authors also speak of an *epileptic medicine*, but improperly: it should be *antepileptic*.

EPIME'LIS. (Επιμηλις; from επι, near to, and μηλον, an apple-tree: because the plant grows near apple-trees.) By this name Galen is supposed to designate the *Arbutus unedo*, and Dioscorides the *Mespilus Germanica*.

EPI'MYLIS. (Επιμυλις; from επι, and μυλη, the knee.) The patella, or knee-pan.

EPINO'TIUM. (Επινωτιον; from επι, upon, and νωτος, the back.) The shoulder-blade.

EPINY'CTIDES. (Επινυκτιδες; from επι, and νυξ, night.) Vesicles rising during the night and disappearing in the morning. A fugacious kind of nettle-rash.

EPIPAROXY'SMUS. (From επι, upon, and παροξυσμος, a paroxysm.) The febrile paroxysm occurring with unusual frequency.

EPIPA'STUM. (Επιπαστον; from επιπασσω, to sprinkle upon.) A pulverulent medicine to be sprinkled upon any part.

EPIPE'TALOUS. *Epipetalus*. A term applied by botanists to stamina, or to glands which are attached to the corolla of a flower. The stamina of the labiated plants are epipetalous.

EPIPHLOGI'SMA. (From επι, and φλογιζω, to inflame.) A burning heat of any part.

EPI'PHORA. (*a*, *æ*. f.; επιφορα, from επιφερω, to carry forcibly.) The watery eye. An involuntary flow of tears. A superabundant flow of a serous humour from the eyes. The humour which flows very copiously from the eye in epiphora, appears to be furnished, not only by the lachrymal gland, but from the whole surface of the conjunctive membrane, Meibomius's glands, and the caruncula lachrymalis; which increased and morbid secretion may be induced from any stimulus seated between the globe of the eye and lids, as sand, acrid fumes, and the like; or it may arise from the stimulus of active inflammation; or from the acrimony of scrofula, measles, small-pox, &c.; or from general relaxation. The disease may also arise from a more copious secretion of tears than the puncta lachrymalia can absorb, or, as is most common, from an obstruction in the lachrymal canal, in consequence of which the tears are prevented from passing freely from the eye into the nose.

EPIPHRA'GMA. (*a*, *atis*. n.; from επι, upon, and φραγμα, a partition.) The slender membrane which sometimes shuts the peristoma of mosses, as is seen in *Polytrichum*.

EPIPHY'LLA. (From επι, upon, and φυλλον, a leaf.) The parasitical funguses which grow on the leaves of other plants are so called.

EPIPHYLLOSPE'RMÆ. (From επι, upon, φυλλον, a leaf, and σπερμα, a seed.) A name given by Haller to those cryptogamic plants which have the reproductive organs on the back of the leaf, as ferns, asplenia, &c.

EPI'PHYSIS. (*is*, *is*. f.; from επι, upon, and φυω, to grow.) A portion of bone growing upon another, but separated from it by a cartilage. All the long bones, and many others, have epiphyses until the end of the juvenile period of life. See *Os*.

EPI'PHYTA. Parasitical funguses which grow on other plants, dead or living.

EPIPI'GMA. Επιπιγμα. A surgical apparatus in the shape of the letter Π, used for the reduction of a luxated humerus. — *Oribasius*.

EPIPLA'SMA. (From επιπλασσω, to spread upon.) 1. A poultice.

2. A preparation made by boiling wheat meal in hydrelæum. It was applied to wounds. — *Galen*.

EPIPLOCE'LE. (*e*, *es*. f.; from επιπλοον, the omentum, and κηλη, a tumour.) An omental hernia. A rupture produced by the protrusion of a portion of the omentum. See *Hernia*.

EPI'PLOIC. (*Epiploicus*; from επιπλοον, the omentum.) Appertaining to the epiploon or omentum.

Epiploic arteries. *Arteriæ epiploicæ.* Branches of the gastro-epiploic artery distributed to the omentum.

EPIPLOI'TIS. (*is, idis.* f.; from επιπλοον, the omentum.) Inflammation of the epiploon or omentum. See *Peritonitis.*

Epi'ploi'schioce'le. (From επιπλοον, the omentum, ισχιον, the ischium, and κηλη, a tumour.) An omental hernia protruding through the ischiadic foramen.

Epi'plomeroce'le. (From επιπλοον, the omentum, μηρος, the thigh, and κηλη, a tumour.) A femoral hernia formed by the omentum.

Epiplo'mphalon. (From επιπλοον, the omentum, and ομφαλος, the navel.) An omental hernia situated at the navel.

Epiploomphalon. See *Epiplomphalon.*

EPI'PLOON. (*on, i.* n.; from επιπλοω, to sail over, because it floats, as it were, upon the intestines.) A duplicature of the peritonæum, otherwise called the *omentum.* See *Omentum.*

Epiploscheoce'le. (*e, es.* f.; from επιπλοον, the omentum, οσχεον, the scrotum, and κηλη, a tumour.) A rupture in which the omentum descends into the scrotum.

Epipo'lasis. (Επιπολασις; from επιπολαζω, to swim on the top.) 1. A fluctuation of humours.

2. A species of chemical sublimation. See *Ruland. Lexicon Alchemiæ.*

Epipo'ma. The same with *epipigma.*

Epiporo'ma. (Επιπωρωμα; from επιπωρεω, to harden.) A hard tumour about the joints.

Episarci'dium. (*um, i.* n.; Επισαρκιδιον; from επι, upon, and σαρξ, the flesh.) Synonymous with *anasarca.*

EPI'SCHESIS. (Επισχεσις; from επισχεω, to restrain.) A suppression of excretions.

Epischeses. An order in the class *Locales* of Cullen's Nosology, including diseases which arise from the suppression of excretions.

EPI'SCHIUM. (*um, i.* n.; επισχιον; from επι, upon, and ισχιον, the hip-bone.) The os pubis.

Episcopa'les va'lvulæ. The mitral valves have been so called from their resemblance to the mitre of a bishop, επισκοπος.

Episei'on. Επισειον. Επισιον. The pubes.—*Hippocrates.*

Enispa'dia. (From επι, upon, and σπαω, to draw.) This name, not particularly significant, has been given to that malformation of the urethra in which it opens on the dorsum of the penis. The word does not exist in the Greek, but is formed analogically in the same manner as *hypospadia.* See *Hypospadia.*

EPISPA'STIC. (*Epispasticus*; from επισπαω, to draw.) A term applied to those substances which have the power of inflaming the skin and causing an effusion of serum under the cuticle. Synonymous with *vesicatory.* See *Vesicatorium.*

Enispe'rma. (From επι, upon, and σπερμα, a seed.) M. Richard gives this name to the outer envelope of a seed.

Episphæ'ria. (From επι, and σφαιρα, a sphere: so called from the spherical shape of the brain.) The convolutions of the brain have been so called.

Epista'gmos. (Επισταγμος; from επσταζω, to drop or trickle.) According to Schneider, Dioscorides uses this word for a catarrh.

Epistaphyli'nus. (From επι, and σταφυλη, the uvula.) An epithet of the *azygos uvulæ muscle.*

EPI'STASIS. (Επισταση.) Hippocrates uses this word in the same sense as επισχεσις, a suppression of any kind; but in the writings of the Greek physicians generally it signifies any matter that is suspended near the surface of the urine, as opposed to υποστασις, *hypostasis*, the sediment.

EPISTA'XIS. (*is, is.* f.; from επισταζω, to distil from.) Bleeding at the nose.

This is very frequent in young persons of a plethoric habit. Females are less subject to it than males, especially after the age of puberty. It often appears, however, in girls as a vicarious discharge when the menses are suppressed. When it occurs in advanced life it is symptomatic of vascular turgescence in the head, and is a common precursor of apoplexy.

Epistaxis comes on at times without any previous warning; but at others, it is preceded by a pain and heaviness in the head, flushing in the face, heat and itching in the nostrils, a throbbing of the temporal arteries, and a quickness of the pulse. In some instances, a coldness of the feet, and shivering over the whole body, together with a costive belly, are observed to precede an attack of this hæmorrhage.

This complaint is to be considered as of little consequence, when it occurrs in young persons, being never attended with any danger; but when it arises in those who are advanced in life, when the blood flows profusely, and returns frequently, it indicates too great fulness of the vessels of the head, and not unfrequently precedes apoplexy, palsy, &c.; and therefore, in such cases, is to be regarded as a dangerous symptom. When this hæmorrhage arises in the course of typhous fever, it is to be considered as a symptom of great danger.

In general, we need not be very anxious to stop a discharge of blood from the nose, particularly where there are marks of fulness of the vessels of the head; but if it occurs under a debilitated state of the system, or becomes very profuse, means must be employed to suppress it. These are chiefly of a local nature; applying pressure to the bleeding vessels, introducing astringents into the nostrils, as solutions of alum, sulphate of zinc, sulphate of copper, &c.; applying cold to the head, or to some very sensible part of the skin, or in the course of the spine, &c. At the same time the patient should be kept in the erect position. If the hæmorrhage be of an active character, the antiphlogistic regimen should be carefully observed: the patient kept cool and quiet; the saline cathartics, refrigerants, as nitrate of potash, and the acids, digitalis, diaphoretics, &c. administered internally; and blood may be taken from the temples, by leeches, or even from the arm, if the patient be very plethoric. Sometimes, after the failure

of other means, closing the posterior as well as anterior outlets from the nose, and preventing the escape of the blood for some time mechanically, has been successful; and this might be particularly proper, where it was discharged copiously into the fauces, so as to endanger suffocation, on the patient falling asleep.

EPISTHO'TONOS. (*os, i.* m.; from επισθεν, forwards, and τεινω, to extend.) A tetanic affection of the muscles on the anterior part of the body, by which the trunk is bent forwards. It is synonymous with *emprosthotonos*, which latter term is more frequently used. See *Tetanus*.

Epistrophalus. See *Epistrophis.*

EPISTRO'PHEUS. (*ei*, m.; from επιστρεφω, to turn round, because the head is turned upon it.) The second cervical vertebra. See *Dentatus.*

EPI'STROPHIS. (*is, is.* m.; from επιστρεφω, to turn about: so called because it turns about on the second vertebra, as upon an axis.) *Epistrophalus. Epistrophia.* The first vertebra of the neck.

EPITHE'LIUM. (*um, ii.* n.) The cuticle covering a mucous membrane.

Kühn observes on this term, that Ruysch, from whom it appears to have been adopted, used *epthelia* adjectively with *membrana* understood; that it is derived from θηλη, the nipple; and that *epithelia membrana* would properly signify nothing more than the cuticle covering the nipple. Hence *epithelium* as generally used appears to be a misapplied term.

EPITHE'MA. (*a, atis.* n.; from επιτιθημι, to place upon or apply.) A lotion, fomentation, or any external application.

EPITHEMA'TIUM. The same.

EPI'THESIS. (From επιτιθημι, to place.) The straightening of crooked limbs by means of instruments.

EPI'THYMUM. (*um, i.* n.; from επι, upon and θυμος, the herb thyme.) See *Cuscuta epithymum.*

EPIZOO'TIC. (*Epizooticus;* from επι, upon, and ζωον, an animal.) When a disease prevails among the inferior animals in the same manner as an epidemic does among men, it is said to be *epizootic.*

EPIZOO'TY. An epizootic disease.

EPO'DE. (From επι, upon, and ωδη, a song.) *Epodos.* The ancient method of curing diseases by incantation.

EPO'MIS. (From επι, upon, and ωμος, the shoulder.) The acromion, or upper part of the shoulder.

EPOMPHA'LIUM. (From επι, upon, and ομφαλος, the navel.) An application to the navel.

EPSOM. The name of a village in Surrey, about eighteen miles from London, in the neighbourhood of which is a considerable mineral spring, called Epsom water. *Aqua Epsomensis.* This water, evaporated to dryness, leaves a residuum, the quantity of which has been estimated from an ounce and a half in the gallon, to five drachms and one scruple. Of the total residuum, by far the greater part, about four or five sixths, is sulphate of magnesia mixed with a very few muriates, such as that of lime, and probably magnesia, which render it very deliquescent, and increase the bitterness of its taste, till it is purified by repeated crystallisations. There is nothing sulphureous or metallic ever found in this spring. The diseases in which it is employed are similar to those in which we use Seidlitz water.

EPSOM SALT. A purging salt, formerly obtained by boiling down the mineral water found in the vicinity of Epsom, but now manufactured by chemists on a large scale. See *Magnesiæ sulphas.*

EPU'LIS. (*is, idis.* f.; from επι, and ουλα, the gums.) A swelling on the gums.

EPULO'TIC. (*Epuloticus;* from επουλοω, to cicatrize.) That which promotes cicatrization.

EQUISE'TUM. (*um. i.* n.; from *equus*, a horse, and *seta*, a bristle: so named from its resemblance to a horse's tail.) 1. The name of a genus of plants in the Linnæan system. Class, *Cryptogamia;* Order, *Filices.*

2. The pharmacopœial name of the mare's tail. See *Hippuris vulgaris.*

EQUISETUM ARVENSE. See *Hippuris.*

E'QUITANS. Equitant: applied to leaves which are disposed in two opposite rows, and clasp each other by their compressed base; being, as it were, laminated, or folded one upon another; as in *Narthecium ossifragum.*

Equivalent. See *Combination, chemical.*

E'QUUS. (*us, i.* m.) The name of a genus of animals of the order *Belluæ.* The horse.

EQUUS ASINUS. The systematic name of the animal called an ass: the female affords a light and nutritious milk. See *Milk, asses'.*

ERADICATI'VUS. A term formerly applied to violent purgation or violent purgatives, in opposition to *minorativus*, as applied to those of a milder description.

ERA'NTHEMUS. (From ηρ, the spring, and ανθεμος, a flower: so called because it flowers in the spring.) A spring flower: applied to a species of chamomile.

ERAVAY. The African name of a small species of ricinus which grows in Guinea, and is used as a purgative. — *Clusius.*

EREBI'NTHUS. Ερεβινθος. The vetch.

ERECTILE TISSUE. A peculiar tissue described by Dupuytren and Rullier, which is susceptible of erection, or active turgescence, by an increased flow of blood. It is formed of arteries, veins, and nervous filaments, and consists of a spongy substance, the areolæ of which communicate with each other. This tissue is found in the corpora cavernosa of the penis, and clitoris, in the corpus spongiosum urethræ, the nipples, lips, iris, &c. This tissue is sometimes developed as a morbid structure, as in the case of nævus maternus, and aneurism by anastomosis. Some deny the distinct existence of the erectile tissue, and consider it merely as a congeries of blood-vessels largely supplied with nerves.

ERE'CTOR. (*or, oris.* m.) That which raises anything up: applied to several muscles, the office of which is to raise up the part into which they are inserted.

ERECTOR CLITO'RIDIS. First muscle of the

clitoris, of Douglas. *Ischio-cavernosus*, of Winslow. A muscle of the clitoris that draws it downwards and backwards, and serves to make the body of the clitoris more tense, by squeezing the blood into it from its crus. It arises from the tuberosity of the ischium, and is inserted into the clitoris.

Erector penis. *Ischio-cavernosus*, of Winslow. A muscle of the penis that drives the urine or semen forwards, and, by grasping the bulb of the urethra, pushes the blood towards the corpus cavernosum and the glans, and thus distends them. It arises from the tuberosity of the ischium, and is inserted into the sides of the cavernous substance of the penis.

ERE'CTUS. Upright. A term very generally applied in natural history: in *Botany*, it expresses the direction of the stem, branches, leaves, petals, stamens, pistils, &c.; thus *caulis erectus*, an upright stem, as in *Lysimachia vulgaris*; *folium erectum*, forming an acute angle with the stem, as in *Juncus articulatus*, &c., *petala erecta*, as in *Brassica erecta*.

Ere'mus. See *Cenobium*.

ERETHI'SMUS. (*us*, *i.* m.; from ερεθιζω, to excite or irritate.) Increased sensibility and irritability. A term variously applied by modern writers. Mr. Pearson has described a state of the constitution produced by mercury acting on it as a poison. He calls it the mercurial erethismus, and mentions that it is characterised by great depression of strength, anxiety about the præcordia, irregular action of the heart, frequent sighing, trembling, a small quick, sometimes intermitting pulse, occasional vomiting, a pale contracted countenance, a sense of coldness; but the tongue is seldom furred, nor are the vital and natural functions much disturbed. In this state any sudden exertion will sometimes prove fatal.

Ere'trius. (From *Eretria*, in the Negropont, the place whence it came.) Dioscorides and Galen describe two kinds of *terra Eretria*, which were much esteemed as alkaline and absorbent earths.

Eru'gmos. (From ερευγω, to belch.) *Ereuxis.* An eructation.

Ergaste'rium. (From εργον, work.) 1. A laboratory. 2. That part of a furnace in which is contained the matter to be acted upon.

Ergot. See *Secale cornutum*.

Ergotism. The poisonous effects of the ergot of rye, which are of two kinds. See *Secale cornutum*.

ERI'CA. (*a*, *æ.* f.; from ερεικω, to break: so named from its fragility, or because it is broken into rods to make besoms of.) The name of a genus of plants in the Linnæan system. Class, *Octandria*; Order, *Monogynia*. Heath.

Ericaceæ. See *Ericeæ*.

ERI'CEÆ. *Ericaciæ.* Ericineæ. A family of plants including the heaths.

Erice'rum. (Ερεικειρον; from ερεικα, heath.) The name of several collyria mentioned by Aëtius, into the composition of which heath entered.

Erici'neæ. See *Ericiæ*.

ERI'GERON. (*um*, *i.* m. Ηριγερων, of the Greek writers; from ηρ, the spring, and γερων, an old man: because, in the spring, it has a white hoary blossom, like the hair of an old man.) 1. The name of a genus of plants. Class, *Syngenesia*; Order, *Polygamia superflua*.

2. The common groundsel was formerly so called. See *Senecio vulgaris*.

Erigeron acre. This is most probably the *conyza cerula* of old pharmacopœias.

Erimoides. A word used by Paracelsus, and supposed to mean sand deposited from the urine.

ERINA'CEUS. (*us*, *i.* m.) The name of a genus of small mammiferous animals. The hedge-hog tribe.

Erinaceus europeus. The hedge-hog. The flesh, which is difficult of digestion, was once considered a delicacy.

Ermesia. Ερμεσια. A composition used by the Magians to make people beget beautiful and well-dispositioned children (!) It consisted of the kernels of pine nuts, triturated with honey, myrrh, saffron, and palm oil, and was drunk mixed with milk. — *Corrhæus.*

Erode'ntia. Medicines which cause erosion.

ERO'SION. (*Erosio*, *onis.* f.; from *erodo*, to gnaw out, or eat into.) The gradual destruction of the substance of a part by increased action of the absorbents, whether spontaneous, or excited by the application of some irritating substance.

ERO'SUS. Jagged; gnawed. A leaf is called *folium erosum*, the margin of which is irregularly cut or notched, especially when otherwise divided besides; as in *Senecio squalidus*.

Ero'tic. (*Eroticus.* Ερωτικος; from ερως, love.) Appertaining to the passion of love; as erotic melancholy.

ERO'TOMA'NIA. (*a*, *æ.* f.; from ερως, love, and μανια, madness.) That melancholy, or madness, which is the effect of love.

Erpes. See *Herpes*.

Erpetology. See *Herpetology*.

ERRA'TIC. (*Erraticus*; from *erro*, to wander.) Wandering; irregular. A term occasionally applied to pains, or any disease which is not fixed, but moves from one part to another; as gout, erysipelas, &c.

Erratic ague. See *Ague*.

E'RRHINE. (*Errhinus*; ερρινα, from εν, in, and ριν, the nose.) By errhines are understood those medicines which, when topically applied to the internal membrane of the nose, excite sneezing, and increase the secretion, independent of any mechanical irritation. Such are tobacco, asarabacca, turbith mineral, &c. Medicines of this kind are also called *sternutatories*.

E'RROR LOCI. Boerhaave introduced this term, from the opinion that the vessels were of different sizes, for the circulation of blood, lymph, and serum, and that when the larger sized globules were forced into the lesser vessels, they became obstructed, by an *error of place*.

Eru'ca. See *Brassica eruca*.

Eruca sylvestris. The wild rocket. See *Brassica eruca*.

Eructation. (*Eructatio, onis.* f.) Belching. See *Flatulency.*

ERUPTION. *Eruptio.* In medical language, the sudden appearance of a disease on the skin; thus we speak of the eruption of measles, small-pox, scarlet fever, &c. The term applies both to the disease itself, as developed on the skin, and the act of its breaking out.

Ervilla. See *Ervum.*

E'RVUM. (*um, i.* n.) 1. The name of a genus of plants in the Linnæan system. Class, *Diadelphia;* Order, *Decandria.*

2. The pharmacopœial name of tare. See *Ervum ervilia.*

Ervum ervilla. The seeds of this plant, which is the *Orobus* of many writers, and the *Ervum ervilia — germinibus undato-plicatis, foliis imparipinnatis,* of Linnæus, have been made into bread in times of scarcity, which is not the most salubrious. The meal was formerly used as a resolvent in the form of poultice.

Ervum lens. The systematic name of the lentil. *Lens.* Φακος of the Greeks. *Ervum — pedunculis subbifloris; seminibus compressis, convexis,* of Linnæus. There are two varieties; the one with large, the other with small seeds. They are eaten in many places as we eat peas, than which they are more flatulent, and more difficult to digest. A decoction of these seeds is used as a lotion to the ulcerations after small-pox, and, it is said, with success.

ERY'NGIUM. (*um, i.* n.) Ηρυγγιον. Eryngo, or sea-holly. 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Digynia.*

2. The pharmacopœial name of the sea-holly. See *Eryngium maritimum.*

Eryngium campestre. The root of this plant, *Eryngium — foliis radicalibus, amplexicaulibus, pinnato-lanceolatis,* of Linnæus, is used in many places for that of the sea-eryngo. See *Eryngium maritimum.*

Eryngium maritimum. The systematic name of the sea-holly, or eryngo. *Eryngium — foliis radicalibus subrotundis, plicatis spinosis, capitulis pedunculatis, paleis tricuspidatis,* of Linnæus. The root of this plant is directed for medicinal use. It has no particular smell, but to the taste it manifests a grateful sweetness; and, on being chewed for some time, it discovers a light aromatic warmth or pungency. It was formerly celebrated for its supposed aphrodisiac powers, but it is now very rarely employed.

Eryngo. See *Eryngium.*

Eryngo, sea. See *Eryngium.*

Eryngo-leaved lichen. See *Lichen.*

ERY'SIMUM. (*um, i.* n.; Blancard derives this word from ερυω, *Salvum conservo,* on account of the great virtues attributed to it by the ancients; others from ερεικω, to cleave, because the leaves are much cleft; others from ερισιμον, precious.) 1. The name of a genus of plants in the Linnæan system. Class, *Tetradynamia;* Order, *Siliquosa.*

2. The pharmacopœial name of the hedge-mustard. See *Erysimum officinale.*

Erysimum alliaria. The systematic name of Jack in the hedge, Sauce alone, or stinking hedge-mustard; which is also called, *Alliaria Camelina,* and *Chamæplion,* by Oribasius. The plant to which these names are given, is the *Erysimum foliis cordatis,* of Linnæus; it has sometimes been exhibited in humid asthma and dyspnœa, with alleged success. It has been esteemed powerfully diaphoretic, diuretic, and antiscorbutic.

Erysimum barbarea. The systematic name of the *barbarea* of the shops. The leaves of this plant, *Erysimum — foliis lyratis, extimo subrotundo,* of Linnæus, have been ranked among the antiscorbutics. They are seldom used in practice.

Erysimum officinale. The systematic name of the hedge-mustard. *Erysimum — siliquis spicæ adpressis, foliis runcinatis,* of Linnæus. It was formerly much used for its expectorant and diuretic qualities, which are now forgotten. The seeds are warm and pungent, and very similar to those of mustard in their sensible effects.

ERYSI'PELAS. (*as, atis.* n. Ερυσιπελας; from ερυω, to draw, and πελας, adjoining: so named from its tendency to spread to the neighbouring parts.) *Ignis sacer.* St. Anthony's fire. Called also, in common language, the Rose. A peculiar form of inflammation which occurs chiefly in the skin; and is generally accompanied with vesications on the affected part, and with symptomatic fever.

1. *Erysipelas phlegmonodes.* Phlegmonoid erysipelas. This form of erysipelas frequently occurs in the face, affecting usually one side of it only: sometimes it attacks one of the extremities; and in both cases it is ushered in by a smart feverish attack. The colour is higher than in the other species, and the burning heat and tingling in the part are exceedingly distressing. The swelling generally appears on the second night, or third day of the fever; the vesications rise on the fourth and fifth, and break or subside on the fifth or sixth, when the redness changes to a yellowish hue, and the swelling and fever begin to diminish, and on the eighth day both disappear: on the tenth, the new cuticle is commonly left exposed, the old one having separated, and the brownish or dark scab, which had formed where the fluid of the vesications had been discharged, having fallen off. The progress of the disease, however, is more rapid, and its duration shorter, in young and sanguine habits, than in those more advanced in life: in the former, the tumefaction is sometimes fully formed on the second day, and the whole terminates on the sixth or seventh; while in the latter, it may be protracted to the tenth or twelfth, and the desquamation may not be completed before the fourteenth day. The vesications, in the latter instances, are often succeeded by a profuse discharge of acrimonious lymph, for several days, so that scabs do not form. Phlegmonoid erysipelas frequently terminates in suppuration, and in sloughing of the cellular membrane, and it is indeed the circumstance of the latter texture being involved that gives to this form of disease its peculiar characters. It has recently been very accurately described by the late Dr.

Andrew Duncan, junior, under the name of Diffuse inflammation of the cellular membrane.

2. The *Erysipelas œdematodes* is less severe in its attack: the tumour is more gradual in its rise and extension, is of a paler red, or of a yellowish brown colour, and is accompanied by less heat and local distress: its surface is smooth and shining; and, if it be strongly pressed with the finger, a slight pit remains for a short time. Vesications, which are smaller, less elevated, and more numerous than in the former species, appear on the third or fourth day from the commencement of the swelling; and are succeeded, in two or three days, by thin dark-coloured scabs, giving an appearance not unlike the confluent small-pox, from the edges of which a clear lymph exudes. The whole face is much enlarged, so that the form of the features is scarcely recognised, and the appearance is not unaptly compared by Dr. Willan to that of a bladder distended with water.

This species of erysipelas is attended with considerable danger, when it affects the face as above described; for the disorder of the functions increases with the advancement of the external disease. Vomiting, rigors, and delirium, followed by coma, take place about the height of the disorder, and often terminate fatally on the seventh or eighth day; while, in other cases, the symptoms continue undiminished, and death occurs at a later period; or a slow and tedious convalescence ensues.

This form of erysipelas most commonly affects persons of debilitated constitution, dropsical persons, and those who have long been subject to other chronic maladies, or live in habitual intemperance. It is not attended with danger, however, when it affects one of the extremities. In some unfavourable cases, matter is formed, which is liable to make its way through the cellular substance, producing irregular sinuses between the muscles, which it often materially injures, and prolonging the sufferings of the patient for many weeks.

3. The *Erysipelas gangrænosum* commences sometimes like the one and sometimes like the other of the foregoing species, and most commonly occurs in the face, neck, or shoulders. It is accompanied with symptoms of low fever, and with delirium, which is soon followed by coma, which remains through the subsequent course of the disease. The colour of the affected part is a dark red; and scattered phlyctanæ, with a livid base, appear upon the surface, which frequently terminate in gangrenous ulcerations. Even when it terminates favourably, suppuration and gangrene of the muscles, tendons, and cellular substance, often take place, producing little caverns and sinuses, which contain an ill-conditioned pus, together with sloughs of the mortified parts, which are ultimately evacuated from the ulcers. It is an exceedingly dangerous affection, the vital powers being frequently quite overwhelmed from the very first of the attack, and death taking place in a few hours.

A peculiar variety of gangrenous erysipelas occasionally occurs in infants, a few days after birth, especially in lying-in hospitals, and is often fatal. Sometimes, indeed, infants have been born with livid patches, vesications, and even gangrene already advanced. It most frequently commences about the umbilicus or the genitals, and extends upwards or downwards, affecting the parts which it reaches with moderate swelling, and slight hardness; the skin puts on a dark red colour, and vesications with livid bases break out, terminating in sphacelus, which, if the child is not speedily cut off, nearly destroys some of the fingers, or toes, the genitals, or other parts. In the milder cases, when the extremities alone are affected, suppurations take place rapidly about the joints of the hands and feet. The *Erysipelas infantum*, however, often terminates favourably in ten or twelve days.

4. In the *Erysipelas erraticum* the morbid patches appear, one after another, on different parts of the body: in some cases, those which appeared first remain till the whole eruption is completed; in others, the first patches decline, as fresh ones appear. Sometimes the disease thus travels progressively from the face downwards to the extremities. It commonly terminates favourably, however, in a week or ten days.

It has been the subject of some discussion, whether erysipelas is not occasionally propagated by contagion. It is sometimes epidemic, and in hospitals it frequently happens that certain wards are so infested by it, that patients labouring under other complaints are seized with it in great numbers; and almost every wound, however trifling, becomes surrounded by erysipelatous inflammation. Instances of its apparent communication by contagion in private houses are much rarer; but still they occur, and, on the whole, we conceive there can be very little reasonable doubt that erysipelas is, in its nature, a contagious disease, although, like fever, it sometimes shows very little disposition to spread in this manner.

Erysipelas is mostly an inflammatory affection of the skin, and then it is apparent and known: but it also affects internal parts, especially the mucous membrane of the throat, primæ viæ, and air passages. It is more liable to attack women and children, and those of an irritable habit, than those of a plethoric and robust constitution.

It is remarkable that erysipelas sometimes returns periodically, attacking the patient once or twice a year, or oftener, and then by its repeated attacks it often gradually exhausts the strength, especially in old and debilitated constitutions.

When the inflammation is a mere blush, and is not attended by much affection of the system, it is called *erythema*; but when the system is affected, it is named erysipelas.

Erysipelas attacks all parts of the surface of the body; but it more frequently appears on the face, legs, and feet, than in any other situation. It occurs oftener in warm climates than in temperate or coldness.

It has been attributed to a certain matter generated within the body, and thrown out on its surface. A particular state of the atmo-

sphere sometimes renders it epidemical. And it has frequently been known to accompany malignant fever.

In slight cases, where it attacks the extremities, it makes its appearance with a roughness, heat, pain, and redness of the skin, which becomes pale when the finger is pressed upon it, and again returns to its former colour, when it is removed. There prevails likewise a slight febrile disposition, and the patient is rather hot and thirsty. If the attack is mild, these symptoms will continue only for a few days, the surface of the part affected will become yellow, the cuticle or scarf-skin will fall off in scales, and no further inconvenience will perhaps be experienced. When however the attack has been severe, and the inflammatory symptoms have run high, then there will ensue pains in the head and back, great heat, thirst, and restlessness; the part affected will slightly swell; the pulse will become small and frequent; and, about the fourth day, a number of little vesicles, containing a limpid, and, in some cases, a yellowish fluid, will arise. In some instances, the fluid is viscid, and instead of running out, as generally happens when the blister is broken, it adheres to and dries upon the skin.

In unfavourable cases, these blisters sometimes degenerate into obstinate ulcers, which now and then become gangrenous. This, however, does not happen frequently; for although it is not uncommon for the surface of the skin, and the blistered places, to appear livid or even blackish, yet this usually disappears with the other symptoms.

The period at which the vesicles show themselves is very uncertain. The same may be said of the duration of the eruption. In mild cases, it often disappears gradually, or is carried off by spontaneous sweating. In some cases it continues without showing any disposition to decline for twelve or fourteen days, or longer.

The trunk of the body is sometimes attacked with erysipelatous inflammation, but less frequently so than the extremities. It is not uncommon, however, as before observed, for infants to be attacked in this manner a few days after birth; and in these it makes its appearance about the genitals. The inflamed skin is hard, and apparently very painful to the touch. The belly often becomes uniformly tense, and sphacelated spots sometimes are to be observed. From dissections made by Dr. Underwood, it appears, that the disease frequently spreads to the abdominal viscera.

When erysipelas attacks the face, it comes on with chilliness, succeeded by heat, restlessness, thirst, and other febrile symptoms, with a drowsiness, or tendency to coma or delirium, and the pulse is very frequent and full. At the end of two or three days, a fiery redness appears on some part of the face, and this extends at length to the scalp, and then gradually down the neck, leaving a tumefaction in every part the redness has occupied. The whole face at length becomes turgid, and the eyelids are so much swelled as to deprive the patient of sight. When the redness and swelling have continued some time, blisters of different sizes, containing a thin colourless acrid liquor, arise on different parts of the face, and the skin puts on a livid appearance in the blistered places; but in those not affected with blisters, the cuticle, towards the close of the disease, falls off in scales.

No remission of the fever takes place on the appearance of the inflammation on the face; but, on the contrary, it is increased as the latter extends, and both will continue probably for the space of eight or ten days. In the course of the inflammation, the disposition to coma and delirium are sometimes so increased as to destroy the patient between the seventh and eleventh days of the disease. When the complaint is mild, and not leading to a fatal event, the inflammation and fever generally cease gradually without any evident crisis.

If the disease arises in a bad habit of body, occupies a part possessed of great sensibility, is accompanied with much inflammation, fever, and delirium, and these take place at an early period, we may suppose the patient exposed to imminent danger. Where translations of the morbid action take place, and the inflammation falls on either the brain, lungs, or abdominal viscera, we may entertain the same unfavourable opinion. Erysipelas seldom terminates in suppuration, unless combined with some degree of phlegmonous inflammation, which is sometimes the case; but, in a bad habit, it is apt to terminate in gangrene, in which case there will be also great danger. When the febrile symptoms are mild, and unaccompanied by delirium or coma, and the inflammation does not run high, we need not be apprehensive of danger.

Where the disease has occupied the face, and proves fatal, inflammation of the brain and its consequences are, in some cases, met with on dissection.

The treatment of erysipelas must vary greatly according to the form of the disease. When it occurs in robust plethoric constitutions, partaking of the phlegmonous character, with severe inflammatory fever, it will be proper to begin by taking a moderate quantity of blood; then direct cooling saline purgatives, antimonial diaphoretics, a light vegetable diet, &c. But if the accompanying fever be more of the typhoid type, bloodletting is inadmissible, and the patient's strength must be supported: after clearing out the primæ viæ, and endeavouring to promote the other secretions by mild evacuants, when the pulse begins to fail, a more nutritious diet, with a moderate quantity of wine, and the decoction of bark with sulphuric acid, or the compound tincture, may be resorted to; and, if necessary, the sulphate of quinine, ammonia, and other powerful stimulants. In the decidedly gangrenous form of erysipelas, all depletion is out of the question, and a tonic and stimulating treatment must be resorted to from the first. Opium should be given in full doses, and calomel may be useful in correcting the disordered state of the abdominal secretions. Besides the constitutional treatment of erysipelas, there are certain local means which are found highly useful.

The ordinary local means of allaying inflammation have, till lately, been little employed in

erysipelas. It has been thought that leeches have a tendency to induce gangrene, and that cold lotions may be injurious by repelling the inflammation. These opinions, however, are now giving way, and many practitioners apply both leeches and cold lotions with excellent effect.

In cases of erysipelas, where the means used to arrest the inflammation have failed, and suppuration and sloughing of the cellular membrane have taken place, which they often do to a very great extent, it is usual to make incisions to give exit to the discharge, and to relieve the tension of the limb. This is an old practice, which was revived in this country by Mr. Copland Hutchison. He recommends the incisions to be made about an inch and a half in length, from two to four inches apart, and varying in number from four to eighteen, according to the extent of the disease. Mr. Lawrence prefers to these numerous small incisions one or two long ones, carried in the direction of the long dimension of the limb or other part. Mr. Lawrence considers this treatment as applicable not only to the suppurating and sloughing state of the disease, but at its commencement, with a view to preventing these occurrences. Mr. Lawrence applies the treatment by incision exclusively to phlegmonoid erysipelas. Incisions are chiefly practised in cases of phlegmonoid erysipelas of the limbs. A copious flow of blood generally follows the application of the knife; and this, unless too profuse, should be encouraged by warm fomentations; but great care must be taken to keep the hemorrhage within proper limits. The part should then be enveloped in a warm poultice.

The use of blisters and cauteries applied to the diseased surface is frequent among the French surgeons, and is said to be advantageous; but it has been little adopted in this country. Compression by bandages has also been recommended; but it is difficult to conceive what effect it can have, except that of producing gangrene. A very ingenious practice has been introduced by Mr. Higginbottom of Nottingham, which consists in the application of nitrate of silver in the following manner: — The part is first cleaned with soap and water, and wiped dry. The inflamed skin, and also the healthy skin, to the extent of an inch or more beyond it, is then to be moistened with water, and the nitrate of silver passed over it twice, thrice, or oftener. The part is left exposed to the air to dry, and is to be kept cool. The result of this practice, in many cases, appears to be a complete change of action in the part, and a resolution of the disease.

Erysipelas infantum. See *Erysipelas.*

Erysipelatoid. (*Erysipelatodes*; from ερυσιπελας, and ειδος, likeness.) Resembling erysipelas.

ERYTHE'MA. (*a, atis.* n.; from ερυθρος, red.) 1. Simple redness. — *Hippocrates.*

2. Rash, or inflammatory blush without fever. — *Cullen.*

3. A lesser degree of erysipelas. — *Callisen.*

4. A nearly continuous redness of some portion of the skin, attended with disorder of the constitution, but not contagious. — *Willan.*

Dr. Willan has described six varieties, which will include all the ordinary forms of the efflorescence. In some of them, as will appear from their titles, the surface is more or less elevated at some period of its course, approximating to the papular or tubercular tumours: but these are obscurely formed, and soon subside, leaving the redness undiminished.

1. *Erythema fugax*, consists of red patches, of an irregular form and short duration, resembling the redness produced from pressure. These patches appear successively on the arms, neck, breast, and face, in various febrile diseases, and in bilious diarrhœa, generally denoting, as Hippocrates and the ancients have observed, a tedious and dangerous disease. They sometimes occur in chronic affections, especially those in which the primæ viæ are deranged; as in dyspepsia, hysteria, hemicrania, &c.

2. The *Erythema lævе* exhibits an uniformly smooth, shining surface, and chiefly appears on the lower extremities, in confluent patches, and is generally accompanied by anasarca. It affects young persons, who are sedentary, with slight fever, and terminates gradually, after an uncertain period, in extensive desquamation, as soon as the anasarca has disappeared. Exercise, with diuretics and corroborants, contributes to shorten its duration in this class of patients. It occurs also in elderly persons, labouring under anasarca (especially in those accustomed to excessive drinking), and is liable to terminate in gangrenous ulcers. Indeed, under whatever circumstances anasarca occurs, so as to stretch the skin greatly, this erythema is liable to be produced, and is often chequered with patches and streaks of a dark red or purple hue. Relief is afforded by the horizontal posture of the limbs, by the internal use of diuretics and bark, and also by a weak spirituous lotion applied to the surface.

It sometimes occurs without œdema, when the bowels have been much disordered; and occasionally, in women, at the menstrual periods.

3. The *Erythema marginatum* occurs in patches, which are bounded on one side by a hard, elevated, tortuous, red border, in some places obscurely papulated: but the redness has no regular boundary on the open side. The patches appear on the extremities and loins, in old people, and remain for an uncertain time, without producing any irritation in the skin. They are connected with some internal disorder, and their occurrence is to be deemed unfavourable.

4. The *Erythema papulatum* occurs chiefly on the arms, neck, and breast, in extensive irregular patches, of a bright red hue, presenting not an inelegant painted appearance. For a day or two, before the colour becomes vivid, the surface is rough, or imperfectly papulated. The redness afterwards continues for about a fortnight; and, as the eruption declines, it assumes a blueish hue, especially in the central parts of the patches. This eruption is sometimes attended with great disorder of the constitution, especially with a frequent, small pulse, total anorexia, and

extreme depression of strength and spirits, and with acute pains and great tenderness of the limbs: but the general disorder is often trifling. Light diet, with diaphoretics, and the mineral acids, and an attention to the state of the bowels, comprise all that is necessary in the treatment of this disorder.

5. *Erythema tuberculatum* resembles the last variety in the large irregular patches of red efflorescence which it exhibits; but there are small slightly elevated tumours interspersed through the patches, which subside in about a week, leaving the erythema, which becomes livid and disappears in about a week more. It commences with fever, and is accompanied with great langour, irritability, and restlessness, and succeeded by hectic. In the only three cases of this erythema, which had occurred to Dr. Willan, the medicines employed did not appear to alleviate the symptoms, or to prevent the subsequent hectic.

6. The *Erythema nodosum*, which is a more common and milder complaint, seems to affect females only, and occurs on the fore part of the legs. It is preceded by slight febrile symptoms for a week or more, which generally abate when the erythema appears. It shows itself in large oval patches, the long diameter of which is parallel with the tibia, and which slowly rise into hard and painful protuberances, and as regularly soften and subside, in the course of nine or ten days; the red colour turning blueish on the eighth or ninth day, as if the leg had been bruised. It has always gone through its course mildly, under the use of laxatives, followed by the mineral acids, and other tonics.

Erythema mercuriale. See *Eczema.*

ERYTHRIC ACID. (*Erythric*; from ερυθρος, red.) An acid obtained by the action of nitric acid on lithic acid. Its colour is yellow, but when exposed to the sun's rays, it turns red — whence its name.

ERYTHRI'NA. (From ερυθρος, red.) 1. A genus of plants. Class, *Diadelphia*; Order, *Decandria*. *Erythrina corallodendron*, the coral tree, a native of the Antilles, is celebrated for the beauty of its scarlet blossoms. The bark of *E. Indica* is considered febrifuge. *E. Monosperma* is much frequented by the insect that forms gum lac.

2. The name given by Heeren to the colouring matter of the *Lichen roccella.*

ERYTHRO'DANUM. (From ερυθρος, red: so called from the colour of its juice.) See *Rubia tinctorum.*

ERYTHROEI'DES. (Ερυθοειδες; from ερυθρος, red, and ειδος, appearance: so called from its colour.) A Greek epithet of the *tunica vaginalis testis*, which has the red fibres of the cremaster dispersed upon its inner surface.

ERYTHRO'NIUM. (From ερυθρος, red: so called from the red colour of its juice.) The name of a genus of plants. Class, *Hexandria*; Order, *Monogynia.*

ERYTHRONIUM AMERICANUM. *Erythronium Indicum.* The root is emetic, but is seldom used.

ERYTHRONIUM DENS CANINUS. *Dens canis.* Dog's tooth violet. The root of this plant has been given against colic and epilepsy, and applied externally in scald-head.

ERYTHRO'XYLUM. (*um, i.* n.; from ερυθρος, red, and ξυλον, wood: so named from its colour.) See *Hæmatoxylum.*

E'RYTHRUS. (From ερυθρος, red: so named from the red colour of its juice.) The sumach. See *Rhus coriaria.*

E'SAPHE. (Εσαφη; from εσαφαω, to feel with the hand.) The touch; or feeling the mouth of the womb, to ascertain its condition.

E'SCHAR. (*Eschara, æ.* f. Εσχαρα; from εσχαροω, to scab over.) *Eschara.* The portion of animal substance that is destroyed by the application of a caustic, and which sloughs away.

ESCHARO'TIC. (*Escharoticus*; from εσχαροω, to scab over.) A substance which possesses the power of destroying the texture of the various solid parts of the animal body to which it is directly applied. This class of substances may be arranged under two orders: —

1. *Eroding escharotics*; as blue vitriol, *alumen ustum*, &c.

2. *Caustic escharotics*; as *potassa pura*, *argenti nitras*, *acidum sulphuricum*, *nitricum*, &c.

E'SCULENT. *Esculentus.* An appellation given to such animals and plants, or any part of them, as may be used for food.

ESCULIC ACID. A peculiar acid found by M. Bussy in the bark of the horse-chesnut.

E'SOX. (*ox, ocis.* m.) The name of a genus of abdominal fishes.

ESOX LUCIUS. The systematic name of the pike fish, from the liver of which an oil is obtained, which is termed, in some pharmacopœias, *oleum lucii piscis.* It is used in some countries, by surgeons, to disperse opacities of the cornea.

ESENBECKINE. An alkaline substance found by Buchner in the Esenbeckia febrifuga.

E'SSENCE. (*Essentia, æ.* f.) Properly that part of anything on which its most remarkable qualities depend. The term has been variously applied by chemists; but it is now generally restricted to the volatile oils obtained from vegetables by distillation.

ESSENCE OF COLT'S-FOOT. This is made of equal parts of balsam of tolu, and compound tincture of benzoin, with double the quantity of rectified alkohol. It is sold as a pectoral.

ESSENCE OF MUSTARD. This is made of oil of turpentine, camphor, spirit of rosemary, and flower of mustard.

ESSENCE OF SPRUCE. This is prepared by decoction from the twigs of the spruce fir. When mixed with treacle or sugar, and water, and fermented, it forms spruce beer. See *Spruce beer.*

ESSENTIAL. *Essentialis.* Relating to the essence of anything.

ESSENTIA BINA. A preparation used to colour brandy, porter, and other strong drinks. It is made by boiling coarse sugar till it becomes black and bitter, and then mixing it with lime water to the consistence of a syrup.

ESSENTIAL SALT OF BARK. The quack medicine sold under this name, is merely a watery extract of Peruvian bark.

ESSENTIAL SALT OF LEMONS. The preparation

so called, is a mixture of cream of tartar and binoxalate of potash.

Essential oil. See *Oil.*

E'SSERA. (*a, æ.* f.; from *Eshera*, an Arabic word literally meaning *papulæ.*) *Sora. Sare.* A species of cutaneous eruption, distinguished by broad, shining, smooth, red spots, mostly without fever, and differing from the nettle rash in not being elevated. It generally attacks the face and hands.

Esthio'menos. (From εσθιω, to eat.) A term formerly applied to any disease which rapidly destroyed, or, as it were, ate away the flesh; as some forms of herpes, lupus, cancer.

E'SULA. (*a, æ.* f.; from *esus*, eaten, because it is eaten by some as a medicine.) Spurge.

Esula major. See *Euphorbia palustris.*

Esula minor. See *Euphorbia cyparissias.*

Ether. See *Æther.*

Ether, acetic. Acetic naphtha. An etherial fluid, drawn over from an equal admixture of alkohol and acetic acid, distilled with a gentle heat from a glass retort in a sand-bath. It has a grateful smell, is extremly light, volatile, and inflammable. Its medicinal properties nearly resemble the other ethers, and may be given in the same doses. It is seldom used.

Ether, hydrochloric. Muriatic ether. Marine ether. This is obtained by mixing and distilling alkohol with extremely concentrated muriate of tin. Its operation on the animal economy resembles that of other ethers. It is scarcely ever used.

Ether, hydrocyanic. This has been employed by M. Magendie in some cases as a substitute for hydrocyanic acid, but the smell was found so insufferable that its use could not be continued.

Ether, muriatic. See *Ether, hydrochloric.*

Ether, nitrous. Nitric naphtha. This may be obtained by distilling with a very gentle heat a mixture of equal weights of alkohol and strong nitric acid; or by the process recommended in the Dublin Pharmacopœia, which is perhaps the best. See *Æther nitrosus.* It is very little used in medicine.

Ether, sulphuric. See *Æther.*

Ether, vitriolic. See *Æther.*

ETHERIAL. (*Ethereus;* from *æther.*) A term applied to any highly rectified essential oil or spirit. See *Oleum æthereum.*

Ethiops. See *Æthiops.*

ETHMOI'D. (*Ethmoides;* from εθμος, a sieve, and ειδος, form: because it is perforated like a sieve.) Sieve-like.

Ethmoid bone. *Os ethmoides. Os ethmoideum.* Cribriform bone. A bone of the head. This is, perhaps, one of the most curious bones of the human body. It appears almost a cube, not of solid bone, but exceedingly light, spongy, and consisting of many convoluted plates, which form a network, like a honey comb. It is curiously enclosed in the os frontis, betwixt the orbitary processes of that bone. One horizontal plate receives the olfactory nerves, which perforate that plate with such a number of small holes, that it resembles a sieve; whence the bone is named cribriform, or ethmoid bone. Other plates, dropping perpendicularly from this one, receive the divided nerves, and give them an opportunity of expanding into the organ of smelling; and these bones, upon which the olfactory nerves are spread out, are so much convoluted as to extend the surface of this sense very greatly, and are named spongy bones. Another flat plate lies in the orbit of the eye; and being very smooth, by the rolling of the eye, it is named the os planum, or smooth bone. So that the ethmoid bone supports the fore-part of the brain, receives the olfactory nerves, forms the organ of smelling, and makes the chief part of the orbit of the eye: and the spongy bones, and the os planum, are neither of them distinct bones, but parts of this ethmoid bone.

The *cribriform plate* is exceedingly delicate and thin; lies horizontally over the root of the nose; and fills up neatly the space betwixt the two orbitary plates of the frontal bone. The olfactory nerves, like two small flat lobes, lie out upon this plate, and adhering to it, shoot down like many roots through this bone, so as to perforate it with numerous small holes, as if it had been dotted with the point of a pin, or like a nutmeg-grater. This plate is horizontal; but its processes are perpendicular, one above, and three below.

1. The first perpendicular process is what is called *crista galli;* a small perpendicular projection, somewhat like a cock's comb, but exceedingly small, standing directly upwards from the middle of the cribriform plate, and dividing that plate into two: so that one olfactory nerve lies upon each side of the crista galli; and the root of the falx, or septum, betwixt the two hemispheres of the brain, begins from this process. The foramen cæcum, or blind hole of the frontal bone, is formed partly by the root of the crista galli, which is very smooth, and is said sometimes to be cellular.

2. Exactly opposite this, and in the same direction with it, *i. e.* perpendicular to the ethmoid plate, stands out the *nasal plate* of the ethmoid bone. It is sometimes called azygous, or single process of the ethmoid, and forms the beginning of that septum, or partition, which divides the two nostrils. This process is thin, but firm, and composed of solid bone; it is commonly inclined a little to one side, so as to make the nostrils of unequal size. The azygous process is united with the vomer, which forms the chief part of the partition; so that the septum, or partition of the nose, consists of the azygous process of the ethmoid bone above, of the vomer below, and of the cartilage in the fore or projecting part of the nose; but the cartilage rots away, so that whatever is seen of the septum in the skull must be part either of the ethmoid bone or vomer.

3. Upon either side of the septum, there hangs down a *spongy bone*, one hanging in each nostril. They are each rolled up like a scroll of parchment; they are very spongy; are covered with a delicate and sensible membrane; and, when the olfactory nerves depart from the cribriform plate of the ethmoid bone, they attach themselves to the septum, and to these upper spongy bones, and expand upon them, so that

the convolutions of these bones are of material use in expanding the organ of smelling, and detaining the odorous effluvia, till the impression be perfect. Their convolutions are more numerous in the lower animals, in proportion as they need a more acute sense. They are named spongy or turbinated bones, from their convolutions resembling the many folds of a turban.

The spongy bones have a great many honeycomb-like cells connected with them, which belong also to the organ of smell, and which are useful, perhaps, by detaining the effluvia of odorous bodies, and also by reverberating the voice. Thus, in a common cold, while the voice is hurt by an affection of these cells, the sense of smelling is almost lost.

4. The *orbitary plate* of the ethmoid bone is a large surface, consisting of a very firm plate of bone, of a regular square form, exceedingly smooth and polished: it forms a great part of the socket for the eye, lying on its inner side. When we see it in the detached bone, we know it to be just the flat side of the ethmoid bone; but while it is incased in the socket of the eye, we should believe it to be a small square bone: and from this, and from its smoothness, it has got the distinct name of *os planum*.

The cells of the ethmoid bone, which form so important a share of the organ of smell, are arranged in great numbers along the spongy bone. They are small, neat cells, much like a honeycomb, and regularly arranged in two rows, parted from each other by a thin partition; so that the os planum seems to have one set of cells attached to it, while another regular set of cells belongs in like manner to the spongy bones. There are thus twelve in number opening into each other, and into the nose.

These cells are frequently the seat of venereal ulcers; and the spongy bones are the surface where polypi often sprout up. And from the general connections and forms of the bone, we can easily understand how the venereal ulcer, when deep in the nose, having got to these cells, cannot be cured, but undermines all the face; how the venereal disease, having affected the nose, soon spreads to the eye; and how even the brain itself is not safe. We see the danger of a blow upon the nose, which by a force upon the septum, or middle partition, may displace the delicate cribriform plate, so as to oppress the brain with all the effects of a fractured skull, and without any operation which can give relief. And we also see the danger of pulling away polypi, which are firmly attached to the upper spongy bone.

Ethmoidal cells. See *Ethmoid bone.*

Ethmoides. See *Ethmoid.*

E'THRON. Ηθρον. The hypogastrium.

EUA'NTHEMUM. (From ευ, well, and ανθεμος, a flower: so named from the beauty of its flowers.) The chamomile.

EUA'PHIUM. (Ευαφιον; from ευ, well, and αφη, the touch: so called from the lenity of its operation.) A medicine for the piles mentioned by Galen.

EU'CHLORINE. (*Euchlorium, ii.* n.; from ευ, intensive, and χλωρος, green.) The protoxide of chlorine: so called from its vivid green colour. See *Chlorine.*

EUDIOMETER. (*Eudiometrum, i.* n.; from ευδια, purity of air, and μετρον, a measure: so called because it determines the quantity of pure or good air.) An instrument for ascertaining the quantity of oxygen in a given bulk of atmospheric air. See *Atmosphere.*

EUDIOMETRY. (*Eudiometria, æ.*; from ευδια, purity of air, and μετρεω, to measure.) The art of determining the quantity of oxygen contained in a given bulk of atmospheric air.

EUGE'NIA. (*a, æ.* f.; so named by Micheli, in compliment to Prince Eugene of Savoy, who sent him from Germany almost all the plants described by Clusius.) The name of a genus of plants in the Linnæan system. Class, *Icosandria;* Order, *Monogynia.*

EUGENIA CARYOPHYLLA'TA. The systematic name of the tree which affords the clove. *Caryophyllus aromaticus.* It grows in the East Indies, the Moluccas, &c. The clove is the unexpanded flower, or rather the calyx; it has a strong agreeable smell, and a bitterish, hot, not very pungent, taste. The oil of cloves, commonly met with in the shops, and received from the Dutch, is highly acrimonious and sophisticated. Clove is accounted the hottest and most acrid of the aromatics; and, by acting as a powerful stimulant to the muscular fibres, may, in some cases of atonic gout, paralysis, &c., supersede most others of the aromatic class; and the foreign oil, by its great acrimony, is also well adapted for several external purposes: it is directed by several pharmacopœias, and the clove itself enters many officinal preparations.

EUGENIA JAMBOS. The systematic name of the Malabar plum-tree. The fruit smells, when ripe, like roses. On the coast of Malabar, where the trees grow plentifully, these plums are in great esteem. They are not only eaten fresh off the trees, but are preserved in sugar, in order to have them eatable all the year. Of the flowers, a conserve is prepared, which is used medicinally as a mild astringent.

EUGE'US. (Ευγαιος; from ευ, well, and γαια, the earth: so called because of its fertility.) The uterus.

EU'LE. (From ευλαζω, to putrefy.) A worm bred in foul and putrid ulcers.

EUNU'CHIUM. (From ευνουχος, an eunuch: so called because it was formerly said to render those who eat it impotent like an eunuch.) The lettuce. See *Lactuca sativa.*

EUPATO'RIOPHA'LACRON. (From ευπατωριον, agrimony, and φαλακρος, bald.) A species of agrimony with naked heads.

EUPATO'RIUM. (*um, i.* n.; ευπατωριον; from *Eupator*, its discoverer: or, *quasi hepatorium*, from ηπαρ, the liver; because it was said to be useful in diseases of the liver.) 1. The Greek name of the herb agrimony. See *Agrimonia eupatoria.*

2. The name of a genus of plants in the Linnæan system. Class, *Syngenesia;* Order, *Polygamia æqualis.*

3. The pharmacopœial name of the *Eupatorium.* See *Eupatorium cannabinum.*

Eupatorium arabicum. See *Eupatorium cannabinum.*

EUPATORIUM CANNABI'NUM. The systematic name of the hemp agrimony. *Eupatorium; Eupatorium arabicum.* The juice of this very bitter and strong-smelling plant, *Eupatorium — foliis digitatis,* of Linnæus, proves violently emetic and purgative, if taken in sufficient quantity, and promotes the secretions generally. It is recommended in dropsies, jaundices, agues, &c., and is in common use in Holland, amongst the lower orders, as a purifier of the blood in old ulcers, scurvy, and anasarca.

Eupatorium Græcorum. See *Agrimonia eupatoria.*

Eupatorium Mesues. See *Achillea ageratum.*

Eupatorium veterum. See *Agrimonia eupatoria.*

EUPE'PSIA. (*a, æ.* f.; from ευ, well, and πεπτω, to concoct.) Good digestion.

EUPE'PTIC. (*Eupepticus;* from ευ, good, and πεπτω, to digest.) Easy of digestion.

EUPHO'RBIA. (*a, æ.* f.; from *Euphorbus,* the physician to King *Juba,* in honour of whom it was named.) The name of a genus of plants in the Linnæan system. Class, *Dodecandria;* Order, *Trigynia.*

EUPHORBIA ANTIQUORUM. The systematic name of a plant supposed to produce the *Euphorbium.*

EUPHORBIA CANARIENSIS. In the Canary islands this species of spurge affords the gum euphorbium.

EUPHORBIA CYPARISSIAS. The systematic name of the cypress spurge; called also *Esula minor,* and *Tithymalus cyparissias.* This, like most of the spurges, is very acrimonious, inflaming the eyes and œsophagus after touching them. It is now fallen into disuse, whatever virtues may have been formerly ascribed to it, one of which, no doubt, was that of opening the bowels; for, amongst rustics, it was called poor man's rhubarb.

EUPHORBIA LATHYRIS. The systematic name of the plant which affords the lesser cataputia seeds. *Cataputia minor. Euphorbia — umbella quadrifida, dichotoma, foliis oppositis integerrimis,* of Linnæus. The seeds possess purgative properties; but if exhibited in an over-dose, prove drastic and poisonous: a quality common to all the *Euphorbiæ.*

EUPHORBIA OFFICINARUM. The systematic name of the plant which affords the euphorbium in the greatest abundance. Euphorbium is an inodorous gum-resin, in yellow tears, which have the appearance of being worm-eaten; said to be obtained from several species of euphorbiæ, but principally from the *Euphorbia officinarum — aculeata nuda multangularis, aculeis geminatis,* of Linnæus: it is imported from Ethiopia, Libya, and Mauritania. It contains an active resin, and is very seldom employed internally; but, it enters as an ingredient into many resolvent and discutient plasters.

EUPHORBIA PALUSTRIS. The systematic name of the greater spurge. The officinal plant ordered by the name *Esula major,* in some pharmacopœias, is the *Euphorbia palustris — umbella multifida, bifida, involucellis ovatis, foliis lanceolatis, ramis sterilibus,* of Linnæus. The juice is exhibited in Russia as a common purge; and the plant is given, in some places, in the cure of intermittents.

EUPHORBIA PARALIAS. *Tithymalus paralias.* Sea-spurge. Every part of this plant is violently cathartic and irritating, inflaming the mouth and fauces. It is seldom employed in the practice of this country; but where it is used, vinegar is recommended to correct its irritating power.

Euphorbium. See *Euphorbia.*

EUPHRA'SIA. (*a, æ.* f.; corrupted from *Euphrosyne,* ευφροσυνη, from ευφρων, joyful: so called because it exhilarates the spirits.) 1. The name of a genus of plants in the Linnæan system. Class, *Didynamia;* Order, *Angiospermia.*

2. The pharmacopœial name of eye-bright. See *Euphrasia officinalis.*

EUPHRASIA OFFICINALIS. The systematic name of the eye-bright. This beautiful little plant, *Euphrasia — foliis ovatis, lineatis, argute dentatis,* of Linnæus, has been greatly esteemed by the common people, as a remedy for all diseases of the eyes; and has also received the encomiums of some medical writers, notwithstanding which, it is now wholly fallen into disuse. It is an ingredient in the British herb-tobacco.

EUSTACHIAN TUBE. *Tuba eustachiana. Iter à palato ad aurem.* The tube, which forms a communication between the posterior nares and the ear; so named after its discoverer, *Eustachius.* See *Auris.*

Eustachian valve. See *Valvula Eustachii.*

EVAPORA'TION. (*Evaporatio, onis.* f.) The conversion of any substance into vapour. As an artificial operation, it is usually performed by applying heat to any compound substance, in order to dispel the volatile parts. It differs from distillation in its object, which chiefly consists in preserving the more fixed matters, while the volatile substances are dissipated and lost: and the vessels are accordingly different; evaporation being commonly performed in open shallow vessels, and distillation in an apparatus nearly closed from the external air.

Evaporation is a process of infinite importance in the economy of nature; and in the animal body, evaporation from the skin, and lungs, is one of the most obvious causes of diminution of temperature. See *Animal temperature.*

Evergreen. See *Sempervirens.*

EVERRI'CULUM. (From *everro,* to sweep away.) A scoop, used to clear the bladder from the small calculous particles which may remain after the operation of lithotomy.

EVOLUTION. (*Evolutio, onis,* f.; from *evolvo,* to unroll.) 1. In the general language of physiology, this term is synonymous with *development.*

2. That hypothesis respecting generation which supposes that the germ is not organised in the body of the parent, but pre-existent, already organised, and only developed by the process of generation, is called the hypothesis of *Evolution:* it is opposed to that of the *Epigenesis.* Compare *Epigenesis.*

3. In obstetrics, the term *spontaneous evolution* has been applied by Dr. Denman to that case in which the arm and shoulder of the child, being protruded from the vagina, a spontaneous turning takes place, and the child is expelled by the breach, as if in a natural presentation of that part. The occasional occurrence of the fact, is generally admitted; but the opinions of obstetricians are divided as to the precise manner in which it takes place.

Evolution, spontaneous. See *Evolution.*

EXACERBATION. (*Exacerbatio*; from *exacerbo*, to become violent.) An increase of intensity in the symptoms of a disease recurring at intervals. The term is generally applied to an increase of febrile symptoms, and is synonymous with *paroxysm.*

EXÆ'RESIS. (From εξαιρεω, to remove.) That division of the art of surgery which comprises the removal of whatever is injurious or superfluous to the body; as the extraction of foreign bodies, amputation of limbs, excision of tumours, &c. The word is not now in use.

Examblo'ma. (Εξαμβλωμα; from εξαμβλοω, to miscarry.) An abortion.

Examblo'sis. Εξαμβλωσις. An abortion.

Exanastomo'sis. (From εξ and αναστομοω, to relax, or open.) The opening of the mouths of vessels, to discharge their contents.

EXANGI'A. (*a, æ.* f.; from εξ, and αγγειον, a vessel.) The generic name given by Mason Good, to diseases which consist in enlargement, breach, or other morbid perforation of a large blood-vessel, without external opening. The genus includes *aneurism, varix,* and *cyania.*

EXA'NIA. (*a, æ.* f.; from *ex*, out of, and *anus.*) Prolapsus of the rectum. See *Procidentia ani.*

EXANTHE'MA. (*a, atis.* n. Εξανθημα; from εξανθεω, *effloresco*, to effloresce, or break forth on the surface.) *Exanthisma.* 1. An eruption of the skin, called a rash. The Greek writers employed this term in a very general sense, as we do the word eruption.

2. In the present day, nosologists have limited it to an eruption or rash which is accompanied with fever, and which has its regular periods of efflorescence and decline. In Dr. Willan's arrangement, it is appropriated solely to those appearances which are usually called rashes; namely, to patches of superficial redness of the skin, of various extent and intensity, occasioned by an unusual determination of blood into the cutaneous vessels, sometimes with partial extravasation; it has no reference, therefore, to the existence of fever or contagion. It comprehends measles, scarlet fever, nettle-rash, rose-rash, purples, and erythema.

Exanthe'mata. (The plural of *exanthema.*) The name of an order of diseases, of the class *Pyrexiæ*, in Cullen's Nosology.

Exanthematic. *Exanthematicus.* Eruptive.

EXANTHE'SIS. (Εξανθησις; from εξανθεω, to effloresce.) Properly the breaking out of an efflorescence on the skin; but applied also to the efflorescence itself.

Exanthi'sma. See *Exanthema.*

Exanthro'pia. (From εξ, without, and ανθρωπος, a man.) The same as *Apanthropia.*

Exarthre'ma. (Εξαρθρημα; from εξαρθροω, to put out of joint.) *Exarthroma; Exarthrosis.* A dislocation, or luxation.

Exarthro'ma. Εξαρθρωμα. See *Exarthrema.*

Exarthro'sis. Εξαθρωσις. See *Exarthrema.*

Exarticula'tio. (From *ex*, out of, and *articulus*, a joint.) A luxation, or dislocation of a bone from its socket.

Excæcaria agallocha. See *Lignum aloes.*

Exci'pulum. (From *excipio*, to receive.) A chemical receiver.

EXCITABI'LITY. (*Excitabilitas*; from *excito*, to excite.) That condition of living bodies wherein they can be made to exhibit the functions and phenomena which distinguish them from inanimate matter, or the capacity of organised beings to be affected by various agents called stimuli.

Exci'tans. Exciting. Stimulating. Applied to medicines which excite the actions of the system — *excitantia.* These are either *general*, acting on the whole system, as alkohol, or *particular*, acting only on certain parts, as diuretics, expectorants, &c.

EXCITATION. (*Excitatio*; from *excito*, to excite.) Synonymous with *excitement*; but the term *excitement* is more frequently applied to the activities of living, and *excitation* to those of inorganic, bodies.

EXCI'TEMENT. 1. That state in which excitability is called into action.

2. The act of awakening excitability.

Exciting cause. See *Ætiology.*

EXCORIA'TION. (*Excoriatio, onis.* f.; from *excorio*, to take off the skin.) An abrasion of the skin.

E'XCREMENT. (*Excrementum, i.* n.; from *excerno*, to separate from.) Any useless matter ejected from the body, but generally applied to the fæces discharged from the bowels.

Excrementi'tious. Of the nature of excrement.

EXCRE'SCENCE. (*Excrescentia, æ.* f.; from *excresco*, to grow from.) Any preternatural growth.

EXCRE'TION. (*Excretio, onis.* f.; from *excerno*, to separate from.) 1. The expulsion, by the various outlets of the body, of such matters as would be superfluous or injurious if they remained.

2. Any matter so thrown off, as the fæces, urine, &c.

E'XCRETORY. (*Excretorius*; from *excerno*, to purge, sift, &c.) This term is applied to the ducts which convey the secreted fluids from the glands. Some glands have only one excretory duct, and others several.

Excretory ducts. See *Excretory.*

Excu'tia ventri'culi. A stomach brush. An instrument consisting of a ferule of iron or brass, with a bunch of hog's bristles at the end of it. It was formerly used to extract foreign bodies from the œsophagus; and some absurdly attempted to cleanse the stomach of viscous matters by means of it.

EXERCISE. (*Excercitatio, onis.* f.) 1. The use of the muscles in subordination to the will.

Exercise has been divided into *active* and *passive*; but many of the movements included in the latter cannot properly be called exercise. See *Gestation*. Active exercise comprehends walking, running, dancing, and all those exercises usually termed athletic. They are of great importance in the preservation of health, and in the removal of disease. The ancient physicians paid much more attention to this subject than the modern, in so much that *gymnastic medicine* formed, with them, a distinct department of the art. See *Gymnastic medicine*.

EXFOLIA'TION. (*Exfoliatio*; from *exfolio*, to cast the leaf.) The separation of a dead piece of bone from the living.

Exfoliativus. Conducive to exfoliation. Medicines which promote exfoliation have been called *exfoliativa*.

Exfoliati'vum tre'panum. A raspatory, or instrument for scraping exfoliating portions of bone.

Exi'schios. (From εξ, out of, and ισχιον, the ischium.) A luxation of the thigh-bone.

Exitu'ra. (From *exeo*, to come from.) Any abscess which emits a sanious fluid. — *Ruland.*

E'xochas. (Εξοχας; from εξεχω, to project.) In general, a tumour. Paul of Ægina applies the term to soft tubercles at the anus — probably piles.

E'xoche. See *Exochas.*

Exocy'ste. See *Exocystis.*

Exocy'stis. (From εξω, without, and κυστις, the bladder.) *Exocyste.* A prolapsus of the inner membrane of the bladder.

EXO'GENOUS. *Exogenus.* A term applied by De Candolle to plants, the vessels of which are so disposed that the older occupy the circumference of the stem, and the younger the centre; so that the growth of the plant takes place from within.

EXO'MPHALUS. (*us, i.* m.; from εξ, out of, and ομφαλος, the navel.) *Exomphalos.* An umbilical hernia. See *Hernia umbilicalis.*

EXOPHTHA'LMIA. (*a, æ.* f.; from εξ, out, and οφθαλμος, the eye.) A swelling or protrusion of the bulb of the eye, to such a degree that the eyelids cannot cover it. It may be caused by inflammation, when it is termed *exophthalmia inflammatoria*; or from a collection of pus in the globe of the eye, when it is termed the *exopthalmia purulenta*; or from a congestion of blood within the globe of the eye, *exophthalmia sanguinea.*

EXOSTO'SIS. (*is, is.* m.; from εξ, and οστεον, a bone.) *Hyperostosis.* A morbid enlargement, or hard tumour of a bone. The bones most frequently affected with exostosis, are those of the cranium, the lower jaw, sternum, humerus, radius, ulna, bones of the carpus, the femur, and tibia. There is, however, no bone of the body which may not become the seat of this disease. It is not uncommon to find the bones of the cranium affected with exostosis in their whole extent. The ossa parietalia sometimes become an inch thick.

Exostosis, however, mostly rises from the surface of the bone, in the form of a hard round tumour; and venereal exostoses, or nodes, are observed to arise chiefly on compact bones, and such of these as are only superficially covered with soft parts; as, for instance, the bones of the cranium, and the anterior surface of the tibia.

EXO'TIC. (*Exoticus*; from εξω, without.) Belonging to a foreign country. Plants which are not *indigenous* or native in a country, are called *exotic.* The phrase *exotic botany* is used, though not very correctly, to signify the botanical study of exotic plants.

Expanding. See *Patens.*

EXPANSION. The increase of bulk which a body undergoes by the recession of its particles from one another, so that it occupies a greater space while its weight remains the same. Expansion is one of the effects of the agency of caloric. See *Caloric.*

EXPE'CTORANT. (*Expectorans*; from *expectoro*, to discharge from the breast.) Applied to that which increases the discharge of mucus from the lungs.

"Expectorants," says Dr. Good, "are those medicines which rather promote the separation of the viscid phlegm with which the bronchiæ are loaded, than simply inviscate or dilute it; though these are also treated of as expectorants by many writers. The list of the proper expectorants employed formerly was very voluminous; in the present day they are comparatively few; and this proscription has, perhaps, been carried too far. The principle upon which they act is, in some degree, doubtful. The simplest way of accounting for it, is by means of a specific determination to the lungs; for as there are pretty clear proofs of medicines operating specifically on other organs, as that of mercury on the salivary glands, and cinchona on the irritable fibre, there is no reason why we should not expect a like operation on the viscera of the chest. Dr. Cullen is quite at a loss on this subject, from not admitting of specific medicines, or a specific action on any organ. As a general rule, he supposes expectorants to operate on the bronchiæ merely by a diaphoretic power, or that of increasing the flow of the superficial exhalents at large, and consequently the exhalents of the lungs, by which the mucus present in the follicles may be poured out in a less viscid form, and hence in a state to be more easily thrown up by the trachea. But this is a very unsatisfactory view of the question. For, first, admitting there are medicines that act directly upon the exhalents of the skin, a specific power is hereby immediately conceded to one set of organs: and, if such a power exist in respect to one set, there is no reason why it may not in respect to fifty. Next, we see evident proofs of an expectorant power in many medicines, as in gum-ammoniac, where we have no proof whatever of increased exhalation from the surface of the body; and, further, the general explanation gives us no clew to the different operations of particular expectorants. It is possible that in all these cases there is a particular stimulus; but whether this depends upon any sensible quality they possess, we cannot easily determine: for though many of them are more pungent to the taste than others, their degree of expectorant power does not, in every instance, keep pace with their degree of pungency."

EXPECTORATION. (*Expectoratio, onis.* f. ; from *expectoro*, to throw out of the chest.) The act of ejecting matters from the chest. The term is sometimes loosely applied to the matter expectorated, but this is more correctly termed *sputum*. See *Sputum*.

EXPIRA'TION. (*Expiratio ;* from *expiro*, to breathe.) That part of respiration in which the air is expelled from the lungs. See *Respiration*.

EXPLORA'TIO. (From *exploro*, to search out.) Exploration. The investigation of the *physical signs* of disease, as opposed to the diagnosis derived from *symptoms*. Exploration, as it is called, is used chiefly in diseases of the thorax and abdomen, and consists of, *Inspection*, or examination by the eye ; *Palpation*, manual examination, or examination by the sense of touch ; *Mensuration*, or geometrical measurement, with a view to ascertaining the comparative size of the two sides of the chest or belly ; *Percussion*, or striking with the hand, which affords indications cognisable both by the touch and the sense of hearing ; *Auscultation*, which affords indications recognised only by the ear, either unaided or assisted by the intervention of the stethoscope.

Expressed oil. An oil obtained by pressing it out of the substance containing it ; as olive oil from the olive, almond oil from the almond.

EXPRESSION. (*Expressio, onis.* f. ; from *exprimo*, to press out.) 1. A mechanical operation by which the juices of plants, and various fixed oils, are obtained ; as the *succus conii*, *oleum amygdalæ*, &c.

2. The indications of the state of the feelings, passions, and sensations, presented by the countenance, attitude, and gesture. See *Physiognomy*.

Expui'tion. (From *exspuo*, to spit out.) The ejection of redundant fluids from the mouth and fauces.

Expulsive. *Expellens. Expulsorius.* 1. A bandage constructed for exerting pressure on parts, so as to expel pus or other fluids, is called the *expulsive bandage*.

2. The pains which occur in the second stage of parturition, and by which the child is expelled, are called *expulsive pains*.

3. Diaphoretics have been called expulsive medicines.

Exsangui'nity. Bloodlessness. See *Anæmia ;* and *Anæmia, partial,* in the Supplement.

EXSER'TUS. Protruding : opposed, in *Botany*, to enclosed.

EXSICCA'TION. (*Exsiccatio ;* from *ex sicco*, to dry up.) Drying. A pharmaceutical and chemical operation, by which plants, chemical preparations, &c., are deprived of their humidity. This is done by exposure to the sun, or to fire, on dry or absorbent substances.

Exstro'phia. (From *εκστρεφω*, to invert.) This term is used by Chaussier, synonymously with *extroversion*. It ought to be written *ectrophia*.

Exsucca'tio. (From *ex*, out of, and *succus*, humour.) Synonymous with *Echymoma*.

EXTE'NSOR. (*or, oris.* m. ; from *extendo*, to stretch out.) A term applied to those muscles the office of which it is to extend any part ; the term is in opposition to flexor.

Extensor brevis digitorum pedis. A muscle of the toes, situated on the foot. *Extensor brevis*, of Douglas. It arises fleshy and tendinous from the fore and upper part of the os calcis, and soon forms a fleshy belly, divisible into four portions, which send off an equal number of tendons that pass over the upper part of the foot, under the tendons of the extensor longus digitorum pedis, to be inserted into its tendinous expansion. Its office is to extend the toes.

Extensor carpi radialis brevior. An extensor muscle of the wrist, situated on the fore-arm. *Radialis externus brevior*, of Albinus. *Radialis secundus*, of Winslow. It arises tendinous from the external condyle of the humerus, and from the ligament that connects the radius to it, and runs along the outside of the radius. It is inserted by a long tendon into the upper and back part of the metacarpal bone of the middle finger. It assists in extending and bringing the hand backward.

Extensor carpi radialis longior. An extensor muscle of the carpus, situated on the fore-arm, that acts in conjunction with the former. *Radialis externus longior*, of Albinus, *Radialis externus primus*, of Winslow. It arises thin, broad, and fleshy, from the lower part of the external ridge of the os humeri, above its external condyle, and is inserted by a round tendon into the posterior and upper part of the metacarpal bone that sustains the fore-fingers.

Extensor carpi ulnaris. *Ulnaris externus*, of Albinus and Winslow. It arises from the outer condyle of the os humeri, and then receives an addition from the edge of the ulna : its tendon passes in a groove behind the styloid process of the ulna, to be inserted into the inside of the basis of the metacarpal bone of the little finger.

Extensor digitorum communis. A muscle situated on the fore-arm, that extends all the joints of the fingers. *Extensor digitorum communis manus*, of Douglas and Winslow. *Extensor digitorum communis, seu digitorum tensor*, of Cowper. *Cum extensore proprio auricularis*, of Albinus. It arises from the external protuberance of the humerus ; and at the wrist it divides into three flat tendons, which pass under the annular ligament, to be inserted into all the bones of the fore, middle, and ring fingers.

Extensor digitorum longus. See *Extensor longus digitorum pedis.*

Extensor indicis. See *Indicator.*

Extensor longus digitorum pedis. A muscle situated on the leg, that extends all the joints of the four small toes. *Extensor digitorum longus.* It arises from the upper part of the tibia and fibula, and the interosseous ligament ; its tendon passes under the annular ligament, and then divides into five, four of which are inserted into the second and third phalanges of the toes, and the fifth goes to the basis of the metatarsal bone. This last Winslow reckons a distinct muscle, and calls it *Peroneus brevis.*

Extensor longus pollicis pedis. See *Extensor proprius pollicis pedis.*

Extensor magnus. See *Gastrocnemius.*

Extensor major pollicis manus. See *Extensor secundi internodii.*

Extensor minor pollicis manus. See *Extensor primi internodii.*

EXTENSOR OSSIS METACARPI POLLICIS MANUS. An extensor muscle of the wrist, situated on the fore-arm. *Abductor longus pollicis manus*, of Albinus. *Extensor primi internodii*, of Douglas. *Extensor primus pollicis*, of Winslow. *Extensor primi internodii pollicis*, of Cowper. It arises fleshy from the middle and posterior part of the ulna, from the posterior part of the middle of the radius, and from the interosseous ligament, and is inserted into the os trapezium, and upper part of the metacarpal bone of the thumb.

Extensor pollicis primus. See *Extensor primi internodii.*

Extensor pollicis secundus. See *Extensor secundi internodii.*

EXTENSOR PRIMI INTERNODII. A muscle of the thumb, situated on the hand, that extends the first bone of the thumb obliquely outwards. *Extensor minor pollicis manus*, of Albinus. This muscle, and the *Extensor ossis metacarpi pollicis manus*, are called *Extensor pollicis primus*, by Winslow; *Extensor secundi internodii*, by Douglas; *Extensor secundi internodii ossis pollicis*, by Cowper. It arises fleshy from the posterior part of the ulna, and from the interosseous ligament, and is inserted tendinous into the posterior part of the first bone of the thumb.

EXTENSOR PROPRIUS POLLICIS PEDIS. An extensor muscle of the great toe, situated on the foot. *Extensor longus*, of Douglas. *Extensor pollicis longus*, of Winslow and Cowper. It arises by an acute, tendinous, and fleshy beginning, some way below the head and anterior part of the fibula, along which it runs to near its lower extremity, connected to it by a number of fleshy fibres, which descend obliquely, and form a tendon, which is inserted into the posterior part of the first and last joint of the great toe.

EXTENSOR SECUNDI INTERNODII. A muscle of the thumb, situated on the hand, that extends the last joint of the thumb obliquely backwards. *Extensor major pollicis manus*, of Albinus. *Extensor pollicis secundus*, of Winslow. *Extensor tertii internodii*, of Douglas. *Extensor internodii ossis pollicis*, of Cowper. It arises tendinous and fleshy from the middle part of the ulna, and interosseous ligament; it then forms a tendon, which runs through a small groove at the inner and back part of the radius, to be inserted into the last bone of the thumb. Its use is to extend the last phalanx of the thumb obliquely backwards.

Extensor secundi internodii indicis proprius. See *Indicator.*

Extensor tarsi minor. See *Plantaris.*

Extensor tarsi suralis. See *Gastrocnemius internus.*

Extensor tertii internodii indicis. See *Prior indicis.*

Extensor tertii internodii minimi digiti. See *Abductor minimi digiti manus.*

Extenuatio. See *Leanness.*

Externus mallei. See *Laxator tympani.*

EXTINCTION. The trituration of mercury with other substances till the globules disappear, is sometimes called the extinction of the mercury.

EXTIPULA'TUS. Without stipulæ: applied to stems of plants.

EXTIRPATION. (*Extirpatio*; from *extirpo*, to eradicate.) The complete removal or destruction of any part, either by cutting instruments, or the action of caustics.

E'XTRACT. (*Extractum*, *i.* n.; from *extraho*, to draw out.) 1. When chemists use this term, they generally mean the product of an aqueous decoction.

2. In *Pharmacy*, it includes all those preparations from vegetables which are separated by the agency of various liquids, and afterwards obtained from such solutions, in a solid state, by evaporation of the menstruum. It also includes those substances which are held in solution by the natural juices of fresh plants, as well as those to which some menstruum is added at the time of preparation. Now, such soluble matters are various, and mostly complicated; so that chemical accuracy is not to be looked for in the application of the term. Some chemists, however, have affixed this name to one peculiar modification of vegetable matter, which has been called *extractive*, or extractive principle; and, as this forms one constituent part of common extracts, and possesses certain characters, it will be proper to mention such of them as may influence its pharmaceutical relations. The extractive principle has a strong taste, differing in different plants: it is soluble in water, and its solution speedily runs into a state of putrefaction, by which it is destroyed. Repeated evaporations and solutions render it at last insoluble, in consequence of its combination with oxygen from the atmosphere. It is soluble in alkohol, but insoluble in ether. It unites with alumina, and if boiled with neutral salts thereof, precipitates them. It precipitates with strong acids, and with the oxides from solutions of most metallic salts, especially muriate of tin. It readily unites with alkalis, and forms compounds with them, which are soluble in water. No part, however, of this subject has been hitherto sufficiently examined.

In the preparation of all the extracts, the London Pharmacopœia requires that the fluid be evaporated as speedily as possible, in a broad, shallow dish, by means of a water-bath, until the extract acquires a consistence proper for making pills; and that towards the end of the operation they should be constantly stirred with a spatula. We are also directed to sprinkle a small quantity of rectified alkohol on the softer extracts in order to prevent them from becoming mouldy. These general rules require minute and accurate attention, more particularly in the immediate evaporation of the solution, whether prepared by expression or decoction, in the manner as well as the degree of heat by which it is performed, and the promotion of it by changing the surface by constant stirring, when the liquor begins to thicken, and even by directing a strong current of air over its surface,

if it can conveniently be done. It is impossible to regulate the temperature over a naked fire, or, if it be used, to prevent the extract from burning; the use of a water-bath is, therefore, absolutely necessary, and the uniformity of consistence and strength in extracts prepared in this manner, sufficiently demonstrates its advantages.

EXTRACTION. (*Extractio*; from *extraho*, to draw out.) The taking extraneous substances out of the body. Thus we speak of the *extraction* of bullets and splinters from wounds: and of stones from the urethra or bladder. Surgeons also sometimes apply the term *extraction* to the removal of tumours out of cavities; as, for instance, to the taking of cartilaginous tumours out of the joints. They seldom speak of extracting any diseased original part of the body; though they do so in one instance, viz. the cataract.

Extractive. See *Extract.*

EXTRA'CTUM. (From *extraho*, to draw out.) An extract. See *Extract.*

Extractum aconiti. Extract of aconite. Take of aconite leaves, fresh, a pound: bruise them in a stone mortar, sprinkling on a little water; then press out the juice, and, without any separation of the sediment, evaporate it to a proper consistence. The dose is from one grain to five grains. For its virtues, see *Aconitum.*

Extractum aloes purificatum. Purified extract of aloes. Take of aloes, powdered, fifteen ounces; boiling water, a gallon. Macerate for three days, in a gentle heat; then strain the solution, and set it by, that the dregs may subside. Pour off the clear solution, and evaporate it to a proper consistence. The dose is from five to fifteen grains. See *Aloes.*

Extractum anthemidis. Extract of chamomile, formerly called extractum chamæmeli. Take of chamomile flowers, dried, a pound; water, a gallon: boil down to four pints, and strain the solution while it is hot, then evaporate it to a proper consistence. The dose is ten grains to a scruple. For its virtues, see *Anthemis nobilis.*

Extractum belladonnæ. Extract of belladonna. Take of deadly night-shade leaves, fresh, a pound. Bruise them in a stone mortar, sprinkling on a little water; then press out the juice, and, without any previous separation of the sediment, evaporate it to a proper consistence. The dose is from one to five grains. For its virtues, see *Atropa belladonna.*

Extractum cinchonæ. Extract of bark. The London College in their present Pharmacopœia order an *extractum cinchonæ cordifoliæ*, *extractum cinchonæ lancifoliæ*, and *extractum cinchonæ oblongifoliæ*. The formula for each is the same. Take of the bruised bark, fifteen ounces; distilled water, four gallons: boil down in a gallon of water to six pints, and strain the liquor while hot. In like manner boil down the bark in an equal measure of water four times, and strain. Lastly, all the liquors being mixed, evaporate to a proper consistence. This extract should be kept soft for making pills, and hard to be reduced to powder.

Extractum cinchonæ resinosum. Resinous extract of bark. Take of lance-leaved cinchona bark, bruised, a pound; rectified spirit, four pints: macerate for four days, and strain. Distil the tincture in the heat of a water-bath, until the extract has acquired a proper consistence. This is considered by many as much more grateful to the stomach, and at the same time producing all the effects of bark in substance; and by the distillation of it, it is intended that the spirit which passes over shall be collected and preserved. The dose is from ten grains to half a drachm. See *Cinchona.*

Extractum colchici aceticum. Acetic extract of meadow saffron. Take of the fresh cormus of meadow saffron, a pound; acetic acid, three fluid ounces: bruise the cormus gradually sprinkled with the acetic acid, then press out the juice, and evaporate it to a proper consistence in an earthen vessel, which is not glazed with lead. This extract has been introduced by the London College into their last Pharmacopœia. The dose is from one to two grains twice or thrice a day. It is used in the same cases as the other preparations of colchicum.

Extractum colchici cormi. Extract of the cormus of meadow saffron. Take of the cormus of fresh meadow saffron a pound. Bruise the cormus, sprinkled with a little water, in a stone mortar; then press out the juice, and evaporate it unstrained to a proper consistence. This also is one of the new preparations in the last London Pharmacopœia. It is given in the dose of a grain every four hours, and is a very efficacious preparation of colchicum.

Extractum colocynthidis. Extract of colocynth. Take of colocynth, cut in pieces, a pound; water, two gallons. Mix, and boil with a slow fire for six hours, frequently adding distilled water, that it may always fill the same measure; strain the solution while it is hot, and evaporate it to a proper consistence. The dose is from five to thirty grains. For its virtues, see *Cucumis colocynthis.*

Extractum colocynthidis compositum. *Extractum catharticum.* Compound extract of colocynth. Cathartic extract. Take of colocynth pulp, cut in pieces, six ounces; purified extract of aloes, twelve ounces; scammony, powdered, four ounces; cardamom, powdered, an ounce; proof spirit, a gallon. Macerate the colocynth in the spirit, for four days, in a gentle heat: strain the solution, and add it to the aloes, scammony, and soap; then, by means of a water-bath, evaporate it to a proper consistence, the cardamom being mixed in towards the end of the process. The dose is from five to thirty grains.

Extractum conii. Extract of hemlock, formerly called succus cicutæ spissatus. Take of fresh hemlock leaves, a pound. Bruise them in a stone mortar, sprinkling on a little water; then press out the juice, and, without any separation to the sediment, evaporate it to a proper consistence. The dose is from five grains to a scruple.

Extractum digitalis. Extract of foxglove. Take of fresh leaves of digitalis, a pound.

Bruise them, sprinkled with a little water, in a stone mortar; then press out the juice, and evaporate it unstrained to a proper consistence. This has been introduced into the last London Pharmacopœia; but it is necessarily a preparation of very uncertain strength, and therefore not so safe as the powder or tincture. The dose is from half a grain to two grains.

Extractum elaterii. Extract of elaterium. Cut the ripe wild cucumbers into slices, and pass the juice, very gently expressed, through a very fine hair sieve; then set it by for some hours, until the thicker part has subsided; the thinner part, which swims at the top, being rejected. Dry the thicker part which remains in a gentle heat. The dose is from half a grain to three grains. For its virtues, see *Momordica elaterium*.

Extractum gentianæ. Extract of gentian. Take of gentian, sliced, two pounds and a half; boiling distilled water, two gallons. Macerate for twenty-four hours, then boil down to a gallon; strain the hot liquor, and evaporate to a proper consistence. Dose from ten to thirty grains. See *Gentiana*.

Extractum glycyrrhizæ. Extract of liquorice. Take of liquorice root, sliced, two pounds and a half; boiling distilled water, two gallons: macerate for twenty-four hours, then boil down to four pints; strain the hot liquor, and evaporate to a proper consistence. Dose, from one drachm to half an ounce. See *Glycyrrhiza*.

Extractum hæmato'xyli. Extract of logwood, formerly called extractum ligni campechiensis. Take of logwood, powdered, two pounds and a half; boiling distilled water, two gallons: macerate for twenty-four hours; then boil down to four pints: strain the hot liquor, and evaporate it to a proper consistence. Dose, from ten grains to half a drachm. For its virtues, see *Hæmatoxylon campechianum*.

Extractum humuli. See *Extractum lupuli*.

Extractum hyoscyami. Extract of henbane. Take of fresh henbane leaves, a pound: bruise them in a stone mortar, sprinkling on a little water; then press out the juice, and evaporate it, unstrained, to a proper consistence. Dose, from three to twenty grains. For its virtues, see *Hyoscyamus*.

Extractum jalapæ. Extract of jalap. Take of jalap-root, powdered, two pounds; rectified spirit, a gallon; distilled water, two gallons: macerate the jalap-root in the spirit for four days, and pour off the tincture; boil down the remaining powder in the water to half a gallon; then strain the tincture and decoction separately, and let the former be distilled and the latter evaporated, until each begins to grow thick. Lastly, mix the extract with the resin, and evaporate it to a proper consistence. Let this extract be kept in a soft state, fit for forming pills, and in a hard one, so that it may be reduced to powder. The dose is from ten to twenty grains. For its virtues, see *Convolvulus jalapa*.

Extractum lactucæ. Extract of lettuce. Take of fresh lettuce leaves, a pound. Bruise them, sprinkled with a little water, in a stone mortar; then press out the juice, and evaporate it, unstrained, to a proper consistence. For the virtues, see *lactuca sativa*. Dose, from five to ten grains twice or thrice a day.

Extractum lupuli. *Extractum humuli.* Extract of hops. Take of hops half a pound; boiling distilled water, two gallons: macerate for twenty-four hours, boil down to a gallon; strain while yet hot, and evaporate to a proper consistence. This extract contains the bitter and narcotic principle of the hop, without the aromatic. Dose, gr. v. to ℈j.

Extractum opii purificatum. Extract of opium, formerly called *extractum thebaicum* and *opium colatum*. Take of opium, sliced, twenty ounces; distilled water, a gallon; pour a small quantity of the water upon the opium, and macerate it for twelve hours, that it may become soft; then, adding the remaining water gradually, rub them together until the mixture be complete. Set it by, that the fæculencies may subside; then strain the liquor, and evaporate it to a proper consistence. Dose, from half a grain to five grains.

Extractum papaveris. Extract of white poppy. Take of white poppy capsules bruised, and freed from the seeds, fifteen ounces; boiling distilled water, a gallon. Macerate for twenty-four hours, then boil down to four pints; strain the hot liquor, and evaporate it to a proper consistence. Six grains are about equivalent to one of opium. For its virtues, see *Papaver album*.

Extractum pareiræ. Extract of pareira. Take of pareira, bruised, two pounds and a half; boiling distilled water, two gallons. Macerate for four and twenty hours, boil down to a gallon, strain while yet hot, and evaporate to a proper consistence. This extract may be supposed to contain the virtues of the plant, if indeed the latter possess any. See *Cissampelos pareira*. The extract is given in doses of from ten grains to half a drachm.

Extractum rhei. Extract of rhubarb. Take of rhubarb root, powdered, fifteen ounces; proof spirit, a pint; water, seven pints. Macerate for four days in a gentle heat; then strain and set it by, that the fæculencies may subside. Pour off the clear liquor, and evaporate to a proper consistence. This extract possesses the purgative properties of the root, and the fibrous and earthy parts are separated; it is, therefore, a useful basis for pills. It is also given separately. Dose, from ten to thirty grains.

Extractum rutæ. Extract of rue. This may be prepared like other simple extracts. It is bitter, but does not possess the more active properties of the plant, as these are dissipated along with the volatile oil.

Extractum sarsaparillæ. Extract of sarsaparilla. Take of sarsaparilla root, sliced, two pounds and a half; boiling water, two gallons. Macerate for twenty-four hours, then boil down to a gallon; strain the hot liquor, and evaporate it to a proper consistence. In practice, this is much used, to render the common decoction of the same root stronger and more efficacious. Dose, from ten grains to a drachm. For its virtues, see *Smilax sarsaparilla*.

Extractum saturni. See *Plumbi acetatis liquor.*

Extractum stramonii. Extract of thorn apple. Take of the seeds of stramonium, fifteen ounces; boiling distilled water, one gallon. Macerate for four hours in a lightly covered vessel, near the fire; then take out the seeds, and having bruised them in a stone mortar, put them again into the liquor. Then boil down to four pints; strain while yet hot, and evaporate to a proper consistence. This extract is given in doses of from half a grain to two grains, in the form of pill. It is not at all to be depended on as to uniformity of strength; but Dr. J. Davy informed Dr. Paris, that after many trials of the extract of stramonium as prepared by Mr. Barry *in vacuo*, he found it more uniformly powerful than the common preparation.

Extractum tara'xaci. Take of dandelion root, fresh and bruised, fifteen ounces; boiling distilled water, a gallon. Macerate for twenty-four hours; boil down to four pints, and strain the hot liquor; then evaporate it to a proper consistence. Dose, from ten grains to a drachm. For its virtues, see *Leontodon taraxacum.*

EXTRAFOLIA'CEOUS. *Extrafoliaceus.* Underneath the leaf: applied to stipulæ, which are below the footstalk, and external with respect to the leaf; as in *Astragalus onobrichis.*

EXTRAVASA'TION. (*Extravasatio;* from *extra*, without, and *vas*, a vessel.) A term applied, by pathologists, to the effusion of fluids from their proper vessels or receptacles. Thus, when blood is effused on the surface, or in the ventricles of the brain, it is said that there is an extravasation. When blood is poured from the vessels into the cavity of the peritonæum, in wounds of the abdomen, this accident is called an extravasation. An extravasation of urine is said to take place when, in consequence of a wound, sloughing, or ulceration, the urine makes its way into the cellular substance, or among the abdominal viscera. When the bile spreads among the convolutions of the bowels, from wounds of the gall-bladder, this is also a species of extravasation.

EXTREMITY. *Extremitas.* This term is applied to the limbs, as distinguishing them from the other divisions of the animal, the head and trunk. The extremities are four in number, divided, in man, into upper and lower; in other animals, into anterior and posterior. Each extremity is divided into four parts: the upper, into the shoulder, the arm, fore-arm, and the hand; the lower, into the hip, the thigh, the leg, and the foot.

EXULCERATION. (*Exulceratio, onis.* f.; from *exulcero*, to cause ulcers.) Mostly applied to the commencement of ulceration.

EXU'VIÆ. (*ia, arum.* pl. f.; from *exuo*, to strip off.) The cast off skins of those animals which change their skins by a natural process. The exuviæ of serpents, *anguium senectæ*, were formerly boiled in wine, and used as a cure for deafness, &c.

Eye. See *Oculus.*

Eye-bright. See *Euphrasia.*

Eyebrow. See *Oculus.*

Eyelid. See *Oculus.*

Eye-tooth. The fangs of the two upper cuspidati are very much larger than those on each side, and extend up near to the orbit, on which account they have been called eye-teeth. See *Teeth.*

F.

F. or ft. In a prescription these letters are abbreviations of *fiat* or *fiant*, let it, or them be made; thus, *f. bolus*, let the substance or substances prescribed be made into a bolus.

FA'BA. (*a, æ.* f. By the Falisci, a people in *Hetruria*, the bean was called *haba;* and from thence, perhaps, *faba.* Martinus derives it from παω, to feed.) See *Bean.*

Faba crassa. See *Sedum telephium.*

Faba ægyptiaca. See *Nymphæa.*

Faba febrifuga. See *Ignatia amara.*

Faba indica. See *Ignatia amara.*

Faba major. See *Bean.*

Faba marina. See *Umbilicus marinus.*

Faba minor. It differs no otherwise from the garden bean than in being less.

Faba pechurim. See *Laurus pechurim.*

Faba porcina. See *Hyoscyamus.*

Faba purgatrix. See *Ricinus.*

Faba sancti Ignatii. See *Ignatia.*

Faba suilla. See *Hyoscyamus.*

Fabaginea. See *Zygophyllum.*

Fabago. See *Zygophyllum.*

Faba'ria. (From *faba*, a bean, which it resembles.) See *Sedum telephium.*

FABRA'RUM AQUA. Forge water. Water in which red-hot iron has been quenched. This is a good mild chalybeate.

FACE. *Facies.* The lower and anterior part of the head. The bones of the face are usually divided by anatomists into those of the upper and lower jaw. In the former, besides the teeth, we find fifteen bones, viz. two *ossa nasi;* two *ossa unguis;* two *ossa malarum;* two *ossa maxillaria superiora;* two *ossa palati;* two *ossa spongiosa inferiora;* two *ossa triangularia;* and the *vomer.* The lower jaw consists of only one bone besides the teeth; the *os maxillaria inferius.* The muscles of the face are numerous, and admit in the human subject of an infinite variety of action, so that all the stronger emotions of the mind have their corresponding characters in the countenance. The minute blood-vessels distributed to the integu-

ments of the face are extremely numerous, and endowed with a high degree of irritability; hence arise continual changes of complexion according to the state of the mind, of the bodily health, of temperature, &c. From these two circumstances, the variety of muscular action, and the changes in the minute circulation, we derive the science of *physiognomy*, which, however it may have been exposed to ridicule when placed upon a false foundation, is of no small utility in the ordinary intercourse of life, and which in the practice of medicine is invaluable as a means of diagnosis. See *Physiognomy*.

The face contains several of the more important organs of sense, and is copiously supplied with arteries, veins, and nerves. These will be found under their respective heads, and need not be described here.

FA'CIAL. *Facialis.* Belonging to the face; as facial nerve, &c.

Facial angle. See *Angle facial.*

Facial artery. 1. The artery, otherwise called the *labial*, the *external maxillary* or angular artery. It is a branch of the external carotid, which, passing under the stylo-hyoid muscle and the tendon of the digastric, penetrates the submaxillary gland, and mounts over the side of the jaw to the angle of the mouth, and thence ascends to the inner angle of the eye, where it is dispersed. In this course it gives off palatine and lingual branches, branches to the submaxillary gland, and to various muscles: a copious supply of blood is sent to the lips by the *inferior labial*, and two coronary branches of this artery.

2. M. Chaussier has given the name of *facial* to the external carotid artery.

Facial nerve. *Nervus facialis.* The eighth pair of nerves. See *Portiodura.*

Facial vein. The vein which returns the blood from the facial artery. It usually joins the external jugular, but sometimes passes to the internal jugular.

Facies. See *Face.*

FA'CIES HIPPOCRA'TICA. That state of the countenance which immediately precedes death; so called, because it has been particularly described by Hippocrates, who calls it προσωπου διαφθορη; (*Coac. Prænot.* 212.) The nose is sharp, the eyes hollow, the temples sunk, the ears cold and contracted, and their lobes inverted; the skin about the forehead hard, tense, and dry; the countenance pale, greenish, or dark.

Facies rubra. See *Gutta rosacea.*

FACTI'TIOUS. *Factitius.* A term applied to any thing which is made by art, in opposition to that which is native, or found already made in nature.

Fæ'ces. The plural of *fæx.* The alvine excretions.

FÆ'CULA. (*a, æ.* f.; diminutive of *fæx.*) A substance obtained by bruising or grinding certain vegetables in water. It is that part which, after a little, falls to the bottom. The fæcula of plants differs principally from gum or mucus in being insoluble in cold water, in which it falls with wonderful quickness. There are few plants which do not contain fæcula; but the seeds of gramineous and leguminous vegetables, and all tuberous roots, contain it most plentifully.

FÆX. (*Fæx, æcis.* f.; an excretion.)

1. The sediment of any fermented liquor; as beer, wine, &c.

2. The alvine excretions are called *fæces.*

FAGA'RA. (*a, æ.* f.; from *fagus*, the beech, which it resembles.) The name of a genus of plants in the Linnæan system. Class, *Tetrandria*; Order, *Monogynia.*

Fagara major. See *Fagara piperita.*

Fagara octandra. The systematic name of the plant which affords that kind of *tacamahaca* which is imported in shells. See *Tacamahaca.*

Fagara piperita. *Fagara major. Castana Luzonis.* This plant is found in Japan and the Philippine islands. Its berries are called Japan pepper, and resemble, in their virtues, the cubebs; they are aromatic, and, according to Avicenna, heating, drying, good for cold, weak stomachs, and astringent to the bowels.

Fago'pyrum. (*um, i.* n.; from *fagus*, the beech, and πυρος, wheat: because its seeds were supposed to resemble the mast, *i. e.* fruit of beech.) See *Polygonum fagopyrum.*

Fagotri'ticum. (*um, i.* n.; from *fagus*, the beech, and *triticum*, wheat.) The buckwheat. See *Fagopyrum.*

FA'GUS. (*us, i.* f; from φαγω, to eat: its nut being one of the first fruits used by man.) 1. The name of a genus of plants in the Linnæan system. Class, *Monœcia*; Order, *Polyandria.*

2. The pharmacopœial name of the beech. See *Fagus sylvatica.*

Fagus casta'nea. The systematic name of the chesnut tree; called also, *Castanea Lopima, Mola, Glans Jovis Theophrasti.* Jupiter's acorn, and Sardinian acorn. The fruit of this plant, *Fagus — foliis lanceolatis, acuminato-serratis, subtus nudis*, of Linnæus, are much esteemed as an article of luxury after dinner. Toasting renders them more easy of digestion; but, notwithstanding, they must be considered as improper for weak stomachs. They are moderately nourishing, as containing sugar, and much farinaceous substance.

Fagus sylvatica. The systematic name of the beech tree; called also, *Fagus, Oxya, Balanda*, and *Valanida.* The fruit and interior bark of this tree, *Fagus — foliis ovatis, obsolete serratis*, of Linnæus, are occasionally used medicinally, the former in obstinate head-ache, and the latter in the cure of hectic fever. The oil expressed from beech nuts is supposed to destroy worms; a child may take two drachms of it night and morning; an adult an ounce. The poor people of Silesia use this oil instead of butter.

Fainting. See *Syncope.*

FAIRBURN. The name of a village in the county of Ross, in North Britain, where there is a sulphureous spring.

Falcanos. Orpiment. — *Ruland.*

FA'LCIFORM. (*Falciformis*; from *falx*, a scythe, and *forma*, resemblance.) Resembling a scythe.

Falciform process. The falx. A process

of the dura mater, that arises from the crista galli, separates the hemispheres of the brain, and terminates in the tentorium.

FA'LCO. (*o, nis.* m.; from *falco*, to hook: so called from the hooked form of its bill.) A genus of birds, of the order *Accipitres*, including the various species of eagle, falcon, hawk, &c. Different parts of these birds had formerly medicinal virtues attributed to them. The dung and fat of the hawk in particular were esteemed in diseases of the eyes. The stone said to be found in the nest of the eagle enjoyed great reputation for its medicinal efficacy. See *Aetites.*

FALDE'LLA. A compress of lint.

Falling of the uterus. See *Prolapsus uteri.*

Falling-sickness. See *Epilepsia.*

Fallopian ligament. See *Poupart's ligament.*

Fallopian tube. See *Tuba Fallopiana.*

FALLTRANCK. *Faltranck.* (German, from *fall*, a fall; and *tranck*, drink.) This name is given in Switzerland and Germany to an infusion of certain herbs gathered among the Alps, which is believed to be of great efficacy in fortifying the body against the effects of falls and blows. These herbs, when dried, are called in France *vulneraire Swisse*, *especes vulneraire*, and *thé Swisse*. The mixture consists of alchemilla, creeping bugloss, betony, periwinkle, pilosella, golden rod, vervain, and several species of artemisia, mint, and veronica.

False aneurism. See *Aneurism.*

False angustura. See *Brucea.*

False pains. See *Parturition.*

False sight. See *Pseudoblepsis.*

False winter's bark. See *Canella alba.*

FALX. (*Falx, cis.* f. A scythe.) See *Falciform process.*

FA'MES. Hunger. See *Hunger.*

Fames canina. See *Bulimia.*

FAMES LUPINA. The same as *Fames canina.*

FAMIGERATI'SSIMUM EMPLA'STRUM. (From *famigeratus*, renowned; from *fama*, fame, and *gero*, to bear: so named from its excellence.) A plaster used in intermittent fevers, made of aromatic, irritating substances, and applied to the wrists.

FAMILY. *Familia.* A term used by different naturalists in various acceptations. It is now usually applied to a collection of a number of genera, which are nearly allied to each other by characters derived from their organisation.

FANTÔME. A phantom. The French give this name to the figures or dolls which are used by surgeons to demonstrate the application of bandages, and by obstetricians to illustrate the mechanism of labour.

FARCIMINA'LIS. (From *farcimen*, stuffing, or sausage-meat.) See *Allantoid.*

FARCTU'RA. Stuffing. An operation of the old pharmacy, which consisted in cramming medicinal substances into the body of an eviscerated animal, or the empty rind of a fruit.

FA'RFARA. (*a, æ.* f.; from *farfarus*, the white poplar: so called because its leaves resemble those of the white poplar.) See *Tussilago farfara.*

FARI'NA. (*a, æ.* f.; from *far*, corn, of which it is made.) Meal, or flour. A term given to the pulverulent and glutinous part of wheat, and other seeds, which is obtained by grinding and sifting. It is highly nutritious, and consists of gluten, starch, and mucilage. See *Triticum.*

FARINA FOSSILIS. The agaric mineral. See *Agaricus mineralis.*

FARINÆ RESOLVENTES. Resolvent flowers. This name was formerly given to a mixture of the flower of the seeds of the white lupin, tare, bean, and barley. Emoliient cataplasms were made of this meal.

FARINA'CEOUS. (*Farinaceus;* from *farina*, flour.) A term given to all articles of food which contain *farina;* those substances called *cerealia*, *legumina*, and *nuces oleosæ*. See *Farina.*

FA'RREUS. (From *far*, corn.) Scurfy. Applied to urine, when it deposits a branny sediment.

FA'SCIA. (*a, æ.* f.; from *fascis*, a bundle: because, by means of a band, materials are collected into a bundle.) 1. A bandage, fillet, or roller.

2. The tendinous expansions of muscles, which bind parts together, are termed *fasciæ.* See *Aponeurosis.*

FASCIA CRIBRIFORMIS. A small web of cellular substance, stretched from the lower edge of Poupart's ligament over the inguinal glands.

FASCIA ILI'ACA. Iliac fascia, or aponeurosis. The strong fascia which covers the inner surface of the iliac and psoas muscles. Externally it is attached to the crista of the ilium. Internally it is continued behind the external iliac vessels to the ridge of the ilium, which bounds the superior aperture of the pelvis. Below this fascia is attached to Poupart's ligament in the two outer thirds of its length.

FASCIA INFUNDIBULIFORMIS. A portion of cellular membrane of a funnel shape, which passes down on the spermatic cord, where it penetrates the fascia transversalis.

FASCIA LATA. A thick and strong tendinous expansion, sent off from the back and from the tendons of the glutei and adjacent muscles, to surround the muscles of the thigh. It is the thickest on the outside of the thigh and leg, but towards the inside of both becomes gradually thinner. A little below the trochanter major, it is firmly fixed to the linea aspera; and, further down, to that part of the head of the tibia that is next the fibula, where it sends off the tendinous expansion along the outside of the leg. It serves to strengthen the action of the muscles, by keeping them firm in their proper places when in action, particularly the tendons that pass over the joints where this membrane is thickest.

FASCIA PROPRIA. The name given by Sir A. Cooper to the proper cellular envelop of a hernial sac.

Fascia spiralis. See *Spiral bandage.*

FASCIA SUPERFICIALIS. A very thin layer of cellular membrane, which covers the abdominal muscles immediately under the skin. It adheres to the crural arch of the fascia lata, and is continued downwards upon the spermatic cord to the scrotum.

FASCIA TORTILIS. A tourniquet.

Fascia transversa'lis. The cellular membrane lining the inner surface of the *transversalis abdominis* muscle. The anatomy of this fascia is minutely described in the splendid work of Sir A. Cooper on hernia.

Fa'scial. (*Fascialis;* from *fascia*, a band.) Of or belonging to a fascia.

Fascia'tio. (From *fascia*, a band.) The binding up any diseased or wounded part with bandages.

FASCICULA'RIS. (From *fascis*, a bundle.) Fascicular: bundled. Applied to roots which are sessile at their base, and consist of bundles of finger-like processes; as the root of the *Ophris nidus avis*.

FASCICULA'TUS. Fasciculate: bundled or clustered. Applied to nerves, stems of plants, leaves, &c.

FASCI'CULUS. (From *fascis*, a bundle.) 1. In *Pharmacy*, a handful.

2. In *Botany*, a fasiculus means a number of flowers on little stalks, variously inserted and subdivided, collected into a close bundle, level at the top; as in sweet-william. It differs from,

1. A *corymb*, in the little stalks coming only from about the apex of the peduncle, and not from its whole length.

2. An *umbel*, from the stalks not coming from a common point.

3. A *cyme*, in not having its principal division umbellate.

Fascina'tio. (*o, onis;* f.) Fascination. It was believed in superstitious times that magicians had the power of inflicting various diseases and evils on individuals by a spell or a look, without coming in contact with them, or administering any thing to them: this was called *fascination*, and divers medicines, amulets, and ceremonies were put in operation against it. The notion of the *evil eye*, which is not yet entirely extinct among the ignorant, is a vestige of this superstition.

Fasciola. (*a, æ.* f; diminutive of *fascia.*) The name of a genus of entozoa in some arrangements. The *fluke worm*. See *Distoma.*

Fasciola hepatica. See *Distoma hepaticum.*

Fasciola humana. See *Distoma hepaticum.*

Fastidium cibi. Want of appetite. See *Anorexia.*

FASTIGIA'TUS. Flat-topped: applied to umbelliferous flowers and others when there are many together which rise to the same height, so as to form a flat surface at the top.

FASTING. A want of the supply of food to the stomach. When produced by want of appetite, without any other apparent affection of the stomach, this often arises from too great fatigue, or protracted fasting; from violent passions of the mind; and from habit, or other cause, enabling the system to sustain almost total abstinence for a long time. The newspapers, and even medical journals of different nations, and the transactions of learned societies, abound with examples of persons having fasted for a term of time so apparently extravagant as to exceed credibility. In most of these cases, and probably in all, if they had been critically investigated, water, tea, or some other fluid, would have been found to have been occasionally taken.

Fat. See *Adeps.*

Fatu'ity. (*Fatuitas;* from *fatuus*, silly.) Idiotism. See *Amentia.*

Fau'ces. (Plural of *faux.*) See *Faux.*

Faufel. An Arabic name of the Areca nut.

FAUX. (*Faux, cis.* f.; in the plural, *fauces.*) 1. In *Anatomy*, the gorge, or opening of the pharynx. See *Deglutition.*

2. In *Botany*, applied to the mouth, or opening of the tube of a monopetalous corol. See *Corolla.*

FAVO'SUS. (From *favus*, a honeycomb.) Favose: honeycomb-like. Applied, 1. To some cutaneous diseases; as *porrigo favosa*, which is covered with a honeycomb-like gummy secretion.

2. To parts of plants; as the receptacle of the onopordium, which has cells like a honeycomb.

FA'VUS. (*us, i.* m.; a honeycomb.) A pustule larger than the *acor*, flatter, and not acuminated. It contains a more viscid matter than the acor; its base, which is often irregular, is slightly inflamed; and it is succeeded by a yellow, semi-transparent, and sometimes cellular scab, like a honeycomb; whence its name.

Feathered. See *Plumosus.*

FE'BRES. (The plural of *febris.*) An order in the class *Pyrexiæ* of Cullen, characterised by the presence of pyrexia, without primary local affection.

FEBRI'CULA. (*a, æ.* f.; dim. of *febris*, a fever.) A slight fever.

Febri'fuga. (*a, æ.* f.; from *febrem fugare*, to drive away a fever.) The plant feverfew; lesser centaury, &c.

FE'BRIFUGE. (*Febrifugus;* from *febris*, a fever, and *fugo*, to drive away.) That which possesses the property of curing or alleviating fever. Applied chiefly to medicines used against the ague.

Febrifugum crenii. Regulus of antimony.

Febrifugum oleum. Febrifuge oil. The flowers of antimony, made with sal-ammoniac and antimony sublimed together, and exposed to the air, which causes them to deliquesce.

Febri'fugus. See *Febrifuge.*

Febrifugus pulvis. Febrifuge powder. The Germans give this name to the pulvis stypticus Helvetii. In England, a mixture of oculi cancrorum and emetic tartar, in the proportion of half a drachm and two grains, has obtained the same name; in fevers, it is given in doses of gr. iii. to iv.

Febrifugus sal. A muriate of potash.

FE'BRIS. (*is. is*, f.; from *ferveo*, to be hot.) *Pyrexia.* Fever. The name of a very extensive and important class of diseases which, although much diversified, are generally conceived to have something common in their nature. In a wide acceptation, the term *fever* has been applied to every case in which there is acceleration of the pulse, increased heat of the surface of the body, thirst, and more or less general disturbance of the functions of the whole system. Now these symptoms present themselves in connexion

both with idiopathic fever, and with those symptomatic affections which arise from local inflammation; hence fever is divided into *idiopathic* and *symptomatic*. With reference to symptomatic fever, there is no doubt of its immediate dependence on local disease or injury; with respect to what is called idiopathic fever, although many attempts have been made of late years to show that it also is merely symptomatic of inflammation in some particular organ, the general opinion of pathologists is adverse to this supposition, and, in truth, on a fair comparison of these morbid states, it seems not a little surprising that their identity should ever have been maintained. In the present article, therefore, we shall treat only of idiopathic fever, referring to the article *Inflammation* for an account of the constitutional disturbance attendant on that state; and to the article *Hectic Fever* for an account of that more protracted form of irritation which accompanies local diseases that wear out the powers of the constitution or tax them very severely for a great length of time.

Idiopathic fever is generally divided into *intermittent*, *remittent*, and *continued*. An intermittent fever is what is commonly called an *ague*, and has already been treated of under that head. A remittent fever is one in which the symptoms never entirely intermit, but undergo a marked diminution and exacerbation at periods more or less regular. The paroxysm of an ague has been considered by many practical writers as a sort of type of fever in general, and it doubtless concentrates many of the more prominent symptoms of this affection, and we therefore refer to it in order to avoid some very tedious and not very useful descriptions of the more protracted forms of fever; which will be much better understood by the diligent observation of a few cases, than by all the descriptions ever written. At the same time, we would by no means be understood to imply that all fevers are made up merely of agues variously interwoven; an extremely hypothetical notion, which, though entertained by some writers of high authority, and among others by Dr. Cullen, is in no degree countenanced by what is known of the etiology, phenomena, and treatment of febrile diseases. The subject of remittent fever is one of considerable extent, and which has been involved in much controversy; it is, moreover, rendered more intelligible by the previous consideration of intermittent and continued fever: we shall therefore treat of it separately (See *Remittent Fever*), and shall at present confine ourselves to the consideration of *continued fever*. Continued fever has been divided by nosologists into *synocha* or inflammatory fever; *typhus*, or low fever; and *synochus* or common continued fever, in which the symptoms at the commencement are allied to synocha, and towards the termination to typhus.

Synocha is a rare form of fever. It appears to be more frequent in warm than in temperate climates, and among us occurs so seldom that many have doubted its existence as an idiopathic form of fever. We see no reason to doubt the probability of its occasional occurrence independently of local inflammation, because in the hot stage of an ague in a young and plethoric patient we have every symptom of the highest inflammatory excitement of the system without any local affection to account for it.

Typhus is that form of fever which has been known under the names of *putrid fever*, *petechial fever*, *spotted fever*, *asthenic fever*, *jail fever*, *camp fever*, *low fever*, *malignant fever*, *pestilential fever*. In its more strongly marked forms, it is characterised by great debility and exhaustion of the vital powers, indicated, as the disease advances, by a very rapid and feeble pulse; low muttering delirium; subsultus tendinum; a dark fur upon the tongue and sordes on the teeth; effusions of blood under the skin causing petechiæ and vibices; sometimes passive hæmorrhage from the nose or intestines; aphthæ in the mouth and fauces; an extremely vitiated state of all the secretions, causing an offensive odour from the body of the patient; an anxious yet vacant physiognomy; an attitude expressive of entire exhaustion of the muscular power, and a cadaverous complexion of the countenance and of the whole surface of the body. Two forms of typhus have been distinguished, namely, *typhus gravior*, malignant typhus, or putrid fever of the older writers, and *typhus mitior*, mild typhus, or what is sometimes called *nervous fever*, in which the symptoms are less formidable, there is less tendency to the formation of petechiæ, and the case approximates to one of ordinary continued fever with an unusual degree of debility and nervous depression.

Synochus, or common continued fever, is the most familiar form of fever in this country. It varies greatly in its type according to the constitution of the atmosphere, the locality, and the circumstances of those among whom it is prevalent; it sometimes assumes a distinctly inflammatory form; at others it presents highly typhoid symptoms, and occasionally it is little disposed to either of these deviations, but preserves its course as common continued fever, with or without some slight inflammatory affection of the head, chest, or abdomen.

It has been matter of much dispute whether typhus is merely a modification of ordinary fever, or whether it is *sui generis*, and arises from a specific contagion. Few, however, who have seen much of the disease, will deny, that in the same epidemy we occasionally observe every shade of variety in the type of fever; that in different parts of the same district we find the character of fever greatly modified by the relative salubrity of different situations, and the degrees of cleanliness and domestic comfort among different masses of the same population; and that the type of fever is often entirely changed in the same individual by a transition from bad air, filth, and wretchedness, to a pure atmosphere, cleanliness, and comfort. It is indeed argued by some, that, although common continued fever may under certain circumstances assume very much the appearance of typhus, it is nevertheless only highly *typhoid* or resembling typhus without actually being typhus; but we submit that since we know nothing whatever of the essence of typhus, and can only infer its

existence from the presence of certain symptoms, we are warranted in concluding that a case so typhoid as not to be distinguishable by its symptoms from typhus is in effect *typhus*. On the whole then there seems much reason to believe that the different kinds of continued fever are essentially the same, and that the particular type of the fever is determined by various causes, some of which we are able to trace, while others, and those the most influential, entirely elude our observation. Another question on which there has been much diversity of opinion is the contagious nature of fever; but we need not discuss this point here, because almost all practical men are now agreed that *typhus* is essentially a contagious disease; again, it is generally admitted that it evinces no great tendency to spread in this manner unless where a number of persons are crowded together in a close atmosphere or under other insalubrious circumstances; lastly, it is well known that common continued fever under similar circumstances always assumes more or less of the typhoid character: we may hence infer with much probability that continued fever in general involves in its nature a contagious principle, which is seldom very active in sporadic cases where ventilation and cleanliness are properly attended to, but which becomes highly active under opposite circumstances.

There are several diseases which, although they present the phenomena of continued fever, are distinguished from the common forms of fever by some remarkable peculiarities, and which arise from a specific contagion that always generates the same disease: such are small-pox, scarlet fever, measles, and the plague. These will therefore be considered separately.

The proximate cause of fever has been a subject of enquiry from the earliest times. For the following survey of the principal hypotheses that have been maintained down to the commencement of the present century, we are indebted to Dr. Mason Good.

I. *That of the Greek schools founded on the doctrine of a concoction and critical evacuation of morbific matter.* It was the opinion of Hippocrates, that fever is an effort of nature to expel something hurtful from the body, either ingenerated, or introduced from without. Beholding a violent commotion in the system, followed by an evacuation from the skin and kidneys, with which the paroxysm terminated, he ascribed the commotion to a *fermentation*, *concoction*, or *ebullition*, by which the noxious matter was separated from the sound humours; and the evacuation to a despumation or scum which such separation produced, or rather to the discharge of this morbid scum from the emunctories that open externally. Galen supported this view with all the medical learning of his day; and it is the only explanation of fever to be met with in medical writings, through the long course of three thousand years; in fact, till the time of Sydenham, who still adhered to it, and whose pages are full of the language to which it naturally gave birth. It blended itself almost insensibly with the language of the chemists of the day.

And hence, the supposed despumation was contemplated as possessed, according to different circumstances, of different chemical qualities and characters; and particularly as being acid, alkaline, effervescent, or charged with some other acrimonious principle, too highly exalted, or in too great a proportion.

This doctrine, considered merely hypothetically, is not only innocent, but highly ingenious and plausible. It is in unison with several of the phænomena of febrile diseases; and derives a strong collateral support from the general history of eruptive fevers, in which we actually see a peccant matter, producing general commotion, multiplying itself as a ferment, and at length separated and thrown off at the surface by a direct depuration of the system.

So far, therefore, as relates to eruptive fevers, the opinion is sufficiently correct. But the moment it is brought forward as the proximate cause of fever, properly so called, in which there is no specific eruption, it completely fails.

For, first, no explanation is here given as to the means by which any such concoction or fermentation, or multiplication of morbific matter in any way takes place. Next, there are many fevers produced evidently by cold, fear, and other excitements, as well mental as corporeal, in which, most certainly, there is no morbific matter introduced, and wherein we have no reason to conceive there is any generated internally; while the disease, limited perhaps to a single paroxysm, closes nevertheless with an evacuation from the skin or the kidneys. And, thirdly, we sometimes behold fevers suddenly cured, as Dr. Cullen has observed, by a hæmorrhage so moderate, as, for example, a few drops of blood from the nose, as to be incapable of carrying out any considerable portion of a matter diffused over the whole mass of the blood; while we are equally incapable of conceiving how such diffused morbific matter could collect itself at a focal point, or pass off at a single outlet; or of tracing in the discharge, after the minutest examination, any properties different from those of blood in a state of full health.

II. *That of Boerhaave founded on the doctrine of a peculiar viscosity or lentor of the blood.* The acute and penetrating mind of Boerhaave, who was born in 1668, was sufficiently sensible of this danger; and the discoveries which were now taking place in chemistry and physiology, led him progressively to the construction of a new theory, which, in a few years, became so popular, as to obtain a complete triumph over that of the Greek schools.

Leeuwenhoeck, by a delicate and indefatigable application of the microscope to animals of a transparent skin, had endeavoured to establish it as a fact, that the constituent principles of the blood consist of globular corpuscles; but that these corpuscles differ in size in a regular descending series, according to the constituent principles themselves; and that each set of principles has its peculiar blood-vessels, possessing a diameter just large enough to admit the globules that belong to it, and con-

sequently incapable, without force, of allowing an entrance of those of a larger magnitude; and hence that the blood-vessels possess a descending series as well as the particles of the blood.

It was upon this supposed fact, that Boerhaave built his hypothesis. He conceived that almost all diseases may be resolved into an introduction of any given series of particles of blood into a series of vessels to which they do not properly belong; and he distinguished such introduction by the name of *error loci*. He conceived still farther, that this heterogeneous admixture is very frequently taking place; and that its chief cause consists in a disproportion of one or more sets of the sanguineous principles to the rest, by which their globular form is occasionally broken down and destroyed, and rendered either too thin and serous, or too gross and viscid. The viscidity of the blood he distinguished by the name of *lentor;* and to a prevalence of this lentor, or viscidity, he ascribed the existence of fever; maintaining that the general disturbance which constitutes fever proceeds from an *error loci* of the viscid blood, whose grosser corpuscles, from their undue momentum as well as superabundance, press forcibly into improper series of vessels, and stagnate in the extremities of the capillaries; whence the origin of the cold stage, and consequently of the stages that succeed it, to which the cold stage gives rise.

The system of Boerhaave, therefore, consisted of an elegant and artful combination of both the earlier and later doctrines of corpuscular physiology.

The most triumphant fact in favour of the Boerhaavian hypothesis is, that the crust on the blood in inflammatory fever, is often found peculiarly dense. But as fevers (and certainly the greater number) are found without any such crust; and as a similar crust, though perhaps not quite so dense, exists under other and very different states of body, as in pregnancy and scurvy, even this leading appeal has long lost its power of conviction: whilst the abruptness with which fevers make their assault from sudden occasional causes, and in constitutions of every diversity, forbid the supposition that, in such cases, a lentor or sizy crasis of the blood can have time to be produced, however it may exist occasionally, and be perhaps the source of other disorders.

III. *That of Stahl, Hoffman, and Cullen, founded on the doctrine of a spasm on the extremities of the solidum vivum or living fibre.* To this period of time, in the production of fever, and indeed of all other diseases, the human body was regarded as almost entirely passive, a mere organic machine operated upon by some *autocrateia*, as *Nature*, or a *vis medicatrix*, but in the same manner as other machines, and mostly by similar laws. Its muscles were contemplated as mechanical levers, and its vessels as hydraulic tubes, whose powers were calculated upon the common principles of mechanics and hydronamics; and were only supposed to be interfered with by the internal changes perpetually taking place in the fluids they had to convey. A new era, however, at length began to dawn upon the world; a more comprehensive spirit to pervade medical study: the animal frame was allowed to exhibit pretensions superior to the inanimate, and not only to be governed by powers of its own, but by powers which are continually and systematically, from a given point, operating to a preservation of health, where it exists, and to a restoration of health, where it has been lost or injured. Stahl, who was contemporary with Boerhaave, and in the university of Hall, in 1694, first started this loftier and more luminous idea,—more luminous, though the light was still struggling with darkness—made the mind the controlling principle, and the *solidum vivum*, or nervous system, the means by which it acted. Fever, on his hypothesis, consisted in a constrictive or *tonic spasm*, in his own language, *spasmus tonicus*, produced by a torpor or inertness of the brain, at the extremity of the nerves, and counteracted by the remedial exertions of the mind, the *vires medicatrices* of his hypothesis, labouring to throw off the assailing power; whence the general struggle and commotion by which the febrile paroxysm is characterised. Hoffman, who was a colleague of Stahl, took advantage of this new view; followed up the crude and primary ideas of Stahl with much patient and laborious investigation; and soon presented to the world a more correct system, in a more attractive style, but apparently with a disingenuous concealment of the source from which he had borrowed his first hints. He omitted the metaphysical part of the Stahlian hypothesis, took from the mind the conservative and remedial power over the different organs with which Stahl had so absurdly endowed it; seated this power as a law of life in the general organisation; separated the nervous from the muscular fibres, the latter of which were regarded as only the extremities of the former by Stahl; allowed a wider range and longer term to the constrictive spasm of fever; and changed its name from spasmus *tonicus* to spasmus *periphericus:* giving, also, to the moving power of the muscular or irritable fibres the name of *vis insita*, as that of the nervous fibre was called *vis nervea*.

It is highly to the credit of Boerhaave, that his mind, in the latter part of his life, was so fully open to the merits of this hypothesis, that he admitted the agency of the nervous power, though a doctrine that struck at the root of his own system.

Dr. Cullen, about the year 1760, boldly ventured upon a new attempt for the purpose of simplifying and facilitating the pathology of fever. As his basis he took the hypothesis of Stahl, as modified and improved by Hoffman: and on this basis erected his stately and elaborate structure, so well known to the medical world, full of ingenuity and daring genius, and which, if it be at this moment crumbling into decay, certainly is not falling prostrate before any fabric of more substantial materials, or more elegant architecture. Cullen has been accused of the same want of ingenuousness towards Hoffman, as Hoffman is chargeable with

towards Stahl; and of having introduced his system to the public with little or no acknowledgment of the sources from which he has drawn. But surely no one can bring forward such an accusation, who has read with any degree of attention the preface to his Practice of Physic, in which he gives a full account of Dr. Hoffman's system in his own words, and pays complete homage to his merits.

According to the more elaborated principles of the Cullenian system, the human body is a congeries of organs, regulated by the laws not of inanimate matter, but of life, and superintended by a mobile and conservative power or energy, seated in the brain, but distinct from the mind or soul; acting *wisely*, but *necessarily*, for the general health; correcting deviations, and supplying defects, not from a knowledge and choice of the means, but by a pre-established relation between the changes produced, and the motions required for the restoration of health; and operating, therefore, through the medium of the moving fibres, upon whose healthy or unhealthy state depends the health or unhealthiness of the general frame: which fibres he regarded with Stahl, as simple nerves, the muscular filaments being nothing more than their extremities, and by no means possessed of an independent *vis insita*.

The brain, therefore, upon this hypothesis, is the *primum mobile*, but it closely associates in its action with the heart, the stomach, and the extreme vessels. The force of the heart gives extension to the arteries, and the growth of the body depends upon such extension in conjunction with the nutritious fluid furnished by the brain, and deposited by the nerves in the interstices of their own fibres; the matter of which fibres is a solid of a peculiar kind, whose parts are united by chemical attraction. All nervous power commences in the encephalon; it "consists in a motion beginning in the brain, and propagated from thence into the moving fibres, in which a contraction is to be produced. The power by which this motion is propagated, we name," says Dr. Cullen, "the *energy* of the brain; and we therefore consider every modification of the motions produced as modifications of that energy." He further lays it down as a law of the economy, that the energy of the brain is alternately excited and collapsed, since every fibrous contraction is succeeded by a relaxation: whence spasms and convulsions are *motus abnormes*, and consist in an irregularity of such alternation. But we must distinguish, in this system, between the energy of the brain and the vital fluid it sends forth by the nerves; for while the former rises and sinks alternately, the latter remains permanently the same. It is not a secretion, but an inherent principle, never exhausted, and that never needs renewal.

This hypothesis, in its various ramifications, influenced every part of his theory of medicine, and consequently laid a foundation for his doctrine of fever. The proximate cause of fever was, in his opinion, a collapse or declination of the energy of the brain, produced by the application of certain sedative powers, as contagion, miasm, cold, and fear, which constitute the remote causes. This diminished energy extends its influence over the whole system, and occasions an universal debility; but chiefly over the extreme vessels, on which it induces a spasm; and in this spasm the cold fit is supposed to consist.

"Such, however," to adopt the words of Cullen himself, "is the nature of the animal economy, that this debility proves an indirect stimulus to the sanguiferous system; whence by the intervention of the cold stage, and spasms connected with it, the action of the heart and larger arteries is increased, and continues so till it has had the effect of restoring the energy of the brain, of extending this energy to the extreme vessels, of restoring, therefore, their action, and thereby especially overcoming the spasm affecting them; upon the removing of which, the excretion of sweat, and other marks of the relaxation of the excretories, take place."

This relaxed or perspiratory section of the paroxysm, however, is not regarded by Cullen as a part of the disease, but as the prelude to returning health. Yet the fit still consists of three stages: the first of debility or diminished energy; the second, of spasm; and the third, of heat. And though Cullen had some doubts whether the remote causes of fever might not produce the spasm as well as the atony of the nervous system, yet he inclined to ascribe the second stage to the operation of the first, as he did most decidedly the third to that of the second: and thus to regard the whole as a regular series of actions, employed by the *vis medicatrix naturæ* for the recovery of health.

That fever, in its commencement or earliest stage, is characterised by debility of the living fibre, or, more closely in the words of Cullen, by diminished energy of the brain, extending directly or indirectly to the voluntary muscles and capillaries, cannot for a moment be doubted by any one who accurately watches its phenomena. And thus far the Cullenian hypothesis is unquestionably correct; as it appears to be, also, in supposing the cold stage to be the foundation of the hot, and of the excretion of sweat by which the hot stage is succeeded. But it fails in the two following important points, without noticing a few others of smaller consequence. The spasm of the minute vessels produced by debility takes the lead in the general assault; and, though it forms only a link in the remedial process, is the most formidable enemy to be subdued: and hence all that follows in the paroxysm is an effort of the system to overcome this spasm. The effort at length proves successful: the debility yields to returning strength; the spasm is conquered, and the war should seem to be over. But this is not the fact: the war continues notwithstanding; there is nothing more than a hollow truce; debility and spasm take the field again, and other battles remain to be fought. There is nothing in this hypothesis to account for a return of debility and spasm, after they have been subdued; nor to show why spasm should ever, in the first instance, be a result of debility.

The next striking defect is, that debility is here made a cause of strength; the weakened action of the first stage giving rise to the increased action and re-excited energy that restore the system to a balance of health: and here, again, we stand in need of the interposition of some present divinity to accomplish such an effort by such means.

IV. *That of Brown and Darwin founded on the doctrine of accumulated and exhausted excitability or sensorial power.* It is not, therefore, to be wondered at that this system, with all its ingenuity and masterly combination, should not have proved satisfactory to every one. In reality, it did not for many years prove satisfactory to every one in the celebrated school in which it was first propounded. And hence, under the plastic hands of Brown, arose another hypothesis, of which we shall proceed to give a very brief outline, together with the modification it received under the finishing strokes of Darwin.

It had great simplicity of principle, and some plausibility of feature; it attracted the curious by its novelty, the indolent by its facility, and every one by the boldness of its speculations. It circulated widely, and soon acquired popularity abroad, as well as at home.

Man, according to Dr. Brown, is an organised machine, endowed with a principle of excitability, or predisposition to excitement, by means of a great variety of stimuli, both external and internal, some of which are perpetually acting upon the machine; and hence the excitement which constitutes the life of the machine is maintained. Excitability, therefore, is the nervous energy of Cullen, and, like that, is constantly varying in its accumulation and exhaustion; yet not, like the nervous energy of Cullen, under the direction and guidance of a *vis conservatrix et medicatrix naturæ*, distinct from the matter of the organisation itself, but passively exposed to the effect of such stimuli as it may chance to meet with, and necessarily yielding to their influence.

Upon this hypothesis, excitement is the vital flame, excitability the portion of fuel allotted to every man at his birth, and which, varying in every individual, is to serve him without any addition for the whole of his existence: while the stimuli by which we are surrounded, are the different kinds of blasts by which the flame is kept up. If the fuel or excitability be made the most of, by a due temperature or mean rate of blasts or stimuli, the flame or excitement may be maintained for sixty or seventy years. But its power of supporting a protracted flame may be weakened by having the blast either too high or too low. If too high, the fuel or excitability will, from the violence of the flame, be destroyed rapidly, and its power of prolonging the flame be weakened directly: and, to this state of the machine, Brown gave the name of indirect debility, or exhausted excitability. If the blasts or stimuli be below the mean rate, the fuel, indeed, will be but little expended, but it will become drier and more inflammable, and its power of prolonging the flame will be still more curtailed than in the former case; for half the blast that would be required to excite rapid destruction antecedently, will be sufficient to excite the same effect now. This state of the machine, therefore, the author of the hypothesis contradistinguished by the name of direct debility, or accumulated excitability.

Upon these principles he founded the character and mode of treatment of all diseases. They consist but of two families, to which he gave the name of sthenic and asthenic: the former produced by accumulated excitability, and marked by direct debility; the latter occasioned by exhausted excitability, and marked by indirect debility.

Fevers, therefore, under this hypothesis, like other diseases, are either sthenic or asthenic: they result from accumulated or exhausted excitability. Inflammatory fever belongs to the first division, and typhus to the second.

The Brunonian hypothesis offers one principle that is unquestionably founded on fact, and is peculiarly worthy of attention: that of accumulated excitability from an absence or defect of stimuli; in colloquial language, an increase of energy by rest. And it is this principle which forms the hinge on which turns the more finished system of Darwin.

Sensible of the objection that weighs equally against that part of the system of Cullen and Brown, which represents the energy or excitability of the living frame as capable of recruiting itself after collapse or exhaustion, without a recruiting material to feed on, he directly allows the existence of such a material; regards it as a peculiar secretion, and the brain as the organ that elaborates and pours it forth. The brain, therefore, in the system of Darwin, is the common fountain from which every other organ is supplied with sensorial fluid, and is itself supplied from the blood, as the blood is from the food of the stomach.

All this is intelligible; but when, beyond this, he endows his sensorial fluid with a mental as well as a corporeal faculty, makes it the vehicle of ideas as well as of sensation, and tells us that ideas are the actual "contractions, or motions, or configurations of the fibres which constitute the immediate organ of sense," he wanders very unnecessarily from his subject, and clogs it with all the errors of materialism.

He supposes the sensorial power thus secreted, to be capable of exhaustion in four different ways, or through four different faculties of which it is possessed: the faculty of *irritability*, exhausted by external stimuli, affecting simple irritable fibres: that of *sensibility*, exhausted by stimuli affecting the fibres of the organs of sense: that of *voluntarity*, exhausted by stimuli affecting the fibres of the voluntary organs acting in obedience to the command of the will: and that of *associability*, exhausted by stimuli affecting organs associated in their actions by sympathy or long habit. By all or any of these means, the sensorial power becomes evacuated, as by food and rest it becomes replenished, often, indeed, with an accumulation or surplus stock of power.

In applying this doctrine to fever, he con-

siders its occasional causes, whatever they may be, as inducing a quiescence or torpor of the extreme arteries, and the subsequent heat as an inordinate exertion of the sensorial power hereby accumulated to excess; and, consequently, the fever of Darwin commences a stage lower than that of Cullen, or in the cold fit, instead of in a collapse of the nervous energy lodged in the brain.

Now, allowing this explanation to account for the cold and hot stages of a single paroxysm of fever, like the spasm of Cullen, it will apply no farther. For when the sensorium has exhausted itself of its accumulated irritability, the disease should cease. It may, perhaps, be said, that a second torpor will be produced by this very exhaustion, and a second paroxysm must necessarily ensue. Admitting this, however, for a moment, it must be obvious that the first or torpid stage only can ensue; for the system being now quite exhausted, the quiescence that takes place during the torpor can only be supposed to recruit the common supply necessary for health: we have no reason to conceive, nor is any held out to us, that this quantity can again rise to a surplus. Yet it must be farther remarked, that in continued fevers we have often no return of torpor or quietude whatever, and, consequently, no means of reaccumulating irritability; but one continued train of preternatural action and exhaustion, till the system is completely worn out. And to this objection the Darwinian hypothesis seems to be altogether without a reply. — *Good's Study of Medicine*, vol. ii. p. 44. *et seq.*

All these doctrines once so laboriously sustained and so fiercely assailed, have now become obsolete, and have given place to others which appear not to be at all more consonant with just reasoning, and which are much more obviously opposed to the evidence of our senses. Of late years there has been a great tendency to localise fever, and to regard it as the result of inflammation of some particular organ. Dr. Clutterbuck has written to prove that all fever consists in inflammation of the brain. M. Broussais is equally certain that fever commences in inflammation of the mucous membrane of the stomach and intestines. Professor Marcus also believes that fever consists essentially in inflammation, but regards inflammation of the brain as the cause of typhus only, while he ascribes hectic fever to inflammation of the lungs, puerperal fever to that of the peritonæum, and catarrhal fever to that of the mucous membrane of the trachea. Lastly, M. Bretonneau has promulgated the opinion that continued fever arises from an inflammatory enlargement of the conglomerate mucous glands of the lower portion of the ileum, and solitary mucous glands of the cœcum — a lesion which he has minutely described under the name of *Dothen-enteritis*. MM. Petit and Serres had previously described a continued fever prevalent in Paris in 1811, and the two following years, the symptoms of which they ascribed to a certain morbid state of the mucous membrane of the lower portion of the small intestines, and of the cœcal valve, accompanied with enlargement and suppuration of the mesenteric glands; but M. Bretonneau first described the anatomical lesion of Peyer's and Brunner's glands. His opinion has been espoused and supported in a very elaborate work by the distinguished Louis, and is now very extensively adopted by the French pathologists.

It is fortunate, perhaps, for the cause of truth, that these conflicting hypotheses have all arisen within a few years, and consequently that they tend to neutralise one another. If it be asserted by one set of observers, that fever depends exclusively on inflammation of the brain, by another, that it depends exclusively on general inflammation of the gastro-enteric mucous membrane, and by a third, that it depends exclusively on an inflammatory enlargement of the mucous glands of the intestines, it is quite clear that they cannot all be right, and we are naturally led to inquire whether there has not been something defective in the principle on which these observations have been conducted? Now, if we cast a glance backwards over the past history of fever as recorded by the most diligent observers in different ages and in different countries, we shall find that an infinite variety of morbid states have presented themselves as accompaniments of continued fever, and formed peculiar features of certain epidemies; — every form of visceral inflammation, membranous, and parenchymatous, cynanche, catarrh, erysipelas, and a host of other affections. We shall further find, that particular complications occur in the ordinary fever of a city or country for a series of years and then give place to other complications. Thus the putrid fever, as it was called, which formerly prevailed in this country, appears to have combined the worst symptoms of scurvy with those of fever, and presented indications of a dissolved and putrescent state of the fluids from which it obtained its popular name, and in which it was thought by many to consist. Such a case is now scarcely, if ever, to be met with in England: yet nobody doubts that this putrid fever was essentially the same malady as the typhus of the present day. This kind of fever was prevalent in London in Sydenham's time; whereas, even the common form of petechial fever is now rare in this metropolis, and the prevailing type of fever is synochous rather than typhous. Again, if we compare the continued fever of London with that of Paris in the present day, we shall find that lesions of the brain are more common in the former city, and those of the intestinal canal in the latter; hence the premature conclusion of Dr. Clutterbuck that fever is inflammation of the brain, and of M. Broussais that it is gastro-enteritis: had these two pathologists changed places, they would probably have also changed doctrines. Finally, it would appear from the testimony of Louis, Andral, Cruveilhier, and other highly distinguished observers, that enlargement of the mucous follicles of the intestines is at present almost an universal appearance on dissection of those who have died of fever in France: not so in England; we sometimes observe this lesion, but in a great majority of cases it is absent, and hence the doctrine of the necessary dependence of fever

on *dothenenteritis*, however high the authority by which it is supported, gains few converts among us. The rationale of what has just been advanced is simply this: recent pathologists appear to have erred, not for want of accuracy of observation in the cases that have come before them, but from generalising too hastily, and mistaking the transient peculiarities of certain epidemies for the permanent and essential characteristics of continued fever. Dr. Tweedie, in his very judicious and practical illustrations of fever, gives the following valuable statement of the results of the dissection of 521 cases of fever, selected from the records of the London Fever Hospital:

Cases in which the fever was not apparently complicated with local inflammation in any organ	163
Cases complicated with cerebral affection	114
thoracic affection	103
abdominal affection	71
cerebral and thoracic affection	26
cerebral and abdominal affection	30
cerebral, thoracic, and abdominal affection	14

We must conclude then, that the proximate cause of fever remains to be discovered, and we may sum up our knowledge of the subject in the often quoted words of Fordyce, one of the most accurate and philosophical of medical reasoners. "A fever," says this author, "is a disease that affects the whole system; it affects the head, the trunk of the body, and the extremities; it affects the circulation, the absorption, and the nervous system; it affects the skin, the muscular fibres, and the membranes; it affects the body, and affects likewise the mind. It is, therefore, a disease of the whole system in every kind of sense. It does not, however, affect the various parts of the system uniformly and equally; but, on the contrary, sometimes one part is much affected in proportion to the affection of another part."

For the treatment of continued fever, as well as for some further description of its varieties, the reader is referred to the articles *Synochus* and *Typhus*.

Febris alba. See *Chlorosis.*

Febris algida. See *Algida febris.*

Febris amphimerina. A quotidian ague. See *Ague.*

Febris anginosa. See *Scarlet fever.*

Febris aphthosa. See *Aphtha.*

Febris ardens. See *Causus* and *Remittent fever.*

Febris asodes. See *Asodes.*

Febris bullosa. See *Pemphigus.*

Febris carcerum. Jail fever.

Febris castrensis. Camp fever.

Febris catarrhalis. A fever, attended with symptoms of catarrh. See *Fever* and *Catarrh.*

Febris chole'rica. Bilious fever.

Febris continua. Continued fever. See *Febris.*

Febris elodes. See *Elodes.*

Febris epiala. See *Epialus.*

Febris erysipelatosa. See *Erysipelas.*

Febris exanthema'tica. A fever with an eruption. See *Exanthema.*

Febris flava. The yellow fever. See *Remittent fever.*

Febris ga'strica. Gastric fever. Fever in which the digestive organs are chiefly affected.

Febris hectica. See *Hectic fever.*

Febris hydro'des. A fever with profuse sweats.

Febris inflammatoria. Inflammatory fever. See *Fever* and *Inflammation.*

Febris intermittens. An intermittent fever. See *Ague.*

Febris lactea. Milk fever. A febrile state sometimes induced when the milk begins to be secreted after parturition, and which is mostly of the synochous type.

Febris lenta. Slow fever. See *Typhus.*

Febris lenticularis. A fever, attended by an eruption like small lentils.

Febris maligna. See *Typhus.*

Febris miliaris. See *Miliaria.*

Febris morbillosa. See *Rubeola.*

Febris mucosa. *Febris pituitosa.* Mucous fever. *Fievre muqueuse* of the French. A form of continued fever described by the continental writers. It chiefly attacks those of the lymphatic temperament, and is characterised by irritation of the gastro-enteric mucous membrane, with redundant mucous secretion from this, and sometimes from the other mucous membranes.

Febris nervosa. See *Typhus.*

Febris nosocomiorum. The fever of hospitals; generally of the typhoid kind.

Febris palustris. Marsh fever. See *Ague* and *Remittent fever.*

Febris pestilens. See *Pestis.*

Febris petechialis. See *Typhus.*

Febris pituitaria. See *Febris mucosa.*

Febris putrida. See *Typhus.*

Febris quercera. See *Quercera.*

Febris remittens. See *Remittent fever.*

Febris scarlatina. See *Scarlatina.*

Febris synocha. See *Synocha.*

Febris typho'des. Typhoid fever. See *Fever.*

Febris unga'rica. *Lues Pannoniæ.* A form of camp fever formerly prevalent in Hungary.

Febris urticaria. See *Urticaria.*

Febris variolosa. See *Variola.*

Febris vesiculosa. See *Erysipelas.*

Fecula. See *Fæcula.*

Fecundation. See *Generation.*

Feet, distortion of the. Children are often born with the feet distorted inwards or outwards. A child with its feet turned inwards is called *varus*; when they are turned outwards it is styled *valgus*. The proper use of bandages early applied will generally correct these deformities; but if they be neglected in infancy they become incurable.

Feigned diseases. Under this head are generally included the diseases simulated by impostors to answer their own ends, and also diseases which, though real, have been voluntarily induced or aggravated. Such deceptions are practised chiefly by vagrants to excite compassion and extort money, or by soldiers or sailors

to escape duty. In the case of soldiers, this has got the name of *malingering*. It is highly necessary for the practitioner to be aware of the various devices by which diseases are simulated. Much useful information on this subject is to be found in the different works on legal medicine, especially those of Mahon and Foderé. Dr. Hennen's Military Surgery may also be consulted with great advantage.

Fel. See *Bile*.

Fel naturæ. Aloes have been so called on account of their bitterness.

Fel-wort. (So called from its bitter taste, like bile.) See *Gentiana lutea*.

Felli'culus. The gall-bladder.

Felliflua passio. See *Cholera*.

Felon. See *Paronychia*.

Femen. See *Femur*.

FEMI'NEUS. Female. A flower is termed female, which is furnished with pistils and not with the stamens.

FE'MORAL. (*Femoralis*; from *femur*, the high.) Of or belonging to the thigh.

Femoral artery. Arteria femoralis. Crural artery. A continuation of the external iliac along the thigh, from Poupart's ligament to the ham. For about two inches of its course below Poupart's ligament it is called the *inguinal* or *common femoral artery*. This gives off the external pudic arteries, and divides into the *proper femoral* and the *profunda*. The proper femoral artery passes down the thigh, covered by the fascia, between the vastus internus and second head of the triceps; about the middle of the inside of the thigh, it is situated behind the sartorius muscle; it afterwards perforates the triceps muscle and passes into the ham, where it is called popliteal: it finally divides into the anterior and posterior tibial. The branches of the proper femoral artery are the *external* and *internal circumflex*, which, however, arise in many subjects from the profunda; and the *ramus anastomoticus magnus*.

FE'MORIS OS. The thigh-bone. A long cylindrical bone, situated between the pelvis and tibia. Its upper extremity presents three considerable processes; these are, the head, the trochanter major, and trochanter minor. The head, which forms about two-thirds of a sphere, is turned inwards, and is received into the acetabulum of the os innominatum, with which it is articulated by enarthrosis. It is covered by a cartilage, which is thick in its middle part, and thin at its edges, but which is wanting in its lower internal part, where a round spongy fossa is observable, to which the strong ligament, usually, though improperly called the *round* one, is attached. This ligament is about an inch in length, flattish, and of a triangular shape, having its narrow extremity attached to the fossa just described, while its broader end is fixed obliquely to the rough surface near the inner and anterior edge of the acetabulum of the os innominatum, so that it appears shorter internally and anteriorly, than it does externally and posteriorly.

The head of the os femoris is supported obliquely, with respect to the rest of the bone, by a smaller part, called the *cervix*, or *neck*, which, in the generality of subjects, is about an inch in length. At its basis we observe two oblique ridges, which extend from the trochanter major to the trochanter minor. Of these ridges, the posterior one is the most prominent. Around this neck is attached the capsular ligament of the joint, which likewise adheres to the edge of the cotyloid cavity, and is strengthened anteriorly by many strong ligamentous fibres, which begin from the lower and anterior part of the ilium, and spreading broader as they descend, adhere to the capsular ligament, and are attached to the anterior oblique ridge at the bottom of the neck of the femur. Posteriorly and externally, from the basis of the neck of the bone, a large unequal protuberance stands out, which is the *trochanter major*. The upper edge of this process is sharp and pointed posteriorly, but is more obtuse anteriorly. A part of it is rough and unequal, for the insertion of the muscles; the rest is smooth, and covered with a thin cartilaginous crust, between which and the tendon of the glutæus maximus that slides over it, a large bursa mucosa is interposed. Anteriorly, at the root of this process, and immediately below the bottom of the neck, is a small process called *trochanter minor*. Its basis is nearly triangular, having its two upper angles turned towards the head of the femur, and the great trochanter, while its lower angle is placed towards the body of the bone. Its summit is rough and rounded. These two processes have the name of *trochanters*, from the muscles that are inserted into them, being the principal instruments of the rotatory motion of the thigh. Immediately below these two processes the body of the bone may be said to begin. It is smooth and convex before, but is made hollow behind by the action of the muscles. In the middle of this posterior concave surface is observed a rough ridge, called *linea aspera*, which seems to originate from the trochanters, and extending downwards, divides at length into two branches, which terminate in the tuberosities near the condyles. At the upper part of it, blood-vessels pass to the internal substance of the bone, by a hole that runs obliquely upwards.

The lower extremity of the os femoris is larger than the upper one, and somewhat flattened, so as to form two surfaces, of which the anterior one is broad and convex, and the posterior one narrower and slightly concave. This end of the bone terminates in two large protuberances, called *condyles*, which are united before so as to form a pulley, but are separated behind by a considerable cavity, in which the crural vessels and nerves are placed, secure from the compression to which they would otherwise be exposed in the action of bending the leg. Of these two condyles, the external one is the largest; and when the bone is separated from the rest of the skeleton, and placed perpendicularly, the internal condyle projects less forwards, and descends nearly three tenths of an inch lower than the external one; but in its natural situation, the bone is placed obliquely, so that both condyles are then nearly on a level with each other. At the side of each condyle, externally, there is a tuberosity, the situation of

which is similar to that of the condyles of the os humeri. The two branches of the linea aspera terminate in these tuberosities, which are rough, and serve for attachment of ligaments and muscles.

Femorocele. See *Hernia cruralis.*

FE'MUR. (*Femur, oris.* n.) The thigh. According to the Latin Grammarians *femur* means the anterior part of the thigh, while the inner part is called *femen.* The thigh consists of one bone, the os femoris; of several muscles, — the psoas magnus, iliacus internus, gluteus maximus, medius, and minimus, the pectineus, triceps, obturator externus and internus, pyriformis, gemini, quadratus, tensor vaginæ femoris, sartorius, gracilis, rectus, crureus, vasti, semimembranosus, semitendinosus, and biceps. These muscles are bound by a strong fascia and surrounded by the common integuments. The ligaments of the thigh are those of its articulation with the os innominatum; viz. — the ligamentum teres and capsulare. The artery is the femoral, a continuation of the external iliac. Its veins and absorbents are numerous, and run parallel with the artery. The nerves are formed by the lumbar and sacral, and are the ischiadic, the obturator, and the crural. The glands are the inguinal and synovial.

FENE'STRA. (*a, æ.* f.; a window.) A name given by anatomists to two foramina in the ear.

Fenestra ovalis. An oblong or elliptical foramen, between the cavity of the tympanum and the vestibulum of the ear. It is shut by the stapes. See *Auris.*

Fenestra rotunda. A round foramen leading from the tympanum to the cochlea of the ear. It is covered by a membrane in the fresh subject. See *Auris.*

Fennel. See *Anethum foeniculum.*

Fennel, hog's. See *Peucedanum.*

Fenugreek. See *Trigonella.*

FERMENTA'TION. (*Fermentatio, onis.* f.; from *fermento,* to ferment.) When aqueous combinations of vegetable or animal substances are exposed to ordinary atmospherical temperatures, they speedily undergo spontaneous changes, to which the generic term of fermentation has been given. There are several circumstances required in order that fermentation may proceed: such are, 1. A certain degree of fluidity; thus, dry substances do not ferment at all. 2. A certain degree of heat. 3. The contact of air. Chemists, after Boerhaave, have distinguished three kinds of fermentation: —

1. The *vinous* or *spirituous,* which affords ardent spirit.

2. The *acetous,* which affords vinegar, or acetic acid.

3. The *putrid* fermentation, or putrefaction, which produces volatile alkali.

I. The conditions necessary for vinous fermentation are: 1. A saccharine mucilage. 2. A degree of fluidity slightly viscid. 3. A degree of heat between 55 and 65 of Fahrenheit. 4. A large mass, in which a rapid commotion may be excited. When these four conditions are united, the vinous fermentation takes place, and is known by the following characteristic phænomena: 1. An intestine motion takes place. 2. The bulk of the mixture then becomes augmented. 3. The transparency of the fluid is diminished by opake filaments. 4. Heat is generated. 5. The solid parts mixed with the liquor rise and float, in consequence of the disengagement of elastic fluid. 6. A large quantity of carbonic acid gas is disengaged in bubbles. All these phenomena gradually cease in proportion as the liquor loses its sweet and mild taste, and it becomes brisk, penetrating, and capable of producing intoxication. In this manner, wine, beer, cider, &c. are made. All bodies which have undergone the spirituous fermentation are capable of passing on to the acid fermentation: but, although it is probable that the acid fermentation never takes place, before the body has gone through the spirituous fermentation, yet the duration of the first is frequently so short and imperceptible, that it cannot be ascertained. Besides the bodies which are proper for spirituous fermentation, this class includes all sorts of fæcula boiled in water.

II. The conditions required for the acid fermentation, are: 1. A heat from 70 to 85 degrees of Fahrenheit. 2. A certain degree of liquidity. 3. The presence of atmospheric air. 4. A moderate quantity of fermentable matter. The phenomena which accompany this fermentation, are an intestine motion, and a considerable absorption of air. The transparent liquor becomes turbid, but regains its limpidity when fermentation is over. The fermented liquor now consists, in a great measure, of a peculiar acid, called the acetic acid, or vinegar. Not a vestige of spirit remains, it being entirely decomposed; but the greater the quantity of spirit in the liquor, previous to the fermentation, the greater will be the quantity of true vinegar obtained. As the ultimate constituents of vegetable matter are oxygen, hydrogen, and carbon; and of animal matter, the same three principles with azote, we can readily understand that all the products of fermentation must be merely new compounds of these three or four ultimate constituents. Accordingly, 100 parts of real vinegar, or acetic acid, are resolvable, by Gay Lussac and Thénard's analysis, into 50·224 carbon + 46·911 hydrogen and oxygen, as they exist in water, + 2·863 oxygen in excess. In like manner, wines are all resolvable into the same ultimate components, in proportions somewhat different. The aëriform results of putrefactive fermentation are in like manner found to be hydrogen, carbon, oxygen, and azote variously combined, and associated with minute quantities of sulphur and phosphorus. The residuary matter consists of the same principles mixed with the saline and earthy parts of animal bodies.

Lavoisier was the first philosopher who instituted, on right principles, a series of experiments to investigate the phænomena of fermentation; and they were so judiciously contrived, and so accurately conducted, as to give results comparable to those derived from the more rigid methods of the present day. Since then, Thénard and Gay Lussac have each contributed most important researches. By the labours of

these three illustrious chemists, those material metamorphoses, formerly quite mysterious, seem susceptible of a satisfactory explanation.

As sugar is a substance of uniform and determinate composition, it has been made choice of for determining the changes which arise when its solution is fermented into wine or alkohol. Lavoisier justly regarded it as a true vegetable oxide, and stated its constituents to be, 8 hydrogen, 28 carbon, and 64 oxygen, in 100 parts. By two different analyses of Berzelius, we have,—

Hydrogen,	6·802	6·891
Carbon,	44·115	42·704
Oxygen,	49·083	50·405
	100·000	100·000

Gay Lussac and Thénard's analyses give,

Hydrogen,	6·90	57·53 water,
Oxygen,	50·63	
Carbon,	42·47	42·47
	100·00	100·00

It has been said that sugar requires to be dissolved in at least 4 parts of water, and to be mixed with some yeast, to cause its fermentation to commence. But this is a mistake. Syrup stronger than the above will ferment, in warm weather, without addition. If the temperature be low, the syrup weak, and no yeast added, acetous fermentation alone will take place. To determine the vinous, therefore, we must mix certain proportions of saccharine matter, water, and yeast, and place them in a proper temperature.

To observe the chemical changes which occur, we must dissolve 4 or 5 parts of pure sugar in 20 parts of water, put the solution into a matrass, and add 1 part of yeast. Into the mouth of the matrass a glass tube must be luted, which is recurved, so as to dip into the mercury of a pneumatic trough. If the apparatus be now placed in a temperature of from 70° to 80°, we shall speedily observe the syrup to become muddy, and a multitude of air bubbles to form all around the ferment. These unite, and attaching themselves to particles of the yeast, rise along with it to the surface, forming a stratum of froth. The yeasty matter will then disengage itself from the air, fall to the bottom of the vessel, to re-acquire buoyancy a second time by attached air bubbles, and thus in succession. If we operate on 3 or 4 ounces of sugar, the fermentation will be very rapid during the first ten or twelve hours; it will then slacken, and terminate in the course of a few days. At this period, the matter being deposited which disturbed the transparency of the liquor, this will become clear.

The following changes have now taken place: —1. The sugar is wholly, and the yeast partially, decomposed. 2. A quantity of alkohol and carbonic acid, together nearly in weight to the sugar, is produced. 3. A white matter is formed, composed of hydrogen, oxygen, and carbon, equivalent to about half the weight of the decomposed ferment. The carbonic acid passes over into the pneumatic apparatus; the alkahol may be separated from the vinous liquid by distillation, and the white matter falls down to the bottom of the matrass with the remainder of the yeast.

The quantity of yeast decomposed is very small. 100 parts of sugar require, for complete decomposition, only two and a half of that substance, supposed to be in a dry state. It is hence very probable, that the ferment, which has a strong affinity for oxygen, takes a little of it from the saccharine particles, by a part of its hydrogen and carbon, and thus the equilibrium being broken between the constituent principles of the sugar, these so react on each other as to be transformed into alkohol and carbonic acid. If we consider the composition of alkohol, we shall find no difficulty in tracing the steps of this transformation.

Neglecting the minute products which the yeast furnishes in the act of fermentation, let us regard only the alkohol and carbonic acid. We shall then see, on comparing the composition of sugar to that of alkohol, that to transform sugar into alkohol, we must withdraw from it one volume of vapour of carbon, and one volume of oxygen, which form by their union one volume of carbonic acid gas. Finally, let us reduce the volumes into weights, we shall find, that 100 parts of sugar ought to be converted, during fermentation, into 51·55 of alkohol, and 48·45 of carbonic acid.

When it is required to preserve fermented liquors in the state produced by the first stage of fermentation, it is usual to put them into casks before the vinous process is completely ended; and in these closed vessels a change very slowly continues to be made for many months, and perhaps for some years.

But if the fermentative process be suffered to proceed in open vessels, more especially if the temperature be raised to 90°, the acetous fermentation comes on. In this, the oxygen of the atmosphere is absorbed; and the more speedily in proportion as the surfaces of the liquor are often changed by lading it from one vessel to another. The usual method consists in exposing the fermented liquor to the air in open casks, the bunghole of which is covered with a tile to prevent the entrance of the rain. By the absorption of oxygen which takes place, the inflammable spirit becomes converted into an acid. If the liquid be then exposed to distillation, pure vinegar comes over instead of ardent spirit.

III. When the spontaneous decomposition is suffered to proceed beyond the acetous process, the vinegar becomes viscid and foul; air is emitted with an offensive smell; volatile alkali flies off; an earthy sediment is deposited; and the remaining liquid, if any, is mere water. This is the putrefactive process. See also *Putrefaction*.

FERME'NTUM. (*um*, *i.* n.; *quasi fervimentum*, from *fervco*, to ferment.) Yeast.

Fermentum cerevisiæ. Yeast; barm: the scum which collects on beer while fermenting, and has the property of exciting that process in various other substances. Medicinally it is antiseptic and tonic; and has been found useful internally in the cure of typhus fever attended with an obvious tendency to putrefaction in the

system, with petechiæ, vibices, and the like: the best way to administer it, is to mix a fluid ounce with seven of strong beer, and give three table-spoonsful to an adult every three or four hours. Externally, it is used in the fermenting cataplasm.

Fern. See *Filix*, *Pteris*, *Aspidium*, and *Polypodium*.

Fern, male. See *Aspidium filix mas.*

Fern, female. See *Pteris aquilina.*

Fern, mules. See *Asplenium hemonitis.*

Ferri alkalini liquor. Solution of alkaline iron. Take of iron, two drachms and a half; nitric acid, two fluid ounces; distilled water, six fluid ounces; solution of subcarbonate of potash, six fluid ounces. Having mixed the acid and water, pour them upon the iron, and when the effervescence has ceased, pour off the clear acid solution; add this gradually, and at intervals, to the solution of subcarbonate of potash, occasionally shaking it, until it has assumed a deep brown-red colour, and no further effervescence takes place. Lastly, set it by for six hours, and pour off the clear solution. This preparation was first described by Stahl, and called tinctura martis alkalina. It is expunged from the last London Pharmacopœia. The dose is from half a drachm to a drachm.

Ferri ammo'nio-chlo'ridum. Ammoniochloride of iron; formerly known by the names of *flores martiales; flores salis ammoniaci martiales; ens martis; ens veneris Boylei; sal martis muriaticum sublimatum; ferrum ammoniacle*, and *ferrum ammoniatum*. Take of sesquioxide of iron, three ounces; hydrochloric acid, half a pint; hydrochlorate of ammonia, two pounds and a half; distilled water, three pints. Pour the acid on the sesquioxide, and digest in a sand-bath for two hours: afterwards add the hydrochlorate of ammonia, dissolved in distilled water; strain and evaporate all the fluid; lastly, reduce the residuum to powder. This preparation is a mixture of sesquichloride of iron and hydrochlorate of ammonia. It is tonic and astringent, in doses from three to fifteen grains, or more, in the form of bolus or pills, prepared with some gum. It is exhibited in most cases of debility, in chlorosis, asthenia, menorrhagia, intermittent fevers, &c. This, or some other strong preparation of iron, as the Tinct. ferri muriatis, Mr. Cline recommended in scirrhous affections of the breast. See *Tinctura ferri, ammonio-chloridi.*

Ferri carbo'nas. See *Ferri sesquioxydum.*

Ferri iodidum. Iodide of iron. Take of iodine, six ounces; iron filings, two ounces; distilled water, four pints and a half. Mix the iodine with four pints of the water, and to these add the iron. Heat them in a sand-bath, and pour off the liquor when it has acquired a greenish colour. Wash what remains with the half pint of water, boiling. Let the mixed and strained liquors evaporate at a heat not exceeding 212° in an iron vessel, that the salt may be dried. Keep it in a well-stopped vessel, the access of light being prevented.

The solution obtained is one of iodide or protiodide of iron; it is of a green colour, and by evaporation with as little contact of air as possible, green tabular crystals may be formed. By evaporation to dryness, and heating moderately, this salt is fused, and on cooling becomes an opaque crystalline mass of an iron-grey colour and metallic lustre. When exposed to the air it attracts moisture, and is very soluble both in water and in alkohol: in order to prevent the deposition of sesquioxide of iron by the absorption of oxygen, the solution should be kept with an iron wire in it.

Composition. — Iodide or protiodide of iron is composed of

One equivalent of iodine.....	126 or	63·3
One equivalent of iron.....	28	14·
Five equivalents of water....	45	22·7
Equivalent.....	199	100·

— *Phillips.*

This medicine has been lately introduced into British practice by Dr. A. T. Thomson, who recommends it in every form of scrofula, in chlorosis, atonic amenorrhœa, hysteria, secondary syphilis, incipient cancer, and other cases. The dose is from three to eight grains, or more.

Ferri limatura purificata. Purified iron filings. These possess tonic, astringent, and deobstruent virtues, and are calculated to relieve chlorosis, and other diseases in which steel is indicated, where acidity in the primæ viæ abounds.

Ferri potassio tartras. Potassio-tartrate of iron. Formerly called *tartarus chalybeatus; mars solubilis; ferrum potabile;* and *ferrum tartarizatum*. Take of sesquioxide of iron, three ounces; hydrochloric acid, half a pint; solution of potash, four pints and a half, or as much as may be sufficient; bitartrate of potash, eleven ounces and a half; solution of sesquicarbonate of ammonia, a pint, or as much as may be sufficient; distilled water, three gallons. Mix the sesquioxide of iron with the acid, and digest for two hours in a sand-bath. Add to these, two gallons of the water, and set aside for an hour; then pour off the supernatant liquor. The solution of potash being added, wash the precipitate frequently with water, and while yet moist, boil it with the bitartrate of potash, previously mixed with a gallon of the water. If the liquor should be acid when tried by litmus, drop into it solution of sesquicarbonate of ammonia until it is saturated. Lastly, strain the liquor, and with a gentle heat let it evaporate, so that the salt may remain dry. — *Phillips.*

This salt is composed very nearly of one equivalent of tartrate of potash and one of tartrate of the sesquioxide of iron. It is a mild and efficacious chalybeate, and is less nauseous to the taste than the other preparations of iron. The dose is from grs. x. to 3ss. in solution or bolus, combined with an aromatic bitter.

Ferri rubigo. See *Ferri sesquioxydum.*

Ferri sesquioxydum. *Ferri subcarbonas; Ferri carbonas; Ferrum præcipitatum;* formerly called *chalybis rubigo præparata*, and *ferri rubigo*. Sesquioxide of iron, commonly called subcarbonate of iron. Take of sulphate of iron, four pounds; carbonate of soda, four pounds two ounces; boiling water, six gallons. Dissolve the sulphate of iron and subcarbonate

of soda separately, each in three gallons of water; then mix the solutions together, and set it by, that the precipitated powder may subside; then, having poured off the supernatant liquor, wash the precipitate of iron with hot water, and dry it. This preparation, which was originally for a subcarbonate of iron, is found to consist principally of the sesquioxide of that metal; the name has therefore been changed in the last London Pharmacopœia. It possesses mild corroborant and stimulating properties, and is exhibited with success in leucorrhœa, ataxia, asthenia, chlorosis, dyspepsia, rachitis, &c. Dose from two to ten grains.

Ferri subcarbonas. See *Ferri sesquioxydum.*

Ferri sulphas. Sulphate of iron; formerly called *sal martis, vitriolum martis, vitriolum ferri,* and *ferrum vitriolatum.* Green vitriol. Take of iron filings, eight ounces; sulphuric acid, fourteen ounces; water, four pints. Mix together the sulphuric acid and water, and add thereto the iron; then, after the effervescence has ceased, filter the solution, and set it aside that crystals may form. Evaporate the decanted liquor that it may again yield crystals. Dry them all. This is an excellent preparation of iron, and is exhibited, in many diseases, as a styptic, tonic, astringent, and anthelmintic. Dose from one grain to five grains.

FE'RRO-CHYA'ZIC ACID. *Acidum ferro-chyazicum:* so called from *ferrum* and *chyazium.* An acid obtained by adding to a solution of ferro-cyanite of barytes, sulphuric acid just enough to precipitate the barytes. It has a pale yellow colour, no smell, and is decomposed by gentle heat or strong light, in which case hydrocyanic acid is formed, and white hydrocyanite of iron is deposited, which becomes blue by exposure.

FE'RRO-CY'ANATE. *Ferro-cyanas.* A compound formed of ferro-cyanic acid with a salifiable base.

FE'RRO-CYA'NIC ACID. (*Ferrum* and *cyanicus.*) *Acidum ferro-prussicum. Acidum ferro-cyanicum.* Into a solution of the amber-coloured crystals, usually called prussiate of potash, pour hydro-sulphuret of barytes, as long as any precipitate falls. Throw the whole on a filter, and wash the precipitate with cold water. Dry it; and having dissolved 100 parts in cold water, add gradually thirty of concentrated sulphuric acid; agitate the mixture, and set it aside to repose. The supernatant liquid is ferro-prussic acid, called by Porrett, who had the merit of discovering it, *ferruretted chyazic acid.*

It has a pale lemon-yellow colour, but no smell. Heat and light decompose it. Hydrocyanic acid is then formed, and white ferro-prussiate of iron, which soon becomes blue. Its affinity for the bases enables it to displace acetic acid, without heat, from the acetates, and to form ferroprussiates.

The pigment called Prussian blue has till lately been considered as a ferrocyanate of iron, but it is now regarded as a *ferro-sesquicianuret* of iron.

Ferro-prussic acid. See *Ferro-cyanic acid.*

Fe'rro-se'squicya'nic acid. If ferro-sesquicianuret of potassium be added to a solution of lead, brown crystals of ferro-cyanuret of lead are, after a while, deposited. These being dissolved in water and decomposed by sulphuretted hydrogen, the filtered solution yields, by evaporation, crystals of a brown colour; — these are *Ferro-sesquicyanic acid.*

FERRUGI'NEUS. 1. Appertaining to iron. 2. Having a yellowish brown colour, like the rust of iron.

Fe'rrum. (*um, i.* n.; the etymology uncertain.) See *Iron.*

Ferrum ammoniatum. See *Ferri ammonio-chloridum.*

Ferrum salitum. An old name of the muriate of iron.

Ferrum tartarizatum. See *Ferri potassio-tartras.*

Ferruretted chyazic acid. See *Ferro-prussic acid.*

Fersæ. The measles have been so called.

FERTILE. *Fertilis.* Fruitful. Applied, 1. In *Physiology,* to women, and the female of brute animals, which are prolific.

2. In *Botany,* to a flower, called *flos fertilis* and *femineus,* when it produces a seed capable of vegetation, which is generally the case in flowers which have both stamens and pistils. Flowers that have only stamens never can produce seeds, and flowers that have only pistils must be barren, if they are so situated as to be out of reach of the pollen from the anthers of the staminiferous flowers: in some instances they will, indeed, produce seeds to all appearance perfect, but these seeds will never vegetate.

Fertile flower. See *Flos.*

FE'RULA. (*a, æ.* f.; a staff, which it resembles: so called *à feriendo.*) The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Digynia.*

Ferula africana galbanifera. The galbanum plant. See *Galbanum,* in the Supplement.

Ferula assafœtida. The systematic name of the assafœtida plant. *Assafœtida. Hingisch* of the Persians. *Altiht* of the Arabians. By some thought to be the σιλφιον, vel οπος σιλφιου, of Dioscorides, Theophrastus, and Hippocrates. *Laser et laserpitium,* of the Latins. *Ferula assafœtida — foliis alternatim sinuatis, obtusis,* of Linnæus. This plant, which affords us the assafœtida of the shops, grows plentifully on the mountains in the provinces of Chorassan and Laar, in Persia.

The process of obtaining it is as follows: the earth is cleared away from the top of the roots of the oldest plants; the leaves and stalks are then twisted away, and made into a covering, to screen the root from the sun: in this state the root is left for forty days, when the covering is removed, and the top of the root cut off transversely; it is then screened again from the sun for forty-eight hours, when the juice it exudes is scraped off, and exposed to the sun to harden. A second transverse section of the root is made, and the exudation suffered to continue for forty-eight hours, and then scraped off. In this manner it is eight times repeatedly collected in a period of six weeks. The juice thus obtained has a bitter, acrid, pungent taste, and is well known by its peculiar nauseous smell, the strength of which is the surest test of

its goodness. This odour is extremely volatile, and of course the drug loses much of its efficacy by keeping. It is brought to us in large irregular masses, composed of various little shining lumps, or grains, which are partly of a whitish colour, partly reddish, and partly of a violet hue. Those masses are accounted the best which are clear, of a pale reddish colour, and variegated with a great number of elegant white tears. This concrete juice consists of two thirds of gum, and one third of resin and volatile oil, in which its taste and smell reside. It yields all its virtues to alkohol. Triturated with water, it forms a milk-like mixture, the resin being diffused by the medium of the gum. Distilled with water, it affords a small quantity of essential oil. It is the most powerful of all the fœtid gums, and is a most valuable remedy. It is most commonly employed in hysteria, hypochondriasis, some symptoms of dyspepsia, flatulent colics, and in most of those diseases termed nervous, but its chief use is derived from its antispasmodic effects; and it is thought to be the most powerful remedy we possess for those peculiar convulsive and spasmodic affections which often recur in the first of these diseases, both taken into the stomach and in the way of enema. It is also recommended as an emmenagogue, anthelmintic, antiasthmatic, and anodyne. Dr. Cullen prefers it as an expectorant to gum ammoniacum. Where we wish it to act immediately as an antispasmodic, it should be used in a fluid form, as that of tincture, from half a drachm to two drachms. When given in the form of a pill, or triturated with water, its usual dose is from five to twenty grains. When in the form of enema, one or two drachms are to be diffused in eight ounces of warm milk or water. It is sometimes applied externally in the form of plaster as a stimulant and discutient.

Ferula minor. All-heal of Æsculapius; probably the *heracleum*.

Ferula Persica. Stinking giant fennel. This plant was supposed by Wildenow to yield the *sagapenum*. The source whence this drug is derived is still uncertain. See *Sagapenum*.

Ferulacea. See *Bubon galbanum*.

Fever. See *Febris*.

Fever, continued. See *Febris continua*.

Fever, hectic. See *Hectic fever*.

Fever, inflammatory. See *Synocha*.

Fever, intermittent. See *Ague*.

Fever, nervous. See *Nervous fever*.

Fever, putrid. See *Typhus fever*.

Fever, remittent. See *Remittent fever*.

Fever, scarlet. See *Scarlet fever*.

Feverfew. See *Matricaria*.

Fi'ber. (*er, ri.* m.) The Latin name of the beaver. See *Castor fiber*.

FIBRE. (*Fibra, æ*, f.) A simple filament. Many of the textures of animal and vegetable bodies are manifestly composed of fibres. The older physiologists admitted only of one elementary fibre in the animal body, of which all the others were some modification; but this notion was nothing better than a mere whim. See *Animal*, *Vegetable*, and *Lignin*.

Fibre, elementary. See *Fibre*.

Fibre, muscular. See *Muscular fibre*.

FI'BRIL. (*Fibrilla*, diminutive of *fibra*.) A small thread-like fibre: applied in botany to the little roots which are given off from radicles.

FI'BRIN. A peculiar organic compound found both in vegetables and animals. It is procured, however, in its most characteristic state from animal matter. It exists in chyle; it enters into the composition of blood; of it the chief part of muscular flesh is formed; and hence it may be regarded as the most abundant constituent of the soft solids of animals.

To obtain it, we may beat blood as it issues from the veins with a bundle of twigs. Fibrin soon attaches itself to each stem, under the form of long reddish filaments, which become colourless by washing them with cold water. It is solid, white, insipid, without smell, denser than water, and incapable of affecting the hue of litmus or violets. When moist it possesses a species of elasticity; by desiccation it becomes yellowish, hard, and brittle. By distillation we can extract from it much carbonate of ammonia, some acetate, a fetid brown oil, and gaseous products; while there remains in the retort a very luminous charcoal, very brilliant, difficult of incineration, which leaves, after combustion, phosphate of lime, a little phosphate of magnesia, carbonate of lime, and carbonate of soda.

Cold water has no action on fibrin. Treated with boiling water, it is so changed as to lose the property of softening and dissolving in acetic acid. The liquor filtered from it yields precipitates with infusion of galls, and the residue is white, dry, hard, and of an agreeable taste.

FIBROUS. (*Fibrosus*; from *fibra*, a fibre.) Composed of fibres. See *Fibre*.

FI'BULA. (*a, æ*. f. A clasp or brace.) A long bone of the leg, so named on account of its connecting and giving firmness to the other parts. It is situated on the outer side of the tibia, and forms, at its lower end, the outer ankle. Its upper extremity is formed into an irregular head, on the inside of which is a slightly concave articulating surface, which, in the recent subjects, is covered with cartilage, and receives the circular flat surface under the edge of the external cavity of the tibia. This articulation is surrounded by a capsular ligament, which is farther strengthened by other strong ligamentous fibres, so as to allow only a small motion backwards and forwards. Externally, the head of the fibula is rough and protuberant, serving for the attachment of ligaments, and for the insertion of the biceps cruris muscle. Immediately below it, on its inner side, is a tubercle, from which a part of the gastro-cnemius internus has its origin. Immediately below this head the body of the bone begins. It is of a triangular shape, and appears as if it were slightly twisted at each end, in a different direction. It is likewise a little curved inwards and forwards. This curvature is in part owing to the action of muscles; and in part, perhaps, to the carelessness of nurses. Of the three angles of the bone, that which is turned towards the tibia is the most prominent, and serves for the attachment of the interos-

ous ligament, which, in its structure and ses, resembles that of the fore-arm, and, like at, is a little interrupted above and below. he three surfaces of the bone are variously mpressed by different muscles. About the iddle of the posterior surface is observed a assage for the medullary vessels, slanting ownwards. The lower end of the fibula is rmed into a spongy, oblong head, externally ough and convex, internally smooth, and co-ered with a thin cartilage, where it is received y the external triangular depression at the wer end of the tibia. This articulation, which esembles that of its upper extremity, is fur-ished with a capsular ligament, and farther rengthened by ligamentous fibres, which are ronger and more considerable than those be-re described. They extend from the tibia to ie fibula, in an oblique direction, and are ore easily discernible before than behind. elow this the fibula is lengthened out, so as rm a considerable process, called *malleolus xternus*, or the outer ankle. It is smooth, and overed with cartilage on the inside, where it is ontiguous to the astragalus, or first bone of ie foot. At the lower and inner part of this rocess, there is a spongy cavity, filled with at; and a little beyond this, posteriorly, is a rtilaginous groove, for the tendons of the eroneus longus and peroneus brevis, which are ere bound down by the ligamentous fibres iat are extended over them.

The principal uses of this bone seem to be, o afford origin and insertion to muscles, and o contribute to the articulation of the leg with ie foot.

FI'BULAR. Appertaining to the *fibula* — s fibular artery, fibular nerve, &c.

FICA'RIA. (*a*, *æ*. f.; from *ficus*, a fig, so called om some fancied resemblance.) See *Ranunculus ficaria*.

FICA'TIO. The development of a tubercle of ie kind called *ficus*.

FICOI'DEÆ. A natural family of plants of hich the genus *ficus* is the type.

FICOI'DES. (From *ficus*, a fig, and *εἶδος*, re-emblance.) Fig-like.

FI'CUS. (*us*, *i*. f.; and *us*, *ús*. f.) 1. A pecies of condyloma so named from its being haped like a fig. See *Condyloma*.

2. The name of a genus of plants in the Linnæan system. Class, *Polygamia*; Order, *Dioecia*. The fig-tree.

FICUS CARICA. The systematic name of the g-tree; called also, *Carica*, *Ficus vulgaris*, and *Ficus communis*. Συκη of the Grecks. French igs are, when completely ripe, soft, succulent, nd easily digested, unless eaten in immoderate uantities, when they are apt to occasion flatu-ency, pain of the bowels, and diarrhœa. The ried fruit, which is sold in our shops, is leasanter to the taste, and more wholesome nd nutritive. They are directed in the *decoc-um hordei compositum*, and in the *confectio ænæ*. Applied externally, they promote the uppuration of tumours; hence they have a lace in maturating cataplasms; and are very onvenient to apply to the gums, and, when oiled with milk, to the throat.

Ficus indica. See *Lacca*.

FIDA. An alchemical name of gold or silver.

FIDICINA'LIS. (From *fidicen*, a harper, or one who plays on a stringed instrument.) The lucubricales muscles have also been called *fidicinales*, for their action in moving the fingers.

Fifth pair of nerves. See *Nervous system*.

Fig. See *Ficus carica*.

Figwort. See *Ranunculus ficaria*, and *Scrophularia*.

Figwort, great water. See *Scrophularia*.

FILA'GO. (*ago*, *aginis*. f.; from *filum*, a thread, and *ago*, to produce or have to do with: in allusion to the cottony web connected with every part of the plant.) A genus of plants in the Linnæan system. Class, *Syngenesia*; Order, *Polygamia necessaria*. Cud or cotton weed.

FILAGO LEONTOPODIUM. The herb lion's-foot, formerly used in the cure of diseases, but now fallen into disuse.

FILAGO PIGMÆ. This plant is sometimes used as an astringent.

FI'LAMENT. (*Filamentum*; from *filum*, a thread.) 1. Applied, in *Anatomy*, to a small thread-like portion adhering to any part, and frequently synonymous with fibre. See *Fibre*.

2. In *Botany*, to the *stamen* of a flower which consists of the filaments, anther, and pollen. The filament is the column which supports the anther.

From its *figure*, the filament is called,

1. *Capillary*; as in plantago.
2. *Filiform*; as in scilla maritima.
3. *Flat*; as in allium cepa.
4. *Dilatate*, spreading laterally; as in ornithogalum umbellatum.
5. *Pedicellate*, affixed transversely to a little stalk; as in salvia.
6. *Bifid*, having two; as in stemodia.
7. *Bifurced*; as in prunella.
8. *Multifid*; as in carolina princeps.
9. *Dentate*; as in rosmarinus officinalis.
10. *Nicked*; as in allium cepa.
11. *Lanceolate*; as in ornithogalum pyrenaicum.
12. *Castrate*, the anther naturally wanting; as in gratiola officinalis.
13. *Subulate*; as in tulipa gesneriani.

From the *pubescence*, —

1. *Barbate*, bearded; as in lycium.
2. *Lanate*, woolly; as in verbascum thapsus.
3. *Pilose*; as in anthericum frutescens.
4. *Gland-bearing*; as in laurus and rheum.

From its *direction*, —

1. *Erect*; as in tulipa gesneriana.
2. *Incurved*; curved inward.
3. *Declinate*; as in hemerocalis fulva.
4. *Connivent*; as in physalis alkekengi.

From its *concretion*, —

1. *Liberate*, free, no where adhering; as in nicotiana tabacum.
2. *Connate*, adhering at their base; as in malva sylvestris, and alcea rosea.

From its *insertion*, —

1. *Receptaculine*, inserted into the receptaculum; as in papaver somniferum.
2. *Corolline*; as in verbascum thapsus, and nerium oleander.

3. *Calicine;* as in pyrus malus, and mespilus germanica.

4. *Styline;* as in the orchides.

5. *Nectorine;* as in pancratium declinatum.

From its length, it is said to be,

1. Very *long;* as in plantago major.

2. Very *short;* as in jasminum, and vinca.

3. *Unequal,* some long, some short; as in cheiranthus cheiri.

FILARIA. (*a, æ.* f.) The name of a genus of worms in Rudolphi's classification.

Filaria medinensis. The systematic name of a curious animal; called also, *Vermis medinensis, Vena medinensis, Vermiculus capillaris, Dracunculus.* The Guinea worm. This animal differs from the *Gordius*, or hair-tail worm, with which it has been confounded. This worm is common in the southern parts of Asia, and in most parts of Africa. It is of a white colour, and about the thickness of a violin string; is commonly found in the legs, but sometimes in the muscular part of the arms. It principally affects children, and its generation is not unlike that of the broad worms of the belly. While it moves under the skin, it creates no trouble; but, in length of time, the place near the dracunculus suppurates, and the animal puts forth its head. If it be drawn, it excites considerable uneasiness, especially if drawn so forcibly as to break it; for the part left within creates intolerable pain. These worms are of different lengths. In the Edin. Med. Essays, mention is made of one that was three yards and a half in length.

File'llum. (From *filum*, a thread.) The frænum of the prepuce. — *Editors of Castelli.*

File'tum. Same etymon. The frænum of the tongue. — *Editors of Castelli.*

FI'LICES. (The plural of *filix.*) Ferns. One of the families, or natural tribes, into which the whole vegetable kingdom is divided. They are defined, plants which bear their flower and fruit on the back of the leaf or stalk, which is termed *frons.*

Fili'cula. (*a, æ.* f.; diminutive of *filix*, fern; a small sort of fern: or from *filum*, a thread, which it resembles.) See *Adiantum capillus veneris.*

FILIFO'RMIS. Filiform: thread-like. Applied to many parts of animals and vegetables from their resemblance; as the leaves of the *Fœniculum dulce*, the style of the *Crocus sativus*, and *Lonicera periclimenum.*

Filipe'ndula. (*a, æ.* f.; from *filum*, a thread, and *pendeo*, to hang: so named because the numerous bulbs of its roots hang, as it were, by small threads.) See *Spiræa filipendula.*

Filipendula aquatica. Water-dropwort; the *Œnanthe fistulosa* of Linnæus.

Filius ante patrem. Any plant, the flower of which comes out before the leaf; as coltsfoot.

FI'LIX. (*ix, ices.* f.; in plural, *filices;* from *filum* a thread: so called from its being cut, as it were, in slender portions, like threads.) Fern. See *Polypodium.*

Filix aculeata. See *Polypodium.*

Filix florida. See *Osmunda regalis.*

Filix fœmina. See *Pteris aquilina.*

Filix mas. See *Aspidium filix mas.*

Filter. See *Filtrum.*

FILTRA'TION. (*Filtratio;* from *filtrum*, a strainer.) An operation, by means of which a fluid is mechanically separated from solid particles. Filtration is performed through bibulous paper, fine linen, sand, &c., according to circumstances.

FI'LTRUM. A filter. An instrument for filtering or straining.

FI'LUM. (*um, i.* n.) A thread or filament.

Filum arsenicale. Sublimed arsenic. — *Ruland.*

FI'MBRIA. (*a, æ.* f.; a fringe: *quasi fimbria;* from *finis*, the extremity.) A fringe. 1. Applied in *Anatomy* to any fringe-like body, and especially to the fringed extremity of the allopian tube.

2. In *Botany*, to the dentated or fringe-like ring of the operculum of mosses, by the elastic power of which the operculum is displaced. See *Peristomium.*

Fimbria'tus. Fringed.

Fimbriata corpora. See *Corpora fimbriata.*

Finckle. See *Anethum fœniculum.*

Fingered. See *Digitatus.*

Fingers. See *Hand.*

Fir. See *Pinus.*

Fir, Canada. See *Pinus balsamea.*

Fir, Norway spruce. See *Pinus abies.*

Fir, Scotch. See *Pinus sylvestris.*

Fir, silver. See *Pinus picea.*

Fir, spruce. See *Pinus picea.*

Fir-balsam. See *Pinus balsamea.*

Fire. See *Ignis.*

Fire damp. A gas evolved in coal mines, consisting almost entirely of light carburetted hydrogen. See *Carburetted hydrogen.*

Firmi'sium mineralium. Antimony.

Fish. *Pisces.* See *Animal kingdom.*

Fish-glue. See *Ichthyocolla.*

Fish-skin. See *Ichthyosis.*

FISSU'RA. (*a, æ.* f.; from *findo*, to cleave or crack.) A fissure. 1. That species of fracture in which the bone is slit, but not completely divided.

2. A name given to a deep and long depression in a part.

Fissura magna sylvii. The anterior and middle lobes of the cerebrum on each side are parted by a deep narrow sulcus, which ascends obliquely backwards from the temporal ala of the os sphenoides, to near the middle of the os parietale. *This sulcus is called Fissura magna sylvii.*

Fissura umbilicalis. The fissure in the liver which lodges the umbilical vein in the fœtus. See *Ovum.*

FI'SSUS. Cleft; cloven. In *Botany*, applied to leaves and pods, which are divided into segments.

Fistic-nut. See *Pistachia vera.*

FI'STULA. (*a, æ.* f.; *quasi fusula*, from *fundo*, to pour out; or from its similarity to a pipe, or reed.) A long and sinuous ulcer that has a narrow opening, and which sometimes leads to a larger cavity, and has no disposition to heal.

Fistula ciba'lis. The œsophagus.

Fistula in ano. A sinus by the side of the rectum. From the laxity of the cellular membrane in the vicinity of the rectum, abscesses which form here easily become diffused, and

ıe matter burrows by the side of the gut, often › a very formidable extent, and hence the ecessity of early attention and great care in ıe treatment of abscesses so situated. Those stulæ in which the matter has made its escape y one or more openings through the skin only, re called *blind external fistulæ*; those in which ıe matter has been discharged through an open- g into the rectum, without any aperture in ıe skin, are called *blind internal fistulæ*; and ıose which open both into the gut, and also xternally through the skin are called *complete stulæ*. The cure is by a surgical operation, hich consists in laying the sinus freely open, nd applying proper dressings to promote its carnation.

Fistula in perinæo. When the urethra is erforated by ulceration or injury, and the urine scapes into the surrounding cellular membrane, occasions inflammation, sloughing, and abscess. f the patient survive the matter finds its way out y ulceration, through the integuments of the erinæum, and the urine also escapes through ıese ulcerous apertures. The term *fistula* is ot very correctly applied to these. Fistulæ in erinæo, as they are called, are most frequently ıe result of neglected or ill-treated strictures of ıe urethra.

Fistula lachrymalis. Properly an ulcer- ted opening in the lachrymal sac, which has no endency to heal, and through which a puriform uid is discharged. The term has been sense- essly applied to almost every diseased state of he lachrymal passages.

Fistula, salivary. When by any means the arotid duct has been wounded, the wound is ften prevented from healing by the continued scape of saliva; and the irritation and pressure f this, occasions the formation of an ulcer- ted opening in the integuments of the cheek, hrough which the saliva escapes. This is called *salivary fistula*.

Fistula spiritalis. The windpipe.

Fistula'ria. (*a*, *æ*. f.; from *fistula*, a pipe: o called because its stalk is hollow.) Staves- cre. See *Delphinium staphisagria*.

Fistulous. *Fistulosus*. Of the nature of a istula.

FIXED. *Fixus*. In *Chemistry*, applied to hose substances which cannot be caused to pass by a strong rarefaction from the solid or liquid tate of an elastic fluid.

Fixed air. See *Carbonic acid*.

FIXITY. The property by which bodies re- ist the action of heat, so as not to rise in vapour.

FLABELLIFORM. (*Flabelliformis*; from *flabellum*, a fan, and *forma*, likeness.) Fan- like: A term applied generally in natural history.

FLAG. 1. A water weed. See *Algæ*.

2. Several aquatic plants, which have long sword-like leaves, are called flags.

Flag, sweet. See *Acorus*.

Flag, water. See *Iris pseudacorus*.

Flag, yellow-water. See *Iris pseudacorus*.

FLAGELLIFORM. *Flagelliformis*. Whip- like. A term applied to a stem that is long and pliant, whip-like; as that of jasmine and blue oxthorn. The term is also generally applied n natural history.

FLAGE'LLUM. (*um*, *i*. n.; diminutive of *flagrum*, a whip. A small whip.) A runner, or a twig, which runs out long and slender; as that of the strawberry.

Flake-white. Subnitrate of bismuth. See *Bismuth*.

FLA'MMULA. (*a*, *æ*. f.; dim. of *flamma*, a fire: named from the burning pungency of its taste.) See *Ranunculus flammula*.

Flatua'rii. The Alchemists were so called, probably because they were always blowing at furnaces.

Flammula jovis. See *Clematis recta*.

Flank. The iliac region of the abdomen.

FLATULENCY. By this is understood a morbid collection of gas in the stomach and bowels. Mr. Hunter supposed, and late experiments prove the truth of his opinion, that gaseous fluids are secreted from the mouths of the secernents into certain cavities in which it is found. This is one way in which a flatulent state of the stomach and bowels is produced; but the most common way is by a fermentation, or chemical separation from the materials introduced into the stomach in the form of food. When the fluids which are poured naturally into the stomach are secreted in a healthy state, they tend to prevent this: but when, from imbecility of the stomach, or its consociate viscera, they are secreted in a dilute or other imperfect state, they lose their corrective power, fermentation rapidly commences, and the stomach is overloaded, distended, and sometimes ready to burst with gas that is hereby let loose, relief being only obtained by frequent *eructation*, or rejection upwards, *crepitation*, or rejection downwards; or its combining loosely with such fluids as may exist in the large intestines, where it often rolls about in an ascending or descending direction, according to the action of the abdominal muscles—sometimes with a rumbling sound, where the intestinal fluid is but small in quantity; and sometimes, when it is considerable, with a gurgling noise, like air rushing into a bottle as the water contained in it is poured out, and hence by the Greeks denominated *borborygmus*.

The quantity of gas formed in the stomach and bowels is sometimes prodigious. It appears from the experiments of Dr. Hales, that one apple, during fermentation, will give above six hundred times its bulk in gas; and we know that many of the vegetable materials introduced into the stomach possess far more ventosity than apples. Flatulency is often a symptom of other diseases, especially indigestion, colic, cholera, hysteria, and hypochondriasis. For the cure of this disease, carminatives, aperients, and tonics are resorted to; as the spicy fruits and verticillate carminatives: nutmegs, cardamoms, pimenta, pepper, capsicum, camphire, peppermint, spearmint, cinnamon, rosemary, lavender, pennyroyal, &c. The aromatic essential oils are powerful carminatives. If these do not succeed, ætherial preparations and warm tonics should be given, and the strictest attention paid to the diet, in which all oleracerous vegetables, and all kinds of peas, beans, and flatulent fruits, should be avoided; also, large libations of fluids. The

diet should consist of plain animal food, with peppers, and good brandy amply diluted at dinner.

Fla'tus. Wind in the stomach and bowels. See *Flatulency.*

Flax. See *Linum.*

Flax, purging. See *Linum catharticum.*

Flax, spurge. See *Daphne gnidium.*

Flax-leaved daphne. See *Daphne gnidium.*

Fleabane. See *Inula dysenterica.*

Flea-wort. See *Plantago psyllium.*

Flectens par lumborum. A name given by Cassirius to the *quadratus lumborum* muscle.

Flemen. (*n, nis.* n.) A Latin word signifying swelling of the ankles from over fatigue.

Fleresin. A name that has been given to gout.

FLESH. The muscular substance of an animal. See *Carnosus.*

Flesh brush. A brush for rubbing the surface of the body in order to excite the cutaneous circulation. Its use is very advantageous where the action of the capillary vessels is languid.

Fleshy. See *Carnosus.*

Flexion. (*Flexio, onis.* f.) The bent state of a joint, or the act of bending a joint; it is opposed to *extension.*

FLEX'OR. The name of several muscles, the office of which is to bend the joints.

Flexor accessorius digitorum pedis. See *Flexor longus digitorum pedis.*

Flexor brevis digitorum pedis, perforatus sublimis. A flexor muscle of the toes, situated on the foot. *Flexor brevis digitorum pedis, perforatus,* of Albinus. *Flexor brevis,* of Douglas. *Flexor digitorum brevis, sive perforatus pedis,* of Winslow. *Perforatus, seu flexor secundi internodii digitorum pedis,* of Cowper. It arises by a narrow, tendinous, and fleshy beginning, from the inferior protuberance of the os calcis. It likewise derives many of its fleshy fibres from the adjacent aponeurosis, and soon forms a thick belly, which divides into four portions. Each of these portions terminates in a flat tendon, the fibres of which decussate, to afford a passage to a tendon of the long flexor, and afterwards re-uniting, are inserted into the second phalanx of each of the four lesser toes. This muscle serves to bend the second joint of the toes.

Flexor brevis minimi digiti pedis. *Parathenar minor,* of Winslow. This little muscle is situated along the inferior surface and outer edge of the metatarsal bone of the little toe. It arises tendinous from the basis of that bone, and from the ligaments that connect it to the os cuboides. It soon becomes fleshy, and adheres almost the whole length of the metatarsal bone, at the anterior extremity of which it forms a small tendon, that is inserted into the root of the first joint of the little toe. Its use is to bend the little toe.

Flexor brevis policis manus. *Flexor secundi internodii,* of Douglas. *Thenar,* of Winslow. *Flexor primi et secundi ossis pollicis,* of Cowper. This muscle is divided into two portions by the tendon of the flexor longus pollicis. The outermost portion arises tendinous from the anterior part of the os trapezoides and internal annular ligament. The second, or innermost, and thickest portion, arises from the same bone, and likewise from the os magnum, and os cuneiforme. Both these portions are inserted tendinous into the sesamoid bones of the thumb. The use of this muscle is to bend the second joint of the thumb.

Flexor brevis pollicis pedis. A muscle of the great toe, that bends the first joint of that part. *Flexor brevis,* of Douglas. *Flexor brevis pollicis,* of Cowper. It is situated upon the metatarsal bone of the great toe, arises tendinous from the under and anterior part of the os calcis, and from the under part of the os cuneiforme externum. It soon becomes fleshy and divisible into two portions, which do not separate from each other till they have reached the anterior extremity of the metatarsal bone of the great toe, where they become tendinous, and then the innermost portion unites with the tendon of the abductor, and the outermost with that of the abductor pollicis. They adhere to the external os sesamoideum, and are finally inserted into the root of the first joint of the great toe. These two portions, by their separation, form a groove, in which passes the tendon of the flexor longus pollicis.

Flexor carpi radialis. A long thin muscle, situated obliquely at the inner and anterior part of the fore-arm, between the palmaris longus and the pronator teres. *Radialis internus,* of Albinus and Winslow. It arises tendinous from the inner condyle of the os humeri, and, by many fleshy fibres, from the adjacent tendinous fascia. It descends along the inferior edge of the pronator teres, and terminates in a long, flat, and thin tendon, which afterwards becomes narrower and thicker, and, after passing under the internal annular ligament, in a groove distinct from the other tendons of the wrist, it spreads wider again, and is inserted into the fore and upper part of the metacarpal bone that sustains the fore-finger. It serves to bend the hand, and its oblique direction may likewise enable it to assist in its pronation.

Flexor carpi ulnaris. *Ulnaris internus,* of Winslow and Albinus. A muscle situated on the cubit or fore-arm, that assists in bending the arm. It arises tendinous from the inner condyle of the os humeri, and, by a small fleshy origin, from the anterior edge of the olecranon. Between these two portions, we find the ulnar nerve passing to the fore-arm. Some of its fibres arise, likewise, from the tendinous fascia that covers the muscles of the fore-arm. In its descent, it soon becomes tendinous, but its fleshy fibres do not entirely disappear till it has reached the lower extremity of the ulna, where its tendon spreads a little, and after sending off a few fibres to the external and internal and annular ligaments, is inserted into the os pisiforme.

Flexor longus digitorum pedis profundus perforans. A flexor muscle of the toes, situated along the posterior part and inner side of the leg. *Perforans seu flexor profundus,* of Douglas. *Flexor digitorum longus, sive perforans pedis,* and *perforans seu flexor tertii internodii digitorum pedis,* of Cowper. It arises fleshy from the back part of the tibia, and, after running down to the internal ankle, its tendon passes under a kind of annular ligament, and then through a

sinuosity at the inside of the os calcis. Soon after this it receives a small tendon from the flexor longus pollicis pedis, and about the middle of the foot it divides into four tendons, which pass through the slits of the flexor brevis digitorum pedis, and are inserted into the upper part of the last bone of all the lesser toes. About the middle of the foot, this muscle unites with a fleshy portion, which, from the name of its first describer, has been usually called *massa carnea Jacobi Sylvii:* it is also termed *Flexor accessorius digitorum pedis.* This appendage arises by a thin fleshy origin, from most part of the sinuosity of the os calcis, and likewise by a thin tendinous beginning from the anterior part of the external tubercle of that bone; it soon becomes all fleshy, and unites to the long flexor just before it divides into its four tendons. The use of this muscle is to bend the last joint of the toes.

Flexor longus pollicis manus. *Flexor longus pollicis,* of Albinus. *Flexor tertii internodii,* of Douglas. *Flexor tertii internodii sive longissimus pollicis,* of Cowper. A muscle of the thumb, placed at the side of the flexor longus digitorum, profundus, perforans, and covered by the extensores carpi radiales. It arises fleshy from the anterior surface of the radius, immediately below the insertion of the biceps, and is continued down along the oblique ridge, which serves for the insertion of the supinator brevis, as far as the pronator quadratus. Some of its fibres spring, likewise, from the neighbouring edge of the interosseous ligament. Its tendon passes under the internal annular ligament of the wrist, and, after running along the inner surface of the first bone of the thumb, between the two portions of the flexor brevis pollicis, goes to be inserted into the last joint of the thumb, being bound down in its way by the ligamentous expansion that is spread over the second bone. In some subjects we find a tendinous portion arising from the inner condyle of the os humeri, and forming a fleshy slip that commonly terminates near the upper part of the origin of this muscle from the radius. The use of this muscle is to bend the last joint of the thumb.

Flexor longus pollicis pedis. A muscle of the great toe, situated along the posterior part of the leg. It arises tendinous and fleshy a little below the head of the fibula, and its fibres continue to adhere to that bone almost to its extremity. A little above the heel it terminates in a round tendon, which, after passing in a groove formed at the posterior edge of the astragalus, and internal and lateral part of the os calcis, in which it is secured by an annular ligament, goes to be inserted into the last bone of the great toe, which it serves to bend.

Flexor ossis metacarpi pollicis. *Opponens pollicis,* of Innes. *Opponens pollicis manus,* of Albinus. *Flexor primi internodii,* of Douglas. *Antithenar sive semi-interosseus pollicis,* of Winslow. A muscle of the thumb, situated under the abductor brevis pollicis, which it resembles in its shape. It arises tendinous and fleshy from the os scaphoides, and from the anterior and inner part of the internal annular ligament. It is inserted tendinous and fleshy into the under and anterior part of the first bone of the thumb. It serves to turn the first bone of the thumb upon its axis, and at the same time to bring it inwards opposite to the other fingers.

Flexor parvus minimi digiti. *Abductor minimi digiti, Hypothenar Riolani,* of Douglas. *Hypothenar minimi digiti,* of Winslow. A muscle of the little finger, situated along the inner surface of the metacarpal bone of the little finger. It arises tendinous and fleshy from the hook-like process of the unciform bone, and likewise from the anterior surface of the adjacent part of the annular ligament. It terminates in a flat tendon, which is connected with that of the abductor minimi digiti, and inserted into the inner and anterior part of the upper end of the first bone of the little finger. It serves to bend the little finger, and likewise to assist the abductor.

Flexor profundus perforans. *Profundus,* of Albinus. *Perforans,* of Douglas. *Perforans vulgo profundus,* of Winslow. *Flexor tertii internodii digitorum manus, vel perforatus manus,* of Cowper. A muscle of the fingers, situated on the fore-arm, immediately under the *perforatus,* which it greatly resembles in its shape. It arises fleshy from the external side and upper part of the ulna, for some way downwards, and from a large portion of the interosseous ligament. It splits into four tendons a little before it passes under the annular ligament of the wrist, and these pass through the slit in the tendons of the flexor sublimis, to be inserted into the fore and upper part of the third or last bone of all the four fingers, the joint of which they bend.

Flexor sublimis perforatus. This muscle, which is the *perforatus* of Cowper, Douglas, and Winslow, is, by Albinus and others, named *sublimis.* It is called *perforatus,* from its tendons being perforated by those of another flexor muscle of the finger, called the *perforans.* They who give it the appellation of *sublimis,* consider its situation with respect to the latter, and which, instead of *perforans,* they name *profundus.* It is a long muscle, situated most commonly at the anterior and inner part of the fore-arm, between the palmaris longus and the flexor carpi ulnaris; but, in some subjects, we find it placed under the former of these muscles, between the flexor carpi ulnaris and the flexor carpi radialis. It arises, tendinous and fleshy, from the inner condyle of the os humeri, from the inner edge of the coronoid process of the ulna, and from the upper and fore-part of the radius, down to near the insertion of the pronator teres. A little below the middle of the fore-arm, its fleshy belly divides into four portions, which degenerate into as many round tendons, that pass altogether under the internal annular ligament of the wrist, after which they separate from each other, become thinner and flatter, and running along the palm of the hand, under the aponeurosis palmaris, are inserted into the upper part of the second bone of each finger. Previous to this insertion, however, the fibres of each tendon decussate near the extremity of the first bone, so as to afford a passage to a tendon of the perforans. Of these

four tendons, that of the middle finger is the largest, that of the fore-finger the next in size, and that of the little finger the smallest. The use of this muscle is to bend the second joint of the fingers.

Flexor tertii internodii. See *Flexor longus pollicis manus.*

FLEXUO'SUS. Flexuous: full of turnings or windings. A stem is so named which is zigzag, forming angles alternately from right to left, and from left to right; as in *Smilax aspera.*

FLOCCILA'TION. (*Floccilatio, onis.* f.; from *floccus*, the nap of clothes.) Picking the bed-clothes. A symptom of great danger in acute diseases. See *Carphologia.*

Flocci volitantes. See *Muscæ volitantes.*

Flooding. The popular name for uterine hæmorrhage, especially as occurring during parturition.

FLORAL. (*Floralis;* from *flos*, a flower.) Belonging to a flower; as floral leaf, &c.

Floral leaf. See *Bractea.*

Flores antimonii hellmontii. An old preparation, made by dissolving sulphuret of antimony in aqua regia, and subliming the product with sal ammoniac. It has been said to be violently emetic in a very small dose.

Flores antimonii rubri. An old preparation made by subliming a mixture of sulphuret of antimony and sal ammoniac.

Flores benzoes. See *Benzoic acid.*

Flores martiales. See *Iron.*

Flores salis ammoniaci. See *Ammoniæ subcarbonas.*

Flores sulphuris. See *Sulphur.*

Flores sulphuris loti. See *Sulphur lotum.*

FLORESCE'NTIA. (*a, æ.* f.; from *floresco*, to flourish or bloom.) The act of flowering, which Linnæus compares to the act of generation in animals.

Floret. A little flower. See *Flosculus.*

FLOS. (*os, oris.* f.; a flower.) I. A flower. That part of a plant, for the most part beautifully coloured, which protects the organs of fructification.

Every flower has parts, which are,

1. *Essential*, constituting properly the flower; as the pistil, stamen, and receptacle.

2. *Less essential*, without which the flower is in some instances formed; as the *calyx*, *corolla*, and *pedunculus.*

3. *Accidental*, noticed in a few only; as the *bractea* and *nectarium.*

A flower is said to be,

1. *Complete*, when furnished with calyx, corolla, stamens, and pistils; as *Nicotiana tabacum.*

2. *Incomplete*, when the calyx or corolla is wanting.

3. *Naked*, devoid of the calyx; as in *Lilium candidum*, and *Tulipa gesneriana.*

4. *Apetalous*, without the corolla; as in *Calenia africana*, and *Saururus cernuus.*

When the stamens and pistils are both, as usual, in one flower, that flower is called *perfect*, or united; when they are situated in different flowers of the same species, they are called *separated flowers;* that which has the stamens being named the *barren* flower, as producing no fruit in itself, and that with the pistils the *fertile* one, as bearing the seed.

The flower contains the internal or genital parts of a plant.

1. The *stamen*, or male genital organ.

2. The *pistillum*, or female genital organ.

From their diversity, flowers are called,

1. *Male*, which have the stamina only.

2. *Female*, in which are the pistils only.

3. *Hermaphrodite*, which contain both stamens and pistils.

4. *Neuter*, naturally deficient of stamens and pistils; as the marginal flowers of the *Centaurea cyanus*, and *Jacobea.*

5. *Castrate*, when the anthers or the pistils are naturally wanting. The pistils, for example, are wanting in the *Calendula officinalis*, and in the *Viola mirabilis* there are no anthers.

6. *Abortive*, the fecundated germens of which wither before the maturity of the fruit; as happens to the florets in the radius of the *Helianthus annuus.* See *Abortive.*

7. *Monstrous*, when the internal organs become petals, as is the case with full or double flowers. A double flower is also termed *flos plenus.*

8. *Fertile*, when they bear seeds which vegetate. See *Fertile.*

9. *Barren*, when without seeds, or have such as do not vegetate. See *Barren.*

Besides these distinctions, Linnæus's favourite division is into,

1. *Aggregate.*

2. *Compound.*

3. *Amentaceous.*

4. *Glumose*, or chaffy, peculiar to the grasses.

5. The *sheathed flower*, the common receptacle of which springs from a sheath; as in *Arum.*

6. The *umbellate.*

7. The *cymose.* See also *Inflorescence.*

II. A term applied by former chemists to whatever had a flower-like appearance, especially if obtained by sublimation; as flowers of sulphur, benjamin, zinc, &c.

FLOSCULO'SUS. Flosculose: having little florets.

FLO'SCULUS. (*us, i.* m.; diminutive of *flos.*) A little flower; a floret. A term applied, in *Botany*, to the small and numerous florets of a compound flower, which are all sessile on a common undivided receptacle, and enclosed in one contiguous calyx, or perianth.

Flounder. See *Pleuronectes flessus.*

Flounder, liver. See *Distoma.*

FLOUR. The powder of the gramineous seeds, or of any farinaceous substance.

Flower. See *Flos.*

Flower-de-luce. See *Iris.*

Flowers of benjamin. See *Benzoic acid.*

Flowers of sulphur. See *Sulphur lotum.*

FLU'ATE. *Fluas.* A compound of the fluoric acid with a salifiable base.

FLUCTUA'TION. *Fluctuatio.* A term used in medicine to express the undulation of a fluid; thus when pus is formed in an abscess, or when water accumulates in the abdomen, if the fingers be applied in a proper manner to the

abscess or the abdomen, the motion of fluctuation may be distinctly felt.

Fluctuation périphérique. See the Supplement.

Fluellin. See *Antirrhinum elatine.*

FLUID. A term applied, 1. adjectively, to express that state of matter in which its particles are readily moveable in all directions with respect to each other; as opposed to the *solid* state, in which the particles of a body cohere more firmly, and require more or less force to separate them.

2. Substantively, to a body the particles of which are readily moveable in all directions with respect to each other. Fluids are divided into *liquids*, the particles of which, though moveable on each other, and easily separated, are held together by a feeble cohesion; and *elastic fluids*, *gases*, or *aëriform fluids*, between the particles of which there is a repulsion, and which, when unconfined, tend to diffuse themselves through space. The fluids of the animal body form a large proportion of its entire substance. See *Animal.*

FLUOBORATE. A compound of the fluoboric acid with a salifiable base.

FLUOBO'RIC ACID. *Acidum fluoboricum.* Probably a compound of fluorine with boron. A gaseous acid, obtained by heating in a glass retort twelve parts of sulphuric acid with a mixture of one part of fused boracic acid, and two of fluor spar, reduced to a very fine powder. It must be received over mercury. It combines with salifiable bases, and forms salts called *fluoborates.*

FLU'OR. (From *fluo*, to flow.) Applied, in *Pathology*, to an increased discharge of a white mucous secretion from the internal surface of the vagina of females.

Fluor albus. See *Leucorrhœa.*

Fluor albus benignus. The whites. See *Leucorrhœa.*

Fluor albus malignus. Gonorrhœa in the female.

Fluor muliebris. The whites. See *Leucorrhœa.*

Fluor uterinus. The same. See *Leucorrhœa.*

FLUO'RIC ACID. *Acidum fluoricum.* The substance formerly so called is now considered as a compound of hydrogen and fluorine, and called hydro-fluoric acid.

Fluoric acid, silicated. See *Fluosilicic acid.*

FLU'ORIDE. A combination of fluorine with a salifiable basis.

FLU'ORINE. The supposed basis of hydro-fluoric acid. It has never yet been obtained in an insulated state. See *Hydro-fluoric acid.*

FLUO-SI'LICATE. A compound of the fluosilicic acid with a base.

FLUOSILI'CIC ACID. *Acidum fluosilicicum.* An acid supposed to be a compound of fluorine and silica. See *Hydro-fluoric acid.*

Fluotitanic acid. Fluoride of titanium. When fluoric acid is poured on titanic acid, (peroxide of titanium,) the latter becomes warm, even after having been previously ignited, and dissolves completely with the aid of heat. Evaporated at a gentle heat, to the consistence of syrup, the solution affords crystals, which do not re-dissolve completely in water, but which are decomposed into two peculiar combinations, of which one is acidulous and soluble, and the other with excess of base is insoluble. The solution of the former, namely, of the fluotitanic acid, in water, is analogous to the liquid fluosilicic acid: it contains fluotitanic acid and fluoric acid combined with water.

FLUX. 1. In *Pathology*, often applied to diarrhœa, dysentery, and cholera.

2. In *Chemistry*, used to denote any substance or mixture added to assist the fusion of metals.

Flux, bile. See *Cholera.*

Flux, black. When one part of nitre and two of cream of tartar are deflagrated together in a crucible, a black powder remains, which is a mixture of charcoal and subcarbonate of potash. This substance is called *black flux*, and is of much use in the reduction of metals.

Flux, crude. A mixture of nitre and cream of tartar put into a crucible along with a metal to aid its fusion.

Flux, intestinal. See *Diarrhœa.*

Flux, white. When equal parts of nitre and cream of tartar are deflagrated together, the whole of the carbon is dissipated: the residuum, which consists of subcarbonate of potash, is called *white flux.*

FLUXION. *Fluxio.* A term formerly applied by chemists, to signify the change of metals, or other bodies, from the solid into the fluid state, by the application of heat. See *Fusion.*

Fluxus capillorum. The name given by Celsus to alopecia.

Fly. See *Musca.*

Fly powder. See *Arsenic.*

Fly, Spanish. See *Cantharis.*

FO'CILE. The ulna and the radius have been denominated by the barbarous appellations of *focile majus* and *minus*; the tibia and fibula have also been so called.

Fo'cus. (A fire.) The right lobe of the liver was fancifully so called by some old anatomists, on the supposition that it ministered to the coction of nutritious matters.

Fodi'na. (From *fodio*, to dig.) A quarry. The labyrinth of the ear.

Fœnicula'tum lignum. A name of sassafras.

FŒNI'CULUM. (*um*, *i.* n.; *quasi fœnum oculorum*, the hay or herb good for the sight. — *Minshew.* An improbable derivation, but we know of no better.) Fennel. See *Anethum.*

Fœniculum alpinum. See *Æthusa.*

Fœniculum aquaticum. See *Phellandrium aquaticum.*

Fœniculum dulce. See *Anethum.*

Fœniculum germanicum. See *Anethum fœniculum.*

Fœniculum marinum. See *Crithmum.*

Fœniculum orientale. See *Cuminum.*

Fœniculum porcinum. See *Peucedanum officinale.*

Fœniculum sinense. See *Anisum stellatum.*

Fœniculum sylvestre. See *Seseli.*

Fœniculum tortuosum. See *Seseli.*

Fœniculum vulgare. See *Anethum.*

FŒ'NUM. (*um, i.* n.) Hay.

Fœnum camelorum. See *Juncus.*

Fœnum græcum. See *Trigonella.*

FŒNUM SYLVESTRE. Wild fenugreck.

FŒTA'BULUM. (From *fœteo*, to become putrid.) An encysted abscess is so called by Severinus.

FŒTAL. Appertaining to the fœtus.

Fœtal circulation. See *Ovum.*

FŒ'TUS. (*us, ús.* m.; from *feo*, to bring forth, according to Vossius.) *Epicyema. Epigonion.* The child enclosed in the uterus of its mother, is called a fœtus from the fifth month after pregnancy until the time of its birth. See *Ovum.*

FOLIACEOUS. Leafy.

FOLIATA TERRA. 1. Sulphur.

2. An old name of the acetate of potash.

FOLIATION. (*Foliatio*; from *folium*, a leaf.) The manner in which leaves are folded up in their buds. See *Vernatio*, and *Gemma.*

FOLIA'TUS. (From its resemblance to *folium*, a leaf.) Foliate: leafy.

FOLIO'LUM. A leaflet or little leaf.

FO'LIUM. (*um, i.* n.; from φυλλον.) A leaf. See *Leaf.*

FOLIUM ORIENTALE. See *Cassia senna.*

FOLLICLE. (*Folliculus*; diminutive of *follis*, a bag.) See *Folliculus.*

FOLLICULOSE. (*Folliculosus*; from *folliculus*, a little bag.) Of the nature of a follicle.

FOLLI'CULUS. (Diminutive of *follis*, a bag.) 1. A little bag. In *Anatomy*, applied to a simple gland or follicle. One of the most simple species of gland, consisting merely of a hollow vascular membrane or follicle, and an excretory duct; such are the mucous follicles, the sebaceous follicles, &c.

In *Botany*, a follicle is a one-valved pericarp, or seed-vessel. It has one cell, and bursts lengthwise, and bears the seeds on or near its edges, or on a receptacle parallel therewith.

From the adhesion of the seeds it is distinguished into,

1. A follicle, *with a partition*, when the seeds adhere to an intermediate dissepiment.

2. A follicle, *without a partition*, when the seeds adhere to the internal sides only.

From the number of seeds,

1. *Monosperm follicle*; as in *Orontium.*

2. *Polysperm*; as in *Asclepias syriaca.*

From the direction, into,

1. *Erect*; as in *Vinca* and *Nerium.*

2. *Reflected*; as in *Plumeria.*

3. *Horizontal*; as in *Cameraria.*

Follicle also means, in *Botany*, an air-bag.

FOLLICULUS FELLIS. The gall-bladder.

FOMENTA'TION. *Fomentatio.* Partial bathing with warm water, simple or medicated.

FO'MES (*es, itis.* m.; *à fovendo.*) Fuel. In medical language a fomes means a porous substance capable of absorbing and retaining contagious effluvia. Wool and woollen cloth are amongst the most active *fomites.*

FOMES MORBI. An old term for the exciting cause of a disease.

FO'MITES. Plural of *fomes.* See *Fomes.*

Fons pulsatilis. See *Fontanella.*

FONTANE'LLA. (*a, æ.* f.; diminutive of *fons*, a fountain.) *Fons pulsatilis.* The parietal bones and the frontal do not coalesce until the third year after birth, so that, before this period there is an obvious interstice, commonly called *mould*, and scientifically the *anterior fontanel.* There is also a lesser space, occasionally, between the occipital and parietal bones, termed the *posterior fontanel.* These spaces between the bones are filled up by the dura mater, pericranium, and external integuments, so that, during birth, the size of the head may be lessened; for, at that time, the bones of the head, upon the superior part, are not only pressed nearer to each other, but they frequently lap over one another, in order to diminish the size during the passage of the head through the pelvis.

FONTI'CULUS. (*us, i.* m.; diminutive of *fons.*) An issue. An artificial ulcer formed in any part by incision or caustic, and kept discharging by introducing daily a pea, covered with any digestive ointment.

FOOT. *Pes.* That part of an animal on which it stands or walks.

In *Zoology*, animals are distinguished, with respect to the number of feet, into,

1. *Biped*, or two-footed, as men and birds.

2. *Quadruped*, or fourfooted; as most land animals.

3. *Multiped*, or many-footed; as insects.

The osseous part of the foot, which is of very complex structure, consists in man of the *tarsus, metatarsus*, and *phalanges.* These are connected by numerous ligaments, acted on by numerous muscles, and covered by tendinous expansions and common integuments, the latter of which are very thick and hard on the sole of the foot, being condensed by the frequent pressure to which they are subjected.

Foot-bath. See *Pediluvium.*

FORA'MEN. (*en, inis.* n.; from *foro*, to pierce.) A little opening.

Foramen centrale. See *Foramen of Soemmering.*

FORAMEN CŒCUM. 1. A single opening, in the basis of the cranium, between the ethmoid and the frontal bone, that gives exit to a small vein.

2. A depression at the posterior part of the tongue.

This is sometimes called *foramen cæcum Morgagni.*

FORAMEN INCISI'VUM. *Foramen palatinum anterius.* A foramen behind the upper incisive teeth, common to the two upper jaws below, but proper to each above. It is filled with a process of the palate, and with very small vessels and nerves.

FORAMEN LACERUM IN BASI CRANII. A foramen in the basis of the cranium, through which the internal jugular vein, and the eighth pair and accessory nerves pass.

FORAMEN LACERUM ANTERIUS. *Foramen lacerum orbitale superius.* A large opening

tween the greater and lesser wing of the henoid bone on each side, through which the ird, fourth, first branch of the fifth, and the xth pair of nerves, and the ophthalmic artery, ass.

Foramen Monroia'num. Foramen of Monro. o named after the elder Dr. Monro, who first scribed it. An aperture under the anterior rt of the body of the fornix, by which the teral ventricles of the brain communicate with ch other. See *Encephalos.*

Foramen of Monro. See *Foramen Monroianum.*

Foramen nigrum. See *Occipital bone.*

Foramen opticum. The hole which transits the optic nerve.

Foramen ovale. The opening between the vo auricles of the heart of the fœtus. See also *nnominatum os.*

Foramen of Winslow. An opening in the mentum. See *Omentum.*

Forami'nulum os. The ethmoid bone.

FO'RCEPS. (*eps, ipis.* f.; *quasi ferriceps,* om *ferrum,* iron, and *capio,* to take.) The ame given to a great variety of surgical inruments, which are used in order to take firm old of bodies.

Fore-arm. See *Body.*

FOR'ENSIC. *Forensis. Forensicus.* Beonging to the forum, or courts of law. Forensic medicine is the application of medical cience to the elucidation of judicial questions. ee *Medicine.*

Foreskin. See *Prepuce.*

Forge water. See *Fabrarum aqua.*

FO'RMIATE. *Formias.* A compound roduced by the union of the formic acid with salifiable basis: thus, *formiate of ammonia,* tc.

FO'RMIC ACID. (*Acidum formicum:* so alled, because obtained from *formica,* the ant.) This acid comes from the ant, or *formica rufa,* f Linnæus. It may be obtained either by imple distillation, or by infusion in boiling vater, and subsequent distillation of as much of he water as can be brought over without burning the residue. After this it may be purified y repeated rectifications, or by boiling; or, after ectification, it may be concentrated by frost.

This acid has a very sour taste, and continues iquid even at very low temperatures. It has ot yet been applied to any use.

FORMI'CA. (*a, æ.* f.; *quod ferat micas,* ecause of his diligence in collecting small particles of provision together.) 1. The name of genus of insects. The ant or pismire. See *Formica rufa.*

2. The name of a black wart with a broad ase, and cleft superficies, because the pain ttending it resembles the biting of an ant.

3. A varicose tumour on the anus and glans enis.

Formica rufa. The ant or pismire. This ndustrious little insect contains an acid juice, nd gross oil, which were supposed to possess phrodisiac virtues. The chrysalides of this nimal are said to be diuretic and carminative, nd by some recommended in the cure of ropsy.

The ant also furnishes an acid called the formic, which it has been long known to contain, and occasionally to emit. See *Formic acid.*

Fo'rmix. See *Herpes exedens.*

FO'RMULA. (*a, æ.* f.; diminutive of *forma,* a form.) A prescription for the preparation of medicines.

Fo'rnax. A furnace.

Fornica'tus. Fornicate: vaulted. See *Forniciformis.*

FORNICIFO'RMIS. Forniciform: vaulted. Applied to the nectary of some plants; as the *Symphytum officinale,* &c. See *Nectarium.*

FO'RNIX. (*ix, icis.* f.; an arch or vault.) The part beneath the corpus callosum in the brain is so called, because, if viewed in a particular direction, it has some resemblance to the arch of a vault. See *Encephalos.*

FO'SSA. (*a, æ.* f.; from *fodio,* to dig.) *Fovea.* A little depression or sinus. The pudendum muliebre.

Fossa amyntæ. A double-headed roller for the face.

Fossa hyaloide'a. The depression in the vitreous humour in which the crystalline lens is lodged.

Fossa lachrymalis. A sinuosity in the frontal bone, for lodging the lachrymal gland.

Fossa magna. 1. The great groove of the ear.

2. The opening of the pudendum muliebre.

Fossa navicularis. 1. The cavity at the bottom of the entrance of the pudendum muliebre.

2. The great groove of the ear.

Fossa ovalis. The depression in the right auricle of the human heart, marking the site of the foramen ovale in the fœtus.

Fossa pituitaria. The hollow in the sella turcica of the sphenoid bone, which contains the pituitary gland.

FO'SSIL. (*Fossilis;* from *fodio,* to dig.) A term applied adjectively and substantively to any thing dug out of the earth. The organic remains of animals and vegetables are termed *extraneous* fossils, as opposed to minerals, which are the natural productions of the earth.

Fossils, extraneous. See *Fossil.*

Fossil unicorn. See *Unicorn.*

Fo'tus. (*us, ûs.* m.) See *Fomentation.*

Fourth pair of nerves. See *Nervous system.*

FO'VEA. (*a, æ.* f.; from *fodio,* to dig.) 1. A little depression.

2. The pudendum muliebre.

3. A partial sweating-bath.

FOVEA'TUS. Having a little depression, or pit. Applied to the nectary of plants. See *Nectarium.*

Fovi'lla. The name given by Martyn to the fecundating liquor contained in the grains of pollen.

FOWL. In a general sense this word is of equal import with bird: but it is applied in a more particular manner to poultry of all kinds.

Fowl, dunghill. See *Phasianus.*

Fowl, guinea. See *Numidia meleagris.*

Fowl, pea. See *Pavo cristatus.*

Fowler's solution. An arsenical solution

introduced into practice by Dr. Fowler, of Stafford, as a substitute for the quack medicine called tasteless ague drop. The arsenical solution of the pharmacopœias is similar to this.

Fox-glove. See *Digitalis.*

Fox-glove, Eastern. See *Sesamum.*

FRA'CTURE. (*Fractura, æ.* f.; from *frango*, to break.) *Catagma, Clasis, Clasma, Agme.* In *Surgery*, the breaking of a bone into two or more fragments. A *simple* fracture is when the bone only is divided. A *compound* fracture is a division of the bone, with a laceration of the integuments, the bone mostly protruding. When the bone is splintered into a number of small pieces, this is called a *comminuted fracture.* A fracture is also termed transverse, oblique, &c., according to its direction.

Fræ'nulum. (*um, i.* n.; diminutive of *frænum.*) See *Frænum.*

FRÆ'NUM. (*um, i.* n.) A name given by anatomists to any ligament which binds down or restrains the motion of a part.

Frænum epiglo'ttidis. The ligament which connects the epiglottis with the root of the tongue and os hyoides.

Frænum linguæ. A fold of the mucous membrane of the mouth, which binds down the tongue.

Frænum præputii. A fold of integument connecting the prepuce with the glans penis.

FRAGA'RIA. (*a, æ.* f.; from *fragro*, to smell sweet.) The strawberry. 1. The name of a genus of plants in the Linnæan system. Class, *Icosandria;* Order, *Polygynia.*

2. The pharmacopœial name of the strawberry. See *Fragaria vesca.*

Fragaria sterilis. Barren strawberry. Astringent, seldom used.

Fragaria vesca. The systematic name of the strawberry plant. The mature fruit of the *Fragaria, flagellis reptantibus*, of Linnæus, was formerly recommended in gouty and calculous affections, in consequence, it would appear, of its efficacy in removing tartar from the teeth, which it is said to do very effectually.

FRAGI'LITAS OSSIUM. Fragility or brittleness of the bones. See *Mollities ossium.*

Fra'gmen. *Fragmentum.* A splinter of a bone.

Fra'gum. (*um, i.* n.; from *fragro*, to smell sweet.) See *Fragaria.*

FRAMBŒ'SIA. (From *framboise*, Fr. for a raspberry.) The yaws; a disease that is endemial to the Antilles islands, as well as Africa. It appears with excrescences like mulberries growing out of the skin in various parts of the body, which discharge an ichorous fluid. The nature of this disease has been imperfectly investigated by European practitioners; and as it is perhaps never seen in England, a very brief account of it here will be sufficient.

The eruption of the yaws sometimes commences without any precursory symptoms of ill-health; but it is generally preceded by a slight febrile state, with languor, debility, and pains of the joints, resembling those of rheumatism. After several days, minute protuberances appear on various parts of the skin, at first smaller than the head of a pin, but gradually enlarging, in some cases to the diameter of a sixpence, and in others even to a greater extent: they are most numerous, and of the largest size, in the face, groins, axillæ, and about the anus and pudenda. But the crop is not completed at once: new eruptions appear in different places, while some of the earlier ones dry off. When the cuticle is broken, a foul crust is formed on the surface, from under which, in the larger protuberances, red fungous excrescences often spring up, which attain different magnitudes, from that of a small raspberry to that of a large mulberry, which fruit they somewhat resemble from their granulated surfaces. When the eruption is most copious, these tubercles are of the smallest size; and when fewer, they are largest. Their duration and progress are various in different constitutions, and at different periods of life. Children suffer less severely than adults, and are more speedily freed from the disease: in them, according to Dr. Winterbottom, the duration of the yaws is from six to nine months; while in adults it is seldom cured in less than a year, and sometimes continues during two or three. The fungous tubercles attain their acme more rapidly in the well-fed negroes, than in those who are ill-fed and thin; and they likewise acquire a larger size in the former than in the latter. They are not possessed of much sensibility, and are not the seat of any pain, except when they appear upon the soles of the feet, where they are confined and compressed by the hard and thickened cuticle: in that situation they render the act of walking extremely painful, or altogether impracticable. They never suppurate kindly, Dr. Winterbottom says, but gradually discharge a sordid glutinous fluid, which forms an ugly scab round the edges of the excrescence, and covers the upper part of it, when much elevated, with white sloughs. When they appear on any part of the body covered with hair, this gradually changes in its colour from black to white, independently of the white incrustation from the discharge. They leave no depression of the skin.

The period during which the eruption is in progress, varies from a few weeks to several months. "When no more pustules are thrown out," Dr. Winterbottom observes, "and when those already upon the skin no longer increase in size, the disease is supposed to have reached its acme. About this time it happens, on some part of the body or other, that one of the pustules becomes much larger than the rest, equalling or surpassing the size of a half-crown piece: it assumes the appearance of an ulcer, and, instead of being elevated above the skin, like others, it is considerably depressed: the surface is foul and sloughy, and pours out an ill-conditioned ichor, which spreads very much, by corroding the surrounding sound skin: this is what is called the *master* or *mother yaw.*" When arrived at its acme, however, the eruption continues a considerable time without undergoing much alteration, often without very materially injuring the functions, and it seldom proves dangerous, except from the mischievous interference of ill-directed art.

The frambœsia is propagated solely by the

ntagion of the matter discharged from the
ption, when it is applied to the wounded or
oken skin of another person, who has not
eviously undergone the disease. For, like
e febrile eruptions, the frambœsia affects the
me person only once during life; but, unlike
em, it is not propagated by effluvia. In
frica, it is usually undergone during child-
od. The period which elapses between the
ception of the contagion and the commence-
ent of the disease is no where mentioned; but
the case of a Dane, whom Dr. Adams saw
Madeira, the patient had been ten months
sent from the West Indies, before he felt any
disposition.

With respect to the treatment of frambœsia,
thing very satisfactory is to be collected from
e writings of the practitioners to whom we are
lebted for the history of the disease. The
tive Africans, according to Dr. Winterbottom,
never attempt to cure it until it has nearly
ached its height, when the fungi have acquired
eir full size, and no more pustules appear."
nd the practitioners in the West Indies soon
arned, by experience, that active evacuations
ard the natural progress of the disease; and
at mercurials, although they suspended it, and
eared the skin of the eruption, yet left the
tient still susceptible of, or rather still im-
egnated with, the virus, which speedily
inced its presence, by a reappearance of the
mptoms, more severe and tedious than before.
truth, the disease, it would seem, like the
stular and exanthematous fevers of our own
mate, will only leave the constitution after it
s completed the various stages of its course,
d removed the susceptibility of the individual
future infection; and no medicine, yet dis-
vered, has had any influence in superseding
is action, or in accelerating its progress. Un-
ss, therefore, any urgent symptoms should re-
ire alleviation, which seldom, if ever, happens,
is advisable to dispense with the administra-
n of medicine, and to be content with restrict-
g the patient to a moderate and temperate
gimen, during the first stage of the malady.
hen the eruptions begin to dry, or as soon as
ey cease to multiply and enlarge, the disease
pears to require the same management as
her slow and superficial ulcerations, accom-
nied with a cachectic state of the system; viz.
light, but nutritious diet, a dry and wholesome
r, warm clothing, moderate exercise, and a
urse of tonic medicine, especially of sarsapa-
la, or cinchona, with the mineral acids, or
th antimonials and small doses of mercury,
cording to the circumstances of the individual
abit. The effects of mercury, however, exhi-
ted so as to excite salivation, as the early West
dian practitioners recommend, seem to be of a
ry questionable nature, especially when it is
accompanied by the vegetable decoctions; and
is certain that patients have, in some cases,
on recovered under the use of the latter, when
e mercurials were omitted. The native
fricans employ decoctions of the bark of two
three trees, which are gently purgative, as
ell as tonic, and likewise wash the sores with
em, after carefully removing the crusts.

The *master yaw* sometimes remains large and troublesome, after the rest of the eruption has altogether disappeared. It requires to be treated with gentle escharotics, and soon assumes a healing appearance under these applications. Stronger caustics are requisite for the cure of the *crab yaws*, or tedious excrescences which occur on the soles of the feet.

Fra'ngula. (*a, æ.* f.; from *frango*, to break: so called because of the brittleness of its branches.) See *Rhamnus frangula.*

Frankincense. See *Juniperus lycia*, and *Pinus abies.*

Fraxine'lla. (*a, æ.* f.; from *fraxinus*, the ash: so called because its leaves resemble those of the ash.) See *Dictamnus albus.*

Fraxinella, white. See *Dictamnus albus.*

FRA'XINUS. (*us, i.* f.; according to some, from *fragor*, on account of the noise its seed vessels make when shaken by the wind.) The ash. 1. The name of a genus of plants in the Linnæan system. Class, *Polygamia;* Order, *Dioecia.*

2. The pharmacopœial name of the ash-tree. See *Fraxinus excelsior.*

Fraxinus excelsior. The systematic name of the ash-tree. *Fraxinus.* Called also, *brumelli*, and *bumelia.* The bark of this tree, *Fraxinus—foliis serratis floribus apetalis*, of Linnæus, when fresh, has a moderately strong bitterish taste. It possesses resolvent and diuretic qualities, and has been successfully exhibited in the cure of intermittents. The seeds are occasionally exhibited medicinally as diuretics, in the dose of a drachm. In warm climates a sort of manna exudes from this species of fraxinus.

Fraxinus ornus. The systematic name of the tree from which manna flows. This substance is also termed *Manna calabrina; Ros calabrinus; Acromeli; Alusar; Drysomeli.* That species which is of a rosy colour, is called *nuba. Mel aërium*, from the supposition that it descended from Heaven. Manna is the condensed juice of the flowering ash, or *Fraxinus ornus—foliis ovato-oblongis serratis petiolatis, floribus corollatis*, Hort. Kew., which is a native of the southern parts of Europe, particularly Sicily and Calabria. Many other trees and shrubs have likewise been observed to emit a sweet juice, which concretes upon exposure to the air, and may be considered of the manna kind, especially the *Fraxinus rotundifolia*, and *excelsior.* In Sicily these three species of fraxinus are regularly cultivated for the purpose of procuring manna, and with this view are planted on the declivity of a hill with an eastern aspect. After ten years' growth, the trees first begin to yield the manna, but they require to be much older before they afford it in any considerable quantity. Although the manna exudes spontaneously upon the trees, yet, in order to obtain it more copiously, incisions are made through the bark, by means of a sharp crooked instrument; and the season thought to be most favourable for instituting this process, is a little before the dog-days commence, when the weather is dry and serene. Manna is generally distinguished into different kinds, viz. the manna in tear, the canulated and flaky manna, and the common

brown or fat manna. All these varieties seem rather to depend upon their respective purity, and the manner in which they are obtained from the plant, than upon any essential difference of the drug. The best manna is in oblong pieces or flakes, moderately dry, friable, very light, of a whitish or pale yellow colour, and in some degree transparent: the inferior kinds are moist, unctuous, and brown. Manna is well known as a gentle purgative, so mild in its operation, that it may be given with safety to children and pregnant women, to the delicacy of whose frames and situations it is particularly adapted. It is esteemed a good and pleasant auxiliary to the purgative neutral salts. It has been thought demulcent and useful in coughs, disorders of the chest, and such as are attended with fever and inflammation, as in pleuritis, &c. It has been particularly recommended in bilious complaints, and to help the discharge of mineral waters, when they are not of themselves sufficiently active. It is apt, in large doses, to create flatulencies and gripes; both of which are prevented by a small addition of some warm carminatives. It purges in doses of from ʒj. to ʒij.; but its purgative quality is much increased, and its flatulent effects prevented, by a small addition of cassia. The dose for children is from one scruple to three. It is best dissolved in whey.

Fraxinus rotundifolia. The systematic name of a tree which affords manna. See *Fraxinus ornus.*

Freckle. See *Ephelis.*

Freezing point. See *Caloric.*

Freezing mixture. See *Caloric.*

Fre'na. The sockets of the teeth have been so called.

French berries. See *Rhamnus infectorius.*

FRIABI'LITY. (*Friabilitas*; from *frio*, to crumble.) The property of being easily crumbled or reduced to small particles by pressure.

FRI'ABLE. Possessed of friability.

FRICTION. (*Frictio, onis.*; from *frico*, to rub.) Friction is a therapeutical agent of considerable power; by means of it, the circulation is stimulated in debilitated parts, and medicinal substances are made to penetrate the pores of the skin.

Friction, sound of. In auscultation the sound of friction, or *bruit de frottement* is a sound which is heard where there is considerable roughness on the surface of the pulmonary or costal pleura. It is synchronous with the respiratory movements.

Friesland green. Another name for *Brunswick green.*

Frigida'rium. (*um, i.* n.; from *frigidus*, cold.) See *Balneum.*

Frigorific. Possessed of the power of inducing cold.

Frigorific mixture. See *Caloric.*

FRI'GUS. (*us, oris.* n.; from *frigeo*, to be cold.) Cold. This is generally thought to consist merely in the privation of heat, though some have maintained it to be a positive principle. The human body contains within itself, as long as it is living, a principle of warmth: if any other body, being in contact with it, abstracts the heat with unusual rapidity, it is said to be cold; but if it carries off the heat more slowly than usual, or even communicates heat to our body, it is said to be hot. See *Ardor.* Cold is a strong irritant, when the atmospheric temperature is too high; it is a pleasant and reviving agent, inasmuch as it both reduces the heated medium, and restores the particles of the affected organ from a state of disquieting tenseness to their usual scale of approximation. If the cold be pushed further, it may go a little beyond this, and be still pleasant and healthful: for the organ or the general system may be in a state of morbid relaxation, and, consequently, in their actual scale of approach, the living particles may be too far remote for the purposes of high elasticity and vigour. And it is in such a condition as this that cold chiefly shows its stimulant power, and is so generally resorted to as a tonic. But if the agency of cold be carried farther than this, it produces uneasiness to the nerves of feeling, by a process precisely the reverse of that which is pursued by heat, and consequently in a twofold manner: first, by lowering the warmth of the organ, or of the system, below its scale of ease and comfort; and next, by forcing the living particles into too close and crowded a state, and not allowing them sufficient room for play. Cold, as an idiopathic affection, is chiefly local, and most common to the head and feet. It is temporarily relieved by warmth and stimulants, and particularly by the friction of a warm hand; and, where it can be used, the exercise of walking. It is permanently relieved by the warmer tonics, as sea-bathing and aromatic bitters.

Considerable mischief has often been produced by a sudden exposure of the feet to severe cold, and especially in delicate and irritable habits, unused to such applications, as colic, headache, catarrh, fevers, and, in podagral habits, gout. But the application of severe and sudden cold to the head or stomach, by drinking ice or cold water, and especially when the individual is heated and perspiring, has been followed with more alarming effects, and even with death itself. Mauriceau relates an instance of death produced during baptism, by applying to the head the water of the baptismal font. This must be a rare occurrence; while the fatal effects of drinking ice or iced water, in a state of heat, are innumerable. It is observed by Dr. George Fordyce, and the observation is quoted and called curious by Dr. Darwin, "that those people who have been confined some time in a very warm atmosphere, as of 120° or 130° of heat, do not feel cold, nor are subject to paleness of their skins, on coming into a temperature of 30° or 40°: which would produce great paleness and painful sensation of coldness in those who had been for some time confined in an atmosphere of only 86° or 90°." The cause is not difficult of explanation. The sensorial power is exhausted, and the nerves of feeling rendered torpid, by a long exposure to a heat of 120° or 130°, and the turgid capillaries, the dilatation of which produces the general blush, lose their power of constriction or collapse; while in a heat of 86° or 90° neither of such effects takes place.

Cold, as a symptom, is found in the first stage fever, in syncope, hysteria, nausea, and inmmation of the viscera, in all of which the fection is general. See *Morbid temperature.*

FRO'NS. (*s, tis.* f. or m.) 1. The forehead. The part between the eyebrows and the iry scalp.

2. (*s, dis.* f.) The leaf or bough of a tree: ow applied by botanists to the cryptogamous ants only, to signify that the stem, root, and af are all in one; as in ferns, fuci, &c.

FRO'NTAL. (*Frontalis*; from *frons*, the rehead.) Belonging to the forehead.

Frontal bone. See *Frontis os.*

Frontal sinus. See *Frontis os.*

Frontalis. See *Frontal.*

Frontalis verus. See *Corrugator supercilii.*

FRO'NTIS OS. The frontal bone. *Os coronale. Os inverecundum. Metopon.* The external rface of this bone is smooth at its upper conx part, but below several cavities and prosses are observed. At each angle of the orbits e bone juts out to form two internal and two ternal processes; and the ridge under the eyeow, on each side, is called the superciliary ocess; from which the orbitar processes exnd backwards, forming the upper part of the bits; and between these the ethmoid bone is ceived. The nasal process is situated between e two internal angular processes. At the ternal angular process is a cavity for the carncula lachrymalis; and at the external, anher for the pulley of the major oblique muscle. he foramina are three on each side: one in ch superciliary ridge, through which a nerve, tery, and vein pass to the integuments of the rehead; a second near the middle of the inrnal side of the orbit, called internal orbitar; e third is smaller, and lies about an inch eper in the orbit. On the inside of the os ontis there is a ridge which is hardly perceple at the upper part, but grows more promint at the bottom, where the foramen cœcum pears; to this ridge the falx is attached. The ontal sinus is placed over the orbit on each le: except at this part the frontal bone is of ean thickness between the parietal and ocbital; but the orbitar process is so thin as to almost transparent.

FRUCTIFICATION. (*Fructificatio, onis.*; from *fructus*, fruit, and *facio*, to make.) nder this term are comprehended the flowers d the fruit of a plant. It is a temporary part plants appropriated to generation, terming the old vegetable and beginning the new. y the parts of fructification, Sir James Smith bserves, each species is perpetually renewed thout limits, while all other modes of propation are but the extension of an individual, d sooner or later terminate in its total extinon. The fructification is therefore essential vegetables. A plant may be destitute of stem, aves, or even roots, because if one of these rts be wanting, the others may perform its nctions; but it can never be destitute of ose organs by which its species is propagated. Linnæus distinguishes seven parts of fructifition, some of which are essential to the very ture of a flower or fruit; others, not so indispensably necessary, and therefore are not universal.

1. The *calyx*, or flower-cup, not essential and often absent. See *Calyx.*

2. The *corolla*, or petal, likewise not essential. See *Corolla.*

3. The *stamen* or *stamina.* These are essential. See *Stamen.*

4. The *pistillum*, or *pistilla*, in the centre of the flower, consisting of the rudiments of the fruit, with one or more organs attached to them, and therefore essential. See *Pistillum.*

5. The *pericarpium*, or seed-vessel, wanting in many plants. See *Pericarpium.*

6. The *semen*, or seed, the perfecting of which is the sole end of all the other parts.

7. The *receptaculum*, which must necessarily be present in some form or other. See *Receptaculum.*

FRU'CTUS. (*us, us.* m.; *à fruor.*) The fruit of a tree or plant. By this term is understood, in *Botany*, the produce of the germen, consisting of the seed-vessel and seed. For the botanical distinctions of fruits, see *Pericarpium.*

Fruits are used more or less extensively as an article of diet for man, and many of the inferior animals live chiefly upon them. Those of the subacid kind are exhibited as dietetic auxiliaries, as refrigerants, antiseptics, attenuants, and aperients. Formerly they were exhibited medicinally in the cure of putrid affections, and to promote the alvine and urinary excretions. The acid which they contain is either the tartaric, oxalic, citric, or mallic, or a mixture of two or more of them with sugar and gluten, starch, and a gelatinous substance. Considering them as an article of diet, they afford little nourishment, and are liable to produce flatulencies. To persons of a bilious constitution and rigid fibres, and where the habit is disposed naturally, or from extrinsic causes, to an inflammatory or putrescent state, their moderate and even plentiful use is salubrious; by those of a cold inactive disposition, where the vessels are lax, the circulation languid, and the digestion weak, they should be used very sparingly. The juices extracted from these fruits by expression, contain their active qualities freed from their grosser indigestible matter. On standing, the juice ferments and changes to a vinous or acetous state. By proper addition of sugar, and by boiling, their fermentative power is suppressed, and their medicinal qualities preserved. The juices of these fruits, when purified from their fæculencies by settling and straining, may be made into syrups, with a due proportion of sugar in the usual way.

FRUCTUS ACIDO-DULCES. Subacid fruits; those which combine an acid with a sweet taste. See *Fructus.*

Fruit. See *Fructus.*

Fruit-stalk. See *Pedunculus.*

FRUMENTA'CEOUS. *Frumentaceus.* A term applied to all such plants as have a conformity with wheat, either with respect to their fruit, leaves or ears.

FRUTESCE'NTIA. (*a, æ.* f.; from *fructus*, fruit.) Frutescence. The mature state of a fruit.

FRU'TEX. (*ex, icis.* m.) A shrub or

plant, which rises with a woody durable stem, but never arrives at the height, or has the appearance of an *arbor*, or tree.

FRUTICO'SUS. Fruticose: shrubby; shrub-like.

FU'CUS. (*us, i.* m.) The name of a genus of plants in the Linnæan system. Class, *Cryptogamia*; Order, *Algæ*.

Fucus bacci'ferus. Gulph-weed. This is eaten raw, as a salad, and pickled as samphire. It is aperient, diuretic, and wholesome.

Fucus digitatus. Sea girdle and hangers. This fucus grows upon stones and rocks in the sea near the shore. It has several plain long leaves or sinuses springing from a round stalk, in the manner of fingers when extended. It affords soda.

Fucus edulis. Red dulce. This species is eaten raw, also after being broiled, when it has the taste of roasted oysters.

Fucus esculentus. *Fucus teres; Fucus fimbriatus.* Daber locks. Edible fucus. Hudson has made this a distinct species, but Linnæus included it under his *saccharinus*. It grows plentifully in the sea near the shores of Scotland, and also those of Cumberland, where it is eaten by the natives. It has a broad, plain, simple, sword-shaped leaf, springing from a pinnated stalk.

Fucus fimbriatus. See *Fucus esculentus.*

Fucus helminthocorton. *Helmintho-corton. Conferva helmintho-cortos. Conferva dichotoma. Corallina rubra. Corallina melito-corton. Lemitho-corton. Mousse de Corse.* Corsican worm-weed. *Fucus helmintho-corton*, of De la Tourrette. This plant has gained great repute in destroying all species of intestinal worms. Its virtues are extolled by many; but impartial experimentalists have frequently been disappointed of its efficacy. The Geneva Pharmacopœia directs a syrup to be made of it. It is given also internally in the cure of scrofulous and cancerous complaints; and in some cases it is said to have been very efficacious.

This sea moss contains several kinds of geniculated thread-like algæ, confervæ, and fuci, which are also supposed to be vermifuge.

Fucus natans. Sea lentil. *Vitis marina. Lenticula marina.* This is said to be useful against some forms of dysuria.

Fucus palmatus. Handed fucus. Dulce. Dills. Dulesh. This grows in the sea and consists of a thin-lobed leaf like a hand, and is eaten either raw, boiled, or broiled.

Fucus pinnatifidus. Pepper dulce. This is often eaten as a salad: it is warm, like cresses, and very wholesome.

Fucus saccharinus. Sweet fucus. Sea-belts. This species grows upon rocks and stones by the sea-shore. The leaves are very sweet, and, when washed and hung up to dry, will exude a substance like sugar, from which the plant is named.

Fucus teres. See *Fucus esculentus.*

Fucus vesiculosus. The systematic name of the sea-oak. Sea wrack. Bladder wrack. *Quercus marina.* This sea weed, the *Fucus vesiculosus — fronde plana dichotoma costata integerrima, vesiculis axillaribus geminis, terminalibus tuberculatis*, of Linnæus, is said to be a useful assistant to sea-water, in the cure of disorders of the glands. Burnt in the open air, and reduced to a black powder, it forms the *æthiops vegetabilis* of the shops, which, as an internal medicine, is similar to burnt sponge, containing a considerable quantity of iodine.

FU'LCRUM. (*um, i.* n.) A prop or support. This term is applied by Linnæus, not only to those organs of vegetables correctly so denominated, such as tendrils, but also to various other appendages to the herbage of a plant, none of which are universal or essential, nor is there any one plant furnished with them all. Sir James Smith prefers the English term *appendage*, for these organs in general, to *props*, because the latter applies only to one of them.

The greater *props*, or *fulcra* of vegetables, are the roots, trunks, and branches.

To the *lesser* are referred.

1. The *petiolus*, or petiole, which is the fulcrum of the leaf.

2. *Cirrus*, the tendril. See *Cirrus.*

3. The *stolo*, or sucker; a filament, or underground bud, protruded from the root, and sending off radicles into the earth, pushes up a stem resembling the parent plant; as in the strawberry, and *Syringa vulgaris.*

4. *Sarmentum*, the runner which gives off from the stem, and radicates on that which is nearest to it; as in the *Hedera helix*, or ivy.

The *fulcra of a flower* are the peduncle, scape, and receptacle.

FULI'GO. (*o, inis.* f.; *quasi fumiligo*; from *fumus*, smoke.) Soot. Wood-soot, *fuligo ligni*, or the condensed smoke from burning wood, has a pungent, bitter, and nauseous taste, and is resolved by chemical analysis into a volatile alkaline salt, an empyreumatic oil, a fixed alkali, and an insipid earth. The tincture prepared from this substance, *tinctura fuliginis*, has been recommended as a powerful antispasmodic in hysterical affections.

FULLER'S EARTH. *Cimolia purpurascens.* An earth composed of silica, alumine, magnesia, lime, muriate of soda, a trace of potash, and oxide of iron. It occurs in different parts of Europe, but the best is found in beds in Buckinghamshire and Surrey. It is sometimes applied by the poor to inflamed breasts, &c. with a view of cooling them.

Fulminating gold. See *Aurum.*

Fulminating mercury. See *Mercury.*

Fulminating platina. See *Platina.*

Fulminating silver. See *Argentum.*

Fulminating powder. This is made by triturating together, in a very dry mortar, three parts by weight of nitre, two of carbonate of potash, and one of flowers of sulphur; when fused in a ladle over the fire it explodes with great violence.

Fulmination. (*Fulminatio*; from *fulmen*, a thunderbolt.) Synonymous with *detonation.*

FULMI'NIC ACID. *Acidum fulminicum*: so called because its compounds explode with a noise. An acid obtained from fulminate of silver, which is the cyanic combined with oxide of silver.

Fumans nix. Quick lime.

FUMA'RIA. (*a*, *æ*. f.; from *fumus*, smoke, from its juice, when dropped into the eye, producing the same sensations as smoke.)

1. The name of a genus of plants in the Linnæan system. Class, *Diadelphia*; Order, *Decandria*. Fumitory.

2. The pharmacopœial name of the common fumitory. See *Fumaria officinalis*.

Fumaria bulbosa. *Aristolochia fabacea*. The root of this plant, *Fumaria — caule simplici, racteis longitudine florum*, of Linnæus, was formerly given to restore suppressed menses, and as an anthelmintic.

Fumaria officinalis. The systematic name of the fumitory or *Fumaria*; called also, *Fumus terræ*, *Capnos*; *Herba melancholifuga*. The leaves of this indigenous plant, *Fumaria — pericarpiis monospermis racemosis, caule diffuso*, of Linnæus, are directed for medicinal use in some Pharmacopœias: they are extremely succulent, and have no remarkable smell, but a bitter, somewhat saline taste. The infusion of the dried leaves, or the expressed juice of the fresh plant, is esteemed for its property of clearing the skin of many disorders of the leprous kind.

FUMIGA'TION. (*Fumigatio*, *onis*. f.; from *fumus*, smoke.) The application of fumes, to destroy contagious miasmata or effluvia. The most efficacious substance for this purpose is chlorine; next to it the vapour of nitric acid; and, lastly, that of the muriatic. The fumes of heated vinegar, burning sulphur, or the smoke of exploded gunpowder, deserve little confidence as antiloimics.

Fuming liquor of Boyle. *Fuming liquor of Beguine*. Hydro-sulphuret of ammonia.

Fuming liquor of Cadet. *Fuming liquor of arsenic*. Chloride of arsenic. See *Arsenic*.

Fuming liquor of Libavius. Bichloride of tin. See *Tin*.

Fumitory. See *Fumaria*.

FUMUS. (*us*, *i*. m.) 1. Smoke. The matter which is volatilised during the combustion of most bodies, and the composition of which varies infinitely, according to the composition of bodies and the products of their combustion.

2. A name given by the alchemists to several substances.

Fumus albus. Mercury.

Fumus citrinus. Sulphur.

Fumus duplex. Sulphur and mercury.

Fumus rubens. Orpiment.

Fumus terræ. Fumitory. See *Fumaria*.

FUNCTION. (*Functio*, *onis*, f.) In Physiology, any action by which vital phenomena are produced. The classification of the functions by the old physiologists is noticed in the article *Action*; which see. The functions of the living body are now generally distributed into,

1. Those of *Nutrition*, embracing digestion, absorption, circulation, secretion, assimilation, and the evolution of heat.

2. Those of *relation*, embracing sensation, the intellectual and moral phenomena, the voice, and voluntary motion.

3. The *generative functions*, or those which relate to the perpetuation of the species, including coition, gestation, parturition, and lactation.

Fu'nda. (*a*, *æ*. f.) 1. A four-headed bandage used in injuries of the face, especially fracture of the lower jaw. It is called, also, *funda galeni*, and *funda maxillaris*.

2. The sling used by obstetricians.

Funda galeni. See *Funda*.

Funda maxillaris. See *Funda*.

Fundament. (*Fundamentum*, *i*. n.) See *Anus*.

Fundament, falling down of. See *Prolapsus ani*.

FU'NGI. (The plural of *fungus*.) An order of the class *Cryptogamia* of Linnæus's system. They cannot properly be said to have any herbage; their substance is fleshy: their parts of fructification are in form of very small capsules, buried in their fleshy substance. These seminiferous capsules are on the surface, or in plates, and are called *lamellæ*, or gills, pores, or prickles, and they burst, as in the algæ.

A fungus or mushroom affords the following parts: —

1. *Pileus*, the hat, which is the round upper part, or head.

2. The *umbo*, the knob, or boss, or more prominent part in the centre of the hat.

3. *Lamellæ*, the gills or membraneous parts on the under side. These are peculiar to the *Agarici*.

4. The *pores*, or small punctures on the under surface, observed only in the genus *Boletus*.

5. *Echini*, or *Aculei*, elevated points on the upper surface of the pileus, noticed in the genus *Hydra* only.

6. *Verrucæ*, warts, observed on the inferior surface.

7. *Stipes*, the stem supporting the hat.

8. *Volva*, the wrapper, or covering, of a membraneous texture, surrounding the stem, and concealing the parts of fructification, and in due time bursting all around, forming a ring upon the stalk; as in *Agaricus campestris*. Linnæus also uses this term for the more fleshy external covering of some other fungi, which is scarcely raised out of the ground, and enfolds the whole plant when young.

9. *Annulus*, the ring, or slender membrane surrounding the stem.

The varieties of the *pileus*, or hat, are, —

1. *Planus*, flat.

2. *Convexus*; as in *Boletus bovinus*.

3. *Concavus*; as in *Octospora*.

4. *Umbonatus*, umbo or naval-like; as in *Agaricus conspurcatus*.

5. *Campanulatus*; as in *Agaricus fimitarius*.

6. *Viscidus*, viscid.

7. *Dimidiatus*, half round; as in *Agaricus niveus*.

8. *Squamosus*, covered with coloured scales; as in *Agaricus procerus*.

9. *Squarrosus*, having stiff elevated scales; as in *Agaricus conspurcatus*.

The varieties of the *lamellæ* are, —

1. *Equal*; as in *Agaricus crinitus*.

2. *Unequal*.

3. *Branched*, when several run into one; as in *Merulius cantharellus*.

4. *Decurrent*, proceeding down the stem.

5. *Venous*, so small that they appear like elevated veins.

6. *Dimidiate*, half round; as in *Agaricus muscarius*.

7. *Labyrinth-like*; as in *Agaricus quercinus*.

The varieties of the *volva* are, —

1. *Simple*.

2. *Double*.

3. *Stellate*, cut several times; as in *Lycopodium stellatum*.

The varieties of the *annulus* are, —

1. *Erect*, loose above, and fixed below; as in *Agaricus conspurcatus*.

2. *Inverse*, fixed above, free and bell-like below; as in *Agaricus mappa*.

3. *Sessile*, fixed only latterally.

4. *Mobile*; as in *Agaricus antiquatus*.

5. *Persistent*, remaining after the perfect formation of the plant.

6. *Evanescent*, disappearing after the complete evolution of the fungus.

7. *Arachnoid*, resembling a slender white web.

The varieties of the *stipes*, or stem, —

1. *Annulate*, having a ring.

2. *Naked*, without any.

3. *Squamose*, scaly.

4. *Bulbous*; as in *Agaricus separatus*.

5. *Filiform*; as in *Agaricus crinitus*.

Fu'ngate. A salt, formed by the fungic acid, with a salifiable base.

FUNGIC ACID. *Acidum fungicum*. So called because it is obtained from vegetables of the order *Fungi*. The expressed juice of the *boletus juglandis*, *boletus pseudo-igniarius*, the *phallus impudicus*, *merulius cantharellus*, or the *peziza nigra*, being boiled to coagulate the albumen, then filtered, evaporated to the consistence of an extract, and acted on by pure alkohol, leaves a substance which is called *fungic acid*.

Fu'ngiform. (*Fungiformis*: from *fungus*, and *forma*, resemblance.) Resembling a fungus.

Fungiform papillæ. The papillæ near the edges of the tongue have been so called.

FU'NGIN. The fleshy part of mushrooms, deprived by alkohol and water of the soluble parts.

FUNGOUS. *Fungosus*. Of the nature of a *fungus*.

Fungous ulcer. See *Ulcer*.

FU'NGUS. (*us*, *i*. m.) 1. In *Surgery*, a luxuriant and unhealthy growth of a texture softer than that which is natural to the part from which it springs.

2. In *Botany*, the name of an order of plants in the Linnæan system, belonging to the class *Cryptogamia*.

Fungus cerebri. See *Hernia cerebri*.

Fungus hæmatodes. *Spongoid inflammation*. *Soft cancer*. *Medullary sarcoma*. A peculiar form of malignant disease, first distinctly described by Mr. J. Burns of Glasgow, under the name of *spongoid inflammation*. This morbid growth has a remarkable similarity to the substance of the brain in its physical and chemical properties.

Most commonly it presents itself in masses, contained in fine membraneous partitions; but it has three varieties, as originally pointed out by Laennec. The first is the *encysted*, which varies from the size of a filbert to that of an apple. The *unencysted*, which may be very small, but, in other instances, obtains the magnitude of a child's head. Its exterior is not so irregular as that of the encysted, though divided into lobules, with fissures between them. The *infiltrated* or *diffused*, consists of masses, which are not circumscribed, and the medullary substance presents a diversified appearance, in consequence of its being blended in various proportions with the tissues amongst which it is produced. It is generally of the same consistence as the cerebral medulla; but sometimes much softer. It varies also in colour: in some instances, it is quite white; in others light red; and it has occasionally been found to be of a deep red colour. A section of the tumour exhibits numerous bloody points. A vascular organisation is conspicuous in it, and as the coats of its vessels are remarkably delicate, the circulation of the blood through them is readily interrupted; hæmorrhage from congestive rupture takes place; and the effused blood is mixed with the brain-like matter. When superficial, medullary sarcoma begins as a colourless swelling, soft and elastic to the touch, unless bound down by a fascia, in which case it has a firm tense feel. When immediately subcutaneous, it is elastic, and hence liable to be mistaken for a tumour containing fluid. When it occurs in the testicle, it is frequently supposed at first to be hydrocele.

Like cancer, it has a tendency to spread to the absorbent glands, which become converted into a similar substance. In every sense of the expression, it is a new formation, an adventitious growth, whether situated in the cellular membrane, in the tissue of the muscles, in that of the viscera, or within the orbit, or in any cavity or on any surface of the body. When it occurs in deep-seated parts, it has an invariable tendency to make its way to the surface; and, when this happens, a considerable swelling arises, the skin at length becomes thin and discoloured, and, from being at first smooth, now projects irregularly; openings are formed in these projections, and a medullary growth springs up, which sometimes bleeds profusely. It is only at this period of the disease that the name of fungus hæmatodes is at all applicable; and even now it is not very correct, as the mass is not a fungus, but a substance of medullary consistence. Medullary sarcoma seems to be a constitutional disease, and rarely confined to one organ. It has been observed in the eye, the brain, the lungs, the heart, the liver, the spleen, the kidneys, the bladder, the uterus, the ovaries, the mammæ, the mesenteric glands, the dura mater, the bones, and the thyroid gland, of which there is a fine specimen in Mr. Langstaff's museum. It may commence in almost every texture, or upon every surface. Sometimes it originates in the antrum, from which it extends to the brain, through the orbit.

An early symptom of this terrible and very common organic disease, is a wan, pale complexion, such as is remarkably indicative of what may be termed a fatal organic disease.

The patient generally dies hectic. One of its differences from cancer is, that it contains within its substance no ligamentous bands, nor central hard nucleus, but consists of a soft pulpy matter contained within septa, composed of a fine delicate membrane. In order to be able to see its structure well, we should subject it to maceration or the action of alkalies. A scirrhous tumour is generally firm, hard, and incompressible from the very first; whereas there is a softness and elasticity about fungus hæmatodes, at once constituting quite a different character. The parts in this latter disease are not destroyed by ulceration, as in cancer; but, after the skin has ulcerated, a medullary bleeding substance protrudes. While the heterologous deposit of cancer, also, has little or no tendency to become organised, that of medullary sarcoma exhibits a greater or lesser disposition to become so. Fungus hæmatodes frequently attacks the liver, the spleen, the kidneys, and lungs, *primarily;* whereas it is alleged by some pathologists, that cancer only attacks these organs *secondarily;* a point, however, deserving of further investigation. Medullary sarcoma is not uncommon in young subjects, and persons below the middle age; whereas cancer chiefly attacks individuals between the ages of forty-five and fifty, or older persons. With regard to the treatment, we know of no medicine which can correct the state of the constitution upon which this disease depends. The only chance of curing it, is by the removal of the tumour at an early period of its formation, before the lymphatic glands and several other parts of the body have become affected. Thus, if the disease has extended up the spermatic cord, castration will be of no avail. Mr. S. Cooper thinks that the viscera generally become diseased much sooner in medullary sarcoma externally situated, than is generally supposed. This opinion has relation only to that form of it which comes under the care of surgeons, where the surface of the body, or the limbs, are the seats of the disease. This fact partly accounts for the general failure of operations.

Notwithstanding there is every reason for believing medullary sarcoma to be a constitutional disease, and we find, that after an operation, there is usually even a greater disposition to relapse, than is manifested in examples of scirrhus and cancer, experience occasionally brings forward cases forming exceptions to this statement. Mr. S. Cooper removed a testicle affected with fungus hæmatodes from a man more than three years ago, yet he remains perfectly well; and we sometimes hear of the same disease in the eyes, breast, and limbs, being effectually extirpated by operation, without being followed by any return of the complaint. Unfortunately, the contrary more generally happens, so that the prognosis should be qualified by a reference to this important fact. — *S. Cooper.*

Fungus igniarius. See *Boletus igniarius.*

Fungus la'ricis. See *Boletus laricis.*

Fungus melitensis. See *Cynomorium.*

Fungus petræus. Agaric mineral. See *Agaricus mineralis.*

Fungus phalloides. See *Phallus impudicus.*

Fungus rosaceus. See *Bedeguar.*

Fungus salicis. See *Boletus suaveolens.*

Fungus sambucinus. See *Peziza auricula.*

Fungus vinosus. The dark-coloured fungus which vegetates in dry cellars, where wine, ale, and the like are kept.

FUNI'CULUS. (*Funiculus:* diminutive of *funis*, a cord.) A little cord.

Funiculus spermaticus. The spermatic cord.

Funiculus umbilicalis. See *Umbilical cord.*

Funis arborum. The *smilax lævis;* so called because it winds itself round trees like a rope. — *Blancard.*

Funis umbilicalis. See *Umbilical cord.*

Funnel-shaped. See *Infundibuliformis.*

Fu'rca. (*a*, *æ*. f.) A fork or species of armature of plants. See *Aculeus.*

Furca'le os. *Furcella. Furcula.* The clavicle.

FURCA'TUS. Furcate: forked; dividing and often subdividing into two, fork-like; as the stems of most of the *Euphorbiæ.* See *Dichotomous.*

Furce'lla inferior. The ensiform cartilage.

Furcella. See *Furcale os.*

Furcula. The clavicle.

F'urcula. (A little fork.) Applied to the clavicle.

Furcula superior. The upper bone of the sternum, and also the clavicle, have been thus named by some writers.

FU'RFUR. (*ur, uris.* m.) 1. Bran. See *Bran.*

2. A disease of the skin, in which the cuticle keeps falling off in small scales like bran. See *Pityriasis.*

FURFURA'CEOUS. (*Furfuraceus;* from *furfur*, bran.) A term applied to the bran-like sediment occasionally deposited in the urine.

Furfura'tio. (*o, onis.* f.) Pityriasis. See *Pityriasis.*

FURNACE. (*Furnus. i.* m.) The furnaces employed in chemical operations are of three kinds: —

1. The *evaporatory furnace*, which has received its name from its use; it is employed to reduce substances into vapour by means of heat, in order to separate the more fixed principles from those which are more volatile.

2. The *reverberatory furnace*, which name it has received from its construction, the flame being prevented from rising; it is appropriated to distillation.

3. The *forge furnace*, in which the current of air is determined by bellows.

FURNUS. (*us, i.* m.) A furnace.

Furnus ane'mius. A wind furnace.

Furor uterinus. See *Nymphomania.*

Furunculi ventriculus. The core of a boil. — *Celsus.*

FURU'NCULUS. (*us, i.* m.; from *furo*, to rage: so named from its heat and inflammation before it suppurates.) A boil. An inflammatory, circumscribed, and very painful swelling immediately under the skin. It seldom exceeds the size of a pigeon's egg. It always has a central core, and is mostly found in persons in

strong health, and in the vigour of youth. Sometimes, however, boils occur in cachectic habits. A boil always suppurates, and sooner or later discharges its contents. This disease rarely requires medical or surgical treatment, unless the person has many, and then bleeding and purging are required in plethoric constitutions, and an alterative course of sarsaparilla in weak and unhealthy ones.

FUSIBILITY. The susceptibility of fusion.

FUSIBLE. Possessed of fusibility.

Fusible calculus. See *Calculi, urinary.*

Fusible metal. A combination of three parts of lead with two of tin, and five of bismuth. It melts at 197° Fahr.

FU'SIFORM. *Fusiformis.* Spindle-shaped or tapering. Applied to parts of plants, as roots, &c. which penetrate perpendicularly into the earth; as the carrot, parsnip, radish, &c.

FUSION. (*Fusio;* from *fundo*, to pour out.) A chemical process, by which bodies are made to pass from the solid to the liquid state, in consequence of the application of heat. The chief objects susceptible of this operation are salts, sulphur, and metals. Salts are liable to two kinds of fusion: the one, which is peculiar to saline matters, is owing to water contained in them, and is called *aqueous fusion;* the other, which arises from the heat alone, is known by the name of *igneous fusion.*

Fyada. An alchemical name of mercury.

G.

GABAL. See *Cabala.*

Gabbara. A mummy.

Gabia'num oleum. *Huile de Gabian*, so called from Gabian, a village in Languedoc, where there is a rock from which it exudes. See *Petroleum rubrum.*

Gabi'rea. Γαβιρεα, a kind of myrrh, mentioned by Dioscorides.

GADUS. (*us, i.* m.) The name of a genus of fishes, of the order, *Jugulares.* The following species are brought to the European markets for the use of the table.

Gadus cilia'ris. The Baltic torsk. The Icelanders prepare it by salting and drying, when it becomes an article of commerce, under the name of *Tetteling.* Its flesh is white, tender, and well flavoured.

Gadus mo'rhua. The cod-fish. This fish, well known in our markets, abounds in the northern seas. Its flesh is white, and is much eaten When salted it is also well-flavoured, and in general esteem.

Gadus ægle'finus. The haddock. An inhabitant of the northern seas of Europe. The larger ones are much esteemed during the winter; the smaller ones for summer use. They are of easy digestion. Salted and dried, they are eaten at breakfast as a delicacy.

Gadus minutus. Very small, never exceeding six or seven inches in length. It is found in the Mediterranean in great abundance, where it is called a *capelan*, or *officier.*

Gadus merla'ngus. The whiting. A delicate white fish, in great abundance in the Irish Seas, and German Ocean.

Gadus polla'cius. The whiting pollack, found on the rocky coast of Britain, and other parts of Europe, and is in great esteem for the table.

Gadus carbona'rius. The coal-fish. Very abundant on the rocky coasts of the northern parts of this island, about the Orkneys, and the coast of Yorkshire, where they become two and three feet long, and constitute the chief support of the poor.

Gadus merlu'ccius. The hake. A native of the North and Mediterranean Seas, not much eaten, except by the poor when dried, when it is called poor John, or stock-fish.

Gadus molva. The ling. This grows to the length of five or six feet. It is not so good as the *morhua*, when fresh; but dried and salted is much esteemed, and is the common food of the poor in Cornwall, where it is prepared for exportation.

Gadus lota. The burbot. The flesh of this is of an agreeable flavour, and easy of digestion.

Gadus brosme. The torsk. This swarms in the seas about the Shetland Islands, and forms a considerable article of commerce, either dried, or salted, or packed in barrels.

Gagel. See *Myrica gale.*

GALA'CTIA. (*a, æ.* f.; from γαλα, *lac*, milk; or γαλακτινος, *lacteus*, milky.) Mislactation: a genus of disease in Good's nosology, embracing defective, excessive, vitiated, premature, erratic, and other morbid secretions of the milk.

Galactic. (From γαλα, milk.) The lactic acid has been so called. See *Lactic acid.*

GALACTINA. (*a, æ.* f.; from γαλα, milk.) Aliment prepared with milk.

GALACTINUS. (From γαλα, milk.) Appertaining to milk: applied to food made of milk.

GALACTIRRHOE'A. (*a, æ.* f.; from γαλα, milk, and ρεω, to flow.) An excess or overflow of milk.

GALACTITES. (From γαλα, milk: so called, according to Dioscorides, from its whiteness when triturated with water.) A calcareous

mineral employed by the ancients, sometimes as an astringent in disorders of the eyes, but more frequently as a promoter of milk.

GALACTO'PHORUS. (From γαλα, milk, and φερω, to bring or carry.) Galactophorous: milk-bearing. As an adjective, applied, 1. To that which has the property of increasing the secretion of the milk.

2. The excretory ducts of the glands of the breasts of women, which terminate in the papilla, or nipple, are called *ductus galactophori*, because they bring the milk to the nipple.

3. As a substantive, an instrument used to facilitate lactation, when the nipple is not sufficiently developed.

GALACTOPOIE'TICUS. (From γαλα, milk, and ποιεω, to make.) Galactopoietic, or milk-making. Possessed of the faculty of increasing the secretion of milk: applied to particular foods, plants, &c.

GALACTOPOSIA. (*a*, *æ*. f.; from γαλα, milk, and πινω, to drink.) The method of curing diseases by a milk diet.

GALA'NGA. (*a*, *æ*. f.; perhaps its Indian name.) See *Maranta* and *Kæmpferia*.

Galanga major. See *Kæmpferia*.

Galanga minor. See *Maranta galanga*.

Galangal. See *Maranta galanga*.

Galangal, English. See *Cyperus longus*.

GALA'XA. *Galacia*. A term applied by Paracelsus to several things; as to the appearance in the heavens, called the Milky Way, and to the porosities of the cranium. Charlton gives this name to the lacteal vessels.

GALBANETUM. A balsam mentioned by Paracelsus. According to Johnson, it was made of galbanum, diluted with turpentine.

GA'LBANUM. (*um*, *i*. n.; from *chalbanah*, Heb.) See the *Supplement*.

GA'LBULUS. (*us*, *i*. m.; from *galbus*, yellow.) 1. The name given by Vogel to a natural yellowness of the skin which is observed in some persons.

2. The fruit of the cypress-tree.

3. Gærtner applies this term, the classical name of the cypress fruit, which is a true *strobilus*, to a globular spurious berry with three or more seeds formed by the coalescing of a few scales, of a fertile catkin become succulent, which happens in the Juniper. — *Smith*.

GA'LDA. A gum-resin mentioned by old writers, but totally forgotten in the present day, and not to be obtained. Externally, it is of a brown colour, but white within, of a hard lamellated structure, and smells and tastes somewhat like elemi. When burnt it gives out an agreeable odour. It was formerly used as a warm stimulating medicine, and applied in plasters as a strengthener.

Ga'le. See *Myrica gale*.

GA'LEA. (*a*, *æ*. f.; derived by some from γαλη, a cat, because helmets were made of cats' skins!) A helmet. 1. In *Anatomy*, the amnion is so called, because it surrounds the fœtus like a helmet.

2. In *Surgery*, a bandage for the head. See *Fascia Galeni*.

3. In *Pathology*, a headach, extending all over the head, has been so called.

4. In *Botany*, the upper arched lip of a ringent and personate corolla is called *galea*. See *Corolla*.

GALEANTHRO'PIA. (*a*, *æ*. f.; from γαλη, a cat, and ανθρωπος, a man.) A species of madness, in which a person imagines himself to be a cat, and imitates its manners. (!) The editors of Castelli cite Laurentius Bellini for this term.

GALEA'TUS. (From *galea*, a helmet.) Helmet-shaped; applied to leaves, flowers, &c.

GA'LEGA. (*a*, *æ*. f.; from γαλα, milk: so named because it increases the milk of animals which eat it, particularly of goats.) 1. The name of a genus of plants in the Linnæan system. Class, *Diadelphia*; Order, *Decandria*.

2. The pharmacopœial name of the goat's rue. See *Galega officinalis*.

GALEGA OFFICINALIS. The systematic name of the goat's rue: called also, *Galega*, and *Ruta capraria*. From the little smell and taste of this plant, *Galega officinalis — leguminibus strictis, erectis; foliolis lanceolatis, striatis, nudis*, of Linnæus, it may be supposed to possess little virtue. In Italy, the leaves are eaten in sallads.

Galen's mad-wort. See *Marrubium*.

GALE'NA. 1. An ancient name of the theriaca before the addition of vipers as an ingredient.

2. The mineral, called lead glance; a native sulphuret of lead.

GALENA MINERALIZA'TA. Lead glance, variously mixed with earthy matter. — *Blancard*.

The same author tells us, that when bismuth, antimony, or iron, are mineralised in like manner, they are called *galena bismuthi, stibii, ferri*, &c.

GA'LENISTS. *Galenici*. The followers of Galen. See *Galenical medicine*.

GALE'NIUM. (Γαληνιον, from γαληνη, galena.) A cataplasm in the composition of which was the galena.

GALENICAL MEDICINE. *Medicina Galenica*. Medicine, as practised according to the precepts of Galen. The authority of Galen was paramount till the sixteenth century, when the chemical sect, with Paracelsus at their head, commenced a furious contest with the Galenists. In the treatment of diseases, the Galenists trusted almost entirely to simples; the chemists, despising these, derived their most powerful remedies from the mineral kingdom, and prepared them by complex processes.

GALEO'BDOLON. The name of a genus of plants of the class *Didynamia*, and order *Gymnospermia*.

GALEOBDOLON LUTEUM. Yellow archangel. An indigenous plant; formerly esteemed vulnerary, but now disused.

GALEO'PSIS. (*is*, *eos*. f.; from γαλη, a weasel, and οψις, aspect: the flowers gaping like the open mouth of that animal.) The name of a genus of plants. Class, *Didynamia*; Order, *Gymnospermia*.

GALERI'CULUM APONEURO'TICUM. A name that has been given to the tendinous expansion which lies over the pericranium, from its resemblance to a little cup, *Galericulum*.

GA'LIA. (*a*, *æ*. f.; from *gallæ*, galls: so

named because galls entered into the composition.) There were two medicines of this name; the one called *pure*, the other *aromatic*. *Galia moschata* contained aloes, amber, and musk; sometimes, nutmeg: *galia zebettina*, civet. The form of these medicines was the lozenge.

Galianco'nes. (Γαλιαγκωνες. From γαλιη, a weasel, and αγκων, the elbow.) Those who have preternaturally short and small arms, were thus designated by the Greeks; for what reason is not very evident. The term has been rendered in the Latin *mustelanci*.

Galipot. See *Barras.*

GA'LIUM. (*um*, *i.* n.; from γαλα, milk; some species having the property of coagulating milk.) 1. The name of a genus of plants in the Linnæan system. Class, *Tetrandria*; Order, *Monogynia*.

2. The pharmacopœial name of the herb cheese-rennet, or ladies' bedstraw. See *Galium verum*.

3. A name for madder. See *Rubia*.

Galium album. See *Galium mollugo.*

Galium apari'ne. The systematic name of the goose-grass: called also Cleavers; Cleaver's bees; Goose-share; Hayriff. *Ampelocarpus*, *Aparine*, *Asparine*, *Asperula*, *Philadelphus*, *Philanthropos*, *Omphalocarpus*, and *Ixus*. This plant is common in our hedges and ditches: *Galium aparine — foliis octonis lanceolatis carinatis scabris retrorsum aculeatis, geniculis venosis, fructu hispido*, of Linnæus. The expressed juice has been given with advantage as an aperient and diuretic in incipient dropsies: but the character in which it has gained greatest reputation, is that of a remedy against cancer. A tea-cupful, internally, gradually increased to half a pint, two or three times a day, and the herb applied, in cataplasm, externally, has been said to cure cancers. Such beneficial results are not confirmed by general experience.

Galium mollu'go. The systematic name of the greater ladies' bedstraw; called also, *Galium album*. *Galium mollugo — foliis octonis, ovato-linearibus, subserratis, patentissimis, mucronatis; caule flaccido, ramis patentibus*, of Linnæus. This herb, with its flowers, is used medicinally. Five ounces or more, of the expressed juice, taken every evening upon an empty stomach, has been said to cure epilepsy.

Galium verum. The systematic name of the true ladies' bedstraw, or cheese-rennet. The *Galium* of the pharmacopœias. The tops of this plant, *Galium verum — foliis octonis, linearibus sulcatis; ramis floriferis, brevibus*, of Linnæus, were long supposed to be an efficacious medicine in the cure of epilepsy; but, in the practice of the present day, they are abandoned. Indeed, from the sensible qualities of the plant, little can be expected. The leaves and flowers possess the property of curdling milk; it is, on that account, styled cheese-rennet.

Gall. See *Bile.*

GALL-BLADDER. *Vesicula fellis.* An oblong membraneous receptacle, situated under the liver, to which it is attached in the right hypochondrium. It is composed of three membranes, a cellular, fibrous, and villous. On one side it adheres closely to the liver, and on the other is covered by the peritonæum. Its use is to retain the bile which regurgitates from the hepatic duct, there to become thicker, more acrid, and bitter, and to send it through the cystic duct, which proceeds from its neck into the ductus communis choledochus, to be sent on to the duodenum.

Gall ducts. See *Hepar.*

Gall-sickness. A popular name for the remitting fever occasioned by marsh miasmata, in the Netherlands. See *Remittent fever.*

Gall-stone. See *Calculus, biliary.*

Ga'lla. (*a*, *æ.* f.;) A gall-nut. See *Quercus infectoria.*

Galla turcica. See *Quercus infectoria.*

GA'LLATE. A salt formed by the gallic acid, with a base.

GA'LLIC ACID. *Acidum gallicum.* An acid found in vegetable substances possessing astringent properties, but most abundantly in the excrescences termed galls, whence it derives its name. It may be obtained by macerating galls in water, filtering and suffering the liquor to stand exposed to the air. It will grow mouldy, be covered with a thick glutinous pellicle, abundance of glutinous flocks will fall down, and, in the course of two or three months, the sides of the vessel will appear covered with small yellowish crystals, abundance of which will likewise be found on the under surface of the supernatant pellicle. These crystals may be purified by solution in alkohol, and evaporation, to dryness.

Another simple process for obtaining this acid, is to boil an ounce of powdered galls in sixteen ounces of water to eight, and strain. Dissolve two ounces of alum in water, precipitate the alumina by carbonate of potash; and after edulcorating it completely by repeated ablutions, add it to the decoction, frequently stirring the mixture with a glass rod. The next day filter the mixture, wash the precipitate with warm water, till this will no longer blacken sulphate of iron; mix the washings with the filtered liquor, evaporate, and the gallic acid will be obtained in fine needled crystals.

These crystals obtained in any of these ways, however, are contaminated with a small portion of extractive matter; and, to purify them, they may be placed in a glass capsule, in a sand-heat, and sublimed into another capsule inverted over this, and kept cool. This acid is soluble in twenty parts of cold water, and in three parts at a boiling heat. It is more soluble in alkohol, which takes up an equal weight if heated, and one fourth of its weight cold.

It has an acido-astringent taste, and reddens tincture of litmus. It does not attract humidity from the air.

The gallic acid is of extensive use in the art of dyeing, as it constitutes one of the principal ingredients in all the shades of black, and is employed to fix or improve several other colours. It is well known as an ingredient in ink.

GALLICUS. From *Gallia*, gall. French.

Gallicus morbus. The venereal disease. See *Syphilis.*

Galli'trichis. *Gallitrichum.* Corrupted from *callitrichis*, or *callitrichum*. See *Callitriche.*

Gallium. See *Galium.*

GALLUS DOMESTICUS. The domestic fowl. See *Phasianus.*

GALREDA. A barbarous Latin word for jelly, most likely from the German *gallerte.*

GA'LVANISM. (*Galvanismus;* from *Galvani,* the inventor.) A professor of anatomy, in the university of Bologna, named *Galvani,* was one day making experiments on electricity in his elaboratory: near the machine were some frogs that had been flayed, the limbs of which became convulsed every time a spark was drawn from the apparatus. Galvani, surprised at this phenomenon, made it a subject of investigation, and discovered that metals, applied to the nerves and muscles of these animals, occasioned powerful and sudden contractions, when disposed in a certain manner. He gave the name of animal electricity to this order of new phenomena, from the analogy that he considered existing between these effects and those produced by electricity.

The name, animal electricity, has been superseded, notwithstanding the great analogy that exists between the effects of electricity and those of galvanism, in favour of the latter term; which is not only more applicable to the generality of the phenomena, but likewise serves to perpetuate the memory of the discoverer.

In order to give rise to galvanic effects in animal bodies, it is necessary to establish a communication between two points of one series of nervous and muscular organs. In this manner a circle is formed, one arch of which consists of the animal parts, rendered the subject of experiment, while the other arch is composed of excitatory instruments, which generally consist of several pieces, some placed under the animal parts called supporters, others destined to establish a communication between the latter, are called conductors. To form a complete galvanic circle, take the thigh of a frog, deprived of its skin; detach the crural nerve, as far as the knee: put it on a piece of zinc; put the muscles of the leg on a piece of silver; then finish the excitatory arch, and complete the galvanic circle by establishing a communication by means of the two supporters; by means of iron or copper wire, pewter, or lead. The instant that the communicators touch the two supporters, a part of the animal arch formed by the two supporters will be convulsed. Although this disposition of the animal parts, and of galvanic instruments, be most favourable to the development of the phenomena, yet the composition of the animal and excitatory arch may be much varied. Thus contractions are obtained by placing the two supporters under the nerve, and leaving the muscle out of the circle, which proves that nerves essentially constitute the animal arch.

It is not necessary for nerves to be entire in order to produce contractions. They take place whether the organs be tied or cut through, provided there exists a simple contiguity between the divided ends. This proves that we cannot strictly conclude what happens in muscular action, from that which takes place in galvanic phenomena; since, if a nerve be tied or divided, the muscles on which this is distributed lose the power of action.

The cuticle is an obstacle to galvanic effects; they are always feebly manifested in parts covered by it. When it is moist, fine, and delicate, the effect is not entirely interrupted. Humboldt, after having detached the cuticle from the posterior part of the neck and back, by means of two blisters, applied plates of metal to the bare cutis, and, at the moment of establishing a communication, he experienced sharp prickings, accompanied with a sero-sanguineous discharge.

If a plate of zinc be placed under the tongue, and a flat piece of silver on its superior surface, on making them touch each other, an acerb taste will be perceived, accompanied with a slight trembling.

The excitatory arch may be constructed with three, two, or even one metal only, with alloys, amalgams, or other metallic or mineral combinations, carbonated substances, &c. It is observed, that metals, which are in general the most powerful excitors, induce contractions so much the more as they have an extent of surface. Metals are all more or less excitants; and it is observed that zinc, gold, silver, and pewter, are of the highest rank; then copper, lead, nickel, antimony, &c.

Galvanic susceptibility, like muscular irritability, is exhausted by too long continued exercise, and is recruited by repose. Immersion of nerves and muscles in alkohol and opiate solutions diminishes, and even destroys, this susceptibility, in the same manner, doubtless, as the immoderate use of these substances in the living man blunts, and induces paralysis in muscular action. Immersion in oxymuriatic acid restores the fatigued parts, to be again acted on by the stimulus. Animals killed by the repeated discharge of an electric battery, acquire an increase of galvanic susceptibility; and this property subsists unchanged in animals destroyed by submersion in mercury, pure hydrogen gas, azote, and ammonia; and, finally, it is totally annihilated in animals suffocated by the vapour of charcoal.

Galvanic susceptibility is extinct in the muscles of animals of warm blood, in proportion as vital heat is dissipated: sometimes even when life is terminated in convulsions, contractility cannot be put into action, although warmth be not completely gone, as though the vital property were consumed by the convulsion, amidst which the animals had expired. In those of cold blood, on the contrary, it is more durable. The thighs of frogs, long after being separated from every thing, and even to the instant of incipient putrefaction, are influenced by galvanic stimuli; doubtless because irritability, in these animals, is less intimately connected with respiration, and life more divided among the different organs, which have less occasion to act on each other for the execution of its phenomena. The galvanic chain does not produce sensible actions (that is, contractions,) until the moment it is completed, by establishing a communication with the parts constituting it. During the time it is complete, that is, throughout

the whole space of time that the communication remains established, every thing remains tranquil; nevertheless, galvanic influence is not suspended: in fact, excitability is evidently increased, or diminished in muscles that have been long continued in the galvanic chain, according to the difference of the reciprocal situation of the connecting metals.

If silver has been applied to nerves, and zinc to muscles, the irritability of the latter increases in proportion to the time they have remained in the chain. By this method, the thighs of frogs have been revivified in some degree, and afterwards become sensible to stimuli that before had ceased to act on them. By distributing the metals in an inverse manner, applying zinc to nerves and silver to muscles, an effect absolutely contrary is observed; and the muscles that possessed the most lively irritability when placed in the chain, seem to be rendered entirely paralytic if they remain long in this situation.

This difference evidently depends on the direction of the galvanic fluid, determined towards the muscles or nerves, according to the manner in which these muscles are disposed; and this is of some importance to be known for the application of galvanic means to the cure of diseases.

Galvanic Pile. — Volta's apparatus is as follows: — Raise a pile, by placing a plate of zinc, a flat piece of wet card, and a plate of silver, successively; then a second piece of zinc, &c. until the elevation is several feet high; for the effects are greater in proportion to its height; then touch both extremities of the pile, at the same instant, with one piece of iron wire; at the moment of contact, a spark is excited from the extremities of the pile, and luminous points are often perceived at different heights, where the zinc and silver come into mutual contact. The zinc end of this pile appears to be negatively electrified; that formed by the silver, on the contrary, indicates marks of positive electricity.

If we touch both extremities of the pile, after having dipped our hands into water, or, what is better, a saline solution, a commotion, followed by a disagreeable prickling in the fingers and elbow, is felt.

If we place in a tube filled with water, and hermetically closed by two corks, the extremities of two wires of the same metal, which are in contact at the other extremity, one with the summit, the other with the base of the pile; these ends, even when separated only by the space of a few lines, experience evident changes at the instant the extremities of the pile are touched: the iron in contact with that part of the pile composed of silver becomes covered with bullæ of hydrogen gas; that which touches the extremity formed by zinc, becomes oxydised or gives off oxygen gas. Fourcroy attributes this phenomenon to the decomposition of water by the galvanic fluid, which abandons the oxygen to the metal that touches the positive extremity of the pile; then conducts the other gas invisibly to the end of the other wire, there to be disengaged.

Galvanic Trough. — This is a much more convenient apparatus. Plates of two metals, commonly zinc and copper, are fastened together, and cemented into a wooden trough, so as to form a number of cells; or earthenware troughs, with partitions, being procured, the metals, connected by a slip, are suspended over these, so that in each cell, except at the ends, there is a plate of each metal; then a diluted acid (usually the sulphuric, nitric, or muriatic, mixed with from twelve to twenty parts of water,) is poured into the trough. It is necessary that the metals be placed in the same order throughout, or one series will counteract another. The zinc end becomes negative, the copper positive; and the power is in proportion to the number of the series; and several such troughs may be connected together, so as to form a most powerful apparatus. See *Electricity*.

From the number of experiments of Davy, many new and important facts have been established, and galvanism has been found one of the most powerful agents in chemistry: by its influence platina wire has been melted; gold, silver, copper, and most of the metals, have easily been burnt; the fixed alkalies, and many of the earths have been made to appear as consisting of a metallic base, and oxygen; and compound substances, which were before extremely difficult to decompose, are now, by the aid of galvanism, easily resolved into their constituents.

The galvanic influence has been considered by some practitioners as likely to increase the nervous influence in paralysed and debilitated states of the muscular system, and many ingenious ways of applying it have been resorted to; but it does not seem to have been useful. Dr. Ure's observations and experiments on this subject, and on galvanism, are highly interesting. The following account of them is extracted from his Chemical Dictionary: — "Many experiments," he observes, "have been performed, in this country and abroad, on the bodies of criminals, soon after their execution. Vassali, Julio, and Rossi, made an ample set, on several bodies decapitated at Turin. They paid particular attention to the effect of galvanic electricity on the heart, and other involuntary muscles; a subject of much previous controversy. Volta asserted, that these muscles are not at all sensible to this electric power. Fowler maintained that they were affected, but with difficulty, and in a slight degree. This opinion was confirmed by Vassali; who further showed, that the muscles of the stomach and intestines might thus also be excited. Aldini, on the contrary, declared, that he could not affect the heart by his most powerful galvanic arrangements.

"Most of the above experiments were, however, made either without a voltaic battery, or with piles feeble in comparison with those now employed. Those, indeed, performed on the body of a criminal, at Newgate, in which the limbs were violently agitated, the eyes opened and shut, the mouth and jaws worked about, and the whole face thrown into frightful convulsions, were made by Aldini with a considerable series of voltaic plates.

"A circumstance of the first moment, in my opinion, has been too much overlooked in experiments of this kind, — that a muscular mass, through which the galvanic energy is directly transmitted, exhibits very weak contractile movements, in comparison with those which can be excited by passing the influence along the principal nerve of the muscle. Inattention to this important distinction, I conceive to be the principal source of the slender effects hitherto produced in such experiments on the heart, and other muscles independent of the will. It ought also to be observed, that too little distinction has been made between the positive and negative poles of the battery; though there are good reasons for supposing, that their powers on muscular contractions are by no means the same.

"According to Ritter, the electricity of the positive pole augments, while the negative diminishes, the actions of life. Tumefaction of parts is produced by the former; depression by the latter. The pulse of the hand, he says, held a few minutes in contact with the positive pole, is strengthened; that of the one in contact with the negative is enfeebled: the former is accompanied with a sense of heat; the latter with a feeling of coldness. Objects appear to a positively electrified eye, larger, brighter, and red; while to one negatively electrified, they seem smaller, less distinct, and bluish,—colours indicating opposite extremities of the prismatic spectrum. The acid and alkaline tastes, when the tongue is acted on in succession by the two electricities, are well known, and have been ingeniously accounted for by Sir H. Davy, in his admirable Bakerian Lectures. The smell of oxymuriatic acid, and of ammonia, are said by Ritter to be the opposite odours, excited by the two opposite poles; as a full body of sound and a sharp tone are the corresponding effects on the ears. These experiments require verification.

"Consonant in some respects, though not in all, with these statements, are the doctrines taught by a London practitioner, experienced in the administration of medical electricity. He affirms, that the influence of the electrical fluid of our common machines, in the cure of diseases, may be referred to three distinct heads: — First, the form of *radii*, when projected from a point positively electrified: Secondly, that of a star, or the negative fire, concentrated on a brass ball: Thirdly, the Leyden explosion. To each of these forms he assigns a specific action. The first acts as a sedative, allaying morbid activity; the second, as a stimulant; and the last as a deobstruent operation, in dispersing chronic tumours. An ample narrative of cases is given in confirmation of these general propositions. My own experience leads me to suppose, that the negative pole of a voltaic battery gives more poignant sensations than the positive.

"The most precise and interesting researches on the relation between voltaic electricity and the phenomena of life, are those contained in Dr. Wilson Philip's Dissertations in the Philosophical Transactions, as well as in his Experimental Enquiry into the Laws of the Vital Functions, more recently published.

"In his earlier researches he endeavoured to prove, that the circulation of the blood, and the action of the involuntary muscles, were independent of the nervous influence. In a late paper, read in January, 1816, he showed the immediate dependence of the secretory functions on the nervous influence.

"The eighth pair of nerves distributed to the stomach, and subservient to digestion, were divided by incisions in the necks of several living rabbits. After the operation, the parsley which they ate remained without alteration in their stomachs; and the animals, after evincing much difficulty of breathing, seemed to die of suffocation. But when in other rabbits, similarly treated, the galvanic power was transmitted along the nerve, below its section, to a disc of silver, placed closely in contact with the skin of the animal, opposite to its stomach, no difficulty of breathing occurred. The voltaic action being kept up for twenty-six hours, the rabbits were then killed, and the parsley was found in as perfectly digested a state as that in healthy rabbits fed at the same time; and their stomachs evolved the smell peculiar to that of a rabbit during digestion. These experiments were several times repeated, with similar results.

"Hence, it appears that the galvanic energy is capable of supplying the place of the nervous influence, so that, while under it, the stomach, otherwise inactive, digests food as usual. I am not, however, willing to adopt the conclusion drawn by its ingenious author, that the 'identity of galvanic electricity and nervous influence is established by these experiments.' They clearly show a remarkable analogy between these two powers, since the one may serve as a substitute for the other. It might possibly be urged by the anatomist, that as the stomach is supplied by twigs of other nerves, which communicate under the place of Dr. Philip's section of the *par vagum*, the galvanic fluid may operate merely as a powerful stimulus, exciting those slender twigs to perform such an increase of action as may compensate for the want of the principal nerve. The above experiments were repeated on dogs, with like results; the battery never being so strong as to occasion painful shocks.

"The removal of dyspnœa, as stated above, led him to try galvanism as a remedy in asthma. By transmitting its influence from the nape of the neck to the pit of the stomach, he gave decided relief in every one of twenty-two cases, of which four were in private practice, and eighteen in the Worcester Infirmary. The power employed varied from ten to twenty-five pairs.

"The general inferences deduced by him from his multiplied experiments, are, that voltaic electricity is capable of effecting the formation of the secreted fluids, when applied to the blood, in the same way in which the nervous influence is applied to it; and that it is capable of occasioning an evolution of caloric from arterial blood. When the lungs are deprived of the nervous influence by which their function is impeded and even destroyed, when digestion is interrupted by withdrawing this influence from the stomach, these two vital functions are re-

newed by exposing them to the influence of a galvanic trough. 'Hence,' says he, 'galvanism seems capable of performing all the functions of the nervous influence in the animal economy; but obviously it cannot excite the functions of animal life, unless when acting on parts endowed with the living principle.'

"These results of Dr. Philip have been recently confirmed by Dr. Clarke Abel, of Brighton, who employed, in one of the repetitions of the experiments, a comparatively weak, and in the other a considerable power of galvanism. In the former, although the galvanism was not of sufficient power to occasion evident digestion of the food, yet the efforts to vomit, and the difficulty of breathing, constant effects of dividing the eighth pair of nerves, were prevented by it. These symptoms recurred when it was discontinued, and vanished on its re-application. 'The respiration of the animal,' he observes, 'continued quite free during the experiment, except when the disengagement of the nerves from the tin-foil rendered a short suspension of the galvanism necessary during their re-adjustment.' —'The non-galvanised rabbit breathed with difficulty, wheezed audibly, and made frequent attempts to vomit.' In the latter experiment, in which the greater power of galvanism was employed, digestion went on as in Dr. Philip's experiments. —*Jour. Sc.* ix.

"Galleis, an eminent French physiologist, had endeavoured to prove, that the motion of the heart depends entirely upon the spinal marrow, and immediately ceases when the spinal marrow is removed or destroyed. Dr. Philip appears to have refuted this notion by the following experiments: — Rabbits were rendered insensible by a blow on the occiput; the spinal marrow and brain were then removed, and the respiration kept up by artificial means; the motion of the heart, and the circulation, were carried on as usual. When spirit of wine, or opium, was applied to the spinal marrow or brain, the rate of the circulation was accelerated.

"A middle-sized, athletic, and extremely muscular man, about thirty years of age, was the subject of the following highly interesting experiments. He was suspended from the gallows nearly an hour, and made no convulsive struggle after he dropped; while a thief, executed along with him, was violently agitated for a considerable time. He was brought to the anatomical theatre in about ten minutes after he was cut down. His face had a perfectly natural aspect, being neither livid nor tumefied; and there was no dislocation of his neck. Dr. Jeffray, the professor of anatomy, having on the preceding day requested me, says Dr. Ure, (from whose Dictionary this article is abridged,) to perform the galvanic experiments, I sent to his theatre with this view, next morning, my *minor* voltaic battery, consisting of 270 pairs of four-inch plates, with wires of communication, and pointed metallic rods, with insulating handles, for the more commodious application of the electric power. About five minutes before the Police-officers arrived with the body, the battery was charged with a dilute nitro-sulphuric acid, which speedily brought it into a state of intense action. The dissections were skilfully executed by Mr. Marshall, under the superintendence of the Professor.

"*Exp.* I. A large incision was made into the nape of the neck, close below the *occiput*. The posterior half of the *atlas vertebra* was then removed by bone forceps, when the spinal marrow was brought into view. A profuse flow of liquid blood gushed from the wound, inundating the floor. A considerable incision was at the same time made in the left hip, through the great gluteal muscle, so as to bring the sciatic nerve into sight; and a small cut was made in the heel. From neither of these did any blood flow. The pointed rod connected with one end of the battery, was now placed in contact with the spinal marrow, while the other rod was applied to the sciatic nerve. Every muscle of the body was immediately agitated with convulsive movements, resembling a violent shuddering from cold. The left side was most powerfully convulsed at each renewal of the electric contact. On moving the second rod from the hip to the heel, the knee being previously bent, the leg was thrown out with such violence as nearly to overturn one of the assistants, who in vain attempted to prevent its extension.

"*Exp.* 2. The left phrenic nerve was now laid bare at the outer edge of the *sterno-thyroideus* muscle, from three to four inches above the clavicle; the cutaneous incision having been made by the side of the sterno-cleidomastoideus. Since this nerve is distributed to the diaphragm, and since it communicates with the heart through the eighth pair, it was expected, by transmitting the galvanic power along it, that the respiratory process would be renewed. Accordingly, a small incision having been made under the cartilage of the seventh rib, the point of the one insulating rod was brought into contact with the great head of the diaphragm, while the other point was applied to the phrenic nerve in the neck. This muscle, the main agent of respiration, was instantly contracted, but with less force than was expected. Satisfied, from ample experience on the living body, that more powerful effects can be produced in galvanic excitation, by leaving the extreme communicating rods in close contact with the parts to be operated on, while the electric chain or circuit is completed by running the end of the wires along the top of the plates in the last trough of either pole, the other wire being steadily immersed in the last cell of the opposite pole, I had immediate recourse to this method. The success of it was truly wonderful. Full, nay, laborious breathing instantly commenced. The chest heaved, and fell; the belly was protruded, and again collapsed, with the relaxing and retiring diaphragm. This process was continued, without interruption, as long as I continued the electric discharges.

"In the judgment of many scientific gentlemen who witnessed the scene, this respiratory experiment was perhaps the most striking ever made with a philosophical apparatus. Let it also be remembered, that for full half an hour before this period, the body had been well nigh

drained of its blood, and the spinal marrow severely lacerated. No pulsation could be perceived, meanwhile, at the heart or wrist; but it may be supposed, that but for the evacuation of the blood,—the essential stimulus of that organ,—this phenomenon might also have occurred.

"*Exp.* 3. The supra-orbital nerve was laid bare in the forehead, as it issues through the supra-ciliary *foramen*, in the eyebrow: the one conducting-rod being applied to it, and the other to the heel, most extraordinary grimaces were exhibited every time that the electric discharges were made, by running the wire in my hand along the edges of the last trough, from the 220th to the 270th pair of plates: thus fifty shocks, each greater than the preceding one, were given in two seconds. Every muscle in his countenance was simultaneously thrown into fearful action: rage, horror, despair, anguish, and ghastly smiles, united their hideous expression in the murderer's face, surpassing far the wildest representations of a Fuseli or a Kean. At this period several of the spectators were forced to leave the apartment from terror or sickness, and one gentleman fainted.

"*Exp.* 4. The last galvanic experiment consisted in transmitting the electric power from the spinal marrow to the ulnar nerve, as it passes by the internal condyle at the elbow: the fingers now moved nimbly, like those of a violin performer; an assistant, who tried to close the fist, found the hand to open forcibly in spite of his efforts. When the one rod was applied to a slight incision in the tip of the fore-finger, the fist being previously clenched, that finger extended instantly; and, from the convulsive agitation of the arm, he seemed to point to the different spectators, some of whom thought he had come to life.

"About an hour was spent in these operations.

"In deliberating on the above galvanic phenomena, we are almost willing to imagine, that if, without cutting into and wounding the spinal marrow and blood-vessels in the neck, the pulmonary organs had been set a-playing at first (as I proposed), by electrifying the phrenic nerve (which may be done without any dangerous incision), there is a probability that life might have been restored. This event, however little desirable with a murderer, and perhaps contrary to law, would yet have been highly honourable and useful to science. From the accurate experiments of Dr. Philip, it appears, that the action of the diaphragm and lungs is indispensable towards restoring the suspended action of the heart and great vessels, subservient to the circulation of the blood.

"It is known that cases of death-like lethargy, or suspended animation, from disease and accidents, have occurred, where life has returned, after longer interruption of its functions than in the subject of the preceding experiments. It is probable, when apparent death supervenes from suffocation with noxious gases, &c., and when there is no organic læsion, that a judiciously directed galvanic experiment will, if any thing will, restore the activity of the vital functions. The plans of administering voltaic electricity hitherto pursued in such cases, are, in my humble apprehension, very defective. No advantage, we perceive, is likely to accrue from passing electric discharges across the chest, directly through the heart and lungs. On the principles so well developed by Dr. Philip, and now illustrated on Clydesdale's body, we should transmit along the channel of the nerves that substitute for nervous influence, or that power which may perchance awaken its dormant faculties. Then, indeed, fair hopes may be formed of deriving extensive benefit from galvanism; and of raising this wonderful agent to its expected rank among the ministers of health and life to man.

"I would, however, beg leave to suggest another nervous channel, which I conceive to be a still readier and more powerful one, to the action of the heart and lungs, than the phrenic nerve. If a longitudinal incision be made, as is frequently done for aneurism, through the integuments of the neck at the outer edge of the *sterno-mastoideus* muscle, about half-way between the clavicle and angle of the lower jaw; then, on turning over the edge of this muscle, we bring into view the throbbing carotid, on the outside of which the *par vagum* and great sympathetic nerve lie together in one sheath. Here, therefore, they may both be directly touched and pressed by a blunt metallic conductor. These nerves communicate, directly or indirectly, with the phrenic; and the superficial nerve of the heart is sent off from the sympathetic.

"Should, however, the phrenic nerve be taken, that of the left side is the preferable of the two. From the position of the heart, the left phrenic differs a little in its course from the right. It passes over the *pericardium*, covering the *apex* of the heart.

"While the point of one metallic conductor is applied to the nervous cords above described, the other knob ought to be firmly pressed against the side of the person, immediately under the cartilage of the seventh rib. The skin should be moistened with a solution of common salt, or, what is better, a hot saturated solution of sal-ammoniac, by which means the electric energy will be more effectually conveyed through the cuticle, so as to complete the voltaic chain.

"For the purposes of resuscitating dormant irritability of nerves, or contractility of their subordinate muscles, the positive pole must be applied to the former, and the negative to the latter."

GALVANO'METER. An instrument for measuring the intensity of a galvanic current, by its effect in deflecting the magnetic needle. The *Electro-magnetic multiplier* is a more complex form of this instrument.

Gambo'gia. See *Cambogia.*

Gambo'gium. See *Cambogia.*

Gamboi'dea. See *Cambogia.*

GA'MMA. (*a*, *æ*. f.; from the letter Γ, *gamma*, which it resembled.) An iron instrument used by the old surgeons for cauterising a hernia.

GA'MMARUS. (*us*, *i*. m.; from καμαρα, an arch: so called from the vaulted roof of its shell.) The lobster. See *Cancer gammarus.*

Gamon. See *Cambogia.*

Gamphe'le. (Γαμφηλη.) The cheeks; the jaw.

Ga'ngamon. (From γαγγαμη, a fishing-net, which it was said to resemble.) A name of the omentum.

Ganglia, abdominal. The semilunar ganglia and solar plerus.

Ganglia semiluna. See *Semiluna ganglia.*

Ganglia solar. See *Solar ganglia.*

Ga'ngliform. A term which has been applied to an enlargement in the course of a nerve; but periphrastically and needlessly, because a *gangliform enlargement* means nothing more nor less than a *ganglion.*

GA'NGLION. (*on, ii.* n. Γαγγλιον, a knot.) A knot. 1. In *Anatomy*, a natural knot-like enlargement, in the course of a nerve. See *Nervous system.*

2. In *Surgery*, an encysted tumour, formed in the sheath of a tendon, and containing a fluid like the white of an egg. It most frequently occurs on the back of the hand or foot.

Ganglion of gasserius. A ganglion on the posterior cord of the fifth pair of nerves.

Gangræna oris. See *Stomacace.*

Gangræna ossis. See *Spina ventosa.*

Gangræna senilis. See *Mortification.*

GA'NGRENE. (Γαγγραινα. *Gangrena, æ.* f.; from γραω, to feed upon: so named from its eating away the flesh.) See *Mortification.*

GARCI'NIA. (*a, æ.* f.; so called in honour of Dr. Garcin, who accurately described it.) The name of a genus of plants in the Linnæan system. Class, *Dodecandria*; Order, *Monogynia.*

Garcinia mangostana. The systematic name of the mangosteen tree, which is a native of Java and the Molucca islands. Its fruit, which is about the size of an orange, is said to be the finest flavoured, and most salubrious of all fruits. The flesh is juicy, white, almost transparent, and of a more agreeable flavour than the richest grape. The dried bark is used medicinally in dysenteries and tenesmus, and a strong decoction of it is much esteemed as a gargle in ulcerated sore throats.

Garga'reon. (Γαργαρεων.) The uvula.

Ga'rgarism. See *Gargarisma.*

GARGARI'SMA. (*a, atis.* n.; and *Gargarismus, i.* m.; and *Gargarismum, i.* n.; from γαργαριζω, to gargle.) A gargle, or wash for the throat.

Gargarisma aluminis. The best formula of this is one drachm of purified alumin, half a fluid ounce of tincture of myrrh, and seven fluid ounces of mint water, mixed.

Gargarismum. See *Gargarisma.*

Ga'rgathum. (A low Latin word.) A bed on which lunatics were formerly confined.

Gargeatio. See *Sudor anglicanus.*

Gargle. See *Gargarisma.*

Garlic. See *Allium.*

Garosmum. See *Chenopodium vulvaria.*

Garou. See *Daphne gnidium.*

Garrophy'llus. See *Eugenia.*

Ga'rum. (*um, i.* n. Γαρον.) A kind of pickle prepared of fish half putrefied and strongly salted, with the addition of aromatics. It is said to have been so called because originally prepared from a fish, called by the Greeks γαρος; but, according to Pliny, the *garus* was a kind of lobster. Several species of *garum* were used by the Romans.

GAS. (A Teutonic word signifying air or spirit.) *Gas.* Aëriform fluid. A term applied to all permanently elastic fluids, simple or compound, except the atmosphere, to which the term *air* is appropriated.

A gas is distinguished from a *vapour* by its permanently elastic state. A vapour is a body made to assume the elastic state for a short time only, by the agency of heat; as when water is converted into steam.

Some of the gases exist in nature without the aid of art, and may therefore be collected; others, on the contrary, are only producible by artificial means.

All gases are combinations of certain substances, reduced to the gaceous form by the addition of caloric. It is, therefore, necessary to distinguish in every gas, the matter of heat which acted the part of a solvent, and the substance which forms the basis of the gas.

Gases are not contained in those substances from which we obtain them in the state of gas, but owe their formation to the expansive property of caloric.

Gas, azotic. See *Nitrogen.*

Gas, carbonic acid. See *Carbonic acid.*

Gas, heavy carbonated hydrogen. See *Carburetted hydrogen.*

Gas, hepatic. See *Hydrogen gas, sulphuretted.*

Gas, hydrogen. See *Hydrogen.*

Gas, light carbonated hydrogen. See *Carburetted hydrogen.*

Gas water. The water which remains after the gas used for illumination has passed through the purifier. It consists of hydro-sulphuret and hydro-bisulphuret of lime. It has been recommended in chronic diseases of the skin.

Gascoigne's balls. See *Gascoigne's powder.*

Gascoigne's powder. (Called after its inventor.) *Pulvis Gascoigni.* A bezoardic powder, composed of one pound of the compound powder of crab's-claws, and one ounce of prepared oriental bezoar, mixed together. Balls made of this are called Gascoigne's balls.

Gaseous oxide of carbon. See *Carbonic oxide.*

GA'STER. Γαστηρ. 1. The belly or abdomen.

2. The stomach.

3. The womb.

GASTERO'PODA. (From γαστηρ, the belly, and πους, a foot.) Belly-footed. The name of a class of molluscous animals which have an organ of locomotion, or foot, situated on the abdominal surface.

Gastero'stoma. (From γαστηρ, and στομα, and so called, because the mouth opens into the stomach.) A name given by some to the *tænia oculis superficialibus.*

GA'STRIC. (*Gastricus*; from γαστηρ, the stomach.) Appertaining to the stomach.

Gastric arteries. *Arteriæ gastricæ.* These are, the *right gastro-epiploic*, a branch of the hepatic artery; the *left gastro-epiploic*, a branch of the splenic; the *coronaria-ventriculi*, a branch of the cæliac; the *pyloric arteries*, which a

mall branches of the hepatic and gastro-epiloics; and the *vasa brevia*, which are branches f the splenic.

GASTRIC JUICE. *Succus gastricus.* A fluid eparated by the stomach. See *Digestion.*

GASTRINUM. An alchemical name of wood shes, from which carbonate of potash is prepared.

GASTRI'TIS. (*is, idis.* f.; from γαστηρ, the tomach.) Inflammation of the stomach. See *Inflammation of the stomach and intestines.*

GASTROCE'LE. (*e, es.* f.; from γαστηρ, he stomach, and κηλη, a tumour.) A hernia f the stomach, occasioned by a protrusion of hat viscus through the abdominal parietes. See *Hernia ventriculi.*

GASTROCNE'MIUS. (*us, i.* m.; from γαστηρ, the stomach, and κνημη, the leg.) Two, r according to some anatomists, four, muscles, orm the fleshy part or calf of the leg. These nuscles are called gastrocnemii.

GASTROCNEMIUS EXTERNUS. An extensor nuscle of the foot, situated immediately under he integuments at the back part of the leg; sometimes called *gemellus:* this latter name is dopted by Albinus. Winslow describes it as wo muscles, which he calls *gastrocnemii;* and Douglas considers this and the following as a *quadriceps*, or muscle with four heads, to which he gives the name of *extensor tarsi suralis.* The gastrocnemius externus arises by two distinct heads. The first, which is the thickest and longest of the two, springs by a strong thick tendon from the upper and back part of the inner condyle of the os femoris, adhering strongly to the capsular ligament of the joint, between which and the tendon is a considerable *bursa mucosa.* The second head arises, by a thinner and shorter tendon, from the back part of the outer condyle of the os femoris. A little below the joint, their fleshy bellies unite in a middle tendon, and below the middle of the tibia they cease to be fleshy, and terminate in a broad tendon, which, a little above the lower extremity of the tibia, unite with that of the gastrocnemius internus, to form one round tendon, sometimes called *chorda magna*, but commonly *tendo Achillis.*

GASTROCNEMIUS INTERNUS. This, which is situated immediately under the last described muscle, is sometimes named *soleus*, on account of its shape, which resembles that of the sole fish. It arises by two heads. The first springs, by tendinous and fleshy fibres, from the posterior part of the head of the fibula, and for some way below it. The second arises from an oblique ridge at the upper and posterior part of the tibia, which affords origin to the inferior edge of the popliteus, continuing to receive fleshy fibres from the inner edge of the tibia, for some way down. This muscle, which is narrow at its origin, spreads wider, as it descends, as far as its middle; after which it becomes narrower again, and begins to grow tendinous; but its fleshy fibres do not entirely disappear till it has almost reached the extremity of the tibia, a little above which it unites with the last-described muscle, to form the *tendo Achillis.* This thick round cord is inserted into the lower and posterior part of the os calcis, after sliding over a cartilaginous surface on that bone, to which it is connected by a tendinous sheath that is furnished with a large *bursa mucosa.*

Both the gastrocnemii have the same use, viz. that of extending the foot, by drawing it backwards and downwards.

GASTROCO'LIC. (*Gastrocolicus;* from γαστηρ, the stomach, and κωλον, the colon.) The greater omentum is called the *gastro-colic* omentum, because it passes from the stomach to the arch of the colon.

GASTRODY'NIA. (*a, æ.* f.; from γαστηρ, the stomach, and οδυνη, pain.) Spasmodic pain in the stomach.

GA'STRO-ENTERI'TIS. (*is, idis.* f.; from γαστηρ, the stomach, and εντερον, the intestine. Inflammation of the stomach and intestines. See *Inflammation of the stomach and intestines.*

GASTRO-EPIPLOIC ARTERIES. Two arteries, which supply the stomach and omentum. See *Gastric arteries.*

GASTRO'LOQUISM. A hybrid term synonymous with ventriloquism.

GA'STRO-HYSTERO'TOMY. (*Gastro-hystero-tomia, æ.* f.; from γαστηρ, the belly, ὑστερον, the womb, and τεμνω, to cut.) The Cæsarian section.

GASTRORAPHY. (*Gastroraphe;* from γαστηρ, the stomach, and ραφη, a suture.) The sewing of wounds of the abdomen.

GASTROTO'MIA. (From γαστηρ, the belly, and τεμνω, to cut.) The operation of cutting into the abdomen, which has been practised under several circumstances.

Gaule. See *Myrica gale.*

GA'YACINE. A name given by some French chemists to the resin of guiac.

Gaz. See *Gas.*

GA'ZIFORM. Gas-like. A term that has been applied to elastic fluids, but unnecessarily; a gaziform fluid means nothing but a gas.

GAZO'METER. (From *gas*, and μετρον, a measure.) This word is applied, not as its etymology would import, to any instrument for measuring gas, but simply to a reservoir for containing gas.

GE'IC ACID. The same as *geine.*

GE'INE. (From γη, the earth.) A name given by Berzelius to vegetable mould, which, according to Braconnot, resembles ulmin.

GEISO'MA. (From γεισον, the eaves of the house.) *Geison.* The prominent parts of the eyebrows, which hang over the eyes like the eaves of a house.

Geison. See *Geisoma.*

GELA'SINOS. (Γελασινος; from γελαω, to laugh.) A Greek epithet of the incisor teeth, because they are shown in laughter — οδοντες γελασινοι.

GELA'SMUS. (From γελαω, to laugh.) The Sardonic laugh. See *Sardonic laugh.*

GE'LATINE. (*Gelatina, æ.* f.) Gelly, or jelly. A substance soluble in water, but not in alkohol: capable of assuming a well-known elastic or tremulous consistence, by cooling, when the water is not too abundant, and liquifiable again, by increasing its temperature. This last property remarkably distinguishes it

from albumen, which becomes consistent by heat. It is precipitated in an insoluble form by tannin; and it is this action of tannin on gelatine that is the foundation of the art of tanning leather.

Jellies are mostly obtained from animal substances, and these are very common in our kitchens; they may be extracted from all the parts of animals, by boiling them in water. Hot water dissolves a large quantity of this substance. Acids, likewise, dissolve them, as do also more particularly the alkalies. Jelly, which has been extracted without long decoction, possesses most of the characters of vegetable mucilage; but it is seldom obtained without a mixture of albumen.

Jellies, in a pure state, have scarcely any smell or remarkable taste. By distillation, they afford an insipid and inodorous phlegm, which easily putrifies. A stronger heat causes them to swell up, become black, and emit a fœtid odour, accompanied with white acrid fumes. An impure volatile alkali, together with empyreumatic oil, then passes over, leaving a spongy coal, not easily burned, and containing common salt and phosphate of lime.

The jelly of various animal substances is prepared for the use of seafaring persons, under the name of portable soup. The whole art of performing this operation consists in boiling the meat, and taking the scum off, as usual, until the soup possesses the requisite flavour. It is then suffered to cool, in order that the fat may be separated. In the next place, it is mixed with five or six whites of eggs, and slightly boiled. This operation serves to clarify the liquid, by the removal of opake particles, which unite with the white of egg at the time it becomes solid by the heat, and are consequently removed along with it. The liquor is then to be strained through flannel, and evaporated on the water-bath, to the consistence of a very thick paste; after which it is spread, rather thin, upon a smooth stone, then cut into cakes, and, lastly, dried in a stove, until it becomes brittle. These cakes may be kept four or five years, if defended from moisture. When intended to be used, nothing more is required to be done than to dissolve a sufficient quantity in boiling water, which by that means becomes converted into soup.

Jelly is also found in vegetables, as ripe currants, and other berries, mixed with an acid.

GELATINOUS. Of the nature of *Gelatin*.

GELA'TIO. (*o, onis.* f.; from *gelo*, to freeze.) 1. Freezing.

2. That rigidity of the body which happens in a catalepsy, as if the person were frozen.

GELBUM. *Gelfum.* An alchemical term applied to argentiferous pyrites, and to the philosopher's stone.

Gem. See *Gemma.*

GEME'LLUS. (From *geminus*, double, having a fellow.) See *Gastrocnemius*, and *Gemini.*

GE'MINI. (*i, orum.* m. pl.) Twins.

GEMINI, *sc.* MUSCULI. *Gemelli*, of Winslow. Part of the *marsupialis* of Cowper. A muscle of the thigh, which has been a subject of dispute among anatomists since the days of Vesalius. Some describe it as two distinct muscles; and hence the name it has of *gemini.* Others contend that it ought to be considered as a single muscle. The truth is, that it consists of two portions, which are united together by a tendinous and fleshy membrane, and afford a passage between them to the tendon of the obturator internus, which they inclose, as it were, in a purse. These two portions are placed under the glutæus maximus, between the ischium and the great trochanter.

The superior portion, which is the shortest and thickest of the two, arises fleshy from the external surface of the spine of the ischium; and the inferior, from the tuberosity of that bone, and likewise from the posterior sacro-ischiatic ligament. They are inserted, tendinous and fleshy, into the cavity at the root of the great trochanter. Between the two portions of this muscle, and the termination of the obturator internus, there is a small *bursa mucosa*, connected to both, and to that part of the capsular ligament of the joint which lies under the gemini.

This muscle assists in rolling the os femoris outwards, and prevents the tendon of the obturator internus from slipping out of its place while that muscle is in action.

GE'MMA. (*a, æ.* f.) 1. In *Mineralogy*, a precious stone or gem.

In the superstitious medicine of former times, almost all the genus had some medicinal or magical virtues attributed to them.

2. In *Botany*, a bud on the stems of plants.

The ancients used the terms *germen* and *oculus* to denote those buds which contain the rudiments of branches and leaves, and *gemma* those in which flowers only are contained; but by the moderns, *germen* has been applied to denote the rudiment of the fruit, or as a generic term for all buds. — *Thompson.*

A *gemma*, or bud, contains the rudiments of a plant, or of part of a plant, for a while in a latent state, till the time of the year, and other circumstances, favour their evolution. In the bud, therefore, the vital principle is dormant. Buds of trees, or shrubs, destined for cold countries, are formed in the course of the summer in the bosoms of their leaves, and are generally solitary; but in the *Lonicera cærulea*, or blue-berried honey-suckle, they grow one under another for three successive seasons.

The buds of the plane tree, *Platanus*, are concealed in the footstalk, which must be removed before they can be seen, and which they force off by their increase; so that no plant can have more truly and necessarily deciduous leaves.

Shrubs in general have no buds, neither have the trees of hot climates.

Buds are various in their forms, but very uniform in the same species, or even genus. They consist of scales closely enveloping each other, and enfolding the embryo plant or branch. Externally, they have often an additional guard of gum, resin, or woolliness, against wet or cold. The horse-chestnut affords a fine example of large and well-formed buds.

The contents of buds are different, even in different species of the same genus, as willows. The buds of some produce leaves only, others flowers, while in other species the same bud bears both leaves and flowers. Different causes, depending on the soil or situation, seem in one case to generate leaf-buds, in another flower-buds. In general, whatever checks the luxuriant production of leaf-buds, favours the formation of flowers and seeds. — *Smith.*

Gems are found in all trees and shrubs in temperate climates. In the majority of instances they are visible from the first, in which case they are *axillary*, that is, seated in the axillæ of the leaves, or the angle which the upper part of the footstalk of the leaf makes with the surface of the stem; but in some instances, as the sumachs and planes, they are *latent*, being hid within the base of the footstalk, and never seen until the fall of the leaf. Gems are, however, sometimes protruded from the trunk, long after it has ceased to produce leaves, as in the case of adventitious buds; they are also situated on roots, and on tubers; but in these cases they are usually denominated *oculi*, or eyes.

Annual plants are supposed to be furnished with gems; but although they are devoid of covered gems, yet their lateral shoots proceed from naked buds which immediately spread into foliage.

The relative position of *axillary* gems is necessarily regulated by that of the leaf, and therefore we find them,

1. *Opposite*, or placed exactly on the same line, on opposite sides of the stem or the branch.

2. *Alternate*, or placed alternately, although on opposite sides; and,

3. *Spiral*, that is, placed round the stem or branch in such a manner that a cord wound in a spiral manner round it would touch each gem. They are said to be *simple* or *solitary*, when one gem only is seen in the axilla of each leaf, as in the greater number of instances; and *aggregate*, when, as in some plants, two, three, or even more, are protruded at the same time: thus we find two in the *Sambucus nigra*, or common elder; three in the *Aristolochia sipho*, or broad-leaved birth-wort; and many in the *Zanthoxylum fraxineum*, or toothach tree.

Du Hamel first noticed the fact, that stems and branches, furnished with alternate axillary gems, have generally one *terminal* gem only; and those with opposite have generally three terminal gems.

The gems on most trees and shrubs rise with a broad base from the surface where they are protruded, and consequently, being in close contact with it, are said to be *sessile*; but they are distant or stalked on some, as the common elder, on which they are supported on a short footstalk, and are termed *pedicillatæ*, or stalked.

Gems differ very considerably in the number and characters of the enclosing scales, their contents, the folding up of the leaves within them, and the manner in which they are evolved in the spring.

a. The scales differ in size and texture, even in the same gem: in the gems of different plants, they differ also in number and in the nature of their coverings. Some gems are entirely destitute of scales; as those of annual plants, and many perennials of tropical climates. The scales, in some instances, are besmeared with a resinous matter; in others, they are entirely free from any moist exudation, but are smooth and polished, being covered with a dry gummy varnish; or they are externally hairy, or enveloped in a velvety down.

Gems are arranged into three species: —

1. *Gemmæ foliiferæ*, leaf gems.
2. *Gemmæ floriferæ*, flower gems.
3. *Gemmæ mixtæ*, mixed gems.

The *Amygdalus persica*, or peach-tree, the *Daphne mezereum*, and many other plants, afford examples of distinct leaf and flower gems; the *Syringa vulgaris*, and *Æsculus hippocastanum*, of mixed gems; and the pear and apple trees, of both leaf and mixed gems.

The leaves, as has already been mentioned, are variously folded up, so as to occupy the smallest possible space in the gem. This regulates the expansion of the leaves when the gem opens in spring, and it is invariably the same in individual plants of the same species. This process is termed *foliation*, and the figures which the leaves assume at the time have received different appellations. — *Thompson.*

1. *Foliatio involuta*, involute, in which each internal margin of the leaf is rolled inwards; as in *Humulus lupulus*, and *Nymphæa lutea*.

2. *Revoluta*, revolute, in which the lateral margins are rolled outwards; as in willows, and *Rumex patientia*.

3. *Obvoluta*, obvolute, in which one leaf, doubled lengthways, embraces within its doubling one half of the other leaf, folded in the same manner; as in *Salvia officinalis*, and *Dipsacus communis*.

4. *Convoluta*, convolute, in which the leaf is rolled lengthways in a spiral manner, one margin forming the axis round which the other turns; as in *Prunus domestica*, and *Prunus armeniaca*, the cabbage, grasses, &c.

5. *Equitans*, equitant, in which the leaf is so folded that the two sides deeply embrace the opposite leaf, which, in its turn, encloses the one opposed to it, and so on to the centre of the bud: this is beautifully exemplified in the *Hemarocallis*, or day-lily, and *Syringa vulgaris*.

6. *Conduplicata*, in which the two sides of the leaf lie parallel to each other; as in *Fagus sylvatica*, and *Quercus robur*.

7. *Plicata*, plaited, the leaf being folded up like a fan; as in *Betula alba*, and *Alchemilla vulgaris*.

8. *Reclinata*, reclinate, turned down, the leaf hanging down and wrapt round the footstalk; as in *Aconitum*, and *Arum*.

9. *Circinata*, circinal, in which the leaf is rolled from the apex to the base; as in all ferns.

As the gems open, the leaves gradually unfold themselves, and assume their natural forms; but the opening of the bud does not in every instance immediately set free the leaves, for in some gems each leaf is separately enclosed in a membraneous cover.

GEMMA'CEUS. A term applied by bota-

nists to a flower-stalk which grows out of a leaf-bud, as is seen in the *Berberis vulgaris*.

GEMMA'TIO. (*o, onis.* f. ; from *gemma*, a bud.) A term used by Linnæus expressive of the origin, form, &c. of buds. See *Gemma*.

GEMMI'PAROUS. (From *gemma*, a bud, and *pario*, to bring forth.) Applied to plants and animals which propagate by shoots.

GE'MMULA. A little bud. The termination of the plumula of germinating seeds.

GEMU'RSA. A disease situated between the toes was anciently so called, according to Pliny. What this disease was is now unknown.

GE'NA. (*a, æ.* f.) The Latin for the cheek.

GENERA'TIO FISSI'PARA. Generation by division. The production of a new organism by a separation from the substance of the parent, as in the propagation of plants by shoots; and that of certain animals, as some of the infusoria and polypi. See *Generation*.

GENERATION. (*Generatio, onis.* f. ; from γεινομαι, to beget.) Many ingenious hypotheses have been instituted by physiologists to explain the mystery of generation; but the whole of our knowledge concerning it appears to be built upon the phenomena it affords, and may be seen in the works of Haller, Buffon, Cruickshanks, and Haighton. It is a sexual action, performed in different ways in most animals; many of them have different sexes, and require conjunction: such are the human species, quadrupeds, and others. The females of quadrupeds have a matrix, separated into two cavities, *uterus bicornis*, and a considerable number of teats; they have no menstrual flux; most of them bear several young at a time, and the period of their gestation is generally short. The generation of birds is very different. The males have a strong genital organ, which is often double. The vulva in the females is placed behind the anus; the ovaries have no matrices, and there is a duct for the purpose of conveying the egg from the ovarium into the intestines: this passage is called the oviduct. The eggs of pullets have exhibited unexpected facts to physiologists, who examined the phenomena of incubation. The most important discoveries are those of the immortal Haller, who found the chicken perfectly formed, in eggs which were not fecundated. There is no determinate conjunction between fishes; the female deposits her eggs on the sands, over which the male passes, and emits its seminal fluid, doubtless for the purpose of fecundating them: these eggs are hatched after a certain time. The males of several oviparous quadrupeds have a double or forked organ. Insects exhibit all the varieties which are observed in other animals: there are some, indeed the greater number, which have the sexes in two separate individuals; among others, the reproduction is made either with or without conjunction, as in the vine-fretter; one of these insects, confined alone beneath a glass, produces a great number of others. The organ of the male, in insects, is usually armed with two hooks to seize the female: the place of these organs is greatly varied; with some, it is at the upper part of the belly, near the chest, as in the female dragon-fly; in others, it is at the extremity of the *antenna*, as in the male spider. Most worms are hermaphrodite; each individual has both sexes. Polypi, with respect to generation, are singular animals; they are reproduced by buds or offsets: a bud is separated from each vigorous polypus, which is fixed to some neighbouring body, and grows: polypi are likewise found on their surface, in the same manner as branches issue from plants. These are the principal modes of generation in animals. In the human species, which engages our attention more particularly, the phænomena are as follow: —

The part of the male, in the act of reproduction, is to deposit the semen in the vagina, at a greater or less distance from the orifice of the uterus.

The function which the female discharges is much more obscure: some feel, at this moment, very strong voluptuous sensations; others appear entirely insensible; whilst others, again, experience a sensation which is very painful. Some of them pour out a mucous substance in considerable abundance, at the instant of the most vivid pleasure: whilst, in the greater part, this phænomenon is entirely wanting. In all these respects, there is, perhaps, no exact resemblance between any two females.

These different phænomena are common to the most frequent acts of copulation; that is, to those which do not produce impregnation, as well as those which are effective.

The most recent opinion is, that the uterus during impregnation opens a little, draws in the semen by aspiration, and directs it to the ovarium by means of the Fallopian tubes, the fimbriated extremity of which closely embraces that organ.

The contact of the semen determines the rupture of one of the vesicles, and the fluid that passes from it, or the vesicle itself, passes into the uterus, where the new individual is to be developed.

However satisfactory this explanation may appear, it is purely hypothetical, and even contrary to the experiments of the most exact observers.

In the numerous attempts made upon animals by Harvey, De Graaf, Valisneri, &c., the semen has never been perceived in the cavity of the uterus; much less has it been seen in the Fallopian tube, at the surface of the ovarium. It is quite the same with the motion which the Fallopian tube is supposed to have in embracing the circumference of the ovarium: it has never been proved by experiment. Even if one should suppose that the semen penetrates into the uterus at the moment of coition, which is not impossible, though it has not been observed, it would still be very difficult to comprehend how the fluid could pass into the Fallopian tubes, and arrive at the ovarium. The uterus in the empty state is not contractible; the uterine orifice of the Fallopian tubes, is extremely narrow, and these canals have no known sensible motion.

On account of the difficulty of conceiving the passage of the semen to the ovarium, some authors have imagined that this matter is not

carried there, but only the vapour which exhales from it, or the *aura seminalis*. Others think that the semen is absorbed in the vagina, passes into the venous system, and arrives at the ovaria by the arteries. The phænomena which accompany the fecundation of women are, then, nearly unknown. An equal obscurity rests on the fecundation of other mammiferous females. Nevertheless, it would be more easy to conceive a passage of the semen to the ovaria in these, since the uterus and the Fallopian tubes possess a peristaltic motion like that of the intestines. Fecundation, however, taking place by the contact of the semen with the ova, in fishes, reptiles, and birds, it is not very likely that nature employs any other mode for the *mammifera*; it is necessary, then, to consider it as very probable that, either at the instant of coition, or at a greater or less time afterwards, the semen arrives at the ovarium, where it exerts more especially its action upon the vessels most developed.

But, even should it be out of doubt that the semen arrives at the vesicles of the ovarium, it would still remain to be known how its contact animates the germ contained in it. Now, this phænomenon is one of those on which our senses, and even our mind, have no hold: it is one of those impenetrable mysteries of which we are, and, perhaps, shall ever remain ignorant.

We have, however, on this subject, some very ingenious experiments of Spallanzani, which have removed the difficulty as far as it seems possible. This philosopher has proved, by a great number of trials, 1st, that three grains of semen, dissolved in two pounds of water, are sufficient to give to it the fecundating virtue; 2d, that the spermatic animalcula are not necessary to fecundation, as Buffon and other authors have thought; 3d, that the *aura seminalis*, or seminal vapour, has no fecundating property; 4th, that a bitch can be impregnated by the mechanical injection of semen into her vagina, &c. &c.

It is thus necessary to consider as conjectural what authors say about the general signs of fecundation. At the instant of conception, the woman feels, it is said, a universal tremor, continued for some time, accompanied by a voluptuous sensation; the features are discomposed, the eyes lose their brilliancy, the pupils are dilated, the visage pale, &c. No doubt, impregnation is sometimes accompanied by these signs; but many mothers have never felt them, and reach even the third month of their pregnancy without suspecting their situation. — *Magendie's Physiology.*

Fecundation having thus taken place, a motion is induced in the vivified ovum, which ruptures the tender vesicle that contains it; the fimbriæ of the Fallopian tube then grasp and convey it into the tube, which, by its peristaltic motion, conducts it into the cavity of the uterus, there to be evolved and brought to maturity, and, at the expiration of a fixed term, to be sent into the world.

Generation, equivocal. *Generatio æquivoca. Generatio spontanea. Generatio heterogenea. Generatio primitiva.* It was the belief of the ancients that a plastic energy existed in the universe, under the influence of which, matter, in certain circumstances, could become organised, and new living beings thus spontaneously produced; as when minute animals are apparently formed from putrefaction, and in infusions of animal or vegetable substances. This supposed mode of generation has been called the *equivocal generation* or *epigenesis*. The hypothesis of the equivocal generation, as adopted by Aristotle, was for many ages universally assented to. In modern times the opinions of physiologists have fluctuated. The doctrine was thrown into discredit by the experiments of Redi and Valisneri; it derived new support from those of Tuberville, Needham, Müller, and Wrisberg, and was again controverted by Spallanzani. The observations of Priestly on *Conservæ* (see *Confervæ*), were in its favour, and they have been confirmed by Ingenhouz and Treveranus, but the recent researches of Ehrenberg throw great doubt on the accuracy of these observations. On the whole, the question must be considered as yet unsettled. The phenomenon most in favour of the equivocal generation, is the production of those entozoa which cannot be traced to any source extraneous to the body of the animal in which they are found.

Generation, organs of. The parts subservient to generation in a woman, are divided into external and internal. The external parts are the *mons veneris*, the *labia*, the *perinæum*, the *clitoris*, and the *nymphæ*. The internal parts of generation are the *vagina* and *uterus*, the *ovaria* and *Fallopian tubes*.

The parts which constitute the organs of generation in men, are the *penis*, *testes*, *vesiculæ seminales*, *vasa deferentia*, and *prostate gland*.

Gene'ric. *Genericus.* Appertaining to a genus. See *Genus*.

GENE'VA. (*a*, *æ*. f. The name of the place where it was first made.) Gin. A spirit distilled from malt or rye, which afterwards undergoes the same process, a second time, with juniper-berries. This is the original and most wholesome state of the spirit; but it is now prepared without juniper-berries, and is distilled from turpentine and cardamoms, and very few, if any, juniper-berries, which gives it something of a similar flavour. The consumption of this article, especially in the metropolis, is immense, and the consequences are very pernicious to the health of those who drink it; and some artisans, and many of the poorer sort, take ten and twelve glasses a day. It has now become a practice with the retail dealers of this article, to prepare it for their customers by mixing alum, sugar, and some other pernicious articles.

GENICULA'TUS. Geniculate: bent like the knee. Applied to stems and the culm of straw of grasses; as in *Alopecurus geniculatus*.

GENI'CULUM. (*um*, *i*. n.; from *genu*, a knee.) The knot or joint of stems, grasses, &c.

Geni'oglo'ssus. (From γενειον, the chin, and γλωσσα, the tongue.) See *Geniohyoglossus*.

Geni'o-hy'o-glo'ssus. (From γενειον, the chin, υοειδες, the os hyoides, and γλωσσα, the

tongue: so called from its origin and insertion.) *Genio-glossus*, of some authors. The muscle which forms the fourth layer between the lower jaw and os hyoides. It arises from a rough protuberance in the inside of the middle of the lower jaw; its fibres run like a fan, forwards, upwards, and backwards, and are inserted into the tip, middle, and root of the tongue, and base of the os hyoides, near its corner. Its use is to draw the tip of the tongue backwards into the mouth, the middle downwards, and to render its back concave. It also draws its root and the os hyoides forwards, and thrusts the tongue out of the mouth.

GENI'O-HYOIDE'US. (From γενειον, the chin, and υοειδες, the os hyoides: so called from its origin in the chin, and its insertion in the os hyoides.) The muscle which constitutes the third layer between the lower jaw and os hyoides. It is a long, thin, and fleshy muscle, arising tendinous from a rough protuberance at the inside of the chin, and growing somewhat broader and thicker as it descends backward to be inserted by very short tendinous fibres into both the edges of the base of the os hyoides. It draws the os hyoides forwards to the chin.

Genio-Phary'ngeus. See *Constrictor pharyngis superior.*

GE'NIPI. A term of barbarous origin, applied to the two following plants: —

Genipi album. See *Artemisia rupestris.*

GENIPI VERUM. The plant directed for medicinal purposes, under this title, is the *Achillea —foliis pinnatis, pinnis simplicibus, glabris, punctatis*, of Haller. It has a very grateful smell, and a very bitter taste, and is exhibited in Switzerland, in epilepsy, diarrhœa, and debility of the stomach.

GENI'STA. (*a, æ.* f.; from *genu*, a knee: so called from the inflection and angularity of its twigs.) 1. The name of a genus of plants in the Linnæan system. Class, *Diadelphia*; Order, *Decandria.*

2. The pharmacopœial name of the common broom. See *Spartium scoparium.*

GENISTA CANARIENSIS. This tree was supposed to afford the lignum Rhodium, which is now known to be an aspalathus. See *Aspalathus canariensis.*

GENISTA SPINOSA INDICA. *Bahel schulli.* An Indian tree, a decoction of the roots of which is diuretic. The leaves, boiled and sprinkled in vinegar, have the same effect, according to Ray.

GENISTA TINCTORIA. The systematic name of the dyer's broom.

GENITA'LIS. (From *gigno*, to beget.) Genital. Appertaining to generation.

Genital organs. See *Organs of generation.*

GENITA'LIUM. (From *genitale*, the membrum virile.) A disease of the genital parts.

GENI'TICUS. (From γεινομαι, *gignor.*) Appertaining to the sexual function.

GENITU'RA. (From *gigno.*) 1. The male seed.

2. The genital organs of either sex.

Gensing. See *Panax.*

GENTIA'NA. (*a, æ.* f.; from *Gentius*, king of Illyria, who first used it.) 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Digynia.* Gentian.

2. The pharmacopœial name of the gentian root. See *Gentiana lutea.*

Gentiana alba. See *Laserpitium.*

GENTIANA CENTAURIUM. Lesser centaury was so called in the Linnæan system; but it now belongs to the genus *Chironia.*

GENTIANA LUTEA. The systematic name of the officinal gentian; called also, Felwort, and *Gentiana rubra.* The gentian met with in the shops, is the root of *Gentiana — corollis subquinquefidis rotatis verticillatis, calycibus spathaceis*, of Linnæus; and is imported from Switzerland and Germany. It is the only medicinal part of the plant, has little or no smell, but to the taste manifests great bitterness, on which account it is in general use as a tonic, stomachic, anthelmintic, antiseptic, emmenagogue, and febrifuge. The officinal preparations of this root are the *infusum gentianæ compositum*, and *tinctura gentianæ composita*, of the London Pharmacopœia, and the *infusum amarum, vinum amarum, tinctura amara*, of the Edinburgh Pharmacopœia; and the *extractum gentianæ* is ordered by both.

Gentiana rubra. See *Gentiana lutea.*

GE'NTIANINE. An alkaline principle discovered in the *Gentiana lutea* by Henri and Caventou, and supposed to be the active part of the plant. It is yellow, bitter, inodorous, nearly insoluble in cold water, but very soluble in alkohol and ether.

GENTIA'NIÆ. A natural family of plants, of which the genus *gentiana* is the type.

GENTI'LII MORBI. (*Gens*, a family.) Family or hereditary diseases.

GE'NU. (Indeclinable in the singular, n.; *genua, genuorum*, &c. in the plural.) The knee.

GENUGRA. (*a, æ.* f.; from *genu*, the knee, and αγρα, a seizure.) A name given by Paracelsus to gout in the knee.

GEO'DES. A kind of aëtites, the hollow of which contains only loose earth, instead of a nodule. See *Aëtites.*

GEOFFRÆ'A. (*a, æ.* f.; named in honour of Dr. Geoffroy.) *Geoffroya.* The name of a genus of plants in the Linnæan system. Class, *Diadelphia*; Order, *Decandria.*

Geoffræa inermis. See *Andira inermis.*

GEOFFRÆA SURINAMENSIS. The systematic name of a tree, the bark of which is esteemed as an anthelmintic.

GERANIA'CEÆ. A natural family of plants, of which the genus *geranium* is the type.

GERA'NIS. (From γερανος, a crane: so called from its supposed resemblance to an extended crane.) A bandage for a fractured clavicle.

GERA'NIUM, (*um, i.* n.; from γερανος, a crane: so called because its pistil is long like the bill of a crane.) The name of a genus of plants in the Linnæan system. Class, *Monadelphia*; Order, *Decandria.* Geranium, or crane's-bill.

Geranium batrachioides. See *Geranium pratense.*

Geranium columbi'num. See *Geranium rotundifolium.*

GERANIUM MOSCHA'TUM. The astringent property of this plant has induced practitioners to exhibit it in cases of debility and profluvia.

GERANIUM PRATENSE. The systematic name of the crowfoot crane's-bill; called likewise *Geranium batrachioides.* A plant which possesses astringent virtues, but in a slight degree.

GERANIUM ROBERTIA'NUM. Stinking crane's-bill. Herb Robert. This common plant has been much esteemed as an external application in erysipelatous inflammations, cancer, mastodynia, and old ulcers, but is now fallen into disuse.

GERANIUM ROTUNDIFOLIUM. The systematic name of the dove's foot, which is also called, *Geranium columbinum.* This plant is slightly astringent.

GERANIUM SANGUINEUM. The systematic name of the bloody crane's-bill. Astringent virtues are ascribed to this plant, but they do not appear to be considerable.

Germ. See *Corculum.*

Germander. See *Teucrium.*

Germander, water. See *Teucrium.*

Germanis oleum. See *Pinus cembra.*

GE'RMEN. (*en, inis.* n.) The rudiment of the young fruit and seed of vegetables, found at the bottom of the pistil. See *Pistillum.* It is various in shape and size.

From its figure it is said to be,

1. *Globose;* as in *Rosa eglantaria,* and *cinnamomea.*

2. *Oblong;* as in *Stellaria biflora.*

3. *Ovate;* as in *Rosa canina,* and *alba.*

From its situation, it is distinguished into,

1. *Superior,* when internal between the corolla; as in *Prunus.*

2. *Inferior,* below and without the corolla; as in *Galanthus nivalis.*

3. *Pedicellate,* upon a footstalk; as in the *Euphorbia.*

It is of great moment, for botanical distinctions, to observe whether it be superior, above the bases of the calyx, or below.

GERMINATION. (*Germinatio, onis.* f.) The vital development of a seed, when it first begins to grow.

GEROCO'MIA. (*a, æ.* f.; from γερας, old age, and κομεω, to be concerned about.) That part of hygeiene which regards the regimen and treatment of old age.

GERONTOPO'GON. (*um, i.* n.; from γερων, an old man, and πωγων, a beard: so called because its downy seed, while enclosed in the calyx, resembles the beard of an aged man.) The herb old man's beard, a species of tragopogon.

GERONTO'XON. (More properly *gerontotoxon;* from γερων, an old person, and τοξον, a bow.) A name of the appearance in the eyes of old persons, otherwise called *Arcus senilis.* See *Arcus senilis,* in the Supplement.

2. The socket of a tooth.

Geropo'gon. See *Gerontopogon.*

GERSA. An alchemical name of cerusse.

GERYON. Quicksilver.

GESTATION. (*Gestatio, onis.* f.; from *gero,* to carry.) Carrying. 1. Passive exercise, in which the body is moved without the exertion of its own muscles; such as swinging, being carried in a litter, riding in a carriage, sailing. All these may, under circumstances, be made to produce a good effect in the treatment of disease. Some exercises are partly passive and partly active — as riding on horseback. The principal kinds of passive exercise are — First, swinging in a hammock, which, at the decline of a fever, is beneficial. Secondly, being carried in a litter, in which the patient either sits, or lies along. It is useful in cases of gout, stone, or any other disorder, which does not admit of violent motions. Thirdly, riding in a carriage, which is of service in most chronical disorders; especially before the more violent exercises can be admitted. Fourthly, sailing in a ship or boat: this produces various effects, according to the different agitation of the waters; and, in many tedious chronical disorders, is efficacious beyond what is observed from the most skilful administration of drugs. Lastly, a rotatory motion, in which the patient is rapidly whirled round, is sometimes used in cases of mania.

2. Pregnancy. The state of a female animal when with young. See *Pregnancy.*

GESTATION, UTERINE. *Gestatio uterina.* The period from the impregnation of a female to the time of labour. See *Pregnancy.*

GE'UM. (*um, i.* n.) 1. The name of a genus of plants in the Linnæan system. Class, *Icosandria;* Order, *Polygynia.*

2. The pharmacopœial name of the two following species of this genus: —

GEUM RIVALE. The root of this has been used medicinally. It is inodorous, and imparts an austere taste. In America, it is in high estimation in the cure of intermittents, and is said to be more efficacious than the Peruvian bark. Diarrhœas and hæmorrhages are also stopped by its exhibition.

GEUM URBANUM. The systematic name of the herb bennet, or avens; called also, *Caryophyllata, Herba benedicta, Caryophyllus vulgaris, Garyophilla,* and *Janamunda.*

Geum — floribus erectis, fructibus globosis villosis, aristis uncinatis nudis, foliis lyratis, of Linnæus. The root of this plant has been employed as a gentle styptic, corroborant, and stomachic. It has a mildly austere, somewhat aromatic taste, and a very pleasant smell, of the clove kind. It is also esteemed on the Continent as a febrifuge.

GIBAR. A barbarous name for any sort of medicine containing a metallic substance.

GIBBO'SITY. (*Gibbositas, atis.* f.; from *gibbus,* a swelling or protuberance.) Crookedness.

GI'BBUS. (*us, i.* m.) Gibbous: bulged; swelled. 1. An irregularity or swelling on the back, or any other part of the body.

2. Applied to leaves, petals, &c., when irregularly swelled on one side or both; as the under part of the corol of the *digitalis,* and corol of the *Lonicera periclemenum.*

GICH. An alchemical name of lime.

Giddiness. See *Vertigo.*

GIGISIM. A barbarous name for gum.

Gilead, balsam of. See *Amyris Gileadensis.*

Gill. See *Branchia*, and *Lamella.*

GILLA. *Grillus.* Names given by the alchemists to various saline substances and their solutions, as sulphate of iron, sulphate of lime, sal ammoniac, and the solutions of these in water.

Gilliflower. See *Dianthus.*

GIMBERNAT'S LIGAMENT. The aponeurosis of the external oblique muscle of the abdomen divides at the inguinal aperture into two portions. The lower portion is doubled inwards, and inserted into the spine of the pubis, the linea ileo-pectinea, and adjacent portion of the fascia lata. The tendinous fibres thus inserted constitute what is called *Gimbernat's ligament*, which is defined by some to be the third insertion of Poupart's ligament.

Gin. See *Geneva.*

Ginger. See *Zingiber.*

GINGER BEER. A pleasant and sufficiently wholesome effervescing beverage, made by fermenting ginger, cream of tartar, and sugar, with yeast. It is made according to several well-known receipts.

Gingiber. See *Zingiber.*

GINGIBRA'CHIUM. (From *gingivæ*, the gums, and *brachium*, the arm.) A barbarous name for the scurvy, because the gums and arms are affected with it.

GINGI'DIUM. A species of *Daucus.*

Gi'ngihil. See *Zingiber.*

GINGIPE'DIUM. (From *gingivæ*, the gums, and *pes*, the foot.) A barbarous name for the scurvy, because the gums and legs are affected.

GINGI'VA. (*a*, *æ.* f.) The gum. The very vascular and elastic fleshy substance that covers the alveolar arches of the upper and under jaws, and embraces the neck of the teeth.

GI'NGLYMUS. (*us*, *i.* m. Γιγγλυμος, a hinge.) The hinge-like joint. A species of diarthrosis, or moveable connection of bones, which admits of flexion and extension; as the knee-joint, &c.

GINSENG. (An Indian word.) See *Panax quinquefolium.*

GIR. Quick-lime.

GIRMIR. Tartar.

GIROUX. A village four leagues from Riez, where there are hot mineral springs, strongly impregnated with muriate of soda, carbonate of magnesia, sulphuret of potash, and a bituminous matter.

GITHA'GO. (*o*, *inis.* f.; from *gith.*) A name used by Pliny for the *Lolium*, or darnel-grass. See *Agrostemma.*

GIZZARD. The proper stomach of birds. The texture of this organ differs remarkably in granivorous and carnivorous birds. See *Animal kingdom.*

The gizzards of poultry have long been considered, in France, as medicinal. They have been recommended in obstructions of the urinary passages, complaints of the bladder, and nephritic pains; but particularly as a febrifuge.

GLABE'LLA. (From *glaber*, smooth; because it is without hair.) The space betwixt the eyebrows.

GLA'BER. (From *galab*, Hebrew.) Glabrous: smooth. Applied to stems, leaves, seeds, &c., of plants, and opposed to hirsute, hairy, or pubescent; as the stem of the *Euphorbia peplus*, and the seeds of *Galium montanum.*

Glabula. See *Galbulus.*

GLA'CIES. Ice. See *Ice.*

GLADI'OLUS. (*us*, *i.* m.; diminutive of *gladius*, a sword: so named from the sword-like shape of its leaf.) The name of a genus of plants in the Linnæan system. Class, *Triandria*; Order, *Monogynia.*

Gladiolus luteus. See *Iris pseudacorus.*

GLA'MA. Γλαμα. The sordes of the eye.

GLAND. (*Glandula*, *æ.* f.; a diminutive of *glans*, an acorn.) I. In *Anatomy*, an organ composed of blood-vessels, nerves, and absorbents, and destined for the secretion or alteration of some peculiar fluid. A gland is either, —

1. *Folliculus*, a follicle, which is a small bag appended to the extremity of a duct into which the secretion is made, and from which it is evacuated by the duct.

2. *Lacuna*, a little sac opening into the passage, and into which generally mucus is secreted, and is discharged when matter moves along the passage.

3. *Crypta*, a soft body, consisting of vessels not completely surrounded with a membrane. The great intestines and kidneys furnish examples of this apparatus for secretion.

4. *Acinus*, a round body, not regularly invested with a membrane. The liver is principally composed of acini.

The glands of the human body are divided, by anatomists, into different classes, either according to their structure, or the fluid they contain. According to their fabric, they are distinguished into four classes: — Simple, compound, conglobate, and conglomerate.

According to their fluid contents, they are more properly divided into, — Mucous, sebaceous, lymphatic, salival, and lachrymal.

1. *Simple glands* are small hollow follicles, covered with a peculiar membrane, and having a proper excretory duct, through which they evacuate the liquor contained in their cavity. Such are the mucous glands of the nose, tongue, fauces, trachea, stomach, intestine, and urinary bladder, the sebaceous glands about the anus, and those of the ear. These simple glands are either dispersed here and there, or are contiguous to one another, forming a heap in such a manner that they are not covered by a common membrane, but each hath its own excretory duct, which is never joined to the excretory duct of another gland. The former are termed solitary simple glands, the latter aggregate or congregate simple glands.

2. *The compound glands* consist of many simple glands, the excretory ducts of which are joined in one common excretory duct; as the sebaceous glands of the face, lips, palate, and various parts of the skin, especially about the pubes.

3. *Conglobate*, or, as they are also called, *lymphatic glands*, are those into which lymphatic vessels enter, and from which they go out

again; as the mesenteric lumbar, &c. They have no excretory duct, but are composed of a texture of lymphatic vessels connected together by cellular membrane: they are the largest in the fœtus.

4. *Conglomerate glands* are composed of a congeries of many simple glands, the excretory ducts of which open into one common trunk: as the parotid gland, thyroid gland, pancreas, and all the salival glands. Conglomerate glands differ but little from the compound, yet they are composed of more simple glands than the compound.

The excretory duct of a gland is the duct through which the fluid of the gland is excreted. The vessels and nerves of glands always come from the neighbouring parts, and the arteries appear to possess a high degree of irritability. The use of the glands is to separate a peculiar liquor, or to change it. The use of the conglobate glands is unknown.

II. In *Botany*, Linnæus defines a gland a little tumour discharging a fluid.

From their situation they are said to be, —

1. *Foliar*, when on the surface of the leaf, as in the *Gossypium religiosum*, which has one gland on the leaf; and *Gossypium barbadense*, the leaves of which have three.

2. *Petiolar*, when in the footstalk; as in *Prunus cerasus*.

3. *Corollar*. The claw of the corolla of the *Berberis vulgaris* has two glands.

4. *Filamentar*, in the filaments; as in *Dictamnus albus*.

From their adhesion, —

1. *Sessile*, without any peduncle; as in *Prunus cerasus*.

2. *Pedicellate*, furnished with a peduncle; as in *Drosera*.

Glands are abundant on the stalk and calyx of the moss-rose, and between the serratures of the leaf of the *Salix pentandria*; on the footstalks of the *Viburnum opulus*, and various species of passion-flower. The liquor discharged is resinous and fragrant.

GLA'NDULA. (*a, æ.* f.; a diminutive of *glans*.) See *Gland*.

Glandula lachrymalis. See *Lachrymal gland*.

Glandulæ Brunneri. See *Brunner's glands*.

Glandulæ myrtiformes. See *Carunculæ myrtiformes*.

GLA'NDULÆ PACCHIO'NI. A number of small albuminous substances, situated under the dura mater, about the sides of the longitudinal sinus. Their use is not known, and some suppose them to be morbid products.

Glandulæ Peyeri. See *Peyer's glands*.

GLANDULO'SUS. Glandular. 1. In *Anatomy*, having the appearance, structure, or function of a gland.

2. In *Botany*, applied to leaves which have little glandiform elevations; as the bay-leaved willow, and *Hypericum montanum*.

GLANS. (*s, dis.* f.) A gland. See *Gland*.

GLANS PENIS. The very vascular nut-like body that forms the apex of the penis. The posterior circle is termed the *corona glandis*. See *Corpus spongiosum urethræ*.

Glans unguentaria. See *Guilandina*.

GLASS. *Vitrum*. This substance was formerly employed by surgeons, when roughly powdered, to destroy opacities of the cornea.

Glass of antimony. See *Antimonii vitrum*.

Glass-shaped. See *Cyathiformis*.

Glass-wort, snail-seeded. See *Salsola kali*.

GLA'STUM. (According to Blancard this is an old Gallic word.) See *Isatis*.

Glauber's salt. See *Sodæ sulphas*.

GLAUCE'DO. (*o, inis.* f.; from γλαυκος, bluish, or seagreen.) See *Glaucoma*.

GLAU'CIUM. (*um, i.* n.; so named from its glaucous or sea-green colour.) The name of a genus of plants in the Linnæan system. Class, *Polyandria*; Order, *Monogynia*. The horned poppy.

GLAUCO'MA. (*a, atis.* n.; from γλαυκος, glaucous: because of the eye becoming of a blue, or sea-green colour.) 1. Dimness, or obscurity of sight from an opacity of the vitreous humour. It is difficult to ascertain, and is only to be known by a very attentive examination of the eye. It is generally produced by a cloudy secretion of the vitreous humour, or by a torpitude of action in the absorbents that carry off the fluid from the cells of the vitreous substance.

A continued course of mercurial alteratives is likely to be beneficial, with blisters near the eye, as behind the ears, &c.

2. This name has been given to cataract. See *Cataract*.

Glauco'sis. See *Glaucoma*.

GLAU'CUS. (Γλαυκος, sea-green.) Glaucous: hoary. Of a hoary or grey bluish green colour: applied to leaves, stems, &c., which are clothed with a fine sea-green mealiness, which easily rubs off; as in *Chlora perfoliata*, and the back of the cabbage-leaf. See *Incanus*, and *Colour*.

GLECHO'MA. (*a, æ.* f.; from γληχων, the name of a plant in Dioscorides.) The name of a genus of plants in the Linnæan system. Class, *Didynamia*; Order, *Gymnospermia*. Ground-ivy.

GLECOMA HEDERA'CEA. The systematic name of the ground-ivy or gill. *Hedera terrestris*. *Glecoma — foliis reniformibus crenatis*, of Linnæus. This indigenous plant has a peculiar strong smell, and a bitterish, somewhat aromatic taste. It is one of those plants which was formerly much esteemed for possessing virtues that, in the present age, cannot be detected. In obstinate coughs, it is a favourite remedy with the poor.

GLE'CHON. Γληχων. Pennyroyal.

GLECHONI'TES. (From γληχων, penny-royal.) Wine impregnated with penny-royal.

Gleet. See *Blennorrhœa*.

GLE'NE. Γληνη. 1. The cavity or socket of the eye.

2. That cavity of a bone which receives another within it.

GLE'NOID. (*Glenoides*; from γληνη, a cavity, and ειδος, resemblance.) The name of some articular cavities of bones. The surface of the scapula, with which the head of the humerus is articulated, is called the glenoid cavity of the scapula.

Gleu'cinum. (From γλευκος, must.) An ointment, in the preparation of which was must.

Gleu'xis. (From γλευκυς, sweet.) A sweet wine.

GLI'ADINE. (From γλια, glue.) The name given by Taddey, an Italian chemist, to one of the constituents of vegetable gluten. See *Gluten*.

Glischro'cholos. (From γλισχρος, viscid, and χολη, the bile.) Viscid bilious excrement.

Glisson's capsule. See *Capsule of Glisson*.

Globate. See *Gland*.

GLOBOSUS. Globose: round. Applied to a root which is rounded, and gives off radicles in every direction; as that of the *Cyclamen europeum*: to the receptacle of the *Cephalanthus*, *Nauclea*, &c. from their form.

GLOBULA'RIA. (*a*, *æ*. f.; from *globus*, a globe: so called from the shape of its flower.) The French daisy.

Globula'ria alypum. The leaves of this plant are used in some parts of Spain in the cure of the venerial disease. It is said to act also as a powerful but safe cathartic.

Globules of the blood. See *Sanguis*.

GLO'BUS. (*us*, *i*. m.) A ball.

Globus hystericus. The air ascending in the œsophagus, and prevented by spasm from reaching the mouth, is so called because it mostly attends hysteria, and gives the sensation of a ball ascending in the throat. This globus, or feeling of a ball in the throat, is a very common annoyance to persons of a nervous temperament; and it is, with them and others, a common attendant, not only in hysterical, but also in nervous and hypochondriacal complaints. Fits of passion, both of anger, grief, and fear, produce it, and often to an extent that threatens suffocation. Many emotions of the mind, even in the strongest, whose minds were well regulated, give rise to this affection. Steadying the mind, cold water about the throat, and a small piece of ice, or very cold water in the mouth, generally relaxes the spasm, when an idiopathic disease. When symptomatic, the remedies of the primary disease are to be resorted to.

GLO'CHIS. (*is*, *inis*. f. Γλωχις, the point of a dart.) A pointed hair. A sharp point; a barbed point. Used, in *Botany*, to a bristle-like pubescence, which is turned backwards at its point into many straight teeth.

GLO'MER. (*er*, *eris*. n. A clue of thread.) A conglomerate gland.

GLO'MERATE. (*Glomeratus*; from *glomer*.) 1. In *Anatomy*, a gland is so called which is formed of a glomer of sanguineous vessels, having no cavity, but furnished with an excretory duct; as the lachrymal and mammary glands.

2. In *Botany*, it means congregated.

GLOME'RULUS. In *Botany*, a small tuft, or *capitulum*, mostly in the axilla of the peduncle. See *Capitulum*.

GLO'SSA. (*a*, *æ*. f. Γλωσσα, and γλωττα, the tongue.) See *Tongue*.

GLO'SSAGRA. (*a*, *æ*. f.; from γλωσσα, the tongue, and αγρα, a seizure.) A violent pain in the tongue.

Glosso-pharyngeal nerves. See *Nervous system*.

Glosso-pharyngeus. See *Constrictor pharyngeus superior*,

Glosso-staphylinus. See *Constrictor isthmi faucium*.

Glossoca'tochos. (From γλωσσα, tongue, and κατεχω, to hold.) An instrument in P. Ægineta for depressing the tongue. A spatula linguæ. The ancient glossocatochus was a sort of forceps, one of the blades of which served to depress the tongue, while the other was applied under the chin.

GLOSSOCE'LE. (*e*, *es*. f.; from γλωσσα, the tongue, and κηλη, a tumour.) An extrusion of the tongue.

Glosso'coma. A retraction of the tongue.

Glossoco'mion. (From γλωσσα, a tongue, and κομεω, to guard.) By this was formerly meant a case for the tongue for a hautboy; but the old surgeons, by metaphor, use it to signify an instrument, or case, for containing a fractured limb.

Glo'tta. (Γλωττα, the tongue.) See *Glossa*.

GLO'TTIS. (*is*, *idis*. f.; from γλωττα, the tongue.) The superior opening of the larynx at the bottom of the tongue.

GLUCI'NA. (*a*, *æ*. f.; from γλυκυς, which signifies sweet, because it gives that taste to the salts in forms.) The name of an earth found in the beryl, a transparent stone of a green colour, and in the emerald of Peru. It is white, light, and soft to the touch; insipid, and adheres to the tongue; and is infusible by itself in the fire. Its specific gravity is 2·967. It is soluble in alkalies and their carbonates, and in all the acids except the carbonic and phosphoric, and forms with them saccharine and slightly astringent salts.

GLUCI'NUM. The metallic base of the earth *glucine*.

GLUE. (Γλια. *Gluten*, *inis*. n.; and *glutinum*, *i*. n.) An inspissated jelly made from the parings of hides and other offals, by boiling them in water, straining through a wicker basket, suffering the impurities to subside, and then boiling it a second time. Shreds or parings of vellum, parchment, or white leather, make a clear and almost colourless glue.

GLU'MA. (*Gluma*, *æ*. f.; *à glubendo*, a husk of corn.) The husk. The peculiar calyx of grasses and grass-like plants, of a chaffy texture, formed of little concave leaflets, which are called *valves*. To the husk belongs the *arista*, the *beard* or *awn*. See *Arista*. The gluma is,

1. *Univalve*, in *Lolium perenne*.
2. *Bivalve*, in most grasses.
3. *Trivalve*, in *Panicum miliaceum*.
4. *Many-valve*, in *Uniola paniculata*.
5. *Coloured*, otherwise than green; as in *Holcus bicolor*.

From the number of flowers the husk contains, it is called, —

1. *Gluma uniflora*, one-flowered; as in *Panicum*.
2. *Biflora*, with two; as in *Aira*.
3. *Multiflora*, having many; as in *Poa*, and *Avena*.

From the external appearance, the gluma is termed, —

1. *Glabrous*, smooth; as in *Holcus lanus*.
2. *Hispid*, bristly; as in *Secale orientale*.
3. *Striate*; as in *Holcus striatus*.
4. *Villose*; as in *Holcus sorgham*, *Holcus saccharatus*, and *Bromus purgans*.
5. *Ciliate*, fringed; as in *Bromus ciliatus*.
6. *Beardless*; as in *Briza* and *Poa*.
7. *Awned*; as in *Hordeum*.

GLUMO'SUS. Glumose. A flower is so called, which is aggregate, and has a glumous or husky calyx.

GLUTE'AL. *Glutealis*. Belonging to the buttocks.

GLUTEAL ARTERY. A branch of the internal iliac artery.

GLU'TEN. (*Quasi geluten*; from *gelo*, to congeal.) See *Glue*.

GLUTEN, ANIMAL. This substance constitutes the basis of the fibres of all the solid parts.

GLUTEN, VEGETABLE. If wheat flour be made into a paste, and washed in a large quantity of water, it is separated into three distinct substances.

1. A *mucilaginous saccharine matter*, which is readily dissolved in the liquor, and may be separated from it by evaporation.

2. *Starch*, which is suspended in the fluid, and subsides to the bottom by repose.

3. *Gluten*, which remains in the hand, and is tenaceous, very ductile, somewhat elastic, and of a brown-grey colour.

The first of these substances does not essentially differ from other saccharine mucilages. The second, namely, the starch, forms a gluey fluid by boiling in water, though it is scarcely, if at all, acted upon by that fluid when cold. Its habitudes and products with the fire, or with nitric acid, are nearly the same as those of gum and of sugar. It appears to be as much more remote from the saline state than gum, as gum is more remote from that state than sugar.

The gluten, though it existed before the washing in the pulverulent form, and has acquired its tenacity and adhesive qualities from the water it has imbibed, is nevertheless totally insoluble in this fluid. It has scarcely any taste. When dry, it is semitransparent, and resembles glue in its colour and appearance. If it be drawn out thin, when first obtained, it may be dried by exposure to the air; but if it be exposed to warmth and moisture while wet, it putrifies like an animal substance. The dried gluten, applied to the flame of a candle, crackles, swells, and burns, exactly like a feather, or piece of horn. It affords the same products by destructive distillation as animal matters do; is not soluble in alkohol, oils, or ether; and is acted upon by acids and alkalis, when heated. According to Rouelle, it is the same with the caseous substance of milk.

Taddey, an Italian chemist, has lately ascertained that the gluten of wheat may be decomposed into two principles, which he has distinguished by the names *gliadine* and *zimome*. They are obtained in a separate state by kneading the fresh gluten in successive portions of alkohol, as long as that liquid continues to become milky, when diluted with water. The alkohol solutions being set aside, gradually deposit a whitish matter, consisting of small filaments of gluten, and become perfectly transparent. Being now left to slow evaporation, the gliadine remains behind, of the consistence of honey, and mixed with a little yellow resinous matter, from which it may be freed by digestion in sulphuric ether, in which gliadine is not sensibly soluble. The portion of the gluten not dissolved by the alkohol is the zimome.

Properties of gliadine. — When dry, it has a straw-yellow colour, slightly transparent, and in thin plates, brittle, having a slight smell, similar to that of honeycomb, and, when slightly heated, giving out an odour similar to that of boiled apples. In the mouth it becomes adhesive, and has a sweetish and balsamic taste. It is pretty soluble in boiling alkohol, which loses its transparency in proportion as it cools, and then retains only a small quantity in solution. It forms a kind of varnish in those bodies to which it is applied. It softens, but does not dissolve, in cold distilled water. At a boiling heat it is converted into froth, and the liquid remains slightly milky. It is specifically heavier than water.

The alkoholic solution of gliadine becomes milky when mixed with water, and is precipitated in white flocks by the alkaline carbonates. It is scarcely affected by the mineral and vegetable acids. Dry gliadine dissolves in caustic alkalis and in acids. It swells upon red-hot coals, and then contracts in the manner of animal substances. It burns with a pretty lively flame, and leaves behind it a light spongy charcoal, difficult to incinerate. Gliadine, in some respects, approaches the properties of resins; but differs from them in being insoluble in sulphuric ether. It is very sensibly affected by the infusion of nutgalls. It is capable of itself of undergoing a slow fermentation, and produces fermentation in saccharine substances.

From the flour of barley, rye, or oats, no gluten can be extracted as from that of wheat, probably because they contain too small a quantity.

Properties of Zimome. — The residue of wheat, which is not dissolved by alkohol, is the zimome. If this be boiled repeatedly in alkohol, it is obtained pure.

Zimome thus purified has the form of small globules, or constitutes a shapeless mass, which is hard, tough, destitute of cohesion, and of an ash-white colour. When washed in water, it recovers part of its viscosity, and becomes quickly brown, when left in contact with the air. It is specifically heavier than water. Its mode of fermenting is no longer that of gluten; for, when it purifies, it exhales a fetid urinous odour. It dissolves completely in vinegar, and in the mineral acids at a boiling temperature. With caustic potash it combines, and forms a kind of soap. When put into lime water, or into the solutions of the alkaline carbonates, it becomes harder, and assumes a new appearance without dissolving. When thrown upon red-hot coals, it exhales an odour similar to that of burning hair or hoofs, and burns with flame.

Zimome is to be found in several parts of

vegetables. It produces various kinds of fermentation, according to the nature of the substance with which it comes in contact.

GLUTE'US. (From γλουτος, the buttocks.) The name of some muscles, arteries, &c. of the buttocks.

Gluteus maximus. *Glutæus magnus*, of Albinus. *Glutæus major*, of Cowper. A broad radiated muscle, on which we sit, is divided into a number of strong fasciculi, is covered by a pretty thick aponeurosis derived from the *fascia lata*, and is situated immediately under the integuments. It arises fleshy from the outer lip of somewhat more than the posterior half of the spine of the ilium, from the ligaments that cover the two posterior spinous processes; from the posterior sacroischiatic ligament; and from the outer sides of the os sacrum and os coccygis. From these origins the fibres of the muscle run towards the great trochanter of the os femoris, where they form a broad and thick tendon, between which and the trochanter there is a considerable *bursa mucosa*. This tendon is inserted into the upper part of the *linea aspera*, for the space of two or three inches downwards; and sends off fibres to the fascia lata, and to the upper extremity of the vastus externus. This muscle serves to extend the thigh, by pulling it directly backwards; at the same time it draws it a little outwards, and thus assists in its rotatory motion. Its origin from the coccyx seems to prevent that bone from being forced too far backwards.

Gluteus medius. The posterior half of this muscle is covered by the gluteus maximus, which it greatly resembles in shape; but the anterior and upper part of it is covered only by the integuments, and by a tendinous membrane which belongs to the fascia lata. It arises fleshy from the outer lip of the anterior part of the spine of the ilium, from part of the posterior surface of that bone, and likewise from the fascia that covers it. From these origins its fibres run towards the great trochanter, into the outer and posterior part of which it is inserted by a broad tendon. Between this tendon and the trochanter there is a small thin *bursa mucosa*. The uses of this muscle are nearly the same as those of the gluteus maximus; but it is not confined, like that muscle, to rolling the os femoris outwards, its anterior portion being capable of turning that bone a little inwards. As it has no origin from the coccyx, it can have no effect on that bone.

Gluteus minimus. *Glutæus minor*, of Albinus and Cowper. A radiated muscle, is situated under the gluteus medius. In adults, and especially in old subjects, its outer surface is usually tendinous. It arises fleshy between the two semicircular ridges we observe on the outer surface of the ilium, and likewise from the edge of its great niche. Its fibres run, in different directions, towards a thick flat tendon, which adheres to a capsular ligament of the joint, and is inserted into the fore and upper part of the great trochanter. A small *bursa mucosa* may be observed between the tendon of this muscle and the trochanter. This muscle assists the two former in drawing the thigh backwards and outwards, and in rolling it. It may likewise serve to prevent the capsular ligament from being pinched in the motions of the joint.

GLU'TIA. (From γλουτος, the buttock.) The buttocks.

GLUTINOUS. *Glutinosus*. Having the properties of gluten.

Gluttony. See *Bulimia*.

Gluttu'patens. (From *gluttus*, the throat, and *pateo*, to extend.) The stomach, as being an extension of the throat. A barbarous term.

GLU'TUS. (*us*, *i*. m. Γλουτος; from γλοιος, filthy.) The buttock. See *Nates*.

Glyca'sma. (From γλυκυς, sweet.) A sweet medicated wine.

Gly'cerine. (From γλυκυς, sweet.) The sweet principle of oils. See *Adeps*.

Glycypi'cros. (From γλυκυς, sweet, and πικρος, bitter: so called from its taste.) See *Solanum dulcamara*.

GLYCYRRHI'ZA. (*a*, *æ*. f.; from γλυκυς, sweet, and ῥιζα, a root.) 1. The name of a genus of plants in the Linnæan system. Class, *Diadelphia*; Order, *Decandria*.

2. The pharmacopœial name of liquorice. See *Glycyrrhiza glabra*.

Glycyrrhiza echinata. This species of liquorice is substituted in some places for the *glabra*.

Glycyrrhiza glabra. The systematic name of the officinal liquorice, *Glycyrrhiza — leguminibus glabris, stipulis nullis, foliolo impari petiolato*, of Linnæus. A native of the south of Europe, but cultivated in Britain. The root contains a great quantity of saccharine matter, joined with some proportion of mucilage, and hence it has a viscid sweet taste. It is in common use as a pectoral or emollient, in catarrhal defluxions on the breast, coughs, hoarsenesses, &c. Infusions, or the extract made from it, which is called *Spanish liquorice*, afford likewise very commodious vehicles for the exhibition of other medicines; the liquorice taste concealing that of unpalatable drugs more effectually than syrups or any other matters of a purely saccharine taste.

Glycyrrhizine. The saccharine juice of liquorice has been so called.

Glycysa'ncon. (From γλυκυς, sweet, and αγκων, the elbow: so called from its sweetish taste, and its inflections, or elbows, at the joints.) A species of southernwood. — *Turton*.

Glyster. See *Enema*.

GNAPHA'LIUM. (*um*, *i*. n.; from γναφαλον, the wool of the teasel: so named from its soft downy surface.) 1. The name of a genus of plants in the Linnæan system. Class, *Syngenesia*; Order, *Polygamia superflua*.

2. The pharmacopœial name of the herb cotton-weed. See *Gnaphalium dioicum*.

Gnaphalium arenarium. The flowers of this plant, as well as those of the gnaphalium stœchas, are called, in the Pharmacopœias, *flores elichrysi*. See *Gnaphalium stœchas*.

Gnaphalium dioicum. The systematic name of the *pes cati*. *Gnaphalium albinum*. Cotton

weed. The flores gnaphalii of the Pharmacopœias, called also, *flores hispidulæ, seu pedes cati*, are the produce of this plant. They are now quite obsolete, but were formerly used as astringents, and recommended in the cure of hooping-cough, phthisis pulmonalis, and hæmoptysis.

Gnaphalium stœchas. The systematic name of Goldilocks; called also, *Elichrysum; Stœchas citrina*. The flowers of this small downy plant are warm, pungent, and bitter, and said to possess aperient and corroborant virtues.

Gna'thus. (From γναπτω, to bend: so called from their curvature.) 1. The jaw, or jaw-bones.

2. The cheek.

Goat. See *Capra hircus.*

Goat's-beard, grey. See *Clavaria cinea.*

Goat's-beard mushroom. See *Clavaria coralloides.*

Goat's-rue. See *Galega.*

Goat's-thorn. See *Astragalus verus.*

Goat-weed. See *Ægopodium.*

Gobio. See *Cyprinus gobio.*

Godbold's vegetable balsam. A nostrum, consisting chiefly of simple oxymel.

Godfrey's cordial. A quack medicine, made by infusing sassafras ℥ix., seeds of carraway, coriander, and anise, of each ℥j., in six pints of water; simmering the mixture till reduced to four pints, then adding six pounds of treacle, boiling the whole for a few minutes, and adding three ounces of tincture of opium.

Godfrey's smelling salts. These are prepared by re-subliming the common subcarbonate of ammonia with pearlash, and a portion of strong alkohol.

Goitre. See *Bronchocele.*

Gold. See *Aurum.*

Gold-cup. See *Ranunculus.*

Golden maidenhair. See *Polytrichum.*

Golden rod. See *Solidago.*

Goldilocks. See *Gnaphalium.*

Gomphi'asis. *Gomphiasmus.* Incorrectly written for *agomphiasis.* See *Agomphiaris.*

Gomphia'smus. See *Gomphiasis.*

GO'MPHIOI. (From γομφος, a nail: so called because they are as nails driven into their sockets.) The dentes molares, or grinding teeth.

Gompho'ma. See *Gomphosis.*

GOMPHO'SIS. (*is, is.* f. Γομφωσις; from γομφοω, to drive in a nail.) *Gomphoma.* A species of immoveable connection of bones, in which one bone is fixed in another, like a nail in a board; as the teeth in the alveoli of the jaws.

GO'NAGRA. (*a, æ.* f.; from γονυ, the knee, and αγρα, a seizure.) The gout in the knee.

Gona'lgia. See *Gonyalgia.*

GONGRO'NA. (*a, æ.* f. Γογγρωνα; from γογγρος, a knot in the bark of a tree.) Hippocrates applies this term to any hard round tumour in tendinous parts. Galen tells us it was also applied in particular to a bronchocele.

Go'ngyle. (Γογγυλη; from γογγυλος, round.) The turnip cabbage, the root of which is globular.

Gongy'lion. (*um, ii.* n. Γογγυλιον; from γογγυλος, round.) A pill.

GONIO'METER. (From γωνια, an angle; and μετρον, a measure.) An instrument for measuring angles, especially those of crystals.

Gonoi'des. (From γονη, seed, and ειδος, form.) Resembling the semen.

GONORRHŒ'A. (*a, æ.* f.; from γονη, the semen, and ῥεω, to flow.) 1. A flow or discharge of semen. This is also called *spermatorrhœa.* As a disease, it is an involuntary emission of the seminal fluid without copulation. It is mostly caused by an indulgence of libidinous ideas, sometimes with an erection of the penis, and sometimes without. During the vigorous state of youth, with strong passions, it is not uncommon. This is the *oneirogonos*, and *gonorrhœa dormientium*, of authors. If it takes place in strong and vigorous constitutions, and especially from a superabundant secretion of seminal fluid, the best remedies are blood-letting and purgatives, with a low and abstemious diet, and regular exercise. Another cause of this malady is the very opposite to the former. Here the constitution is evidently in a relaxed state, and the fluid that is emitted is thin or pellucid, and consists either of a morbid secretion from the testes, or an admixture of a thin fluid furnished by the vesiculæ seminales: this is the *gonorrhœa laxorum;* and requires that sexual intercourse should be forbidden, and the system invigorated by cold sea-bathing, local bathing with a bidet, chalybeate medicines, bark and zinc, with the occasional use of blisters to the perinæum. Cantharides have been given internally with advantage, after a due attention to the state of the system.

Both species are occasionally produced sympathetically from other diseases, as stricture of the urethra, stone in the bladder, &c.; and then, of course, attention must be given to the removal of the primary affection.

2. When the venereal disease became known, that form of it which consists in a purulent discharge from the urethra, was named gonorrhœa, from the erroneous notion that the discharge consisted of semen; and this name is still generally retained to denote a purulent discharge from the urethra, which is called *gonorrhœa benigna*, when supposed to arise from irritation, unconnected with venereal contamination, and *gonorrhœa virulenta, maligna*, or *venerea*, when it arises from the application of the venereal virus. See *Urethrites.*

Gonorrhœa balani. A gonorrhœal discharge, affecting the glans penis only.

Gonorrhœa dormientium. See *Gonorrhœa.*

Gonorrhœa virulenta. See *Gonorrhœa.*

GONYA'LGIA. (*a, æ.* f.; from γονυ, the knee, and αλγος, pain.) *Gonialgia. Genalgia.* Pain in the knee.

Goose. See *Anser domesticus.*

Goose-foot. See *Chenopodium.*

Goose-grass. See *Galium aparine.*

GO'RDIUS. (*us, i.* m.) The name of a genus of animals of the class *Annelides*, and order *Abranchia.*

Gordius aquaticus. The hair-tail worm, or *Seta equina*, found in stagnant marshes and ditches in Lapland, and other places.

Gordius medinensis. See *Filaria medinensis.*

GO'RGET. The name given to an instrument used in the operation of lithotomy. Gorgets are of two kinds, *cutting* and *blunt*. The cutting gorget is a kind of knife, furnished with a beak, which runs in the groove of the staff, so that the gorget being pushed along it, divides the neck of the bladder and the prostate gland. The blunt gorget is merely a sort of large directory for guiding the forceps into the bladder. The gorget is now seldom used; the cutting one being superseded by a simple knife, and the blunt one by the use of the finger.

GORGO'NIA. (*a*, *æ*. f.) The name of a genus of corals.

Gorgonia anti'pathes. *Antipathes*. Black coral. Formerly used in epilepsy.

GOSSY'PIUM. (*um*, *ii*. n.; from the Egyptian *gotne*, whence *gottipium*, and *Gossypium*.) 1. The substance called cotton.

2. The name of a genus of plants in the Linnæan system. Class, *Monadelphia*; Order, *Polyandria*.

Gossypium herbaceum. The systematic name of the cotton-plant: called also, *Bombyx. Gossypium — foliis quinquelobis subtus eglandulosis, caule herbaceo*, of Linnæus. It is an herbaceous plant, with bitriennial stems, growing from four to six feet high. It is cultivated in vast abundance in India, and grows also in China, Egypt, and other tropical countries. The seeds are directed for medicinal use in some foreign pharmacopœias; and are administered in coughs, on account of the mucilage they contain. The capsules contain many seeds, enveloped in the well-known substance called cotton, which sometimes adheres very firmly to them, and at others is easily detached. Cotton is produced by many species and varieties of Gossypium besides the above, and is cultivated in Asia, America, Africa, and the south of Europe.

Go'tium. A goitre. See *Bronchocele*.

Goulard's cerate. The *Ceratum plumbi compositum*.

Goulard's extract. A saturated solution of acetate of lead. See *Plumbi acetatis liquor*.

Gourd. See *Cucurbita*.

Gourd, bitter. See *Cucumis colocynthis*.

GOUT. (This word is derived from the French *goute*; the origin of which, Dr. Good says, is almost forgotten. Most diseases, he observes, attended by tumefaction, were ascribed, by the ancients, to a flow of some morbid fluid or humour to the affected part, which was called a rheum or defluxion; and the rheum or defluxion was denominated hot, cold, acrid, saline, or viscid, according to the nature of the symptoms. The Arabian writers ascribed even this cause to various diseases of the eyes, which were called gutta serena and gutta obscura, "clear or cloudy drops or defluxions," according to the external appearance. Hence gutta, goute, or gout, means a defluxion of morbid humour to the part; as rheumatism also does.) Several names are given to this disease, according to the part affected; as *arthritis*, *podagra*, *chiragra*. It has also been called *dolor podagricus*, *febris podagrica*, &c. It is characterised by pain in the joints, chiefly of the great toe, or, at any rate, chiefly of the feet and hands, returning at intervals, with more or less of swelling, and redness of the skin; the functions of the stomach being most disturbed previous to the attack.

It is a very painful disease, preceded usually by flatulency and indigestion, and accompanied by fever, pains in the joints of the hands and feet, particularly in that of the great toe, and which returns by paroxysms, occurring chiefly in the spring and beginning of winter. The only disorder for which the regular gout can possibly be mistaken, is the rheumatism; and cases may occur wherein there may be some difficulty in making a just discrimination: but the most certain way of distinguishing them will be, to give due consideration to the predisposition in the habit, the symptoms which have preceded, the parts affected, the recurrences of the disease, and its connexion with other parts of the system. It most frequently attacks the male sex, particularly those of a corpulent habit and robust frame; but every now and then we meet with instances of it in robust females. Those who are employed in constant bodily labour, or who live much upon vegetable food, as likewise those who make no use of wine or other fermented liquors, are seldom afflicted with the gout. The disease seldom appears at an earlier period of life than from five-and-thirty to forty; and, when it does, it may be presumed to arise from an hereditary disposition. Indolence, inactivity, and too free a use of tartareous wines, fermented liquors, and animal food, are the principal causes which give rise to the gout; but it may likewise be brought on by great sensuality, and excess in venery, intense and close application to study, long want of rest, grief or uneasiness of mind, exposure to cold, too free a use of acidulated liquors, a sudden change from a full to a spare diet, the suppression of any accustomed discharge, or by excessive evacuations; and that it sometimes proceeds from an hereditary disposition, is beyond all doubt, as females who have been remarked for their great abstemiousness, and youths of a tender age, have been attacked with it.

Most nosologists divide it into four species, the regular, the atonic, the retrocedent, and the misplaced, or shifting.

1. The *regular Gout*. — A paroxysm of regular gout sometimes comes on suddenly, without any previous warning; at other times it is preceded by an unusual coldness of the feet and legs, a suppression of perspiration in them, and numbness, or a sense of prickling along the whole of the lower extremities; and with these symptoms the appetite is diminished, the stomach is troubled with flatulency and indigestion, a degree of torpor and languor is felt over the whole body, great lassitude and fatigue are experienced after the least exercise, the body is costive, and the urine pallid. On the night of the attack, the patient perhaps goes to bed in tolerable health, and, after a few hours, is awaked by the severity of the pain, most commonly in the first joint of the great toe; sometimes, however, it attacks other parts of the

foot, the heel, calf of the leg, or perhaps the whole of the foot. The pain resembles that of a dislocated bone, and is attended with the sensation as if cold water was poured upon the part; and this pain becoming more violent, is succeeded by rigors and other febrile symptoms, together with a severe throbbing and inflammation in the part. Sometimes both feet become swelled and inflamed, so that neither of them can be put to the ground; nor can the patient endure the least motion without suffering excruciating pain. Towards morning, he falls asleep, and a gentle sweat breaks out, and terminates the paroxysm, a number of which constitutes what is called a fit of the gout. The duration of the fit will be longer or shorter, according to the disposition of the body to the disease, the season of the year, and the age and strength of the patient. When a paroxysm has thus taken place, although there is an alleviation of pain at the expiration of some hours, still the patient is not entirely relieved from it; and, for some evenings successively, he has a return both of pain and fever, which continue, with more or less violence, until morning. The paroxysms, however, prove usually more mild every day, till at length the disease goes off either by perspiration, urine, or some other evacuation; the parts which have been affected becoming itchy, the cuticle falling off in scales from them, and some slight degree of lameness remaining. At first an attack of gout occurs, perhaps, only once in two or three years; it then probably comes on every year, and at length it becomes more frequent, and is more severe, and of longer duration, each succeeding fit. In the progress of the disease, various parts of the body are affected, and translations take place from one joint, or limb, to another; and after frequent attacks, the joints lose their strength and flexibility, and become so stiff as to be deprived of all motion. Concretions, of a chalky appearance, are likewise formed upon the outside of the joints, and nephritic affections of the kidneys arise from a deposit of the same kind of matter in them, which, although fluid at first, becomes gradually dry and firm. This matter is partly soluble in acids, but without effervescence; and Dr. Wollaston discovered it not to be carbonate of lime, but a compound of the uric or lithic acid and soda.

2. *Atonic Gout.* — It sometimes happens that, although a gouty diathesis prevails in the system, yet from certain causes, no inflammatory affection of the joints is produced; in which case, the stomach becomes particularly affected, and the patient is troubled with flatulency, indigestion, loss of appetite, eructations, nausea, vomiting, and severe pains; and these affections are often accompanied with much dejection of spirits, and other hypochondriacal symptoms. In some cases, the head is affected with pain and giddiness, and now and then with a tendency to apoplexy; and in other cases, the viscera of the thorax suffer from the disease, and palpitations, faintings, and asthma, or pectoral anginea arise. This is what is called atonic gout. A great variety of anomalous symptoms are referable to the same source.

3. *Podagra retrograda.* — Retrocedent gout. It sometimes happens that, after the inflammation has occupied a joint, instead of its continuing the usual time, and so going off gradually, it ceases suddenly, and is translated to some internal part. The term retrocedent gout is applied to occurrences of this nature. When it falls on the stomach, it occasions nausea, vomiting, anxiety, or great pain; when on the heart, it brings on syncope; when on the lungs, it produces an affection resembling asthma; and, when it occupies the head, it is apt to give rise to apoplexy, or palsy.

4. *Misplaced Gout,* is when the gouty diathesis, instead of producing the inflammatory affection of the joints, occasions an inflammatory affection of some internal parts, and which appears from the same symptoms that attend the inflammation of those parts from other causes. All occurrences of this nature, as well as of the two former, are to be regarded as attacks of irregular gout, and are to be guarded against as much as possible.

Besides the more easily recognised forms of gout, there is no doubt that the gouty diathesis gives rise to a specific inflammation of various membranous parts. This is exemplified in the gouty form of iritis. (See *Iritis.*) It appears also to exert, occasionally, a pernicious influence on the nervous system; and Beer admits a distinct form of gouty *amaurosis.* See *Amaurosis.*

In attempting the cure of this disease, our attention must be directed to the paroxysm, and to the management during its absence; and particularly to the state of the constitution and previous habits, which may demand different and opposite plans.

Treatment of the paroxysm of a regular fit of Gout. — From the belief that a regular fit of gout was an effort of nature to throw off some peccant humour which formed the essence of the disease, it was formerly left to itself, or perhaps encouraged to proceed through its course without interruption. This opinion is now abandoned, and the practice is to endeavour to subdue the paroxysm by the ordinary means resorted to in inflammations of any other kind; as bleeding, purgatives, sudorifics, local astringents, refrigerants, &c., so managed as to prevent any danger of repelling the gout to some internal organ, and thus converting a regular paroxysm into a retrograde or atonic gout. Sydenham prohibited purging and sweating, and only allowed bleeding in young and vigorous constitutions, during the first or second paroxysm. He admits of the use of laudanum, where the pain is acute; and he trusts chiefly for the cure of the disease to an alterative regimen, and apozems to be resorted to in the intervals. Dr. Cullen allows bleeding, with the same restrictions as Sydenham, though he recommends the application of leeches to the part, as at all times a safer practice than the use of the lancet. Of cathartics and sudorifics he takes no notice, otherwise than as these may enter into the general course of an antiphlogistic plan: he is decidedly averse to the use of cold, and thinks that warm bathing and emol-

lient poultices, blistering, burning with moxa, camphorated and aromatic oils, induce the inflammation to shift from one part to another, and consequently tend to repel the inflammation from the extremities to some more important part; while opium, though it affords relief in present paroxysms, occasions them to return with greater violence; and therefore he observes, by way of conclusion, "The common practice of committing the person to patience and flannel alone, is established upon the best foundation." Now, says Dr. Good, as the gout, after it has shown itself in paroxysms, is never idle; and as one paroxysm, in the opinion of Sydenham, Cullen, and every other physician, hastens on another, renders its intervals shorter, and its duration longer; and progressively saps all the energies both of mind and body, and renders life itself a burden, it is of serious importance to enquire whether this fear of a repulsion, however well founded in some instances, is not allowed too generally? whether it be not possible to draw a definite line between the form of the disease in which it ought to operate, and that in which it ought not? and whether, in the latter case, we may not derive all the benefit from a full use of a reducing process, which is obtained in other inflammations, accompanied with a like degree of constitutional vigour?

From the history of gout, we may draw this general corollary: that when once excited by some occasional cause into action, it has a peculiar tendency to fix and expand itself upon the weakest parts of the system; and, where several parts are equally weak, to pass in sudden transitions from one part to another, though transitions are rare where the system is sound.

In healthy constitutions, the weakest parts are the extremities; and hence, in such constitutions, these are the parts in which the gout uniformly opens its assault.

In unhealthy habits, however, the extremities are not the weakest parts of the system, but perhaps the stomach, or the heart, or the head, or the lungs, or some other organ; while several of these organs may, moreover, be equally debilitated, according to the idiosyncrasy, or to accidental circumstances. And true to the general, rule the gouty principle, when roused into action in habits of this kind, fixes itself from the first on one of those important viscera rather than on the extremities; or roaming from one to another, on its alternating its course from these organs to the extremities, or from the extremities to these organs. And as metastases are rare where the system is sound, they become frequent in proportion as it loses its character, and especially in proportion to its debility in particular parts.

These are rules which cannot be too closely studied and committed to memory, and they seem to point out the line of distinction between that form of the disease in which a prudent fear of revulsion ought to be entertained, and that in which we may safely act without any such fear whatever. They directly lead us to two states of constitution that require a very different, and in many instances a very opposite, mode of treatment; and seem to settle the important question before us, under what circumstances it may be expedient to employ a palliative plan, and under what a cooling and reductive.

We shall commence with the first of these two states, forming a regular but violent fit of gout as it shows itself in a sound constitution, and inflicts its torture on the hand or the foot. Guiding ourselves by the laws just laid down, there seems no reason why, instead of "committing the person to patience and flannel alone," we should not pursue the evacuating and refrigerant means employed in active inflammations of any other kind, and have cause to expect a like success: such as bleeding, so strongly recommended by Dr. Heberden, and allowed occasionally by Sydenham, and emptying the bowels, relaxing the skin generally, and cooling the fiery heat of the affected limb by cold water, or any other frigorific application. With a transfer of morbific matter we have now no longer to contend. Yet, even where such a cause is admitted, as in most exanthemata, the plan thus proposed is, in many instances, pursued without hesitation.

In weakly habits or idiosyncrasies, or incidental debilities of particular organs, a metastasis is a frequent result, and peculiarly marks the character of gouty inflammation; and here refrigerants, violent purgatives, and venesection ought to be most sedulously abstained from; and the best practice is that of "committing the person to patience and flannel alone."

The inflammation of a regular fit of gout subsides gradually, though rapidly, under the treatment now proposed, without any repulsion whatever. Yet, in a few instances, it has seemed to be repelled in part, whilst it has chiefly passed off by resolution.

The use of local refrigerants is by no means of modern invention, however it may have become a subject of warm controversy in the present day. The application of cold water is recommended by Hippocrates and other Greek writers, by Celsus; by many more modern authors, as Camerarius, Zacutus Lusitanus, Kolhaas, and Keck. Bartholine speaks of the use of snow as a common application in 1661, and Pechlin, both of snow and cold sea-water towards the close of the same century. Heberden approved highly of the use of cold water, which has also received the more recent recommendation of Drs. Kinglake and Mason Good.

But this treatment has often been employed rashly, and sometimes with great and even fatal mischief. It ought never to be ventured upon except, as already stated, where the constitution is decidedly sound and vigorous.

Leeches may, in many instances, be applied where venesection would be of doubtful expedency. A liniment of oil of almonds, impregnated with opium, rubbed on the tumefaction with a protracted and very gentle friction, is often found very serviceable in mitigating the pain; and epithems of tepid water, as recommended by Dr. Scudamore, alone, or mixed with a portion of æther or alkohol, formed by cloths wetted with the fluid, and applied to the inflamed part, renewable as they become dry, in many

cases prove a grateful substitute for cold water; and are preferable to poultices, warm water, or even vapour-baths, which too generally relax and weaken the joint, and prevent it from recovering its elasticity, after the paroxysm is over, so soon as it otherwise would do.

At the same time, the body should be cooled with gentle aperients or injections; and while drenching sweats are avoided, which never fail to be injurious, the breathing moisture should be imitated, which often breaks forth naturally in an early part of the morning, and is sure to afford relief after a night of distraction. Nor should opium be omitted where the pain is very acute; for, while it affords temporary ease, it diminishes the duration as well as the violence of the paroxysm.

The regimen should be light and inirritant, and the diet below the standard to which the patient has been accustomed; though, to guard against a metastasis to the stomach, we must be cautious that we do not reduce it too much. His chamber should be well ventilated, and his dress light and easy.

In the varieties, constituting atonic and retrocedent gout, there is a podagric diathesis grafted upon an unsound frame; the unsoundness being general or local: and, however fearless we may be of the disease fixing on any internal organ in the preceding variety, we have here a constant apprehension that it may do so, and in many cases see it commence in such organs.

In atonic gout, our uniform attempt should be to produce a transfer from the part on which it has seized, and fix it in the extremities: in retrocedent gout, on the contrary, to render the vacillating attack on the extremities more permanent, and prevent it from shifting to any other quarter.

To obtain the first intention, we have to strengthen and even stimulate the system generally by warm tonics and a generous diet, and, above all things, to take off the severe suffering, in whatever it may consist, from the affected organ: for the longer the fit continues there, the weaker it will become, and the less capable of any instinctive remedial exertion. At the same time we may solicit the paroxysm to the extremities by putting the feet into warm water, and thus unstringing the tone of their vessels; so as to bring the standard of their atony below that of the affected organ.

In atonic gout, the sufferings, though widely different according to the seat of the disease, are almost insupportable. In the head the pain is maddening, or the disorder is accompanied with great horror, or mimics the stupor of an apoplexy: in the stomach there is a faintness like that of death, with the sense of a cold lump of lead lodged within it; or there is a gnawing or a burning agony, or a spasmodic stricture which seems to cut the body in two, and renders breathing almost impossible; often, also, accompanied with a rapid and sinking palpitation of the heart.

It is of importance to determine accurately that these anomalous symptoms are really those of gout; of which we have chiefly to judge from the general character of the patient's constitution, his hereditary predisposition, habits of life, and the ailments to which he has been previously subject. In most cases, too, during the paroxysm, and especially where the stomach is affected, the warmest cordials are necessary: as brandy, the aromatic spirit of ammonia, the tincture of ginger or of capsicum, or, what is still better, usquebaugh. And it is always advantageous, and especially where the bowels are confined, to add to it some warm aperient, as aloes or rhubarb. Most of the family gout-cordials are made upon this principle, and judiciously consist of some active aperient and the hottest aromatics, dissolved in ardent spirits. And the patient, who is subject to these attacks, should never be without having something of this kind at hand, since the paroxysm often makes its onset without any warning. Yet he should resolutely forbear having recourse to any such medicine, except in the time of necessity: for an habitual indulgence in any of them will still farther debilitate the affected organ, and indeed the entire system; and hence quicken the returns of the paroxysm, and render the antidote less availing. Most of the preparations of ether may be employed with benefit in the variety before us, and particularly in that icy coldness of the stomach, accompanied with a numbness of the limbs and a rapid palpitation of the heart, under which it occasionally exhibits itself. External irritants may also be beneficially employed at the same time, and particularly those of rapid action, as the compound camphire liniment, and sinapisms: at the same time the extremities should be plunged into the warm bath. But our sheet-anchor is opium; and it should be given freely, and in union with some preparations of antimony, so as to act towards the surface generally, and thus restore to the living power its interrupted equilibrium.

In retrocedent gout the same plan is to be pursued, where the attack has actually shifted from the feet or hands to some internal organ.

In gout, the *intervals of this disease* are of as much importance to be attended to as its paroxysms: and here, also, the mode of management under the first form should differ essentially from that under the second; for though the occasional causes may, in many cases, be the same, they have in the former to operate upon a vigorous scale of power, and in the latter, upon a scale decidedly reduced.

In every variety, all known occasional causes must be equally avoided. Where the diet has been too rich, it must be lowered; and where too spare and abstemious, made more liberal. Indolence and a sedentary life must give way to regular exercise; and over-exertion of body or mind, to repose and quiet. In the young, robust, and corpulent, whether the disease result from too great indulgence at the table, or an habitual taint, it may be requisite to abstain from animal food, wines, and fermented liquors altogether; but where the sufferer has passed considerably beyond the zenith of life, and the luxuries of the table have become habitual, his ordinary fare should be reduced or diminished, rather than entirely commuted. And in every change, it is better to proceed slowly, than to

rush rapidly from one extreme to another: since nothing has so great a tendency to prepare the internal organs for gouty paroxysms, as such sudden and violent transitions. The bowels should be kept in regular order, and the hour of rest be early.

A due and unswerving attention to these general rules of the hygiene, will often be sufficient to keep those free from all disturbance of the gout for many years, and perhaps for the whole of their subsequent life, who have only known it in the form of a few regular paroxysms. But where the system, and especially the digestive function, is weak, and the patient has had anticipations of a tonic or recedent gout, or has actually suffered from its assaults, it will be necessary to superadd a course of *invigorating medicines*.

There are three classes of remedies that generally pass under this name: stimulants, bitters, and astringents. The first increase the action, the two last augment the tone. Stimulants can rarely be employed alone, except in cases of emergency; for a lax state of fibres will bear little increase of action without, at the same time, suffering an equal increase of debility. But they may often, and in the case of gout perhaps always, be combined with astringents and bitters with great and decisive benefit.

Most of the celebrated specifics for preventing a return of gout, have been formed of these classes of medicines in combination, and especially of bitters and aromatics: and it is singular that, although the variety of them which nature offers to us is almost infinite, they have been employed with little change from the time of Galen and Cælius Aurelianus, in the second century, to that of Sydenham, in the seventeenth.

There have, in all ages, been offered to the public, specifics for the sudden cure or removal of the paroxysm when present, as well as for preventing its return hereafter. Lucian, in his Tragopodagra, gives us, with great humour, a list that occupies a page of such as were chiefly in vogue in his day; and the catalogue is certainly not diminished in our own. Those that have acquired the highest reputation, appear to have been composed of some species of hellebore, or of meadow-saffron; the first of which is among the remedies quoted by Lucian, though it is probable that the ῥίζα ἑλλεβορου of the Greeks belonging to a different plant from either the white or black hellebore of modern dispensatories.

The favourite specifics of the present day are M. Husson's *Eau médicinale*, and the *Vinum colchici*, or wine of meadow-saffron, introduced in the current Pharmacopœia of the London College. The exact components of the former are kept a secret; though its basis is now universally believed to be either the root or some other part of the meadow-saffron. The effects of the Eau médicinale and of the colchicum wine, do not essentially differ; for, after taking about sixty drops of either, the pulse becomes slower, and at length sinks, in about twelve hours, from ten to twenty strokes in a minute below its natural number, at which time the inflammation subsides. The action of both medicines is accompanied with great languor, and a deadly nausea or sickness, which terminates in vomiting, or a discharge from the bowels, or both. If the dose be in a small degree in excess, the symptoms are syncope, cold sweat, extreme prostration of strength, violent vomiting and purging, a wiry and almost imperceptible pulse, or a state of utter and very alarming insensibility. And, in some constitutions, these effects have followed from the use of even a common dose. So that these preparations seem to be rather stronger drugged than the celebrated oxymel colchici of Stoerck.

It is possible that the colchicum may act by a specific power on the peculiar inflammation of a regular fit; yet as other intestinal irritants have occasionally produced a like effect, and particularly the *Gratiola officinalis* and *Ranunculus flammula*, the disappearance of the paroxysm may also be ascribed to a transfer of action to the stomach and intestines. Generally speaking, specifics operate by a secret and inexplicable power, as the bark in intermittents, the vaccine virus in shielding the constitution against small-pox, and mercury in syphilis: for though a ptyalism gives proof that the system is impregnated with the last, there are few practitioners so attached to the Cullenian doctrine in the present day, as to contend that the venereal virus is carried off by the salivation, since we are perpetually beholding it carried off under the influence of mercury without any salivation whatever.

Admitting yet, that the colchicum has a specific power over a regular inflammatory paroxysm of gout, it is clear that it has no such power over the gouty diathesis, since the paroxysm has never been so removed as not to return again. And hence it is a matter of reasonable discussion, whether the constitution is not liable to suffer from the sudden resolution of the local inflammation, and whether, by the exhibition of the colchicum, the returns of the paroxysm may not be increased in frequency, while they are diminished in duration. The general impression among practitioners in the present day seems, however, to be favourable to the use of colchicum.

From the rapidity and force of its operation, it is clear that it ought never to be tried, except in the first variety of gout, or where the system is firm and healthy, and the disorder shows itself in a regular fit. And as it is highly desirable to restrain the violence of the paroxysm, shorten its duration, and carry it off as soon as possible, the use of the colchicum may be judicious so long as the system is able to recover itself readily from its influence, and provided the patient limits himself to the smallest dose that will answer the purpose.

Gout-stone. See *Chalk-stone*.

Gout-weed. See *Ægopodium*.

Gouttes d'or du General Lamotte. De Lamotte's golden drops. A medicine prepared by dissolving nitrate of gold in alkohol. It has gained great reputation in gout and nervous diseases, in which, however, there is no reason to believe that it possesses any real efficacy.

Gouty amaurosis. See *Amaurosis.*

Gouty concretions. See *Gout.*

Gouty iritis. See *Iritis.*

Gowland's lotion. This is made by triturating an ounce of bitter almonds, and two ounces of sugar, with two pounds of distilled water; then adding to the strained liquor two scruples of corrosive sublimate, previously ground with two drachms of rectified alkohol. It is used in obstinate cutaneous diseases.

GRA'CILIS. (So named from its slenderness.) *Rectus interior femoris, sive gracilis interior,* of Winslow. A long, straight, and slender muscle of the thigh, situated immediately under the integuments, at the inner part. It arises, by a broad and thin tendon, from the anterior part of the ischium and pubis, and soon becoming fleshy, descends nearly in a straight direction along the inside of the thigh. A little above the knee, it terminates in a slender and roundish tendon, which afterwards becomes flatter, and is inserted into the middle of the tibia, behind and under the sartorius. Under the tendons of this and the rectus there is a considerable *bursa mucosa,* which on one side adheres to them and to the tendon of the semitendinosus, and on the other to the capsular ligament of the knee. This muscle assists in bending the thigh and leg inwards.

GRAFTING. Budding. Inoculating. The process of uniting the branches or buds of two or more separate trees. The bud or branch of one tree, accompanied by a portion of its bark, is inserted into the bark of another, and the tree which is thus engrafted upon is called the stock. By this mode different kinds of fruits, pears, apples, plums, &c., each of which is only a variety accidentally raised from seed, but no further perpetuated in the same manner, are multiplied; buds of the kind wanted to be propagated being engrafted on so many stems of a wild nature.

Grains of Paradise. See *Amomum granum paradisi.*

GRA'MEN. (*en, inis.* n.) Grass. Any kind of grass-like herb.

Gramen arundinaceum. See *Calamagrostis.*

Gramen caninum. See *Triticum repens.*

Gramen cruris cyperioidis. *Gramen ægyptiacum.* Egyptian cock's-foot grass, or grass of the cross. The roots and plants possess the same virtues as the dog's grass, and are serviceable in the earlier stages of dropsy. They have been thought to correct the bad smell of the breath, and to relieve nephritic disorders, colics, &c., although now neglected.

Gra'mia. The sordes of the eyes.

GRAMI'NEÆ. The natural family of the grasses.

Gra'mma. A scruple.

Gra'mme. (From γραμμη, a line: so called from its linear appearance.) The iris of the eye.

Gramme. A French weight equal to 15·444 grains Troy.

Granadi'lla. (Diminutive of *granada,* Spanish, a pomegranate: so called because at the top of the flower there are points, like the grains of a pomegranate.) The passion-flower, the fruit of which is said to possess refrigerating qualities. See *Passiflora.*

Grana actes. Elder-berries. See *Actæa.*

Grana fina. Cochineal.

Grana mollucca. *Grana tiglia.* The seeds of the *Croton tiglium.* See *Croton tiglium.*

Grana sylvestria. *Granilla.* A variety of the cochineal, which frequents the *Cactus ficus indica.*

Granatri'stum. A carbuncle. — *Paracelsus.*

GRANA'TUM. (*um, i.* n.; from *granum,* a grain, because it is full of seed.) The pomegranate. See *Punica granatum.*

Grande'balæ. (*Quod in grandioribus ætate nascantur,* because they exist only after the age of puberty.) The hairs under the arm-pits.

GRANDINO'SUS. (From *grando,* hail.) The *os cuboides* has been called *os grandinosum,* for what reason we know not.

GRA'NDO. (*o, inis.* f. *Quod similitudinem granorum habeat,* because it is in shape and size like a grain of seed.) 1. Hail.

2. A moveable tumour on the margin of the eyelid, like a hail-stone. See *Chalazion.*

GRANI'FERUS. Graniferous: bearing grain.

GRANULA'TION. (*Granulatio, onis.* f.; from *granum,* a grain.) 1. In *Surgery,* the little grain-like fleshy bodies which form on the surfaces of ulcers and suppurating wounds, and serve both for filling up the cavities, and bringing nearer together and uniting their sides, are called granulations. Nature is supposed to be active in bringing parts as nearly as possible to their original state, whose disposition, action, and structure have been altered by accident or disease; and after having, in her operations for this purpose, formed pus, she immediately sets about forming a new matter upon surfaces in which there has been a breach of continuity. This process is called *granulating* or *incarnation;* and the substance formed is called *granulations.* The colour of healthy granulations is a deep florid red. When livid they are unhealthy, and have only a languid circulation. Healthy granulations, on an exposed or flat surface, rise nearly even with the surface of the surrounding skin, and often a little higher; but when they exceed this, and take on a growing disposition, they are unhealthy, become soft, spongy, and without any disposition to form skin. Healthy granulations are always prone to unite to each other, so as to be the means of uniting parts.

2. In *Chemistry,* the method of dividing metallic substances into grains or small particles, in order to facilitate their combination with other substances, and sometimes for the purpose of readily subdividing them by weight.

GRANULA'TUS. Granulated. 1. In *Surgery,* applied to ulcers.

2. In *Botany,* beaded: applied to roots which are beaded, as it were, or jointed; as that of the *Oxalis acetocella.*

Gra'nulum. A little grain.

GRA'NUM. (*um, i.* n.) A grain or kernel.

Granum cnidium. See *Daphne mezereum.*

Granum infectorium. See *Kermes.*

Granum kermes. See *Kermes.*

Granum moschi. See *Hibiscus.*

Granum paradisi. See *Amomum.*

GRANUM REGIUM. The castor-oil seed.

Granum tigli. See *Croton tiglium.*

Granum tinctoriæ. See *Kermes.*

GRAPHIOI'DES. (From γραφις, a style, and ειδος, a form.) An epithet of the styloid processes of the temporal bone and ulna.

GRAPHI'SCUS. This word has got into the Lexicons as the name of a surgical instrument invented by Diocles for extracting darts. This appears to be an error arising from a wrong reading of Celsus. Targa's edition reads Διοκλειον κναθισκον. (Lib. vii. c. 5.) Cyathiscus, therefore, is probably the word; and this is generally used by the Greek writers to signify a scoop or probe with a hollow at the end of it.

GRAS DES CADAVRES. A French vernacular name of adipocere.

GRASSA. Borax.

GRATI'OLA. (*a, æ.* f.; diminutive of *gratia*, so named from its supposed admirable qualities.) Hyssop. 1. The name of a genus of plants in the Linnæan system. Class, *Diandria;* Order, *Monogynia.*

2. The pharmacopœial name of the hedge-hyssop. See *Gratiola officinalis.*

GRATIOLA OFFICINALIS. The systematic name of the hedge-hyssop; called also, *Digitalis minima, Gratia dei,* and *Gratiola centauriodes.* This exotic plant, the *Gratiola — foliis lanceolatis, serratis, floribus pedunculatis,* of Linnæus, is a native of the south of Europe; but is raised in our gardens. The leaves have a nauseous bitter taste, but no remarkable smell; they purge and vomit briskly in the dose of half a drachm of the dry herb, or of a drachm infused in wine or water. This plant, in small doses, has been commonly employed as a cathartic and diuretic in hydropical diseases; and instances of its good effects in ascites and anasarca are recorded by many respectable practitioners. Gesner and Bergius found a scruple of the powder a sufficient dose, as in this quantity it frequently excited nausea or vomiting; others have given it to half a drachm, two scruples, a drachm, and even more.

An extract of the root of this plant is said to be more efficacious than the plant itself, and exhibited in the dose of half a drachm, or a drachm, in dysenteries, produces the best effect. We are also told by Kostrzewski, that in the hospitals at Vienna, three maniacal patients were perfectly recovered by its use; and in the most confirmed cases of lues venerea, it effected a complete cure: it is usually acted by increasing the urinary, cutaneous, or salivary discharges.

GRATIA DEI. The old name of some plants, given to them from their supposed salutary qualities. See *Gratiola, Geranium robertianum,* &c.

GRAVE'DO. (*o, onis.* f.; from *gravis,* heavy.) A name for *coryza,* on account of the sense of weight in the head which accompanies it.

Gravel. See *Calculus.*

GRAVE WAX. An old popular name of adipocere.

Graviditas. See *Pregnancy.*

GRAVI'METER. A name given by Guyton Morveau to Nicholson's aroemeter.

GRAVITA'TION. Generally used synonymously with *gravity;* but gravity more properly denotes the cause, and gravitation the effect. Thus, when a body falls to the earth, this is an instance of *gravitation,* which is occasioned by the law or power of *gravity.*

GRA'VITATIVE. *Gravativus.* This term is sometimes applied to pain accompanied with a great sense of weight.

GRAVITY. (*Gravitas, atis.* f.) The term used by natural philosophers to denote the cause by which all bodies move toward each other, unless prevented by some other force or obstacle. It operates directly as the mass, and inversely as the square of the distance.

GRAVITY, SPECIFIC. The density of the matter of which any body is composed, compared to the density of another body, assumed as the standard. This standard is pure distilled water, at the temperature of 60° F. To determine the specific gravity of a solid, we weigh it, first in air, and then in water. In the latter case, it loses of its weight a quantity precisely equal to the weight of its own bulk of water; and hence, by comparing this weight with its total weight, we find its specific gravity. The rule therefore is, Divide the total weight by the *loss* of weight in water, the quotient is the specific gravity. If it be a liquid or a gas, we weigh it in a glass or other vessel of known capacity; and dividing that weight by the weight of the same bulk of water, the quotient is, as before, the specific gravity.

GRAY LOTION. The black wash is sometimes so called.

Great sympathetic nerve. See *Nervous system.*

Green sickness. See *Chlorosis.*

GREEN VITRIOL. Sulphate of iron.

GRESSU'RA. (From *gradior,* to proceed.) The perinæum, which goes from the pudendum to the anus.

GRI'AS. (*as, adis.* f.; a name mentioned by Apuleius.) The name of a genus of plants. Class, *Polyandria;* Order, *Monogynia.*

GRIAS CAULIFLORA. The systematic name of the tree, the fruit of which is the anchovy pear. The inhabitants of Jamaica esteem it as a pleasant and cooling fruit.

GRIE'LUM. A name formerly applied to parsley and smallage.

GRIPHO'MENOS. (From γριφος, a net: because it surrounds the body as with a net.) Applied to pains which surround the body at the loins.

GRIPPE. The common French name of the influenza.

GROATS. The decorticated seed of the oat.

GROCER'S ITCH. A variety of the *Eczema impetiginoides,* produced by the irritation of sugar.

Gromwell. See *Lithospermum.*

GROS. A French weight equal to 59·070 troy grains.

GROSSULA'RIA. (*a, æ.* f.; diminutive of *grossus,* an unripe fig: so named because its fruit resembles an unripe fig.) The gooseberry, or gooseberry-bush. See *Ribes.*

Grossus. See *Ficus.*

Grotto del cane. (The Italian for the dogs' grotto: so called because the experiments with the gas of the grotto are generally made upon dogs.) A grotto, near Naples, in which carbonic acid gas rises about eighteen inches. A man, therefore, is not affected; but an animal, as a rabbit or a dog, forcibly held in, or that cannot rise above it, is soon killed, unless taken out. He is recovered, if not kept in too long, by being brought into the open air.

Grotto dei serpi. The grotto of the serpents, not far distant from Braccano, in Italy. It is filled with warm vapour, and those affected with cutaneous diseases resort to it.

Ground-ivy. See *Glecoma hederacea.*

Ground-liverwort. See *Lichen caninus.*

Ground-nut. See *Bunium bulbocastanum.*

Ground-pine. See *Teucrium chamæpitys.*

Groundsel. See *Senecio vulgaris.*

GRUB. A worm or maggot hatched from the egg of the beetle kind, or scarabeus: applied, occasionally, to the sebaceous secretion of the subcutaneous follicles of the skin.

Gruina'les. The name of an order of plants in Linnæus's Fragments of a Natural Method, consisting principally of the geranium or crane's-bill genus.

Gruma. Tartar. — *Ruland.*

Grumosus. See *Grumous.*

Grumous. *Grumosus.* Curdled, clotted.

Gru'mus. (*us, i.* m.) A curd. A clot of blood.

GRU'TUM. (*um, i.* n.) A hard white tubercle of the skin, resembling, in size and appearance, a millet-seed.

GRY'LLUS. (*us, i.* m.) The name of an extensive genus of insects.

Gryllus verruci'vorus. *Locusta Verrucivora.* The wart-eating grasshopper. It has green wings, spotted with brown, and is caught, by the common people in Sweden, to destroy warts, which it is said to do by biting off the excrescence, and discharging a corrosive liquor on the wound.

Gry'phus pe's. *Pied de Griffon.* Griffon's Foot. An instrument described by Ambroise Paré for extracting moles from the uterus.

GRYPHO'SIS. (From γρυποω, to incurvate.) A disease of the nails, which turn inwards, and irritate the soft parts below.

Gryphus lapis. The philosopher's stone.

GUAI'ACUM. (*um, i.* n.; from the Spanish *Guayaco*, which is formed from the Indian *Hoaxacum.*) 1. The name of a genus of plants in the Linnæan system. Class, *Decandria*; Order, *Monogynia.*

2. The pharmacopœial name of the officinal guaiacum. See *Guaiacum officinale.*

Guaiacum officinale. This tree, *Guaiacum —foliis bijugis, obtusis*, of Linnæus, is a native of the West Indian islands. The wood, gum, bark, fruit, and even the flowers, have been found to possess medicinal qualities. The wood, which is called *Guaiacum americanum, Lignum vitæ, Lignum sanctum, Lignum benedictum, Palus sanctus*, is brought principally from Jamaica, in large pieces, of four or five hundred weight each, and, from its hardness and beauty, is used for various articles of turnery ware. It scarcely discovers any smell, unless heated, or while rasping, in which circumstances it yields a light aromatic one: chewed, it has a slightly acrid taste. The substance called guiac is obtained by wounding the bark in different parts of the body of the tree, or by what has been called jagging. It exudes copiously from the wounds, though gradually; and when a quantity is found accumulated upon the several wounded trees, hardened by exposure to the sun, it is gathered, and packed up in small kegs for exportation: it is of a friable texture, of a deep greenish colour, and sometimes of a reddish hue; it has a pungent acrid taste, but little or no smell, unless heated. Guiac was considered as a gum resin, till Mr. Brande showed it to be a substance *sui generis.* Water dissolves about 9 *per cent.* of guiac, alkohol 95, and ether 40. The solutions of the alkalis and their carbonates dissolve it readily: sulphuric acid dissolves it, and the solution is of a rich claret colour; it is dissolved by nitric acid with a copious evolution of of nitrous fumes. Muriatic acid dissolves a small portion only; but all these mineral acids decompose the guiac, and are therefore incompatible in prescription with it. The *bark* contains less resinous matter than the wood, and is, consequently, a less powerful medicine, though, in a recent state, it is strongly cathartic. "The *fruit*," says a late author, "is purgative, and, for medicinal use, far excels the bark. A decoction of it has been known to cure the venereal disease, and even the yaws, in its advanced stage, without the use of mercury." The *flowers*, or blossoms, are laxative, and in Jamaica are commonly given to the children in the form of syrup. It is only the wood and resin of guaiacum which are now in general medicinal use in Europe; and, as the efficacy of the former is supposed to be derived merely from the quantity of resinous matter which it contains, they may be considered indiscriminately as the same medicine. Guaiacum was first introduced into the materia medica soon after the discovery of America; and, previous to the use of mercury in the lues venerea, it was the principal remedy employed in the cure of that disease: its great success brought it into such repute, that it is said to have been sold for seven gold crowns a pound: but notwithstanding the very numerous testimonies in its favour, it often failed in curing the patient, and was at length entirely superseded by mercury; and though it be still occasionally employed in syphilis, it is rather with a view to correct other diseases in the habit, than for its effects as an antivenereal. It is now more generally employed for its virtues in curing more gouty and rheumatic pains, and some cutaneous diseases. Dr. Woodville and others frequently conjoined it with mercury and soap, and, in some cases, with bark or steel, and found it eminently useful as an alterative. In the Pharmacopœia it is directed in the form of mixture and tincture: the latter is ordered to be prepared in two ways, viz. with rectified spirit, and the aromatic spirit of ammonia. Of these latter compounds, the dose may be from two scruples to two drachms; the gum is generally given from six grains to

twenty, or even more, for a dose, either in pills or in a fluid form, by means of mucilage or the yolk of an egg. The decoctum lignorum of the Edinburgh Pharmacopœia, of which guaiacum is the chief ingredient, is commonly taken in the quantity of a pint a day.

As many writers of the sixteenth century contended that guaiacum was a true specific for the venereal disease, and the celebrated Boerhaave maintained the same opinion, the following observations are inserted: Mr. Pearson mentions, that when he was first entrusted with the care of the Lock Hospital, 1781, Mr. Bromfield and Mr. Williams were in the habit of reposing great confidence in the efficacy of a decoction of guaiacum wood. This was administered to such patients as had already employed the usual quantity of mercury; but who complained of nocturnal pains, or had gummata, nodes, ozæna, and other effects of the venereal virus, connected with secondary symptoms, as did not yield to a course of mercurial frictions. The diet consisted of raisins and hard biscuit; from two to four pints of the decoction were taken every day; the hot bath was used twice a week; and a dose of antimonial wine and laudanum, or Dover's powder, was commonly taken every evening. Constant confinement to bed was not deemed necessary; neither was exposure to the vapour of burning spirit, with a view of exciting perspiration, often practised, as only a moist state of the skin was desired. This treatment was sometimes of singular advantage to those whose health had sustained injury from the disease, long confinement, and mercury. The strength increased; bad ulcers healed; exfoliations were completed; and these anomalous symptoms, which would have been exasperated by mercury, soon yielded to guaiacum.

Besides such cases, in which the good effects of guaiacum made it be erroneously regarded as a specific for the lues venerea, the medicine was also formerly given, by some, on the first attack of the venereal disease. The disorder being thus benefited, a radical cure was considered to be accomplished: and though frequent relapses followed, yet, as these partly yielded to the same remedy, its reputation was still kept up. Many diseases, also, which got well, were probably not venereal cases. Pearson seems to allow that, in syphilitic affections, it may indeed operate like a true antidote, suspending for a time the progress of certain venereal symptoms, and removing other appearances altogether; but he observes that experience has evinced, that the unsubdued virus yet remains active in the constitution.

Pearson has found guaiacum of little use in pains of the bones, except when it proved sudorific; but that it was then inferior to antimony or volatile alkali. When the constitution has been impaired by mercury and long confinement, and there is a thickened state of the ligaments, or periosteum, or foul ulcers still remaining, Pearson says, these effects will often subside during the exhibition of the decoction; and it will often suspend, for a short time, the progress of certain secondary symptoms of the lues venerea; for instance, ulcers of the tonsils, venereal eruptions, and even nodes. Pearson, however, never knew one instance in which guaiacum eradicated the virus; and he contends that its being conjoined with mercury neither increases the virtue of this mineral, lessens its bad effects, nor diminishes the necessity of giving a certain quantity of it. Pearson remarks, that he has seen guaiacum produce good effects in many patients having cutaneous diseases, the ozæna, and scrofulous affections of the membranes and ligaments.

Guajava. *Guava. Guajabo.* Names of the guava tree, from the fruit of which an excellent jelly-like preserve is made. The tree is the *Psidium pomiferum* of Linnæus.

Guano.

Guaparaiba. See *Rhizophora.*

GUBERNA'CULUM TE'STIS. *Ligamentum testis.* A name given by John Hunter to a fibro-vascular cord, extended between the testis and scrotum in the fœtus. He considered it as chiefly instrumental in directing the course of the testis into the scrotum.

Gudgeon. See *Cyprinus gobio.*

Guiana carter. See *Simarouba.*

GUILA'NDINA. (*a, æ.* f.; named after Melchior Guilandinus.) The name of a genus of plants. Class, *Decandria;* Order, *Monogynia.*

Guilandina bonduc. The systematic name of the plant, the fruit of which is called *Bonduch indorum.* Molucca or bezoar nut. It possesses warm, bitter, and carminative virtues.

Guilandina moringa. See *Moringa aptera.*

Guinea-hen weed. See *Peteveria alliacea.*

Guinea-fowl. See *Numidia meleagris.*

Guinea-pepper. See *Capsicum.*

Guinea-worm. See *Filaria.*

GULA. (*a, æ.* f.; from γευομαι, to taste.) See *Œsophagus.*

Gulph-weed. See *Fucus bacciferus.*

GUM. (*Gummi,* n.; indeclinable.) I. The mucilage of vegetables. It is usually transparent, more or less brittle when dry, though difficultly pulverable; of an insipid, or slightly saccharine taste; soluble in, or capable of combining with, water in all proportions, to which it gives a gluey adhesive consistence, in proportion as its quantity is greater. It is separable, or coagulates by the action of weak acids; it is insoluble in alkohol, and in oil; and capable of the acid fermentation, when diluted with water. The destructive action of fire causes it to emit much carbonic acid, and converts it into coal without exhibiting any flame. Distillation affords water, acid, a small quantity of oil, a small quantity of ammonia, and much coal.

These are the leading properties of gums rightly so called: but the inaccurate custom of former times applied the term gum to all concrete vegetable juices, so that in common we hear of gum copal, gum sandaracb, and other gums, which are either pure resins, or mixtures of resins with the vegetable mucilage.

The principal gums are, — 1. The common gums, obtained from the plum, the peach, the cherry-tree, &c. 2. Gum arabic, which flow

naturally from the acacia in Egypt, Arabia, and elsewhere. This forms a clear transparent mucilage with water. 3. Gum Seneca, or Senegal. It does not greatly differ from gum arabic: the pieces are larger and clearer; and it seems to communicate a higher degree of the adhesive quality to water. It is much used by calico-printers and others. The first sort of gums are frequently sold by this name, but may be known by their dark colour. 4. Gum adragant or tragacanth. It is obtained from a small plant, a species of astragalus, growing in Syria, and other eastern parts. It comes to us in small white contorted pieces resembling worms. It is usually dearer than other gums, and forms a thicker jelly with water.

Willis has found, that the root of the common blue-bell, *Scilla nutans*, dried and powdered, affords a mucilage possessing all the qualities of that from gum arabic. The roots of the vernal squill, white lily, and orchis, equally yield mucilage. Lord Dundonald has extracted a mucilage also from lichens.

Gums treated with nitric acid afford the saclactic, malic, and oxalic acids.

II. The fleshy substance which surrounds the teeth. See *Gingiva.*

Gum, acacia. See *Acacia vera.*

Gum, arabic. See *Acacia vera.*

Gum, elastic. See *Caoutchouc.*

Gum, red. See *Strophulus.*

Gum-boil. See *Parulis.*

GUMA. An alchemical name of mercury.

GU'MMA. (*a, atis.* n.; so named from the resemblance of its contents to gum.) A strumous tumour on the periosteum of a bone.

Gummi. See *Gum.*

Gummi acaciæ. See *Acacia vera.*

Gummi acanthinum. See *Acacia vera.*

Gummi arabicum. See *Acacia vera.*

Gummi carannæ. See *Caranna.*

GUMMI CERASORUM. The gum which exudes from the bark of cherry-trees. See *Cerasin.*

GUMMI CHIBOU. A spurious kind of gum elemi, but little used.

Gummi courbaril. See *Hymenæa.*

Gummi euphorbii. See *Euphorbia.*

Gummi galda. See *Galda.*

Gummi gambiense. See *Kīno.*

Gummi guttæ. See *Stalagmitis.*

Gummi hederæ. See *Hedera helix.*

Gummi juniperinum. See *Juniperus.*

Gummi kikekunemalo. See *Kīkekunemalo.*

Gummi kino. See *Kīno.*

Gummi lacca. See *Lacca.*

Gummi lamac. See *Acacia vera.*

Gummi lutea. See *Botany Bay.*

Gummi myrrhæ. See *Myrrha.*

GUMMI NOSTRAS. The name given on the Continent to gums which are the produce of indigenous trees.

Gummi rubrum gambiense. See *Kīno.*

Gummi sagapenum. See *Sagapenum.*

Gummi scorpionis. See *Acacia vera.*

Gummi senega. See *Acacia vera.*

Gummi senegalense. See *Acacia vera.*

Gummi senica. See *Acacia vera.*

Gummi thebaicum. See *Acacia vera.*

Gummi tragacanthæ. See *Astragalus.*

Gummosæ pilulæ. See *Pilulæ galbani compositæ.*

GUM-RESIN. *Gummi resina.* Gum-resins are the juices of plants that are mixed with resin, and an extractive matter, which has been taken for a gummy substance. They seldom flow naturally from plants, but are mostly extracted by incision in the form of white, yellow, or red fluids, which dry more or less quickly. Water, spirit of wine, wine, or vinegar, dissolve them only in part, according to the proportion they contain of resin or extract. Gum-resins may also be obtained artificially by digesting the parts of vegetables containing the gum-resin in diluted alkohol, and then evaporating the solution. For this reason most tinctures contain gum-resin. The principal gum-resins employed medicinally are aloes, ammoniacum, assafœtida, galbanum, cambogia, guaiacum, myrrha, olibanum, opoponax, sagapenum, sarcocolla, scammonium, and styrax.

GUNDE'LIA. (*a, æ.* f.; the name given by Tournefort, in honour of his companion and friend, Andrew Gundelscheimer, its discoverer, in the mountains of Armenia.) A genus of plants. Class, *Syngenesia;* Order, *Polygamia segregata.*

GUNDELIA TOURNEFORTII. The young shoots of this plant are eaten, but the roots are purgative and emetic.

GURGU'LIO. (*o, onis.* f.) This is set down in most lexicons as a name of the *uvula*, but it properly means the *wind-pipe.*

Gustati'vus. See *Gustatorius.*

GUSTATO'RIUS. (*Gustativus;* from *gustus*, taste.) Gustatory. Gustative. Appertaining to the sense of taste.

GU'STATORY NERVES. The nerves which minister to the sense of taste. See *Taste.*

GU'STUS. (*us, ûs.* m.; from γευομαι, to taste.) See *Taste.*

GU'TTA. (*a, æ.* f.) 1. A drop. Drops are an uncertain form of administering medicines, and should never be trusted to. The shape of the bottle, or of its mouth, from which the drops fall, as well as the consistence of the fluid, occasion a considerable difference in the quantity administered. See *Minimum.*

2. A name of apoplexy, from a supposition that its cause was a drop of blood falling from the brain upon the heart.

Gutta gamba. See *Stalagmitis.*

GUTTA NIGRA. The black drop. Called also the Lancaster black drop and Quakers' black drop. A preparation of opium, formerly kept secret. The true receipt for making it came into the hands of the late Dr. Armstrong, who published it. It is as follows: — "Take half a pound of opium, sliced; three pints of good verjuice (juice of the wild crab); one ounce and a half of nutmegs, and half an ounce of saffron. Boil them to a proper thickness, then add a quarter of a pound of sugar and two spoonsful of yeast. Set the whole in a warm place near the fire for six or eight weeks, then place it in the open air until it becomes a syrup; lastly, decant, filter, and bottle it up, adding a little sugar to each bottle."

In this preparation an acetate of morphia is

formed; it is therefore thought to be more directly sedative, and less apt to derange the digestion, than the tincture of opium. The black drop is considered about three times as strong as the tincture of opium; the dose must, therefore, be regulated accordingly.

Gutta opaca. A name for the cataract.

Gutta serena. (So called by the translators of the Arabians.) See *Amaurosis.*

Guttæ rosaceæ. Red spots upon the face and nose. See *Acne.*

Gutta'lis cartila'go. The arytænoid cartilage.

Gutti'feræ. Drop-bearers. A natural family of plants, including the genus *Stalagmites*, and others.

Gu'ttur. (*ur, uris.* n.) The throat.

GU'TTURAL. *Gutturalis.* Belonging to the throat.

Guttural artery. The superior thyroideal artery.

Gutturiformis cartilago. The arytænoid cartilage.

Guttu'rnium. The same.

Guttu'ro-maxilla'ris. A name given by Chaussier to the internal maxillary artery.

GYMNA'STIC. (*Gymnasticus; γυμναστικος*; from *γυμνος*, naked, because the athletæ were stripped.) A term applied to that branch of medicine which consisted in the use of various bodily exercises, with a view to the preservation of health or the cure of disease. It formed an important part of the medicine of the Greeks, and is too much neglected by modern practitioners. Gymnastic medicine is said to have been invented by one Herodicus, born at Selymbria, a city of Thrace; or, as some say, at Leutini in Sicily. He was first master of an academy where the youth came to learn warlike and manly exercises; and observing them to be very healthful, on that account he made exercise become an art in reference to the recovering of men out of diseases, as well as preserving them from them, and called it *Gymnastic*, which he made a great part of his practice. But Hippocrates, who was his scholar, blames him sometimes for his excesses with this view. And Plato exclaims against him with some warmth, for enjoining his patients to walk from Athens to Megara, which is about 25 miles, and to come home on foot as they went, as soon as they had but touched the walls of the city.

This was rather sharp practice; but there is little doubt that a very free use of the muscles is highly conducive to health, and that the want of it among the civilised nations of modern times gives rise to great debility of the muscles, and a morbid irritability of other organs.

GYMNA'STICE. (*e, es.* f.; *γυμναστικη.*) Gymnastics. Gymnastic medicine. See *Gymnastic.*

Gymnastics. See *Gymnasticus.*

GYMNOCA'RPI. The second division in Persoon's arrangement of mushrooms, such as bear seeds embedded in an appropriate dilated, exposed membrane, denominated *hymenium*, like *helvella*, in which that part is smooth and even; *boletus*, in which it is porous; and the vast genus *agaricus*, in which it consists of gills.

GYMNOSPE'RMIA. (*a, æ.* f.; from *γυμνος*, naked, and *σπερμα*, a seed.) The name of an order of the class *Didynamia*, of the sexual system of plants, embracing such as have added to the didynamial character four naked seeds.

Gynæci'a. (*Γυνεικεια*; from *γυνη*, a woman.) The menses, and also the lochia.

GYNÆCOMA'NIA. (*a, æ.* f.; from *γυνη*, a woman, and *μανια*, madness.) That species of insanity which consists in an extravagant desire for women.

Gynæcomy'stax. (From *γυνη*, a woman, and *μυσταξ*, a beard.) The hairs on the female pudendum.

Gynæcoma'sthon. (*Γυναικομασθον*; from *γυνη*, a woman, and *μασθος*, Doric for *μαστος*, the breast.) A preternatural magnitude of the breast in either sex.

GYNA'NDRIA. (*a, æ.* f.; from *γυνη*, a woman, and *ανηρ*, a man, or husband.) The name of a class in the sexual system of plants. It contains those hermaphrodite flowers, the stamina of which grow upon the pistil, so that the male and female organs are united, and do not stand separate as in other hermaphrodite flowers.

Gynanthro'pus. (From *γυνη*, a woman, and *ανθρωπος*, a man.) This name has been given to an hermaphrodite, in which the characters of the male predominate.

Gynida. (From *γυνη*, a woman.) An hermaphrodite has been so called.

Gyno'basis. (From *γυνη*, a woman, and *βασις*, a base.) Decandolle thus designates the base of a solitary style, which is tumid and divided into separate cells.

GY'PSUM. (*um, i.* n.) Sulphate of lime. Gypseous alabaster substance is found in nature in great abundance in compact, foliated, and fibrous forms, and sometimes crystallised, when it is called selinite. Prepared with water, it constitutes the well-known substance called plaster of Paris. Gypsum forms an ingredient in the unguentum alabastrinum. See *Alabastrinum unguentum.* Plaster of Paris is used by artists and anatomists for taking casts; it has also been employed to make a mould for a fractured limb, to keep it in the proper position.

H.

HABE'NA. (*a*, *æ*. f. A bridle.) A bandage for keeping the lips of wounds together. An uniting bandage.

HA'BITAT. (A contraction of *habitatio*, habitation.) Used generally by naturalists to express the natural abode or locality of an animal, or the nature of the situation in which a plant grows.

Hacub. See *Gundelia tournefortii.*

Haddock. See *Gadus æglefinus.*

HADID. An alchemical name of iron.

HÆ'DUS. (*us*, *i.* m.) The kid, or young of the goat. See *Capra hircus.*

HÆ'MALOPS. (*ops*, *opis.* m.; from αἷμα, blood, and ωψ, the eye.) An effusion of blood in the eye-lids or eye-ball.

HÆMA'NTHUS. (*us*, *i.* m.; from αἷμα, blood, and ανθος, a flower: so called from its colour.) A genus of plants of the class *Hexandria*, and order *Monogynia*. The blood-flower. The juice of the bulb of a species of this genus is used by the Hottentots to poison arrows.

HÆMASTA'TICA. (From αἷμα, blood, and στατικη, the science which treats of the weight of bodies.) Hæmastaticks. The name given by Hales to that department of physiology which treats of the laws which regulate the movements of the blood in the vessels of the living body.

HÆMATAPO'RIA. (*a*, *æ*. f.; from αἷμα, blood, and απορια, defect.) Sagar uses this term synonymously with *anæmia.*

HÆMATE'MESIS. (*is*, *is.* f.; from αἷμα, blood, and εμεω, to vomit.) A vomiting of blood. Hæmatemesis is readily to be distinguished from a discharge from the lungs, by its being usually preceded by a sense of weight, pain, or anxiety in the region of the stomach; by its being unaccompanied by any cough; by the blood being discharged in a very considerable quantity; by its being of a dark colour, and somewhat grumous; and by its being mixed with the other contents of the stomach.

The disease may be occasioned by any thing received into the stomach, which stimulates it violently or wounds it; or may proceed from blows, bruises, or any other cause capable of exciting inflammation in this organ, or of determining too great a flow of blood to it; but it arises more usually as a symptom of some other disease (such as a suppression of the menstrual or hæmorrhoidal flux, or obstructions in the liver, spleen, and other viscera,) than as a primary affection. It is seldom so profuse as to destroy the patient suddenly, and the principal danger seems to arise, either from the great debility which repeated attacks of the complaint induce, or from the lodgment of blood in the intestines, which, by becoming putrid, might occasion some other disagreeable disorder.

This hæmorrhage, being usually rather of a passive character, does not admit of large evacuations. Where it arises, on a suppression of the menses, in young persons, and returns periodically, it may be useful to anticipate this by taking away a few ounces of blood, not neglecting proper means to help the function of the uterus. In moderate attacks, particularly where the bowels have been confined, the infusion of roses and sulphate of magnesia may be employed: if this should not check the bleeding, the sulphuric acid may be exhibited more largely, or some of the more powerful astringents and tonics, as alum, tincture of muriate of iron, decoction of bark, or superacetate of lead. Where pain attends, opium should be given freely, taking care that the bowels be not constipated; and a blister to the epigastrium may be useful. In all cases the food should be light, and easy of digestion; but more nourishing as the patient is more exhausted.

HÆMA'TICA. (From αἷμα, blood.) Diseases of the sanguineous function: the third class in Dr. Good's Nosology.

Hæmatine. See *Hæmatoxyline.*

HÆMATI'TES. (*es*, *is.* m.; from αἷμα, blood: so named from its property of stopping blood, or from its colour.) *Lapis hæmatites.* A species of iron ore called bloodstone. Finely levigated, and freed from the grosser parts by frequent washings with water, it has been long recommended in hæmorrhages, fluxes, uterine obstructions, &c., in doses of from one scruple to three or four.

HÆMATI'TINUS. (From αἱματιτης, the hæmatite.) A collyrium, in which was the hæmatite.

HÆ'MATOCE'LE. (*e*, *es.* f.; from αἷμα, blood, and κηλη, a tumour.) A swelling of the scrotum, or spermatic cord, proceeding from or caused by blood. The distinction of the different kinds of hæmatocele, though not usually made, is absolutely necessary toward rightly understanding the disease; the general idea or conception of which appears to Pott to be somewhat erroneous, and to have produced a prognostic which is ill founded and hasty. According to this eminent surgeon, the disease, properly called hæmatocele, is of four kinds: two of which have their seat within the tunica vaginalis testis; one within the albuginea; and the fourth in the tunica communis, or common cellular membrane, investing the spermatic vessels.

In the passing an instrument, in order to let out the water from a hydrocele of the vaginal coat, a vessel is sometimes wounded, which is of such size as to tinge the fluid pretty deeply at the time of its running out: the orifice becoming close when the water is all discharged, and a plaster being applied, the blood ceases to flow from thence, but insinuates itself partly into the cavity of the vaginal coat, and partly into the cells of the scrotum; making, in the

space of a few hours, a tumour nearly equal in size to the original hydrocele. This is one species.

It sometimes happens in tapping a hydrocele, that although the fluid discharged by that operation be perfectly clear and limpid, yet in a very short space of time (sometimes in a few hours) the scrotum becomes as large as it was before, and palpably as full of a fluid. If a new puncture be now made, the discharge, instead of being limpid (as before) is either pure blood or very bloody. This is another species; and, like the preceding, confined to the tunica vaginalis.

The whole vascular compages of the testicle is sometimes very much enlarged, and at the same time rendered so lax and loose that the tumour produced thereby has, to the fingers of an examiner, very much the appearance of a swelling composed of a mere fluid, supposed to be somewhat thick, or viscid. This is in some measure a deception, but not totally so: the greater part of the tumefaction is caused by the loosened texture of the testes; but there is very frequently a quantity of extravasated blood also. If this be supposed to be a hydrocele, and pierced, the discharge will be mere blood. This is a third kind of hæmatocele, and very different, in all its circumstances, from the two preceding: the fluid is shed from the vessels of the glandular part of the testicle, and contained within the tunica albuginea. The fourth consists in an effusion of blood from a branch of the spermatic vein, in its passage from the groin to the testicles; in which case, the extravasation is made into the tunica communis, or cellular membrane, investing the spermatic vessels.

Each of these species, Pott says, he has seen so distinctly, and perfectly, that he has not the smallest doubt concerning their existence, and of their difference from each other.

HÆMATOCE'LE ARTERIO'SA. A name that has been given to aneurism.

HÆMATO'CHYSIS. (*is, is.* f.; from αἷμα, blood, and χεω, to pour out.) A hæmorrhage, or flux of blood.

HÆMATO'DES. (From αἷμα, blood.) Hæmatoid. 1. An old epithet of the bloody crane's-bill. See *Geranium sanguineum.*

2. The epithet of a peculiar form of malignant tumour. See *Fungus hæmatodes.*

HÆMATO'LOGY. (*Hæmatologia, æ.* f.; from αἷμα, blood, and λογος, a discourse.) The doctrine of the blood.

HÆMATO'MPHALUS. (From αἷμα, blood, and ομφαλος, the navel.) A tumour about the navel, from an extravasation of blood.

HÆMATOPEDE'SIS. (From αἷμα, blood, and πεδαω, a leap.) The leaping of the blood from a wounded artery.

HÆ'MATOPHLŒBŒ'STASIS. (From αἷμα, blood, φλεψ, a vein, and στασις, a station.) A suppression of an impetuous current of blood in the veins; and sometimes, according to Galen, a full vein.

HÆMATO'SIS. (From ἁιμα, blood.) A hæmorrhage, or flux of blood.

HÆMATOSINE. The colouring matter of the blood. See *Sanguis.*

HÆMATOSPI'LIA. (From αἷμα, blood, and σπιλος, a spot.) A name given by Alibert to *Purpura hæmorrhagia.*

HÆMATO'XYLINE. The colouring principle of the logwood, also called *Hæmatine,* but less appropriately.

HÆMATO'XYLON. (*on* or *um, i.* n.; from αἷμα, blood, and ξυλον, wood: so called from the red colour of its wood.) The name of a genus of plants in the Linnæan system. Class, *Decandria;* Order, *Monogynia.*

HÆMATOXYLON CAMPECHIANUM. The systematic name of the logwood tree. Called also, *Acacia Zeylonica.* The part ordered in the Pharmacopœia, is the wood, called *Hæmatoxyli lignum, Lignum campechense, Lignum campechianum, Lignum campescanum, Lignum indicum,* and *Lignum sappan.* Logwood. It is of a solid texture and of a dark red colour. It is imported principally as a substance for dyeing, cut into junks and logs of about three feet in length; of these pieces the largest and thickest are preserved, as being of the deepest colour. Logwood has a sweetish sub-astringent taste, and no remarkable smell; it gives a purplish red tincture both to watery and spirituous infusions, and tinges the stools, and sometimes the urine, of the sand colour. It is employed medicinally as an astringent and corroborant. In diarrhœas it has been found peculiarly efficacious, and has the recommendation of some of the first medical authorities; also in the latter stages of dysentery, when the obstructing causes are removed, to obviate the extreme laxity of the intestines usually superinduced by the repeated dejections. In the form of decoction the proportion is two ounces to 2lb. of fluid, reduced by boiling to one. An extract is ordered in the pharmacopœias. The dose from ten to forty grains.

The colouring principle of this root is called *hæmetine.* On the watery extract of logwood, digest alkohol for a day: filter the solution, evaporate, add a little water, evaporate gently again, and then leave the liquid at rest. Hæmatine is deposited in small crystals, which, after washing with alkohol, are brilliant, and of a reddish-white colour. Their taste is bitter, acrid, and slightly astringent.

Hæmatine forms an orange-red solution with boiling water, becoming yellow as it cools, but recovering, with increase of heat, its former hue. Excess of alkali converts it first to purple, then to violet, and, lastly, to brown: in which state the hæmatine seems to be decomposed. Metallic oxides unite with hæmatine, forming a blue-coloured compound. Gelatine throws down reddish flocculi. Peroxide of tin and acid merely redden it.

Hæmatoxylum. See *Hæmatoxylon campechianum.*

HÆMATU'RIA. (*a, æ.* f.; from αἷμα, blood, and ουρον, urine.) The voiding of blood with urine. This disease is sometimes occasioned by falls, blows, bruises, or some violent exertion, such as hard riding and jumping; but it more usually arises from a small stone lodged either in the kidney or ureter, which, by its size or irregularity, wounds the inner surface of the

part it comes in contact with; in which case the blood discharged is most usually somewhat coagulated, and the urine deposits a sediment of a dark brown colour, resembling the grounds of coffee.

A discharge of blood by urine, when proceeding from the kidney or ureter, is commonly attended with an acute pain in the back, and some difficulty of making water, the urine which comes away first being muddy and high coloured, but, towards the close of its flowing, becoming transparent, and of a natural appearance. When the blood comes immediately from the bladder, it is usually accompanied with a sense of heat and pain at the bottom of the belly.

The voiding of bloody urine is always attended with some danger, particularly when it is mixed with purulent matter. When it arises in the course of any malignant disease, it shows a highly putrid state of the blood, and always indicates a fatal termination.

The appearances to be observed on dissection will accord with those usually met with in the disease which has given rise to this complaint.

When hæmaturia has resulted from a mechanical injury in a plethoric habit, it may be proper to take blood, and pursue the general antiphlogistic plan, opening the bowels occasionally with castor oil, &c. When it is owing to calculi, which cannot be removed, we must be chiefly content with palliative measures, giving alkalies or acids according to the quality of the urine; likewise mucilaginous drinks and glysters; and opium, fomentations, &c. to relieve pain. Uva ursi also has been found useful under these circumstances, but more decidedly where the hæmorrhage is purely passive; in which case, also, some of the terebinthinate remedies may be cautiously tried, and means of strengthening the constitution must not be neglected.

HÆMOCE'RCHNUS. (Αἱμοκερχνος; from ἁιμα, blood, and κερχνος.) This word is rendered in two senses by the translators of the Greeks, according to two different etymologies; for the word κερχνος signifies a *rattling in the wind-pipe*, and also, as an adjective, *dry*. The word hæmocerchnus has therefore been rendered by *spitting of blood with rattling in the throat*, and also by *excretion of dry sanguinolent matters*.

HÆMO'DIA. (Αἱμωδια; from αἱμα, blood, and ὁδους, a tooth.) The Greek word for the sensation commonly called *edging of the teeth*.

HÆMOPLA'NIA. (From αἱμα, blood, and πλανη, a wandering.) A genus of disease in Swediaur's Nosology, embracing vicarious hæmorrhages.

HÆMO'PTOE. (From αἱμα, blood, and πτυω, to spit up.) The spitting of blood. See *Hæmoptysis*.

HÆMO'PTYSIS. (*is, is.* f.; from αἱμα, blood, and πτυω, to spit.) A spitting of blood. An expectoration of florid or frothy blood, preceded usually by heat or pain in the chest, irritation in the larynx, and a saltish taste in the mouth. It is sometimes produced by congestion, or a plethoric state of the vessels of the lungs, which is the most common cause of an idiopathic hæmoptoe, and which also obtains in diseases of the heart, especially in hypertrophy of the right ventricle, which is accordingly a common cause of hæmoptysis. Thus produced it is called *hæmoptysis plethorica:* sometimes it is produced by external violence, and this is called *hæmoptysis violenta:* calculous matter, irritating and eroding the vessels, causes the species denominated *hæmoptysis calculosa:* vomicæ bursting in the lungs, and ulcerating the vessels, gives rise to the *hæmoptysis phthisica;* and when the bleeding is caused by the suppression of some customary evacuation, it is termed *hæmoptysis vicaria.* Hæmoptysis is readily to be distinguished from hæmatemesis by the blood being coughed up in one instance, and vomited in the other: in hæmatemesis also the blood is thrown out in considerable quantities, and is, moreover, of a darker colour, more grumous, and mixed with the other contents of the stomach: whereas blood proceeding from the lungs is usually in small quantity, of a florid colour, and mixed with a little frothy mucus only.

A spitting of blood arises most usually between the ages of sixteen and twenty-five, and may be occasioned by any violent exertion, either in running, jumping, wrestling, singing loud, or blowing wind-instruments; as likewise by wounds, plethora, weak vessels, hectic fever, coughs, irregular living, excessive drinking, or a suppression of some accustomed discharge, such as the menstrual or hæmorrhoidal. It may likewise be occasioned by breathing air too much rarefied to be able properly to expand the lungs.

Persons in whom there is a faulty proportion, either in the vessels of the lungs, or in the capacity of the chest, being distinguished by a narrow thorax and prominent shoulders, or who are of a delicate make and sanguine temperament, seem much predisposed to this hæmorrhage; but in these, the complaint is often brought on by the concurrence of the various occasional and exciting causes before mentioned.

A spitting of blood is not, however, always to be considered as a primary disease. It is often only a symptom; and in some disorders, such as pleurisies, peripneumonies, and many fevers, often arises, and is the presage of a favourable termination.

Sometimes it is preceded, as has already been observed, by a sense of weight and oppression at the chest, a dry tickling cough, and some slight difficulty of breathing. Sometimes it is ushered in with shiverings, coldness at the extremities, pains in the back and loins, flatulency, costiveness, and lassitude. The blood which is spit up is generally thin, and of a florid red colour; but sometimes it is thick, and of a dark or blackish cast; nothing, however, can be inferred from this circumstance, but that the blood has lain a longer or shorter time in the chest before being discharged.

It was long supposed that the discharge of blood from the lungs was always connected with the rupture of vessels; but it is now well ascertained that, in many cases of hæmoptysis, the blood simply exudes from the bronchial membrane without any breach of structure, and

that even a fatal hæmorrhage may arise from this source.

Unless the discharge of blood be excessive, hæmoptysis is seldom attended with immediate danger to life, but it is nevertheless generally a formidable symptom, as being connected with some organic lesion of the thoracic viscera. Sometimes the hæmorrhage is so profuse as to be fatal; and occasionally, owing to the rupture of a large vessel, the lungs are inundated with blood, and the patient dies instantaneously. See *Apoplexy, pulmonary.*

In this hæmorrhage, which is mostly of the active kind, the antiphlogistic regimen must be strictly observed; particularly avoiding heat, muscular exertion, and agitation of the mind; and restricting the patient to a light, cooling, vegetable diet. Acidulated drink will be useful to quench the thirst, without so much liquid being taken. Where the blood is discharged copiously, but no great quantity has been lost already, it will be proper to attempt to check it by bleeding freely, if the habit will allow: and sometimes, where there is pain in the chest, local evacuations and blisters may be useful. The bowels should be well cleared with some cooling saline cathartic, which may be given in the infusion of roses. Digitalis is also a proper remedy, particularly where the pulse is very quick, from its sedative influence on the heart and arteries. Antimonials in nauseating doses have sometimes an excellent effect, as well by checking the force of the circulation, as by promoting diaphoresis; calomel also might be added with advantage; and opium, or other narcotic, to relieve pain and quiet cough, which may perhaps keep up the bleeding. Emetics have, on some occasions, been successful; but they are not altogether free from danger. In protracted cases, internal astringents are given, as alum, kino, &c., but their effects are very precarious: the superacetate of lead, however, is perhaps the most powerful medicine, especially combined with opium, and should always be resorted to in alarming or obstinate cases, though, as it is liable to occasion colic and paralysis, its use should not be indiscriminate; but it acts probably rather as a sedative than astringent. Sometimes the application of cold water to some sensible part of the body, producing a general refrigeration, will check the bleeding. When the discharge is stopped, great attention to regimen is still required, to obviate its return, with occasional evacuations: the exercise of swinging, riding in an easy carriage, or on a gentle horse, or especially sailing, may keep up a salutary determination of the blood to other parts: an occasional blister may be applied, where there are marks of local disease, or an issue or seton perhaps answer better. Should hæmoptysis occasionally exhibit rather the passive character, evacuations must be sparingly used, and tonic medicines will be proper, with a more nutritious diet.

HÆMORRHAGE. (*Hæmorrhagia, æ.* f.; from αἷμα, blood, and ῥήσσω, to break out.) A bleeding, or flow of blood. Blood, from whatever organ it flows, may have two causes for its issue. The vessels may be ruptured by a morbid distension and impetus; or they may give way from debility and relaxation, their tunics breaking without any peculiar force urged against them, or their exhalents admitting the flow of red blood, instead of the more attenuate serum. To the former description of hæmorrhages, Dr. Cullen has given the name of *active;* to the latter, that of *passive.* The active hæmorrhages he places amongst febrile diseases, because, although only an accidental symptom, it is generally present; and all those which are evidently without fever, he refers to other parts of his system.

The great predisponent cause of active hæmorrhage, wherever it makes its appearance, is congestion or plethora. A plethoric diathesis will, however, only predispose to a bleeding somewhere or other; and hence there must be a distinct local cause that fixes it upon one particular organ, rather than upon another. The chief local cause is a greater degree of debility in the vessels of such organ than belongs to the vascular system generally. But there are other and more extensive causes that operate upon some organs, and which consist in an unequal distribution of the blood, and its peculiar accumulation in some vessels rather than in others. See *Epistaxis, Hæmoptysis, Hæmatemesis, Menorrhagia,* &c.

Hæmorrhage from the lungs. See *Hæmoptysis.*

Hæmorrhage from the nose. See *Epistaxis.*

Hæmorrhage from the stomach. See *Hæmatemesis.*

Hæmorrhage from the urinary organs. See *Hæmaturia.*

Hæmorrhage from the uterus. See *Menorrhagia.*

HÆMORRHA'GIÆ. Hæmorrhages, or fluxes of blood. The name of an order in the class *Pyrexiæ* of Cullen's Nosology. It is characterised by pyrexia with a discharge of blood, without any external injury; the blood on venesection exhibiting the buffy coat. It contains the following genera, viz. epistaxis, hæmoptysis, hæmorrhois, and menorrhagia.

HÆMORRHŒ'A. (From αἷμα, blood, and ῥέω, to flow.) The name given by Swediaur to passive hæmorrhage.

HÆMORRHŒA PETECHIALIS. A name given by Dr. Adair to *purpura hæmorrhagica.*

HÆMORRHOI'DAL. (*Hæmorrhoidalis.*) 1. Of or belonging to the hæmorrhoidal vessels.

2. The trivial name of some plants which were supposed to be efficacious against piles; as *Carduus hæmorrhoidalis,* &c.

HÆMORRHOIDAL ARTERIES. *Arteriæ hæmorrhoidales.* The arteries of the rectum are so called: they are sometimes two, and at other times three in number. 1. The upper hæmorrhoidal artery, which is the great branch of the lower mesenteric continued into the pelvis. 2. The middle hæmorrhoidal, which sometimes comes off from the hypogastric artery, and very often from the pudical artery. It is sometimes wanting. 3. The lower or external hæmorrhoidal is almost always a branch of the pudical artery, or that artery which goes to the penis.

HÆMORRHOIDAL VEINS. *Venæ hæmorrhoi-*

dales. These are two. 1. The external, which evacuates itself into the vena iliaca interna.

2. The internal, which conveys its blood into the vena portæ.

HÆMORRHOIDES ORIS. A discharge of blood from the turgid veins of the palate, uvula, and fauces, arising from suppression of the hæmorrhoidal discharge. — *Blancard.*

HÆMORRHOIDES UTERI. Varicose veins in and around the genital organs in women. — *Blancard.*

HÆMORRHOIDES VESICÆ. A varicose state of the veins around the neck of the bladder.

HÆMO'RRHOIS. (From αἷμα, blood, and ῥεω, to flow.) 1. A flow of blood. In this sense the term was generally used by the Greek and Latin writers.

2. The name of a particular disease. See *Piles.*

HÆMO'RRHOUS. The name of a very venomous African serpent mentioned by Pliny. Sprengel thinks it the same with the *Coluber cerastes* of Linnæus.

HÆMOSTA'SIA. (*a, æ.* f.; from αἷμα, blood, and ἱστημι, to stand.) A stagnation of blood.

HÆMOSTA'TIC. (*Hæmostaticus;* from αἷμα, blood, and σταω, to stop.) Having the power of stopping an hæmorrhage. See *Styptics.*

HAGER. *Hagian.* An Armenian stone.

HAGIOSPE'RMUM. (From ἁγιος, holy, and σπερμα, seed: so called from its reputed virtues.) An obsolete name of the seed of the *Artemisia santonica.*

HAGIO'XYLUM. (From ἁγιος, holy, and ξυλον, wood: so named because of its medicinal virtues.) Guiacum.

Hair. See *Capillus,* and *Pilus.*

Hairy river weed. See *Conferva rivalis.*

Hake. See *Gadus merluccius.*

HALA'TIUM. (Ἁλατιον; from ἁλς, salt.) A medicine composed of salt and purgatives.

Halberd-shaped. See *Hastatus.*

Halberd-shaped leaf. See *Hastatus.*

HALCHE'MIA. (From ἁλς, salt, and χεω, to pour out.) The art of fusing salts.

Halec. See *Clupea harrengus.*

HALELÆ'UM. (From ἁλς, salt, and ελαιον, oil.) A mixture of salt and oil, used by the ancients to swellings of the joints.

HALICA'CABUM. (From ἁλς, the sea, and κακαβος, night-shade: so called because it grows upon the shores of the sea.) See *Physalis alkekengi.*

HALICES. Yawning after sleep.

HA'LIMUS. (From ἁλιμος, belonging to the sea.) See *Atriplex halimus.*

HALINI'TRUM. (From ἁλς, salt, and νιτρον, nitre.) Nitre, or rock salt.

HA'LITUS. (*us, ús.* m.; from *halo,* to breathe out.) A vapour.

HALLUCINA'TION. (*Hallucinatio, onis.* f.; from *hallucinor,* to err.) A genus of mental disease in Good's Nosology. See *Alusia.*

HA'LLUS. (From ἁλλομαι, to leap.) The great toe, from its use in springing from the ground.

HA'LMYRAX. The nitre of Media.

HALMYRO'DES. (From ἁλμυρος, salt.) A term applied to the humours: it means acrimonious. It is also applied to fevers which communicate such an itching sensation as is perceived from handling salt substances.

HA'LO. (*o, onis.* m.; from ἁλως, an area, or circle.) See *Areola.*

HA'LOID. (From ἁλς, sea-salt, and ειδος, resemblance.)

A term applied to all those compounds which consist of a metal, on the one hand, and of chlorine, iodine, fluorine, and the radicals of the hydracids in general, excepting sulphur, on the other. The whole series of the metallic chlorides, iodides, and fluorides, such as chloride of sodium, iodide of potassium, and fluor spar, as well as the cyanurets, sulphocyanurets, and ferrocyanurets, are included in the list of *Haloid-salts.* In point of composition they have a striking resemblance to oxides and sulphurets, in connexion with which they have already been described; but, when we compare soda with sea-salt, we cannot fail to be struck with the striking difference of their character: the perfect neutrality of the one, both as to test paper and tendency to combine with other bodies, forming a strong contrast with the causticity, alkalinity, and extensive affinity of the other. The word *haloid* is aptly applied to distinguish the whole of the series, because in constitution they are all similar to sea-salt; and the term *halogenous* is applied to chlorine and those elements by which haloid-salts are generated. Besides the simple haloid-salts, Berzelius distinguishes the three following kinds of combination: — *hydro-haloid-salt,* or combinations of a simple haloid-salt with the hydracid of its radical; *oxy-haloid salts,* or combinations of a metallic oxide with a haloid-salt of the same metal; *double haloid-salts,* consisting of two simple haloid-salts, which contain different metals, but the same non-metallic ingredient, or of two haloid-salts, consisting of the same metal, but having the other ingredients different; or, lastly, of two simple haloid-salts, both the elements of which are wholly different.

HALONI'TRUM. (From ἁλς, salt, and νιτρον, nitre.) A name formerly given to the efflorescence found on the damp walls of places inhabited by men or animals. It is a mixture of the subcarbonate of soda and ammonia.

HALOTE'CHNIA. (From ἁλς, salt, and τεχνη, an art.) A name formerly given to that part of chemistry which treats of salts.

HA'LUX. Improperly written for *Hallus.*

Hamalgama. See *Amalgam.*

HA'MMA. (Ἁμμα, from ἁπτω, to bind, or fit on.) A truss for a hernia.

HAMO'SUS. Hooked. Applied to the bristly pubescence of seeds and plants; as the pericarp of the *Arctium lappa;* the seeds of *Daucus muricatus,* and *Alisma cordifolia.*

HAMPSTEAD. A village near to London, where there is an excellent chalybeate water not inferior to that of Tunbridge-wells in any respect, except being nearer to the metropolis.

HAMULA'RIA. (*Hamularia, æ.* f.; from *hamus,* a hook.) A genus of worm described by Rudolphi. Dr. Treutler found two worms of this genus in the bronchial glands of a person who died of phthisis. These animals, *Ha-*

mularia subcompressa, were oblong, round, and a little compressed on both sides, dark brown, studded with black spots, tapering slightly towards the anterior extremity, and a little transparent towards the tail. The two extremities bent up a little after the death of the animal. The head terminated in an obtuse point, and was furnished with two prominent hooks or projections: except these two crotchets, no other traces of organs were perceptible. — *Rhind on Worms.*

HA'MULUS. (*us*, *i.* m.; diminutive of *hamus*, a hook.) A little hook. In *Anatomy*, applied to any hook-like process; as the hamulus of the pterygoid process of the sphenoid bone.

HA'MUS. (*us*, *i.* m.) A hook. A species of pubescence of plants formed of bristles, bent at their point into a hook; as in *Rumex tuberosus*, *Caucalis daucoides*, and *Galium aparine*, &c.

HAND. *Manus.* The hand is composed of the carpus or wrist, metacarpus, and fingers. The *arteries* of the hand are the palmary arch, and the digital arteries. The veins are the digital, the cephalic of the thumb, and the salvatella. The nerves are the external and internal cutaneous.

HANDALA. Colocynth.

Hanging. See *Suspensio.*

HANNAY'S LOTION. *Preventive wash.* A nostrum for preventing venereal infection. It is a solution of potash.

HAPSIS. Ἁψις. 1. The sense of touch.

2. A lesion of any kind. Hippocrates uses the phrase ἁψσις φρενων, to signify delirium.

HA'PSUS. An old name for a compress of lint or other material.

HARDE'RI GLA'NDULA. Gland of Harderus. So called after an anatomist of that name, although it was described long before his time. A gland found in ruminant and pachydermatous quadrupeds, and also in birds. It is situated near the inner angle of the eye, and secretes a thick whitish fluid, which is diffused over the eye-ball.

Hardesia. See *Lapis hibernicus.*

Hare. See *Lepus timidus.*

HARE-LIP. *Labium leporinum;* called also, *Lagocheilus*, and *Lagostoma.* A fissure or longitudinal division of one or both lips. Children are frequently born with this kind of malformation, particularly of the upper lip. Sometimes the portions of the lip which ought to be united have a considerable space between them; in other instances they are not much apart. The cleft is occasionally double, there being a little lobe, or small portion of the lip, situated between the two fissures. Every species of the deformity has the same appellation of hare-lip, in consequence of the imagined resemblance which the part has to the upper lip of a hare.

The fissure commonly affects only the lip itself. In many cases, however, it extends along the bones of the palate, even as far as the uvula. Sometimes these bones are totally wanting: sometimes they are only divided by a fissure.

Such a malformation is always peculiarly afflicting. In its least degree, it constantly occasions considerable deformity; and, when it is more marked, it frequently hinders infants from sucking, and makes it indispensable to nourish them by other means. When the lower lip alone is affected, which is more rarely the case, the child can neither retain its saliva, nor learn to speak, except with the greatest impediment. But when the fissure pervades the palate, the patient not only never articulates perfectly, but cannot masticate or swallow, except with great difficulty, on account of the food readily getting up into the nose.

Harengus. See *Clupea harengus.*

HARMA. Ἁρμα. A Greek word for a collyrium.

Harmala. See *Peganum harmala.*

HARMATTAN. A prevailing wind on the coast of Africa, between Cape Verd and Cape Lopez, in the months of December, January, and February. It is a particularly dry wind, from passing over the burning deserts of Africa; so much so, that, in a very short time, the leaves of plants become dry and crisp, and the skin of human beings dry and chapped, the nose and lips sore, the fauces arid, and the perspiration acrid; yet it is not pestilential, but, on the contrary, puts an end to epidemic diseases.

HARMO'NIA. (*a*, *æ.* f.; from αρω, to fit together.) Harmony. A species of synarthrosis, or immovable connexion of bones, in which bones are connected together by means of rough margins, not dentiform: in this manner most of the bones of the face are connected together.

HA'RPAX. *Ha'rpaga.* Amber.

HARROGATE. Harrowgate. The villages of High and Low Harrogate are situate in the centre of the county of York, adjoining the town of Knaresborough. Harrogate possesses at present no less than fourteen wells, which are in greater or less repute. Six of them are sulphureous, five pure chalybeate, one saline chalybeate, and two saline, containing only a trace of iron, and no sulphur. Some years ago the chalybeate waters only were used internally, and the sulphureous confined to external use; but both are now largely employed as an internal medicine. The sulphureous springs contain variable proportions of sulphuretted and carburetted hydrogen gases, carbonic acid, azotic gas, muriates of soda, lime, and magnesia, and bicarbonate of soda. The pure chalybeates, as they are called, contain from one grain to two grains and a half of protoxide of iron, kept in solution by carbonic acid, with an inconsiderable impregnation of earthy salts, and some azotic and oxygen gas. The saline chalybeate, called *Oddy's saline chalybeate*, and Cheltenham spring, is the only one of its kind. A gallon of the water contains the following ingredients, according to the analysis of Dr. A. Hunter: —

Carbonate of iron	5·3	grains.
Common salt	576·5	
Chloride of calcium	43·5	
Chloride of magnesium	9·65	
Carbonic acid gas	5·75	cubic inches.
Azotic gas	7·75	

The saline wells, of which there are two, differ considerably. The Crescent old well, as it is called, contains a large quantity of muriate of soda, with a considerable proportion of sulphate of soda, and smaller proportions of muriates of lime and magnesia, with carbonic acid and azotic gases. The other saline spring, called Knaresborough dropping-well, has been long celebrated for its petrifying power. It contains a large quantity of sulphate of lime, with carbonate of lime, sulphate of magnesia, a little carbonate of lime, and carbonic acid, azotic, and oxygen gases.

The virtues of the Harrogate waters are different according to their kind, and may easily be inferred from their compositions. The sulphureous springs enjoy great and deserved reputation in the cure of certain cutaneous diseases: even the most obstinate frequently disappear, and remain absent as long as the patient continues to use the water, although they too frequently return when he ceases to do so.

HART. The male of a five-year-old deer. See *Cervus*.

Hart's tongue. See *Asplenium*.

Hart-wort. See *Laserpitium siler*.

Hart-wort of Marseilles. See *Seseli tortuosum*.

HARTFELL. The name of a place near Moffat, in Scotland. It has a mineral water, which contains iron dissolved by the sulphuric acid, and is much celebrated in scrofulous affections, and cutaneous diseases. It is used no less as an external application, than drank internally. The effects of this water, at first, are some degree of drowsiness, vertigo, and pain in the head, which soon go off, and this may be hastened by a slight purge. It produces generally a flow of urine, and an increase of appetite. It has acquired much reputation also in old and languid ulcers, where the texture of the diseased part is very lax, and the discharge profuse and ill-conditioned.

The dose of this water is more limited than that of most of the mineral springs which are used medicinally. It is of importance in all cases, and especially in delicate and irritable habits, to begin with a very small quantity, for an over-dose is apt to be very soon rejected by the stomach, or to occasion griping and disturbance in the intestinal canal; and it is never as a direct purgative that this water is intended to be employed. Few patients will bear more than an English pint in the course of the day; but this quantity may be long continued. It is often advisable to warm the water for delicate stomachs, and this may be done without occasioning any material change in its properties.

Hartshorn. See *Cornu*.

Hartshorn shavings. See *Cornu*.

Harvest bug. See *Acarus autumnalis*.

HA'STA. (*a*, *æ*. f.) A spear: applied to parts of animals and vegetables, which are supposed to resemble this instrument.

HASTA REGIA. The *Asphodelus luteus*.

HASTA'TUS. Hastate: spear or halberd-shaped. Applied to a triangular leaf, hollowed out at the base and sides, but with spreading lobes; as in *Rumex acetocella*, and *Solanum dulcamara*.

HASTE'LLA. (*a*, *æ*. f.; diminutive of *hasta*.) A splint like a spear, used for fractured limbs.

Hatchet-shaped. See *Dolabriformis*.

HATFIELD'S TINCTURE. A nostrum, consisting of guiac, soap, and rectified spirit of wine.

HAU'STUS. (*us*, *ûs*. m.; from *haurio*, to swallow.) A draught or single dose of a liquid medicine.

HAUTERIVE. A village, a league and a half from Vichy, in the department of Allier, where there are two saline springs, said to be similar to that of the Celestius at Vichy.

HAVERS' GLANDS. Glands in and about the synovial membrane of joints; first described by Havers.

HAWK. A species of the genus *Falco*. See *Falco*.

Hawkweed. See *Hypochæris*.

Hawkweed, greater. See *Sonchus*.

Hawkweed, lesser. See *Hypochæris*.

Hay, camel's. See *Juncus odoratus*.

Hazel-nut. See *Corylus avellana*.

Head. See *Caput*.

HEADACHE. *Cephalagia.* Headache, or pain in the head, as a generic term, has received a variety of trivial names, according as it may be produced by some other disease, or the variety of its cause, or the part of the head that is affected: hence cephalalgia venerea, rheumatica, &c.; cephalalgia nervosa, inflammatoria, &c.; cephalalgia stomachica, intermittens, &c. It is sometimes an obtuse pain, with a sense of heaviness extending over the whole head, attended by a general disquiet and confusion, rather than by acute pain; by a general torpitude of the sensorial power, which disqualifies the person for a continuance of mental exertion. The sight is often dim, the hearing dull, and the memory vacant. This kind of headache is a nervous affection of the brain. It is mostly the result of weakness, or a want of proper supply of that kind of sensorial energy on which the feeling of comfort depends, and is produced by irregular circulation of the blood in the head, mental exertion, and the passions of the mind.

Another kind of headache is usually called hemicrania, because it occupies one half only, or the great part of one half of the head. The vulgar name is megrim. It begins with uneasy feelings, or creepings over a part of the scalp, which increase to an acute and often throbbing pain within the head, and mostly over one eye. The person often describes it like to an opening and shutting of the skull. There is often sickness of the stomach with it. This kind of headache lasts an uncertain time, seldom more than a few hours. It frequently assumes an intermittent type, coming on at a certain time like an ague, and hence it is called an ague in the head. It differs much in the degree of violence, and is either a purely nervous disease, or a bilious one. When the latter, it terminates when the stomach and bowels are relieved, and does not return, is accompanied by vomiting of bile, and is denominated a sick headache.

All ordinary cases of headache depend on one of the following causes: —

1. A weakness or exhaustion of the power of the encephalon.

2. A sympathy with the stomach and chylopoietic viscera.

Their cure consequently is to be effected by nervous tonics when the disease is nervous, and by removing the states of stomach and chylopoietic viscera which excite the sympathetic headache.

Rest is in all cases necessary: cold, and pressure on the head, often give relief; as the application of a napkin wrung out of cold water, sponging the head with iced water, spirituous lotions, bandaging the head, &c.

When the pain appears to be purely nervous, from exhaustion or mental exertion, or other causes of debility, nervous tonics are to be given; as cinchona, cascarilla, calumba, gentian, and the like, and also dilute ethers and wine; and if the pain be considerable, a small dose of opium, or Dover's powder, immediately after a warm pediluvium or fomentation, and a warm bed.

When the headache is periodical, these tonics are to be administered in the same way as against an ague, in the period of ease.

The sympathetic headache requires the removal of the chylopoietic derangement, which is generally best effected by a vomit, and the warm aloetic purges.

Headache is very often indeed a symptomatic affection; so much so that there are very few diseases in which it does not take place. It is a prominent symptom in all fevers and inflammations, and in many nervous diseases, the venereal disease, and rheumatism.

Headed. See *Capitulatus.*

HEALTH. That state of the living body in which all its functions are duly performed.

Hearing. *Auditus.* See *Auris.*

HEART. *Cor.* A hollow muscular viscus, which forms the centre of the circulating system in the higher orders of animals. Some observations on the general mechanism of the heart will be found in the article *Circulation;* and its peculiarities in different classes of animals are noticed in the article *Animal Kingdom.* The human heart is irregularly pyramidal in its shape, and lies between the lungs, enclosed in its proper investing membrane, the *pericardium.*

It is placed so obliquely, that if a line corresponding with its axis were passed through it, at the moment of its pulsation, its direction, taken from base to apex, would be downwards, forwards, and to the left side. The anterior surface of the heart is convex in its general outline; the posterior is flat, and rests on the diaphragm: the lower, or right border, is rather thin, and longer than the upper, which is rounded. The heart's surface is marked on its anterior and posterior aspect by two lines, of which one runs transversely, the other from above downwards; their position indicates the division of the organ into four different compartments, or cavities. The base of the heart (which is comparatively thin and flaccid in its structure) consists of that part which is in immediate connexion with the veins (*pars cordis venosa*), and is divided into two cavities, called auricles, from the fact that each is surmounted by an appendage resembling an ear (*auricula.*) It is separated from the lower or pyramidal part by a deep transverse groove (*sulcus auriculo-ventricularis.*) These circumstances are most distinctly observable when the heart is distended. The portion between the transverse sulcus and the summit is thick and muscular, and connected with the arterial trunks; it consists of two cavities (ventricles), the division between which is indicated by two slight grooves extending from the base to the apex, and lodging the descending branches of the coronary vessels.

When we consider the heart in its physiological relations, we adopt a different mode of division; for we find it to be a double organ, made up of two hearts, one for the pulmonary circulation (cor pulmonale), occupying the right side, and consisting of an auricle and a ventricle; the other for the system at large (cor systemicum), also consisting of two cavities of the same denomination. The pulmonic heart is the agent for the circulation of black blood, the systemic circulates red blood. Now, as no two of these cavities agree in form, or in the arrangement of their components, it becomes necessary to describe each separately.

The *right auricle* rests on the diaphragm, and forms the right and anterior part of the base of the heart. It presents two parts which, though not marked off by any precise line of division, yet differ in size and form. One of these, large and flaccid, occupies the interval between the venæ cavæ, so as to receive directly the blood which they convey, and is hence named *sinus venarum cavarum.* The other projects forwards and inwards, between the right ventricle and the root of the aorta, like an appendage to the general cavity; and so it is sometimes named "auricular appendage," but more frequently *auricula*, from some resemblance to a dog's ear. It is triangular in form, compressed, and slightly dentated at its border. It is thicker and more fleshy than the sinus.

The external surface of the auricle, unattached in the greater part of its extent, is prolonged upwards, and to the left side, into its auricular appendage; inferiorly, it is connected with the right ventricle, internally with the left auricle, and into its two extremities open the venæ cavæ.

In order to examine the interior of the auricle, an incision may be made from the junction of the cavæ across to the auricula, from the middle of which another may be carried upwards into the superior cava. If the lower border of this incision be drawn forwards, the cavæ will be observed to incline inwards at an angle, their conflux being marked by a slight elevation, called *Lower's tubercle* (tuberculum Loweri.) The greater part of the cavity forms a pouch (*sinus*), which is smooth, and but slightly muscular in its structure. The inner surface of the auricula is distinguished from the rest by several fleshy fasciculi, which run transversely upon it, called *musculi pectinati.* The inner side of the auricle is thin and smooth; it corresponds with or is formed by the partition (*septum auricularum*), which separates it from the left auricle. At its lower part, and just above the orifice of the inferior vena cava, is situated an oval depression, (*fossa ovalis, vestigium foraminis ovalis,*)

indicating the original communication between the auricles: it is bounded superiorly by a prominent convex border of a lunated form, its concavity looking downwards, and named *annulus fossæ ovalis*. Though the development of the septum be carried to the full extent, that lamella of it which closes the foramen ovale having extended up to a level with the annulus, we often find its upper border merely in apposition, but not united by adhesion to the corresponding part of the septum, so that an oblique or valvular aperture remains between the auricles; still, during the action of the organ, there is sufficient provision against any communication between these cavities. At the line of union between the inferior cava and the auricle is situated a crescentic fold of the lining membrane, called *valvula Eustachii*. This in the fœtal state is large; in the adult it is comparatively diminutive, and often even perforated by several foramina. One border of the valve rests upon the wall of the auricle, with which it is continuous. Another is free and unattached, being of a crescentic form; its upper extremity blends itself with the inner border of the annulus ovalis, and the inferior with the corresponding part of the orifice of the vena cava inferior. Between this valve (its left side) and the ventricular opening is situated the orifice of the coronary vein, protected by a valve. Several minute foramina may also be observed in different parts of the auricle, resembling the orifices of small veins, and called *foramina Thebesii*. Placed obliquely between the appendix and the inferior cava, we observe the *auriculo-ventricular opening*, of an elliptic form, and about an inch in diameter; round its circumference is attached the base of the tricuspid valve, the rest of which lies in the cavity of the ventricle.

The *right ventricle* (ventriculus pulmonalis) extends from the base of the right auricle to the apex of the heart. Its form is somewhat triangular: to see its interior it will be found convenient to make an angular or V-shaped flap, by dissecting up its anterior wall. When this is done, we observe that the interior surface presents a number of rounded fleshy fasciculi, which are called *columnæ carneæ*, and are divisible into three orders. The first, adherent by both extremities, are free in the rest of their extent; others are but slightly prominent, being attached by their extremities, and also by the greater part of their circumference; the third set form three or four fasciculi, which are directed from the summit towards the base of the ventricle, where they are connected with the borders and apices of the tricuspid valves, through the medium of several tendinous processes, called *chordæ tendineæ*. The base of the ventricle is prolonged upwards; its surface becoming at the same time quite smooth, somewhat in the form of a funnel, where it gives attachment to the pulmonary artery; so that the mouth of this vessel is placed higher up, and to the left of the auricular opening. At its orifice three membranous folds are placed, called *sigmoid valves*. One border of these is attached at the line of union of the ventricle with the artery; the other is free in the cavity of the latter, and presents in its middle a small granule, called *nodulus* or *corpus aurantii*. The *tricuspid valve* is so called from its being divided into three points or processes, formed by the lining membrane of the auricle and ventricle. Each is triangular in its form; their bases, which are continuous and undivided from one another, being attached all round the circumference of the opening, whilst in the rest of their extent they lie within the cavity of the ventricle. One of them rests upon the septum, or corresponds with it; another with the anterior wall of the cavity; whilst the third or larger is inclined obliquely upwards, and, as it were, interposed between the auricular and pulmonary apertures. The free margin of each is a little thickened, and gives attachment to the chordæ tendineæ.

The *left auricle* (sinus pulmonalis) is situated at the posterior part of the base of the heart, where the greater portion of it is concealed by the pulmonary artery and the aorta, which overlap it, the auricula alone being visible, without detaching these vessels, or inverting the position of the heart. When distended, it is of a square form, and into its angles open the pulmonary veins, those of the left lung being very close together. From its upper and left extremity projects the auricula, which is narrower but longer and more tapering than that of the right side. Its margins are more deeply dentated, and present some angular inflections or zigzags. Its point rests on the root of the pulmonary artery. The interior of the left auricula presents musculi pectinati similar to those in the right, but the general cavity of the auricle is smooth. A slight depression may be observed in the septum auricularum, corresponding with the fossa ovalis. In the inferior part of the cavity is situated the *auriculo-ventricular opening*, the circumference of which gives attachment to the mitral valve.

The *left ventricle* (ventriculus aorticus) occupies the left border of the heart, about one-third of its extent appearing on the anterior surface, the rest being placed posteriorly, owing to the obliquity of the septum ventriculorum. Its cavity can be conveniently exposed by making two incisions through its wall, parallel with the septum, and uniting at an angle near the apex. When the flap thus formed is drawn upwards, the great thickness of the walls of the cavity, as compared with those of the right ventricle, is rendered manifest. The columnæ carneæ resemble those of the right side, but are thicker, and directed for the most part from the base to the apex of the heart. Their intersections are exceedingly numerous at the summit of the cavity, and along its posterior wall, but the upper part of the anterior one is comparatively smooth. Two fleshy fasciculi of considerable size, commencing by smaller bundles, one from the anterior, the other from the posterior surface, pass upwards and terminate each in a blunted extremity, from which numerous chordæ tendineæ branch off to be inserted into the edges of the mitral valve. The auriculo-ventricular opening is guarded by a valve, similar in structure to that of the right side, but differing from in presenting but two pointed processes; hence,

it has been termed the *mitral valve* (*valvula mitralis.*) The larger division of it looks towards the aortic opening. To the right side of and before the large opening just noticed, is situated a smaller one, which communicates with the aorta, and is guarded by three valvular folds of the lining membrane, similar in structure and form to those of the pulmonary artery, and also called *sigmoid* or *semi-lunar valves.*

The heart is covered by the serous layer of the pericardium, which is reflected upon it, and lined in its interior by a membrane of apparently similar structure, which not only serves as a coating for its proper substance, but also forms folds or valves at the auriculo-ventricular openings at each side, as well as the semi-lunar valves, where it is prolonged into the aorta and the pulmonary artery. Between the investing and the lining membrane is placed the proper muscular tissue of the organ.

The heart receives its blood by the two coronary arteries; its veins terminate in the right auricle; its nerves come from the cardiac plexus, and appear very small as compared with the bulk and quantity of matter of the organ; a circumstance which was much insisted on in the discussion of the long-litigated question — Do the fibres of the heart possess their susceptibility to impression (irritability) *per se*, or do they derive it from the nerves?

The muscular fibres of which the parietes of the heart are made up, differ not only in their quantity and number in each of its cavities, but also in their mode of arrangement. The smoothness of the heart's surface is obviously owing to the membrane which invests it. Within the cavities of the ventricles, and in the auricular appendages, we can readily see how the muscular fibres are disposed and interlaced, without disturbing the lining membrane; but to expose those on the outer surface, the investing membrane must be taken off. When this is carefully done, it will be found that the fibres of the ventricles run obliquely from above downwards to the left, and backwards, which disposition of them can be demonstrated even to the apex. M. Gerdy has shown that the fibres also form curves, whose convexity is turned forwards towards the apex; for if any given fibre commences at the surface, it will be found to dip in so as to become deeply seated at its termination, and *vice versâ*, by which means the bend of their curves will be turned as above stated. Owing to this disposition, the fibres of one ventricle are not all continued across into the other; many of them are seen to turn inwards at the septum, and mix with its substance. By following the course of these, we can separate the septum into two planes; but the greater part of its substance appears to belong to the left ventricle. The external stratum of fibres extends over the whole surface of the ventricles; within these is another plane (not, however, so extensive, as it does not reach much more than halfway to the apex), whose fibres take a different direction, so as to decussate with those of the outer layer; and, lastly, a third plane at the inner surface of the ventricles runs longitudinally from below upwards to the base, being continuous with the columnæ carneæ; but towards the apex they run in every possible direction, rendering the surface minutely reticulated.

But, it will be asked, have these fibres any common point of departure — an origin, as it is usually called? They will be found to commence at the base of each ventricle, deeply in the groove which separates it from the auricle. The examination of them is facilitated by filling all the cavities with plaster of Paris, and immersing the heart in boiling water for an hour or two; the serous pericardium can then be easily removed, and the muscular fibres traced deeply into the groove, where they will be found attached to a white tendinous, or rather cellulo-fibrous band of fibres. A fasciculus of this sort occupies the grooves at the anterior and posterior aspect, corresponding with the auriculo-ventricular openings; but it does not reach round their circumference; it seldom extends more than half way. The two pair of fasciculi thus disposed are connected with a fibrous structure placed at the aortic aperture, at each side of which are two tendinous points, connected by a transverse band passing round the posterior segment of the aperture. To this band the fibrous fasciculi in the posterior grooves are attached, whilst the anterior pair are connected with the tendinous points. Taken altogether, this structure may be called apparatus tendinosus cordis. M. Gerdy names it "tissu albuginé cardiaque," and Wolff "textus cartilagineus cordis." The muscular fibres of the auricles are thin, and in a manner scattered; most of those in the sinuses are transverse, but posteriorly, at the junction of the venæ cavæ in the right auricle, some run longitudinally; and higher up, at the orifice of the superior cava, they become circular, and seem as if prolonged a little way upon it.

HEART, DISEASES OF THE. The heart is subject to a variety of diseases which may be distinguished into *sympathetic*, *inflammatory*, and *organic*.

1. *Sympathetic affections.* These consist in irregularity, increase, or diminution of the heart's action, or painful nervous affections of the heart, arising from various causes not operating immediately on the organ itself. Thus palpitations and syncope are frequently the results of dyspepsia, hysteria, agitation or distress of mind, and other causes which tend to disturb the nervous functions. Neuralgic affections of the heart also are not uncommon.

2. *Inflammatory affections.* Three distinct textures are involved in the structure of the heart, namely, the pericardium, a serofibrous membrane, which forms its outer envelope; the muscular structure of the heart itself; and the endocardium or serous membrane which lines its cavities. Each of these textures is liable to inflammation, which, when seated in the pericardium, is termed *Pericarditis;* when in the membrane lining the cavities of the heart, *Endocarditis;* and when in its muscular substance, *Carditis.*

a. Pericarditis. — This may assume an acute, subacute, or chronic, form. It may proceed from the same remote causes which induce in-

flammation of other serous membranes; or it may be caused by extension of inflammation from the pleura; or it may arise from the metastasis of rheumatism, which is the most frequent cause, especially in young patients. The symptoms of pericarditis are extremely variable and deceptive, and it has been frequently found on dissection to have existed in a severe degree, in cases where it had altogether escaped the attention of the practitioner. Generally speaking, the following are the principal symptoms of acute pericarditis: sharp burning pain in the region of the heart, accompanied by an attack of acute inflammatory fever; the pain shoots to the left scapula and shoulder, and often descends some way down the arm; it is increased by full inspiration and by the movements of the ribs, and also by pressure between the ribs over the apex of the heart, and in the epigastrium; the respiration is hurried and laborious, and there is a sense of constriction in the præcordial region with restlessness and anxiety; the patient cannot lie on the left side, and generally feels least distress when lying on the back; the state of the pulse varies extremely; it is always frequent, but is sometimes full, hard, and vibratory, and at others feeble, irregular, or intermittent; in the advanced stage of the disease the pulse is generally feeble and irregular, though the action of the heart continues violent; there is frequent fainting, and extreme anxiety, restlessness, and misery. The duration of this disease is very various; if not checked, it sometimes proves fatal in two or three days, and at other times is protracted for several weeks. This diversity of symptoms and duration depends on the nature and progress of the organic changes which take place in the course of the inflammation. These changes consist, for the most part, in effusions of lymph or serum, which are more or less copious, and take place more or less rapidly. Thus, if serum be effused in large quantity at an early period, the action of the heart will almost from the first be much oppressed, and the pulse feeble and irregular; if the effusion be more gradual, these symptoms will not occur till a more advanced period: again, if a copious exudation of coagulating lymph take place, and glue the pericardium to the heart, serous effusion will be restrained, the symptoms dependent on it averted, and the duration of the case protracted.

Inflammation of the pericardium does not often extend to the muscular substance of the heart, and when it does so, there seem to be no very well established symptoms by which the fact can be ascertained; this, however, is of little consequence in practice, because the treatment is not influenced by it.

The physical signs of pericarditis are, increased impulse of the heart; bellows sound; and, where there is considerable effusion, a more than usual dulness on percussion in the cardiac region.

When there are partial exudations of lymph on the opposite surfaces of the pericardium, the sound of friction is not uncommon.

The physical signs taken in conjunction with the symptoms, generally speaking, remove all obscurity from the diagnosis of pericarditis.

The symptoms of chronic pericarditis are those of the acute in a less degree, and the accompanying fever is of the hectic kind. The increased impulse of the heart and the bellows sound exist, but are less remarkable than in the acute form; when there is effusion of serum or lymph within the pericardium, the dulness on percussion is the same.

Pericarditis may be considered as almost always a fatal affection, except in those instances of the acute disease in which the inflammation is cut short by vigorous practice, before any organic change has ensued. When pericarditis terminates in adhesion of the pericardium to the heart, the patient frequently remains for some months, or even for several years, free from any symptoms which appear formidable, but this state always, sooner or later, induces enlargement of the heart, generally hypertrophy with dilatation; and when this takes place it goes on very rapidly to a fatal issue.

The signs by which an adhesion of the pericardium to the heart may be recognised, are not always very distinctly marked, nor are some which have been brought forward as particularly diagnostic, sufficiently established to merit much confidence. In a general way, when we find after acute or chronic inflammation of the pericardium, that there is a permanently increased dulness on percussion in the cardiac region, with a degree of dyspnœa and more or less oppression on the chest, we may infer that this lesion has probably taken place.

b. Endocarditis. Inflammation of the lining membrane of the heart assumes an acute, subacute, or chronic form. It frequently arises from the metastasis of rheumatism, and its causes may in general be considered as similar to those of pericarditis. Endocarditis is a disease which has been recognised by pathologists only within the last few years, nor have its symptoms yet been determined with the accuracy that could be wished. In the acute form there is generally no severe pain, but rather a sense of oppression, anxiety, and faintness. There is a very tumultuous action of the heart, and great increase of impulse, frequently accompanied with a tremour or vibration, which, in some instances, amounts to what is called the purring tremour. The pulse varies much; it is generally very rapid and irregular, but does not partake of the force of the heart's action, being usually soft and weak; it is sometimes hard and vibratory, and is then generally more regular. There is usually a bellows sound, which is more distinct in proportion to the strength of the heart's action, and which is rougher, or approaches more to the rasp sound, in proportion to the tumefaction of the valves, and the effusion of lymph on the surface of the lining membrane of the heart.

The more chronic forms of endocarditis are frequently very difficult to distinguish from chronic pericarditis, unless where the latter is attended with copious serous effusion or extensive adhesion, in which case percussion may greatly aid the diagnosis.

On the dissection of those who have died of acute endocarditis, the lining membrane of the

heart presents various appearances, according to the degree and duration of the inflammatory action; increased vascularity, thickening, softening, albuminous exudations, puriform deposits: if the case be of some duration, the depositions of lymph become vascular, and give rise to excrescences, vegetations, organised false membranes, and various adhesions.

Chronic endocarditis gives rise to narrowing of the different orifices of the heart, cartilaginous and osseous induration of the valves, and, as particularly illustrated by M. Andral, to hypertrophy of the ventricles. Inflammation of the lining membrane of the heart may be readily conceived to conduce to the thickening of the parietes of that viscus; first, by direct irritation of the contiguous muscular substance, as we find the muscular coat of the stomach thickened in chronic gastritis; secondly, by stimulating the muscular fibres to increased action, both by the morbid stimulus of the disease, and by the opposition offered by the narrowing of the heart's apertures, just as the muscular coat of the bladder is thickened by a stricture of the urethra.

c. Carditis. General inflammation of the substance of the heart is a rare disease. Induration and softening of the entire muscular substance are, however, sometimes found; and as these occasionally present themselves in cases of pericarditis, and are found to occupy only a superficial portion of the muscular substance contiguous to the pericardium, it is reasonable to infer that they are the result of an extension of inflammation from that membrane, and consequently, that when they occur, independently of pericarditis, they are the result of primary inflammation of the substance of the heart. Dr. Latham has recorded a solitary instance of universal suppuration of the substance of the heart. There appear to be no distinct instances of gangrene of the heart.

Partial carditis is not so rare, but still not common. It terminates in abscess or ulceration, more frequently the latter. Ulcers occupy the external or the internal surface of the heart; but the latter oftener than the former. Ulceration is the most common cause of rupture of the heart, which, however, is a very rare accident.

The treatment of pericarditis, endocarditis, and carditis may be considered under one head, as it is perfectly similar in all. In acute cases it consists, in the first place, in a very bold and early use of the lancet, and a rigid observance of all the particulars of the antiphlogistic regimen. We need be less cautious in the abstraction of blood in this than in any other case of acute inflammation; the very centre of life is attacked, and a fatal event is certain, if the disease be not speedily subdued: still reference must be had to the strength of the patient; if a decided impression have been made by the lancet, cupping and leeches may be sufficient to subdue the remaining inflammatory action. In some cases of debilitated patients, they may, indeed, supersede the use of the lancet altogether, for this is one of the cases of inflammation in which local bleeding has a very powerful effect. The next most important remedy after bloodletting is mercury, which, in this, as in other cases, is a powerful means of preventing effusion, or causing the absorption of such matters as may already have been effused: with this view calomel should be given in the manner best suited to insure its effect on the mouth, namely, in small doses frequently repeated. Antimonial diaphoretics and saline purgatives are also serviceable. Digitalis may be useful in keeping the pulse down, and opium, combined with the calomel, has frequently a very beneficial effect; other narcotics and antispasmodics may also be useful according to circumstances. In the rheumatic and gouty forms of carditis, colchicum is highly esteemed by some practitioners. The use of counter irritants is better adapted to the subacute and chronic states of carditis, than to the acute.

Chronic carditis demands the same treatment as the acute, but in a very moderate degree, small evacuations of blood, general or local, and continued counter irritation by blisters, setons, tartar emetic ointment, &c. are the principal means; mercury is also applicable here on the same principle as in the acute disease. When lymph has been effused within the heart or pericardium, and become organised, the case is beyond the reach of art; and when pericarditis has terminated in serous effusion, if the patient survive any length of time, the case, in effect, becomes one of dropsy of the pericardium, on the treatment of which little need be said, because no treatment is, generally speaking, of any avail.

3. *Organic diseases of the heart.* The most remarkable of these are, *Induration — Softening — Atrophy — Hypertrophy — Dilatation — Morbid growths — Morbid deposits and degenerations — Diseases of the valves and orifices of the heart.*

1. *Induration.* Induration of the muscular substance of the heart is not common. It appears to be always the result of inflammation either extending from the pericardium to the muscular substance, or originating in the latter.

2. *Softening.* A pale and flabby state of the muscular substance of the heart is frequent in leucophlegmatic and dropsical subjects, but this may be considered as indicative of debility rather than of absolute disease. Distinct softening of the heart is like induration, rare, and like it appears to be always the result of inflammatory action.

3. *Atrophy.* Most writers on diseases of the heart, mention cases of diminished size of the organ, but the etiology of the affection appears to be entirely unknown.

4. *Hypertrophy.* Hypertrophy, or morbid increase of the muscular substance of the heart is very common. It is more frequent, and greater in degree, in the left ventricle than in the right. In most cases both ventricles are more or less affected. The auricles also, are occasionally hypertrophied, but always in connexion with diseases of the ventricles or valves. Hypertrophy may occupy the parietes of only one cavity of the heart, or of all. M. Bertin divides hypertrophy into — *a. Simple hypertrophy* in which the walls of the cavities are merely thickened without any change in the capacity

the cavities; *b. Hypertrophy, with increase of the capacity of the cavities; c. Hypertrophy, with diminution of the capacity of the cavities.*

Hypertrophy may arise from any of those causes by which the substance of muscles in general is augmented; namely, from any of those causes which occasion a permanent increase in the force or frequency of contraction. Hence simple nervous palpitation, if habitual, may occasion hypertrophy; it seldom does so however, to any great extent; inflammation of the pericardium or endocardium, and obstruction of the orifices of the heart, are the common causes of this affection: we have already noticed the manner of their operation, when speaking of endo-carditis. The essential signs of simple hypertrophy are, a full and hard pulse, which is almost always regular, and generally more or less vibratory; dyspnœa; and increased impulse of the heart, with diminished sound. Hypertrophy with diminution of the capacity of the cavities, is indicated by nearly the same signs, except that in some cases it appears to be attended by symptoms of obstructed circulation. Hypertrophy with dilation, presents, as might be expected, the mixed characters of these two states; there is increase both of impulse and of sound, and the symptoms will vary according as the hypertrophy or the dilatation predominates. If we consider the respective relations of the right and left cavities of the heart to the pulmonary and systemic circulation, we shall be prepared to expect a difference in the symptoms of hypertrophy, when situated in the one and in the other. In hypertrophy of the right cavities, the respiration is more embarrassed, the complexion is inclined to livid, and hæmoptysis is more frequent. In hypertrophy of the left cavities, the brain suffers more than the lungs; the carotid arteries pulsate very strongly; there is a remarkable tendency to apoplexy, and other forms of cerebral disease, and the patient is frequently annoyed with pain, drowsiness, or throbbing in the head, noises in the ears, and other disagreeable sensations.

Hypertrophy of the auricles is not accompanied with any diagnostic symptoms; but this is of little consequence, because it is always connected with and dependent on some disease or obstruction of the corresponding ventricle. The stethoscope aids the symptoms, in enabling us to determine which side of the heart is affected with hypertrophy; when the increased impulse is perceived under the bottom of the sternum, we infer that the right ventricle is hypertrophied; when it is increased between the cartilages of the fifth and seventh ribs, on the left side, we infer that the left ventricle is diseased; and when we find increased impulse in both these situations, we conclude that both sides of the heart are affected.

5. Dilatation. Dilatation of the cavities of the heart may take place without any change in the thickness of their parietes; or it may be accompanied with thickening; or it may be accompanied with preternatural thinness of their parietes: hence, we have *Simple dilatation; Dilatation with hypertrophy;* and *Dilatation with attenuation.*

Various causes may occasion temporary distension of the cavities of the heart, but when these causes are removed, the cavities return by their own elasticity to their natural dimensions. Permanent dilatation, therefore, is as distinctly a disease as hypertrophy; and it seems better entitled to rank as a primary disease, in as much as it is oftener found unconnected with inflammation or obstruction. Dilation of the heart indeed seems always to depend on an original or acquired debility of its muscular fibres, because in some instances, where we find it independently of other disease, it can only be attributed to such debility, and in other instances, again, where it is induced by the same exciting causes as hypertrophy, we must presuppose some such debility to account for the occurrence of dilatation, in place of the thickening which would be the natural result of over action were the organ more robust.

a. Dilatation with hypertrophy is a mixed case, combining the symptoms and signs of dilatation with those of hypertrophy. There is one symptom, however, which is considered very diagnostic of this state; namely, turgescence of the external jugular veins, and a pulsation of these veins synchronous with that of the arteries: the rationale of this symptom has not yet been satisfactorily explained.

b. Simple dilatation, as it is called, is in reality a case of dilatation with hypertrophy, in which the dilatation predominates over the hypertrophy; for since the parietes of the heart are extended, without diminution of their thickness, there must have been a real increase of substance.

c. Dilatation with attenuation. This affects the right ventricle rather than the left, but in most cases both ventricles are involved. The auricles also are sometimes affected, most commonly from disease of the auricular valves. In dilation of the cavities of the heart with attenuation, the symptoms are in many respects precisely the reverse of those of hypertrophy. The heart palpitates, but its action is feeble and oppressed; the pulse is soft and weak, though seldom irregular, except in an advanced stage of the disease; the circulation is languid, and the evolution of animal heat deficient; the lungs are oppressed with venous congestion, whence arise dyspnœa, cough, œdema of the lungs, and passive hæmorrhage from the bronchial membrane; effusion takes place within the cavities of the pleura, pericardium, or both; the countenance is of a leaden hue; the functions of the brain are torpid, from insufficient aëration of the blood; the liver is extremely liable to become enlarged, and ascites ensues as a consequence of the obstruction of the portal veins: the prevalence of the dropsical diathesis generally shows itself first in the lower extremities, but is never confined to these; and, when it once shows itself, is certain eventually to invade one or more of the great cavities of the body. The above are the consequences of a considerable degree of dilatation, but minor degress frequently exist for many years without occasioning any formidable symptoms; and slight dilatation of the heart is very common in cases of asthma, and

other diseases which obstruct the pulmonary circulation.

The physical signs of dilatation of the heart with attenuation of its walls, are exactly the reverse of those which indicate hypertrophy. The impulse of the heart is diminished, while its sound is increased and heard over a greater extent of the chest than is natural. We can here only state the physical signs of this and other affections of the heart in a very general manner, referring the reader for more minute information to the elaborate treatises on auscultation, which have appeared of late years in France and in this country — at the same time, cautioning him not to adopt too implicitly some of the minor distinctions pointed out by their authors, and never to trust absolutely to the ear, unless the information thus obtained be corroborated by the symptoms of the case.

The different forms of dilatation of the heart, have been designated by some pathologists under the title of *Aneurism of the heart* — dilatation with hypertrophy being called *Active aneurism*, and dilatation with attenuation, *Passive aneurism;* these, however, are unmeaning terms, and should be banished from pathology.

6. *Morbid growths.* These consist chiefly of fungous growths and excrescences, which spring from the lining membrane of the heart, and acquire various degrees of vascularity and consistence, and present various forms and appearances. The only known cause of these morbid productions is, inflammation of the endocardium, and they are more frequently found springing from that portion of the membrane which covers the valves, in which case the valves themselves are often ossified. It is probably that in some cases the excrescences in question originate from the gradual organisation of portions of lymph effused on the surface of the inflamed membrane; in other cases there seems to be no reason to attribute them to such an origin, and they are probably caused by some unknown perversion of action in the vessels of the membrane itself, like polypi in other parts. They are more frequently met with in the left than in the right cavities of the heart. Morbid growths, of a bony consistence, are occasionally met with, usually attached to the valves, but sometimes springing from other parts of the endocardium.

7. *Morbid depositions and degenerations.* These consist chiefly in the formation of bony matter, and in fatty and greasy degenerations. Ossific deposits are common in the pericardium and under the lining membrane of the heart, in the situation of the valves. They have occasionally also been found in the muscular substance of the heart, large portions of which, in some rare instances, have been found converted into bone. Fat is often deposited, in very large quantities, within the pericardium, and sometimes insinuates itself between the muscular fibres, causing atrophy of the muscular substance. In other cases, small portions of the substance of the heart, generally towards the apex, have been found infiltrated with a greasy matter. It does not appear that these fatty and greasy degenerations are productive of any particular bad effects.

8. *Diseases of the valves and orifices of the heart.* The valves of the heart, consisting of fibrous membrane invested on each side by the serous membrane which lines the cavities of the heart, are like other parts of similar texture, particularly liable to cartilaginous induration and to ossification. It would appear that these changes always commence in the fibrous part, and are consequently situated under the serous membrane. All the valves of the heart are liable to these diseases, but those of the left side are much more so than those of the right. The induration of the valves on the right, also, seldom goes beyond the cartilaginous stage, or at all events not so frequently as on the left side. The mitral valve is more frequently diseased than any other; next to this the semilunar valves of the aorta: disease of the tricuspid valve is not very common, and that of the semilunar valves of the pulmonary artery very rare. Bony degenerations of the valves of the heart appear to be of two very different kinds; in the one a cartilaginous induration becomes gradually converted into an imperfectly organised bone; in the other, a calcareous matter, which possesses no organization, is deposited in a caseous or steatomatous nidus. The former appears to be generally the result of inflammation of the endocardium, or of straining of the valves from over action of the heart; the latter of that ossific diathesis, prevalent in old age, which occasions bony depositions in various parts of the arterial system. Fungous growths — or vegetations, as they are strangely called — are frequently found springing from the serous membrane of the indurated valves.

Disease of the valves, when to any considerable extent, is almost always connected in the relation of cause or effect with hypertrophy or dilatation; the case, therefore, is usually a mixed one, in which the symptoms and signs of hypertrophy or dilatation are complicated with others indicative of obstruction to the free exit of the blood from the cavities of the heart. The symptoms of hypertrophy or of dilatation, are greatly aggravated by the presence of the valvular disease, and to these are superadded intermission or irregularity of the pulse; the bellows, or rasp sound; and, occasionally, the purring tremour. In general, disease of the auriculo-ventricular valves occasions more irregularity of the pulse than that of the semilunar valves; the pulse also is more affected by disease of the valves on the left than on the right side of the heart. The degree of roughness of the sounds which attend the contraction of the heart, depends chiefly on the degree of valvular obstruction; and the sound varies from the softest bellows sound to the roughest rasp sound. The situation in which the sound is heard most distinctly, indicates the particular valve which is diseased.

In the case of the mitral valve, the sound seems nearest when the stethoscope is applied at the left margin of the sternum, between the third and fourth ribs; when the aortic valves are affected, the sound is most distinct about the middle of the sternum (speaking relatively both to its length and breadth); when the tricuspid valve is diseased, the sound is clearest

at a point a little to the right of the mesial line of the sternum, opposite to the space between the third and fourth ribs. The purring tremour is sometimes present and sometimes absent; it is chiefly heard when the action of the heart is increased by a fit of palpitation. It is not by itself at all diagnostic of disease of the valves, because it occurs also in other morbid states of the heart. It is to be observed also, that a single auscultation is by no means sufficient to enable us to form a just opinion as to the presence or absence of disease of the valves, since from causes not easily explained, we may be able to detect no sound one day although it be loud and distinct on another. The above is a very rude, though it is hoped not very incorrect outline of the pathology and semeiography of the organic diseases of the heart: the limits of this Dictionary do not permit us to extend it.

With respect to the treatment of these diseases, the general principles which should guide the practitioner may be stated in few words. When, as most frequently happens, the organic change is consecutive on some other disease, as, for example, hypertrophy on inflammation of the investing or lining membranes of the heart, or passive dilatation on congestion in the lungs, it is our business to remove the cause, if this be possible, before the effects have become serious: again, when we can perceive no manifest cause of such structural changes, we have no immediate means of preventing or arresting them: hence, the *curative* treatment of such diseases resolves itself entirely into that of the affections on which they may be consecutive. With respect to the *paliative* treatment, it consists in the avoidance of all causes which can hurry or disturb the circulation, as too active exercise, strong emotions of the mind, the use of indigestible aliments, or sudden vicissitudes of temperature; the occasional use of blood-letting, when necessary to relieve congestion; of digitalis, to allay increased action of the heart; and of those means calculated to obviate disorders of the digestive organs, which have very great influence in producing an irritable state of the heart. By a judicious observance of these rules, the fatal termination of organic diseases of the heart may often be kept at bay for a long time, and the patient exempted from any very severe suffering.

Heart, displacement of the. *Ectopia cordis.* Various deviations from the natural position of the heart occur, as the consequence of congenital malformation, and of disease or external violence. In cases of original malformation, the heart may be contained in the chest although its position be anormal, or it may be excluded from the chest altogether. Thus, it may be placed in the chest vertically, with its apex upwards or downwards; it may be placed horizontally; it may have its apex turned to the right side instead of the left, or the whole viscus may be situated on the right side of the chest instead of being in the middle of that cavity. Where the heart is excluded altogether from the chest, it is found either in different parts of the abdomen, or in the neck: in the former case the individual has been known to live, and even to enjoy good health; in the latter, life must necessarily cease at, or soon after birth.

Displacement of the heart may occur in consequence of various diseases of the chest, as *hypertrophy with dilation of the heart*, which has a natural tendency to render the position of the heart more horizontal by carrying the apex to the left — *serous effusion in the cavity of the pleura* — *empyema* or *pneumothorax*, which appear to be by far the most frequent morbid causes of displacement of the heart — *aneurism of the aorta* — *tumours* — and *diaphragmatic hernia*. Enlargement of the liver, and emphysema of the lung on one side, have also been stated as causes.

With respect to displacement from violence, it is evident, that such an injury must generally be instantly fatal. Dr. Stokes, however, has recorded an instance in which there is little doubt that this accident took place, and yet the patient survived. (*Ed. Med. & Surg. Journal*, No. 108.)

Heart, malformations of the. The principal malformations of the heart which have been recorded are: 1. That in which there is only one auricle and one ventricle, as in the normal condition of fishes. 2. That in which there are two auricles and one ventricle, as in reptiles. 3. Those in which the septum is wanting between the auricles or ventricles. 4. Those in which one or all of the peculiarities of the fœtal heart remain after birth, as when the foramen ovale or ductus arteriosus remains open. Besides these malformations, in which the heart, though monstrous in relation to the human organism, has a resemblance to the heart of the inferior animals, there are others in which the structure is more irregular and anomalous, as where the aorta rises from the right ventricle and the pulmonary artery from the left; where there are supernumerary ventricles, auricles, or septa; or where the auricle does not communicate with its proper ventricle, but with the other, as the right auricle with the left ventricle.

Heart-shaped. See *Cordatus.*

Heart's ease. See *Viola tricolor.*

Heat. See *Calor*, and *Caloric.*

Heat, absolute. This term is applied to the whole quantity of caloric existing in a body in chemical union.

Heat, animal. See *Animal temperature.*

Heat, free. If the heat which exists in any substance be from any cause forced in some degree to quit that substance, and to combine with those that surround it, then such heat is said to be free, or sensible, until the equilibrium is restored.

Heat, latent. When any body is in equilibrium with the bodies which surround it with respect to its heat, that quantity which it contains is not perceptible by any external sign, or organ of sense, and is termed combined caloric, or latent heat.

Heat, prickly. See *Lichen tropicus.*

Heat, sensible. See *Heat, free.*

Heat, vital. See *Animal temperature.*

Heavy carbonated hydrogen. See *Carburetted hydrogen.*

Heavy inflammable air. See *Carburetted hydrogen.*

HE'BE. (Ἥβη; from ἡβάω, *flores, vigeo.*) The hair which grows upon the pubes; the part on which it grows; or the age when it appears.

HE'CTIC. (*Hecticus;* ἑκτικος; from ἕξις, habit.) Appertaining to the habit or constitution.

Hectic fever. *Febris hectica.* A disease of great perplexity and irregularity. Nothing can more fully prove this than the different characters given of it, and the different places allotted to it by different authors. Sauvages and Sagar introduce it into the list of continued fevers. Linnæus, Chrichton, and Parr, into that of remitting and exacerbating fevers. Boerhaave regards it as of a mixed nature, a continued intermittent. "Febris hectica," says he, "est referenda ad febres continuatas intermittentes." Vogel and Cullen degrade it into a mere symptomatic affection. "As I have never," says the latter, "observed a fever of this kind except when symptomatic, I could not consent to admit it into the list of idiopathic fevers, which alone ought to be enumerated."

Those who have adopted Dr. Cullen's opinion have usually contemplated it as a mere effect of absorbed pus. Dr. Heberden seems to think it dependent upon a local cause; but that irritability in any diseased organ, which cannot be brought into a healthy state, will excite it as effectually as pus introduced into the system.

Galen, on the contrary, John Hunter, and Willan, contend, that hectic may be, and often is, a strictly idiopathic affection. The second of these regards hectic fever as of two sorts, symptomatic and idiopathic. The first he ascribes entirely to local irritability, and opposes the idea that it is ever produced by absorbed pus. His argument is, that if absorbed pus be capable of producing it in one instance, it ought in every instance. He does not think that more pus is absorbed during the existence of hectic fever than when no such fever is present: but, admitting that this should be the case, he would rather ascribe the increased absorption to the hectic constitution, operating upon the abscess or sore, than to the abscess or sore operating upon the constitution; in which case the hectic diathesis is the cause, and the increased absorption is only the effect. So that, even here, he regards the hectic as a primary or constitutional disease.

As a symptomatic affection, however, he refers it to a general irritability of the constitution, produced by sympathy, in consequence of "some incurable local disease of a vital part, or of a common part when of some magnitude;" and which becomes incurable from two causes: firstly, because, though the local irritation is small, the constitution is bad, and does not dispose the parts to a healing state; and secondly, because, though the constitution is good, the local irritation is so considerable that it cannot muster up a sufficiency of remedial energy to subdue it; and hence, while sympathising in the irritable action, falls a prey to its own efforts.

Yet, says he, it is possible for hectic fever to be an original disease of the constitution; for the constitution may fall into the same mode of action, without any local cause whatever, at least that we know of. And in this manner he accounts for its existence as an idiopathic affection. And, in effect, nothing is more common than for hectic fever to exist in patients in which we can trace no local cause whatever: and in all such cases we must either indulge in a gratuitous hypothesis, and throw our suspicion at random upon the lungs, or the liver, or the kidneys, or the heart, or the mesenteric glands, or whatever other organ a few casual symptoms may suggest to the fancy; or we must at least act upon the principle of its being an idiopathic affection, even though we should refuse, in terms, to admit that it is so.

There seems great reason for admitting a hectic diathesis or temperament, the features of which are for the most part strongly marked, and are to be found in a fair skin, blue eyes, yellow hair, lax fibre, and sanguine disposition. And, wherever this exists, it is probable that most of the causes of other fevers, operating upon it, will produce a hectic. And we can hence readily account for the examples brought by different authors of its being excited by diseased actions or affections of the heart, stomach, mesentery, liver, pancreas, lungs, or brain; by a suppression of various exanthems or other eruptions, or of various habitual discharges, natural or morbid; by other fevers; by chronic inflammations or abscesses. It is well known to be a common sequel to the measles, occasionally so to the small-pox, and, in a few instances, to rosalia or scarlet fever. It may be a result of dyspepsia. And it is possible that hectic fever may occasionally spring, like other remittents, from febrile miasm.

The character of the disease is well given by John Hunter in the following words: "Hectic may be said to be a slow mode of dissolution; the general symptoms are those of a low or slow fever, attended with weakness, but more with the action of weakness than real weakness: for, upon the removal of the hectic cause, the action of strength is immediately produced, as well as every natural function, however much it was decreased before. The particular symptoms are debility; a small, quick, and sharp pulse; the blood forsaking the skin; loss of appetite; often rejection of all aliment by the stomach; wasting; a great readiness to be thrown into sweats; sweating spontaneously when in bed; frequently a constitutional purging." — To which he adds, "the water clear." There is, in reality, much difference of opinion upon this last point. Dr. Heberden has observed that the same irregularity which accompanies most other symptoms of the disease attends this also; that the urine is equally clear or turbid in the exacerbations and the intervals: sometimes clear in the first, and turbid in the second; and sometimes turbid in the first and clear in the second: while Dr. Duncan, from long and assiduous attention asserts, that the urine is peculiarly distinguished by a natural furfuraceous separation. Where authorities thus clash, it is not a symptom to be depended upon as a pathognomic.

From the frequent approaches which the hectic makes towards a perfect apyrexy, it is sometimes apt to be confounded with an intermittent; but there is rarely any remission in which the pulse is not at least ten strokes in a minute quicker than it ought to be; and by this it is sufficiently distinguishable, as it is also by the greater irregularity of its different stages, and indeed of all its symptoms.

It is owing to this last feature that sometimes the exacerbation commences with a chilly fit, and sometimes without; and that, when there is a chilly fit, sometimes it is immediately succeeded by heat, but sometimes by perspiration, without any intervening hot fit; while occasionally the cold fit only leads to heat, or even terminates singly without either heat or perspiration. Hence the exacerbations must vary in duration: but even where every stage is present and succeeds in regular order, the duration of the entire exacerbation is almost equally uncertain, insomuch that it is seldom that three exacerbations of equal length recur in succession. The remissions will sometimes extend to ten or twelve days, without a single intervening pyrectic symptom; and sometimes the cold, or the hot fit, or the sweating, will be renewed several times in the same day. Yet, let the perspiration appear whenever it may, the patient is never relieved by it; but is as anxious and restless during its continuance as in the heat or chill.

Dr. Heberden tells us, that he has sometimes seen a hectic attack persons who seemed in tolerable health, in a sudden and violent manner, like a common inflammatory fever; and, like that, in a little time bring them into imminent danger of their lives; after which it as abated, and afforded hopes of recovery. But the hopes have been deceitful: for the hectic has still been fed by some lurking mischief; and, resisting the power of medicine, has gradually undermined the patient's health and destroyed him.

More commonly, however, hectic fever commences slowly and insidiously, and is not suspected for some months; and the only symptoms noticeable are, lassitude upon slight exercise, loss of appetite, and a wasting of the flesh. But if these symptoms be connected with a general increase of pulse, so that the artery beats from ninety to a hundred, or a hundred and twenty strokes in a minute, there will be a real ground for apprehension.

This is one of many diseases in which the art of medicine has hitherto laboured in vain to strike into any direct track of cure. The real cause is commonly involved in great and impenetrable obscurity, and we can do little more than attack single symptoms as they make their appearance.

Where the disease is evidently symptomatic, the case must depend upon curing, or, if incurable, upon removing, when this can be accomplished, the part affected. Where idiopathic, we must combat, as far as we are able, the irritable diathesis; and above all things endeavour to strengthen, without increasing, the action of the machine. The best sedatives, as well as tonics, are acids; and of these the vegetable will usually be found preferable to the mineral, since, on account of their corrosive property, the latter can only be taken in small quantities. They abate the febrile heat, diminish the restlessness, and frequently succeed in checking the night-sweats. And if, as is often the case, the patient be tormented with pains in the limbs or joints, resembling rheumatism, and preventing him from sleeping, we may combine the acids with opium. The bowels must be kept regular by gentle laxatives, and the neutral salts seem to answer this purpose better than most others. It will, however, be convenient to vary them occasionally, and sometimes to exchange them for the senna confection, or some other aperient.

Stimulants rarely answer any good purpose, and in many instances evidently heighten and accelerate the exacerbation. The Peruvian balsam has been given advantageously with nitre; but myrrh is a medicine of fairer promise; and beyond these we can scarcely ever venture to proceed.

The lighter bitters are certainly serviceable in many cases, and may conveniently be employed in combination with the acids; but bark, though tried in numerous instances, and with great perseverance, has not been found successful. Dr. Heberden, however, says that he never saw it do any harm in the hectic fever, and his opinion is confirmed by that of Sir Edward Hulse, after having prescribed it for forty years: yet neither of them ever obtained proofs of any beneficial result.

Sarsaparilla has, in some instances, proved highly serviceable, and many cases of hectic have been cured by it. Every thing depends on having the genuine article. The decoction is the best preparation of it, and next to it the powder. Its use should be persevered in for a considerable time, and with it a vegetable and milk diet.

A light and regular diet, regular hours, and gentle exercise, are coadjutants of great importance. When the disease is dependent upon some local affection, the Bath waters have often afforded relief; but in idiopathic cases, they usually augment the fever, aggravate the patient's sufferings, and hasten his death.

HE'DERA. (*a*, *æ*. f.; from *hæreo*, to stick: because it attaches itself to trees and old walls.) The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Monogynia*. The ivy.

Hedera arborea. See *Hedera helix*.

HEDERA HELIX. The ivy; called also, *Hedera arborea*. The leaves of this tree have little or no smell, but a very nauseous taste. Haller informs us, that they are recommended in Germany against the atrophy of children. By the common people of this country they are sometimes applied to running sores, and to keep issues open. The berries were supposed by the ancients to have a purgative and emetic quality; and an extract was made from them by water, called by Quercetanus *extractum purgans*. Later writers have recommended them in small doses as alexipharmic and sudorific: it is said, that in the plague at London, the powder of them was

given in vinegar, or white wine, with good success. It is from the stalk of this tree that a resinous juice, called *Gummi hederæ*, exudes very plentifully in warm climates. It is imported from the East Indies, though it may be collected from trees in this country. It is brought over in hard compact masses, externally of a reddish-brown colour, internally of a bright brownish yellow, with reddish specks or veins. It has a strong, resinous, agreeable smell, and an astringent taste. Though never used in the practice of the present day, it possesses corroborant, astringent, and anti-spasmodic virtues.

Hedera terrestris. See *Glechoma.*

HEDERA'CEÆ. (From *hedera*, the ivy.) The name of an order of plants in Linnæus's Fragments of a Natural Method, consisting of the ivy, and a few other allied genera.

Hedge hyssop. See *Gratiola officinalis.*

Hedge mustard. See *Erysimum.*

Hedge mustard, stinking. See *Erysimum.*

Hedgehog. See *Erinaceus.*

Hedgehog mushroom. See *Hydnum erinaceum.*

HE'DRA. Ἕδρα. 1. A fracture of the cranium with depression. — *Hippocrates.*

2. According to Mahon this word signified also the anus, the alvine excrements, and the bottom of an abscess.

HEDYO'SMOS. Mint.

HEDY'PNOIS. (*ois, idis.* f.; from ἡδυς, sweet, and πνεω, to breathe.) Sweet-breathing: a name in some writings for the dandelion.

HEDY'SARUM. (*um, i.* n.; from ἡδυς, sweet.) The name of a genus of plants. Class, *Diadelphia;* Order, *Decandria.*

HEDYSARUM ALHAGI. A small shrub which grows in Persia and Mesopotamia. Its leaves become covered during the night with a granular manna or honey dew which is used as food, and has very little laxative quality. The leaves of this plant are said to be purgative.

HELCO'MA. Ulceration.

HELCY'DRION. (Diminutive of ἑλκος, an ulcer.) A little ulcer.

HELCY'STER. (Ἑλκυστηρ; from ἑλκω, to draw.) The crotchet used by obstetricians.

HELE'NIUM. (*um, ii.* n.; so called from *Helene*, an island where it grew.) See *Inula helenium.*

Heleoselinum. See *Eleoselinum.*

Helianthemum. See *Helianthus.*

HELIA'NTHUS. (*us, i.* m.; from ἡλιος, the sun, and ανθος, a flower.) This name originated from the resemblance which its broad golden disk and ray bear to the sun, and is rendered further appropriate by its having the power of constantly presenting its flowers to that luminary.) The name of a genus of plants. Class, *Syngenesia;* Order, *Polygamia frustranea.* The sun-flower.

HELIANTHUS ANNUUS. The systematic name of the *Corona solis*, and *Chimalatus.* The seeds have been made into a nutritious bread. The whole plant, when young, is boiled and eaten in some countries, as being aphrodisiac.

HELIANTHUS TUBEROSUS. Jerusalem artichoke. The root of this plant somewhat resembles the artichoke in flavour. It is not very wholesome, being apt to produce flatulency and dyspepsia.

HELICA'LIS. Appertaining to the helix, or border of the ear.

Helicalis major. See *Helicis major.*

Helicalis minor. See *Helicis minor.*

HE'LICIS MAJOR. A proper muscle of the ear, which depresses the part of the cartilage of the ear into which it is inserted; it lies upon the upper or sharp point of the helix, or outward ring, arising from the upper and acute part of the helix anteriorly, and passing to be inserted into its cartilage a little above the tragus.

HELICIS MINOR. A proper muscle of the ear, which contracts the fissure of the ear: it is situated below the helicis major, upon part of the helix. It arises from the inferior and anterior part of the helix, and is inserted into the crus of the helix, near the fissure in the cartilage opposite to the concha.

HELIOSCO'PIOS. (From ἡλιος, the sun, and σκοπεω, to behold: because it turns to the sun.) See *Helianthus*, and *Heliotropium.*

HE'LIOTROPE. *Heliotropium. Heliotropius lapis.* The blood-stone. A subspecies of rhomboidal quartz. It was formerly in high esteem as an amulet against hæmorrhage, epilepsy, renal calculi, &c.

Heliotropii succus. See *Croton.*

HELIOTRO'PIUM. (*um, ii.* n.; from ἡλιος, the sun, and τροπη, a turning or inclination: and so called because it turns its leaves round with the declining sun. Ἡλιοτροπιον τοω μεγα, of Dioscorides. 1. The name of a genus of plants. Class, *Pentandria;* Order, *Monogynia.*

2. The name of a mineral, why so called we know not. See *Heliotrope.*

Heliotropium indicum. See *Convolvulus batatas.*

HELIOTROPIUM MAJUS. This is the *Heliotropium europæum* of Linnæus, which is bitter throughout.

Heliotropium tricoccum. See *Croton.*

HELI'TIS. (From ἡλος, a nail: so called in the Cyprian copper-works, because obtained by hammering copper nails.) A copper-flake.

HE'LIX. (*ix, icis.* m. Ἑλιξ, a spiral line; from εἱλω, to turn round.) The external circle or border of the outer ear, that curls inwards.

HELLEBORA'STER. (From ἑλλεβορος, hellebore.) See *Helleborus fœtidus.*

Helleborastrum. See *Helleborus.*

Hellebore. See *Helleborus.*

Hellebore, black. See *Helleborus niger.*

Hellebore, white. See *Veratrum album.*

HELLE'BORUS. (*us, i.* m. Ἑλλεβορος: from ἑλειν 2. aor. inf. of αἱρεω, to slay, and βορα, food; because it is poisonous if eaten.) The name of a genus of plants in the Linnæan system. Class, *Polyandria;* Order, *Polygynia.* Hellebore.

Helleborus albus. See *Veratrum album.*

HELLEBORUS FŒTIDUS. Stinking hellebore, or bear's-foot; called also, *Helleborastor.* It is the *Helleborus — caule multifloro foliosо, foliis pedatis,* of Linnæus. The leaves of this indigenous plant are recommended by many as

possessing extraordinary anthelmintic powers. The smell of the recent plant is extremely fetid, and the taste is bitter and remarkably acrid, insomuch that, when chewed, it excoriates the mouth and fauces. It commonly operates as a cathartic, sometimes as an emetic, and, in large doses, proves highly deleterious.

Helleborus niger. Black hellebore, or Christmas rose; called also, *Melampodium*.

Helleborus — scapo subbiflore subnudo, foliis pedatis, of Linnæus. The root of this exotic plant is the part employed medicinally: its taste, when fresh, is bitterish, and somewhat acrid; it also emits a nauseous acrid smell; but, being long kept, both its sensible qualities and medicinal activity suffer very considerable diminution. The ancients esteemed it as a powerful remedy in maniacal cases. At present it is exhibited principally as an alterative, or, when given in a large dose, as a purgative. It often proves a very powerful emmenagogue in plethoric habits, where steel is ineffectual, or improper. It is also recommended in dropsies, and some cutaneous diseases.

Helmet. See *Galea*.

Helmet-flower. See *Anthora*.

Helmi'nthagogue. (*Helminthagogus*; from ἕλμινς, a worm, and αγω, to drive out.) Synonymous with anthelmintic. See *Anthel*.

HELMI'NTHIA. (*a*, *æ*. f.; from ἕλμινς, a worm.) The same as *helminthiasis*.

HELMINTHI'ASIS. (*is*, *is*. f. Ἑλμινθιασις; from ἕλμινς, which signifies any species of worm.) A disease in which worms, or the larvæ of worms, are bred in any part of the body.

Helmi'nthic. (*Helminthicus*; from ἕλμινς, a worm.) Appertaining to worms.

Helminthoco'rton. See *Fucus helminthocorton*.

HELO'DES. (From ἕλος, a swamp.) A fever, characterised throughout by profuse sweating. The sweating sickness.

HELO'SIS. (From εἱλω, to turn.) An eversion or turning out of the eyelids.

HELVE'LLA. (*a*, *æ*. f. A word used by Cicero, for some sort of plant, supposed to be a fungus.) The name of a genus of plants. Class, *Cryptogamia*; Order, *Fungi*.

Helvella esculenta. According to Persoon, this and the mitra are eaten on the Continent for the morel, with which they are confounded.

He'lxine. (*e*, *es*. f.; from ἑλκω, to draw: so called because it sticks to whatever it touches.) See *Parietaria*.

HE'MATINE. The colouring principle of logwood. See *Hæmatoxylon campechianum*.

Hematu'ria. See *Hæmaturia*.

HEMERALO'PIA. (*a*, *æ*. f.; from ημερα, the day, and ωψ, the eye.) A defect in the sight, which consists in being able to see in broad daylight, but not in the evening. This disease of the sight is said to be endemic in some parts of France, Russia, Poland, the West Indies, Brazils, and the intertropical regions generally. It proceeds from too great an habitual exposure to light, whence the retina becomes torpid, and requires a strong stimulus to raise it. At noontide, therefore, it is sensible to the impression of objects, but does not clearly discern them in the shade, or towards the close of day. Scarpa says, it is properly nothing but a kind of imperfect periodical amaurosis, most commonly sympathetic with the stomach. Its paroxysms come on towards the evening, and disappear in the morning. At sunset, objects appear to persons affected with this complaint, as if covered with an ash-coloured veil, which gradually changes into a dense cloud, which intervenes between the eyes and surrounding objects. Patients with hemarolopia have the pupil, both in day and night time, more dilated and less moveable than it usually is in healthy eyes. The majority of them, however, have the pupil more or less moveable in the day-time, and always expanded and motionless at night. When brought into a room faintly lighted by a candle, where all the bystanders can see tolerably well, they cannot discern at all, or in a very feeble manner, scarcely any one object; or they only find themselves able to distinguish light from darkness, and at moonlight their sight is still worse. At daybreak, they recover their sight, which continues perfect all the rest of the day till sunset. Tonics and gentle stimulants are the best remedies for hemeralopia; especially cinchona and cascarilla, with the mineral acids. Blisters are useful; and stimulating the ball of the eye with ether, dilute citrine ointment, and also the vapour of camphire.

The derivation and meaning of the term hemeralopia have been much disputed. Some critics are for inserting an α privative between ημερα and ωψ, and others are for deriving the term from ημερα, the day, αλαος, blind, and ωψ, the eye; if either of which be admitted, the meaning becomes exactly opposite to that given above, and the word signifies *day-blindness*. The term ημεραλωψ is not defined by any Greek writer; we must therefore infer its meaning from that of its opposite, νυκταλωψ; but the latter term is differently defined by different Greek authors. For the examination of this point, we therefore refer the reader to the article *Nyctalopia*.

HE'MERALOPS. (*ops*, *opis*. m.; from ημερα, the day, and ωψ, the eye.) One who can see but in the day-time.

Hemeroca'llis. (From ημερα, day, and καλος, beautiful: so called because its flowers open in the day and shut at night.) The name of a genus of plants. Class, *Hexandria*; Order, *Monogynia*. The day-lily.

Hemerocallis fulva. *Lilium rubrum, purpureum*, and *croceum*. The tawny day-lily. The leaves are cooling, and the roots aperient; but they have fallen into disuse.

Hemicerau'nios. (From ημισυς, half, and κεραυνος, a thunder-bolt, because it was forked like a thunder-bolt.) A bandage for the back and breast.— *Galen*.

HEMICRA'NIA. (*a*, *æ*. f.; from ημισυς, half, and κρανιον, the head.) A pain that affects only one side of the head. It is generally nervous or hysterical, sometimes bilious; and, in both cases, sometimes comes at a regular period, like an ague. When it is accompanied by a strong pulsation, like that of a nail piercing the part, it is denominated *clavus*.

HEMIO'BOLON. Half an obolus, or the twelfth part of a drachm.

HEMIO'LION. According to Galen, this means twelve drachms. In another sense, it is the same as *sesquialtera*, the whole of a thing, and as much more; as *sesquiuncia*, an ounce and a half.

HEMIONI'TIS. (From ἡμιονος, a mule: so called because it is supposed to be, as a mule is, sterile.) See *Asplenium hemionitis.*

HEMIO'PSIA. (*a*, *æ.* f.; from ἡμισυς, half, and ωψ, an eye.) A defect of vision, in which a person sees only the half of an object.

HEMIPA'GIA. (From ἡμισυς, half, and παγιος fixed.) A fixed pain on one side of the head. See *Hemicrania.*

HEMIPLE'GIA. (*a*, *æ.* f.; from ἡμισυς, half, and πλησσω, to strike: so called because one side of the body is affected.) See *Paralysis.*

HEMI'PTERA. (From ἡμισυς, half, and πτερον, a wing.) An order of insects having the upper wings half membranous and half coriaceous.

HEMIRHO'MBION. (From ἡμισυς, half, and ρεμβω, to revolve. *Semirhombus.*) An old bandage, which extended half way round the part it was applied to.

HEMISPHERE. (*Hemisphera*, *æ.* f.; half a globe.) The two masses which form the upper part of the brain are called the hemispheres of the brain. See *Encephalos.*

HEMI'TOMON. (From ἡμισυς, half, and τεμνω, to cut.) An old bandage, which was cut halfway down.

HEMITRITÆ'US. (Ἡμιτριταιος, from ἡμισυς, half, and τριταιος, third, or tertian.) The Greek synonyme of *semitertian.* See *Ague.*

Hemlock. See *Conium maculatum.*

Hemlock, water. See *Cicuta virosa.*

Hemlock-dropwort. See *Œnanthe.*

Hemp. See *Cannabis sativa.*

Hemp, water. See *Eupatorium.*

Hemp-agrimony. See *Eupatorium.*

HEMP-SEED CALCULUS. Some varieties of the mulberry calculus have been so called.

Henbane. See *Hyoscyamus.*

HEN-BLINDNESS. Nyctalopia has been so called, because hens are affected with it.

Henna. See *Lawsonia inermis.*

HE'PAR. (*ar*, *atis.* n. Ἡπαρ, the liver.) See *Liver.*

HEPAR ANTIMONII. An oxy-sulphuret of antimony.

HEPAR MARTIALE. A compound of liver of sulphur and oxide of iron.

Hepar sulphuris. See *Sulphuretum.*

HEPAR SULPHURIS VOLATILIS. Boil's fuming liquor. The hydrosulphuret of ammonia.

HEPAR UTERINUM. The placenta.

HEPATA'LGIA. (*a*, *æ.* f.; from ἡπαρ, the liver, and αλγος, pain.) Pain in the liver.

HEPATIC. (*Hepaticus*; from ηπαρ, the liver.) 1. Belonging to the liver.

2. Applied to designate the liver colour. See *Colour.*

Hepatic air. See *Hydrogene, sulphuretted.*

HEPATIC ARTERY. *Arteria hepatica.* The artery which nourishes the substance of the liver. It arises from the cœliac, where it almost touches the point of the *lobulus Spigelii.* Its root is covered by the pancreas; it then turns a little forwards, and passes under the pylorus to the porta of the liver, and runs betwixt the biliary ducts and the vena portæ, where it divides into two large branches, one of which enters the right, and the other the left lobe of the liver. In this place it is enclosed, along with all the other vessels, in the capsule of Glisson.

HEPATIC DUCT. *Ductus hepaticus.* The trunk of the biliary pores. It runs from the sinus of the liver towards the duodenum, and is joined by the cystic duct, to form the ductus communis choledochus. See *Biliary duct.*

HEPATIC FLUX. A form of dysentery accompanied with copious discharge of bilious matter.

HEPATIC VEINS. *Venæ hepaticæ.* From the extremities of the vena portæ, and also from those of the hepatic artery, a number of veins arise, which are called *venæ hepaticæ*, and accompany the branches of the hepatic artery and vena portæ. The branches of the hepatic veins finally unite into two or three large trunks, which recede from the hepatic artery and vena portæ, and terminate in the vena cava ascendens, just below the diaphragm.

Hepatica fontana. See *Marchantia.*

HEPATICA HERBA. (So called because it was thought to be useful in diseases of the liver.) See *Marchantia.*

Hepatica jecoraria. See *Marchantia.*

Hepatica nobilis. See *Anemone.*

Hepatica stellata. See *Marchantia.*

Hepatica terrestris. See *Marchantia.*

Hepatica vulgaris. See *Marchantia.*

HEPATIRRHŒ'A. (*a*, *æ.* f.; from ἡπαρ, the liver, and ῥεω, to flow.) 1. A purging, with bilious evacuations.

2. A diarrhœa, in which portions of flesh, like liver, are voided.

HEPATISATION. (*Hepatisatio*, *onis.* f.; from ἡπαρ, the liver: so called from its appearing like liver.) The conversion of any texture into a substance resembling liver. The term is applied chiefly to the lungs. Hepatisation is generally divided into *red* and *yellow*; the former deriving its colour from the presence of blood, the latter from purulent infiltration. — See *Pneumonia.*

HEPATI'TIS. (*is*, *idis.* f.; from ἡπαρ, the liver.) *Inflammatio hepatis.* An inflammation of the liver. A disease attended with inflammatory fever; tension and pain of the right hypochondrium, often pungent, like that of a pleurisy, but more frequently dull or obtuse; a pain at the clavicle, and at the top of the shoulder of the right side; much uneasiness in lying down on the left side; difficulty of breathing; a dry cough, vomiting, and hiccough.

Besides the causes producing other inflammations, such as the application of cold, external injuries from contusions, blows, &c., this disease may be occasioned by certain passions of the mind, by violent exercise, by intense summer heats, by long-continued intermittent and remittent fevers, and by various solid concretions in the substance of the liver. In warm

climates this viscus is more apt to be affected with inflammation than perhaps any other part of the body, probably from the increased secretion of bile which takes place when the blood is thrown on the internal parts, by an exposure to cold; or from the bile becoming acrid, and thereby exciting an irritation in the part. Hepatitis has generally been considered of two kinds; the one *acute*, the other *chronic*.

The *acute* species of hepatitis comes on with a pain in the right hypochondrium, extending up to the clavicle and shoulder; which is much increased by pressing upon the part, and is accompanied with a cough, oppression of breathing, and difficulty of lying on the left side, together with nausea and sickness, and often with a vomiting of bilious matter. The urine is of a deep saffron colour, and small in quantity: there is loss of appetite, great thirst, and costiveness, with a strong, hard, and frequent pulse; and when the disease has continued for some days, the skin and eyes become tinged of a deep yellow. When the inflammation is in the cellular structure or substance of the liver, it is called, by some, *hepatitis parenchymatosa;* and when the gall-bladder, which is attached to this organ, is the seat of the inflammation, it has been called *hepatitis cystica*.

The *chronic* species is usually accompanied with a morbid complexion, loss of appetite and flesh, costiveness, indigestion, flatulency, pains in the stomach, a yellow tinge of the skin and eyes, clay-coloured stools, high-coloured urine, depositing a red sediment and ropy mucus; an obtuse pain in the region of the liver, extending to the shoulder, and not unfrequently with a considerable degree of asthma.

These symptoms are, however, often so mild and insignificant as to pass almost unnoticed; as large abscesses have been found in the liver upon dissection, which in the person's lifetime had created little or no inconvenience, and which we may presume to have been occasioned by some previous inflammation.

Hepatitis, like other inflammations, may end in resolution, suppuration, gangrene, or scirrhus; its termination in gangrene is a rare occurrence in temperate, but a very frequent one in hot, climates.

In the East and West Indies, and all hot climates, inflammation of the liver is a very fatal disease; but in the temperate parts of Europe, the disease is seldom attended with fatal consequences of an immediate nature.

When suppuration takes place, the patient mostly recovers, unless the strength has been greatly reduced by the remedial process, or the constitution has given way before. Then it often happens that a hectic fever is produced, and the patient sinks without any bursting of the abscess; but when the constitution is good, and the strength is yet to be trusted to, adhesions form between the part where the abscess lies and some neighbouring part, and the pus is discharged by the different outlets with which this part is connected, by coughing, vomiting, purging, or by the abscess breaking outwardly.

On dissection, the liver is often found much enlarged, and hard to the touch; its colour is more of a deep purple than what is natural, and its membranes are more or less affected by inflammation. Dissections, likewise, show that adhesions to the neighbouring parts often take place, and abscesses, containing a considerable quantity of pus, are often found in its substance.

The treatment of this disease is different, in the two forms which it assumes. That of the acute hepatitis only differs from that which is resorted to against all acute inflammation, in the particular way in which mercury is exhibited. As soon, therefore, as the disease is pathognomonically established, the lancet and purgatives are to be resorted to; and, in this climate, as boldly and as frequently as against inflammation of any equally important viscus. A sufficient quantity of blood is to be abstracted rapidly from an athletic, young, and good-constitutioned subject; and its repetition to be directed according to the effect, and the state of the pulse. The bowels are next to be cleared by five grains of the submuriate of mercury, followed by saline purgatives with senna, until the nature of the evacuations shows that it is not likely that any fæcal matter remains in the intestines in a solid form, and that the bile passes off freely. Much depends on attending to this circumstance, and guarding against a tardy movement, or lodgment in the sacculi of the colon. In the East Indies, where this disease is so frequent, and proves fatal to so many, the bowels are mostly loose, from the great secretion of an acrimonious bile; and it is found necessary to arrest in some degree the peristaltic movement of the bowels, by combining opium with the purgatives. In all cases where it becomes doubtful whether the lancet should be again resorted to, cupping and leeches are useful; after which, a large blister should be applied over the affected organ. As soon as the intestinal canal has been cleansed of all the crude fæcal matter, mercury should be administered in such a way as to produce, as soon as possible, its peculiar action on the gums and mouth. In very acute cases, and especially those which exist in the East, where a few days determine whether the patient is to live or die, this is attempted by rubbing mercurial ointment into the legs and thighs, and giving calomel and opium in large doses, and frequently: five grains of the former with half a grain of the latter, or five grains of the compound powder of ipecacuanha, every two, three, or four hours. In this country much smaller doses are given, because the disease does not proceed so rapidly; and James's antimonial powder is administered in the dose of five grains, with one of the submuriate of mercury, every four or six hours. The appearance of a soreness of the gums is always hailed as a precursor of a decline of the disease. In this climate, much good results from effecting and keeping up a perspiration; and, where the urgency of the inflammatory action is not very great, the period between the mercurial diaphoretics may be lengthened, and saline sudorifics given in the intervals. Hepatitis soon shows in what way it will terminate; and if no diminution of the symptoms is affected, death soon

takes place, from the violence of the inflammatory action, or from gangrene. A gradual mitigation of the force of the symptoms indicates its resolution. A shivering, with remission of febrile action, announces the formation of pus: an abscess then forms, and bursts either through the integuments, or into the stomach, colon, lungs, or kidney. As soon as this becomes known, the strength of the patient is no longer to be reduced: the strict antiphlogistic diet before adopted must yield to a more nourishing one, but not a stimulating one; and tonics, especially bitters, as calomba and gentian, or cascarilla, are to supply the place of the former medicines.

Chronic hepatitis requires the same treatment with the acute, but in miniature. General blood letting is only to be had recourse to when there is acute pain, and there is no reason why blood should not be abstracted; but cupping, and frequently applying leeches, are beneficial. Mercurial alteratives are especially serviceable; Plummer's pill, or the Pilula hydrargyri submuriatis composita of the London Pharmacopœia, or small doses of the blue pill, are to be administered regularly, so as to effect a perceptible action on the gums, and no more. This is to be kept up for a considerable time, unless no benefit results, and the bowels are to be kept open with mild aperients and bitters, such as are recommended against indigestion. The nitric acid was once very well thought of against the chronic hepatitis of hot climates: five drops of the pure nitric acid is to be mixed with three ounces of distilled water, sweetened, and taken three times a day. The nitro-muriatic acid foot-bath has been found beneficial, when used at the same time. Taraxacum was also once a favourite medicine against this disease. Dr. Baillie thought he had seen it decidedly useful. The extract and strong decoctions are given, and often in combination with bicarbonate of soda. The diet is to be nourishing, not heating. Those who are resident in hot climates should move into the European states, which often effects a cure without any medicine.

HEPATOCE'LE. (*e*, *es*. f.; from ἡπαρ, the liver, and κηλη, a tumour.) A hernia, caused by a portion of the liver protruding through the abdominal parietes.

Hepatogastric omentum. The lesser omentum, which passes from the liver to the stomach.

Hepato'rium. See *Eupatorium*.

Hepatotomia. (From ἡπαρ, the liver, and τεμνω, to cut.) Dissection of the liver.

Hephæ'stias. (From Ἡφαιστος, Vulcan, or fire.) A drying plaster of burnt tiles.

Hepi'alus. (From ηπιος, gentle.) A mild quotidian fever.

HEPTA'NDRIA. (*a*, *æ*. f.; from ἑπτα, seven, and ανηρ, a man, or husband.) The name of a class in the sexual system of plants, consisting of such hermaphrodite flowers as have seven stamens.

Heptapha'rmacum. (*um*, *i*. n.; from ἑπτα, seven, and φαρμακον, medicine.) A medicine composed of seven ingredients, the principal of which were cerusse, litharge, wax, &c.

Heptaphy'llum. (*um*, *i*. n.; from ἑπτα, seven, and φυλλον, a leaf: so named because the leaf has seven leaflets.) The tormentil; and, according to others, the alchemilla.

Heptaple'urum. (From ἑπτα, seven, and πλευρα, a rib: so named from its having seven ribs upon the leaf.) See *Plantago major*.

Heracle'a. (*a*, *æ*. f.; so called from its growing in abundance in Heraclea.) 1. Water horehound. See *Marrubium*.

2. The wild marjoram. See *Origanum vulgare*.

HERACLE'UM. (*um*, *i*. n.; from *Heraclea*, the name of several ancient cities, near some of which, the plant may have grown; or from Ἡρακλης, Hercules, the plant having been found or used by that hero.) The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Digynia*.

Heracleum gummiferum. This species was till lately supposed to yield the gum resin called *ammoniacum*, which, however, is now ascertained to be the produce of another plant. See *Dorema ammoniacum*.

Heracleum spondylium. *Branca ursina Germanica*. *Spondylium*. Cow-parsnip. All-heal. *Heracleum—foliolis pinnatifidis, lævibus; floribus uniformibus* of Linnæus. In Siberia it grows extremely high, and appears to have virtues in the cure of dysentery which the plants of this country do not possess.

Heracleus morbus. Epilepsy has been so called either on account of the strength of the disease, or because Hercules was subject to it.

Herb-bennet. See *Geum urbanum*.

Herb-of-grace. See *Gratiola*.

Herb-mastich. See *Thymus mastichina*.

Herb-trinity. See *Anemone hepatica*.

HE'RBA. (*a*, *æ*. f.) A herb. A plant is properly so called which bears its flower and fruit once only, and then with its root wholly perishes. There are two kinds: *annuals*, which perish the same year; and *biennials*, which have their leaves the first year, and their flowers and fruit the second, and then die away.

2. By the term *herba*, Linnæus denominates that portion of every vegetable which arises from the root, and is terminated by the fructification.

Herba alexandrina. See *Smyrnium*.

Herba benedicta. See *Geum*.

Herba britannica. See *Rumex*.

Herba felis. See *Nepeta*.

Herba julia. Milfoil.

Herba melancholifuga. See *Fumaria*.

Herba militaris. See *Achillea*.

Herba paris. See *Paris*.

Herba patri. See *Primula veris*, and *Crithmum maritimum*.

Herba regia. See *Ocymum*.

Herba sacra. See *Verbena trifoliata*.

Herba sanctæ barbaræ. See *Erysimum*.

Herba trinitatis. See *Anemone hepatica*.

HERBA'CEUS. Herbaceous. Plants are so considered which have succulent stems or stalks, and die down to the root every year.

HERBA'RIUM. *Hortus siccus*. A collection of dried specimens of plants.

Hercules's all-heal. See *Laserpitium chironium*.

HE'RCULES BO'VII. A once famed emetic and cathartic compound, prepared from gold and mercury, dissolved in a distillation of copperas, nitre, and sea-salt.

HERE'DITARY DISEASES. *Morbi hereditarii.* Diseases which are propagated from parents to their offspring, as gout, scrofula, mania, &c.

HERMA'PHRODITE. (*Hermaphroditus;* from Ἑρμης, Mercury, and Αφροδιτη, Venus: *i. e.* partaking of both sexes.) A term applied adjectively and substantively to an animal possessed of the generative organs, and reproductive power of both sexes. The true hermaphrodite of the ancients was, the man with male organs of generation, and the female stature of body; that is, narrow chest and large pelvis: or the woman with female organs of generation, and the male stature of body, broad chest and narrow pelvis. The term is now loosely applied to any *lusus naturæ*, wherein the parts of generation appear to be a mixture of both sexes. There is no such thing as a true human hermaphrodite; the individuals supposed to be so, are always, either males with some defect of the organs of generation, giving them a resemblance to those of the female, or *vice versâ*.

2. In *Botany*, an hermaphrodite flower is one which contains both the male and female organs, for the production of the fruit, within the same calyx and petals.

HERME'TIC. (*Hermeticus;* from Ἑρμης, Mercury, who was the father of chemistry.) Appertaining to chemistry, of which art Hermes is said to have been the founder.

HERMETIC MEDICINE. Medicine as practised by the chemical sect, as opposed to the Galenical medicine.

HERMETIC SEAL. The closing the end of a glass vessel while in a state of fusion, according to the usage of chemists.

Hermodactyl. See *Hermodactylus.*

HERMODA'CTYLUS. (Ἑρμοδακτυλος. This word has been derived from Ἑρμης, Mercury, and δακτυλος, a finger.) Its real derivation is, however, probably from *Hermus*, a river in Asia, upon whose banks it grows, and δακτυλος, a date, which it resembles. *Hermodactyl. Anima articulorum.* A root much celebrated among the ancients for the cure of gout. There has been much dispute as to the plant to which this root belonged: according to some it was the *colchicum illyricum;* according to others, the *iris tuberosa;* and according to others the *colchicum autumnale.* From its antiarthritic virtues, it is highly probable that it was some species of colchicum.

HERMO'LAOS. Ἑρμολαος. The name of an astringent collyrium: two kinds of it, a greater and a less, are mentioned by Aetius.

HE'RNIA. (*a, æ.* f.; from ἑρνος, a branch: from its protruding out of its place.) *Ecnexis. Ramex.* A rupture. Surgeons understand by the term *hernia*, a tumour formed by the protrusion of some of the viscera of the abdomen out of that cavity into a kind of sac, composed of the portion of peritonæum, which is pushed before them. However, there are certainly some cases which will not be comprehended in this definition; either because the parts are not protruded at all, or have no hernial sac. The places in which these swellings most frequently make their appearance, are the groin, the navel, the labia pudendi, and the upper and fore part of the thigh; they do also occur at every point of the anterior part of the abdomen; and there are several less common instances, in which hernial tumours present themselves at the foramen ovale, in the perinæum, in the vagina, at the ischiatic notch, &c. The parts which, by being thrust forth from the cavity in which they ought naturally to remain, mostly produce hernia, are either a portion of the omentum, or a part of the intestinal canal, or both together. But the stomach, the liver, the spleen, uterus, ovaries, bladders, &c. have been known to form the contents of some hernial tumours. From these two circumstances of situations and contents, are derived all the different appellations by which herniæ are distinguished. If a portion of intestine only forms the contents of the tumour, it is called *enterocele;* if a piece of omentum only, *epiplocele;* and if both intestine and omentum contribute to the formation of a tumour, it is called *entero-epiplocele.* When the contents of a hernia are protruded at the abdominal ring, but only pass as low as the groin, or labium pudendi, the case receives the name of *bubonocele*, or *inguinal hernia;* when the parts descend into the scrotum, it is called an *oscheocele*, or *scrotal hernia.* The *crural*, or *femoral hernia*, is the name given to that which takes place below Poupart's ligament. When the bowels protrude at the navel, the case is named an *exomphalos*, or *umbilical hernia;* and *ventral* is the epithet given to the swelling, when it occurs at any other promiscuous part of the front of the abdomen. The *congenital rupture* is a very particular case, in which the protruded viscera are not covered with a common hernial sac of peritonæum, but are lodged in the cavity of the tunica vaginalis, in contact with the testicle; and, as must be obvious, it is not named, like hernia in general, from its situation or contents, but from the circumstance of its existing from the time of birth.

When the hernial contents lie quietly in the sac, and admit of being readily put back into the abdomen, it is termed a *reducible hernia;* and when they suffer no constriction, yet cannot be put back, owing to adhesions, or their large size in relation to the aperture through which they have to pass, the hernia is termed *irreducible.* An *incarcerated* or *strangulated* hernia, signifies one which not only cannot be reduced, but suffers constriction; so that, if a piece of intestine be protruded, the pressure to which it is subjected stops the passage of its contents onward towards the anus, makes the bowel inflame, and brings on a train of most alarming and often fatal consequences.

The general symptoms of a hernia which is reducible, and free from strangulation, are — an indolent tumour at some point of the parietes of the abdomen; most frequently descending out of the abdominal ring, or from just below Poupart's ligament, or else out of the navel; but occasionally from various other situations.

The swelling mostly originates suddenly, except in the circumstances above related; and it is subject to a change of size, being smaller when the patient lies down upon his back, and larger when he stands up, or draws in his breath. The tumour frequently diminishes when pressed, and grows large again when the pressure is removed. Its size and tension often increase after a meal, or when the patient is flatulent. Patients with hernia are apt to be troubled with colic, constipation, and vomiting, in consequence of the unnatural situation of the bowels. Very often, however, the functions of the viscera seem to suffer little or no interruption.

If the case be an *enterocele*, and the portion of the intestine be small, the tumour is small in proportion; but though small, yet, if the gut be distended with wind, inflamed, or have any degree of stricture made on it, it will be tense, resist the impression of the finger, and give pain upon being handled. On the contrary, if there be no stricture, and the intestine suffers no degree of inflammation, let the prolapsed piece be of what length it may, and the tumour of whatever size, yet the tension will be little, and no pain will attend the handling it: upon the patient's coughing, it will feel as if it was blown into; and, in general, it will be found very easily returnable. A gurgling noise is often made when the bowel is ascending.

If the hernia be an *epiplocele*, or one of the omental kind, the tumour has a more flabby and a more unequal feel; it is in general perfectly indolent, is more compressible, and (if in the scrotum) is more oblong and less round than the swelling occasioned in the same situation by an intestinal hernia; and, if the quantity be large, and the patient an adult, it is, in some measure, distinguishable by its greater weight.

If the case be an *entero-epiplocele*, that is, one consisting of both intestine and omentum, the characteristic marks will be less clear than in either of the simple cases; but the disease may easily be distinguished from every other one, by any body in the habit of making the examination.

Hernia aquosa. See *Hydrocele.*

Hernia carnosa. See *Sarcocele.*

Hernia cerebri. *Encephalocele.* This term has been applied to several different cases. One case is, where there is a congenital defect in the ossification of some part of the cranium; and the subjacent portion of the brain, projecting through the aperture, forms a tumour under the integuments. Another case is, where there is a congenital deficiency of a large portion, both of the cranium and integuments, and the greater part of the brain protrudes; this is a monstrosity which is incompatible with the continuance of life for a longer period than a few days. A third case is, where a tumour connected with the brain rises through the aperture made in the operation of trephining. Concerning the nature of the last-mentioned case, there is difference of opinion among surgical writers; and indeed the tumour seems to be of a different character in different cases, sometimes consisting of the substance of the brain, at others, of a mass of congealed blood, and at others, again, of a fungous mass, which has been supposed to spring from the cerebral substance; it is very likely, however, that fungous tumours of the dura mater may frequently have passed under the name of hernia cerebri.

Hernia congenita. This species of hernia consists in the adhesion of a protruded portion of intestine or omentum to the testicle after its descent into the scrotum. This adhesion takes place while the testicle is yet in the abdomen. Upon its leaving the abdomen, it draws the adhering intestine, or omentum, along with it into the scrotum, where it forms the hernia congenita.

From the term *congenital*, we might suppose that this hernia always existed at the time of birth. The protrusion, however, seldom occurs till after this period, on the operation of the usual exciting causes of hernia in general. The congenital hernia does not usually happen till some months after birth; in some instances not till a later period. Hey relates a case, in which a hernia congenita was first formed in a young man, aged sixteen, whose right testis had, a little while before the attack of the disease, descended into the scrotum. It seems probable that, in cases of hernia congenita, which actually take place when the testicle descends into the scrotum before birth, the event may commonly be referred, as observed above, to the testicle having contracted an adhesion to a piece of intestine, or of the omentum, in its passage to the ring. Wrisberg found one testicle which had not passed the ring, adhering, by means of a few slender filaments, to the omentum, just above this aperture, in an infant that died a few days after birth.

Excepting the impossibility of feeling the testicle in hernia congenita, as we can in most cases of bubonocele, (which criterion Mr. Samuel Cooper, in his Surgical Dictionary, observes Mr. Pott should have mentioned,) the following account is very excellent: — "The appearance of a hernia, in very early infancy, will always make it probable that it is of this kind; but in an adult, there is no reason for supposing his rupture to be of this sort, but his having been afflicted with it from his infancy; there is no external mark, or character, whereby it can be certainly distinguished from the one contained in a common hernial sac; neither would it be of any material use in practice, if there was."

Hernia cruralis. Femoral hernia. The parts composing this kind of hernia are always protruded under Poupart's ligament, and the swelling is situated towards the inner part of the bend of the thigh. The rupture descends on the side of the femoral artery and vein, between these vessels and the os pubis. Females are particularly subject to this kind of rupture, in consequence of the great breadth of their pelvis, while in them the inguinal hernia is rare. It has been computed, that nineteen out of twenty married women, afflicted with hernia, have this kind; but that not one out of an hundred unmarried females, or out of the same

number of men, have this form of the disease. The situation of the tumour makes it liable to be mistaken for an enlarged inguinal gland; and many fatal events are recorded to have happened from the surgeon's ignorance of the existence of the disease. A gland can only become enlarged by the gradual effects of inflammation; the swelling of a crural hernia comes on in a momentary and sudden manner, and, when strangulated, occasions the train of symptoms described in the account of the hernia incarcerata, which symptoms an enlarged gland could never occasion. Such circumstances seem to be sufficiently discriminative: though the feel of the two kinds of swelling is often not in itself enough to make the surgeon decided in his opinion. A femoral hernia may be mistaken for a bubonocele, when the expanded part of the swelling lies over Poupart's ligament. As the taxis and operation for the first case ought to be done differently from those of the latter, the error may lead to very bad consequences. The femoral hernia, however, may always be discriminated, by the neck of the tumour having Poupart's ligament above it. In the bubonocele, the angle of the pubes is behind and below this part of the sac; but in the femoral hernia, it is on the same horizontal level, a little on the inside of it.

Till of late years, the stricture, in cases of femoral hernia, was always supposed to be produced by the lower border of the external oblique muscle, or, as it is termed, Poupart's ligament. A total change of surgical opinion on this subject has, however, latterly taken place, in consequence of the accurate observations first made in 1793, by Gimbernat, surgeon to the king of Spain. In the crural hernia (says he) the aperture through which the parts issue is not formed by two bands (as in the inguinal hernia), but it is a foramen, almost round, proceeding from the internal margin of the crural arch (Poupart's ligament), near its insertion into the branch of the os pubis, between the bone and the iliac vein; so that, in this hernia, the branch of the os pubis is situated more internally than the intestine, and a little behind; the vein externally, and behind; and the internal border of the arch before. Now, it is this border which always forms the strangulation.

Hernia femoralis. See *Hernia cruralis.*

Hernia flatulenta. *Pneumatocele.* Windy rupture; a rupture, in the contents of which there is much gurgling from an accumulation of gas.

Hernia guttalis. Bronchocele.

Hernia gutturis. Bronchocele.

Hernia humoralis. See *Orchitis.*

Hernia incarcerata. Incarcerated hernia. Strangulated hernia, or a hernia with stricture. The symptoms are a swelling in the groin, &c. resisting the impression of the fingers. If the hernia be of the intestinal kind, it is generally painful to the touch, and the pain is increased by coughing, sneezing, or standing upright. These are the very first symptoms, and if they are not relieved, are soon followed by others; viz. a sickness at the stomach, a frequent retching, or inclination to vomit, a stoppage of all discharge per anum, attended with frequent hard pulse, and some degree of fever. These are the first symptoms; and if they are not appeased by the return of the intestine, that is, if the attempts made for this purpose do not succeed, the sickness becomes more troublesome, the vomiting more frequent, the pain more intense, the tension of the belly greater, the fever higher, and a general restlessness comes on which is very terrible to bear. When this is the state of the patient, no time is to be lost; a very little delay is now of the utmost consequence; and if the one single remedy which the disease is now capable of be not administered immediately, it will generally baffle every other attempt. This remedy is the operation whereby the parts engaged in the stricture may be set free. If this be not now performed, the vomiting is soon exchanged for a convulsive hiccough, and a frequent gulping up of bilious matter: the tension of the belly, the restlessness and fever, having been considerably increased for a few hours, the patient suddenly becomes perfectly easy, the belly subsides, the pulse, from having been hard, full, and frequent, becomes low, languid, and generally interrupted; and the skin, especially that of the limbs, cold and moist; the eyes have now a languor and glassiness, a lack-lustre not easy to be described: the tumour of the part disappears, and the skin covering it sometimes changes its natural colour for a livid hue; but whether it keeps or loses its colour, it has an emphysematous feel, a crepitus to the touch, which will easily be conceived by all who have attended to it, but is not easy to convey an idea of by words. This crepitus is the too sure indicator of gangrenous mischief within. In this state, the gut either goes up spontaneously, or is returned with the smallest degree of pressure; a discharge is made by stool, and the patient is generally much pleased at the ease he finds: but this pleasure is of short duration; for the hiccough and the cold sweats, continuing and increasing, with the addition of spasmodic rigors and subsultus tendinum, the tragedy soon finishes.

Hernia inguinalis. *Bubonocele.* Inguinal hernia. The *hernia inguinalis* is so called because it appears in both sexes at the groin. It is one of the divisions of hernia, and includes all those herniæ in which the parts displaced pass out of the abdomen through the ring, that is, the arch formed by the aponeurosis of the musculus obliquus externus in the groin, for the passage of the spermatic vessels in men, and the round ligament in women. The parts displaced that form the hernia, the part into which they fall, the manner of the hernia being produced, and the time it has continued, occasion great differences in this disorder. There are three different parts that may produce a hernia in the groin, viz. one or more of the intestines, the epiploon, and the bladder. That which is formed by one or more of the intestines, was called by the ancients *enterocele.* The intestine which most frequently produces the hernia, is the *ilium*, because, being placed in the iliac region, it is nearer the groin than the rest: but notwithstanding the situation of the other intestines, which seems not to allow of their coming

near the groin, we often find the jejunum, and frequently also a portion of the colon and cæcum, included in the hernia. It must be remembered that the mesentery and mesocolon are membranous substances, capable of extension, which, by little and little, are sometimes so far stretched by the weight of the intestines, as to escape with the ilium in this species of hernia. The hernia made by the epiploon is called *epiplocele;* as that caused by the epiploon and any of the intestines together is called *entero-epiplocele*. The hernia of the bladder is called *cystocele*. Hernia of the bladder is uncommon, and has seldom been known to happen but in conjunction with some of the other viscera. When the parts, having passed through the abdominal rings, descend no lower than the groin, it is called an incomplete hernia; when they fall into the scrotum in men, or into the *labia pudendi* in women, it is then termed complete.

The marks of discrimination between some other diseases and inguinal hernia are these: —

The disorder in which a mistake may possibly be made, are the circocele, bubo, hydrocele, and hernia humoralis, or inflamed testicle.

For an account of the manner of distinguishing circocele from a bubonocele, see *Circocele*.

The circumscribed incompressible hardness, the situation of the tumour, and its being free from all connection with the spermatic process, will sufficiently point out its being a bubo, at least while it is in a recent state; and when it is in any degree suppurated, he must have a very small share of the *tactus eruditus* who cannot feel the difference between matter, and either a piece of intestine or omentum.

The perfect equality of the whole tumour, the freedom and smallness of the spermatic process above it, the power of feeling the spermatic vessels, and the vas deferens in that process; its being void of pain upon being handled, the fluctuation of the water, the gradual formation of the swelling, its having begun below and proceeded upwards, its not being affected by any posture or action of the patient, nor increased by his coughing or sneezing, together with the absolute impossibility of feeling the testicle at the bottom of the scrotum, will always, to an intelligent person, prove the disease to be hydrocele.

Pott, however, allows that there are some exceptions in which the testicle cannot be felt at the bottom of the scrotum, in cases of hernia. In recent bubonoceles, while the hernial sac is thin, has not been long, or very much distended, and the scrotum still preserves a regularity of figure, the testicle may almost always be easily felt at the inferior and posterior part of the tumour. But in old ruptures, which have been long down, in which the quantity of contents is large, the sac considerably thickened, and the scrotum of an irregular figure, the testicle frequently cannot be felt; neither is it in general easily felt in the *congenital hernia*, for obvious reasons.

In the *hernia humoralis*, the pain in the testicle, its enlargement, the hardened state of the epididymis, and the exemption of the spermatic cord from all unnatural fulness, are such marks as cannot easily be mistaken; not to mention the generally preceding gonorrhœa. But if any doubt still remains of the true nature of the disease, the progress of it from above downwards, its different state and size in different postures, particularly lying and standing, together with its descent and ascent, will, if duly attended to, put it out of all doubt that the tumour is a *true hernia*.

When an inguinal hernia does not descend through the abdominal ring, but only into the canal for the spermatic cord, it is covered by the aponeurosis of the external oblique muscle, and the swelling is small and undefined.

Now and then, the testicle does not descend into the scrotum till a late period. The first appearance of this body at the ring, in order to get into its natural situation, might be mistaken for that of a hernia, were the surgeon not to pay attention to the absence of the testicle from the scrotum, and the peculiar sensation occasioned by pressing the swelling.

Hernia intestinalis. *Enterocele.* A rupture caused by the protrusion of a portion of the intestine. See *Hernia inguinalis.*

Hernia ischiatica. A rupture at the ischiatic notch. This is very rare. A case, however, which was strangulated, and undiscovered till after death, is related in Sir A. Cooper's second part of his work on hernia. The disease happened in a young man aged 27. On opening the abdomen, the ilium was found to have descended on the right side of the rectum into the pelvis; and a fold of it was protruded into a small sac, which passed out of the pelvis at the ischiatic notch. The intestine was adherent to the sac at two points: the strangulated part, and about three inches on each side, were very black. The intestines, towards the stomach, were very much distended with air, and here and there had a livid spot on them. A dark spot was even found on the stomach itself, just above the pylorus. The colon was exceedingly contracted, as far as its sigmoid flexure. A small orifice was found in the side of the pelvis, in front of, but a little above the sciatic nerve, and on the fore part of the pyriformis muscle. The sac lay under the gluteus maximus muscle, and its orifice was before the internal iliac artery, below the obturator artery, but above the vein.

Hernia lachrymalis. A swelling of the lachrymal sac from over distension.

Hernia mesenterica. Mesenteric hernia. If one of the layers of the mesentery be torn by a blow, while the other remains in its natural state, the intestines may insinuate themselves into the aperture and form a kind of hernia. The same consequences may result from a natural deficiency in one of these layers. Sir A. Cooper relates a case in which all the small intestines, except the duodenum, were thus circumstanced. The symptoms during life were unknown.

Hernia mesocolica. Mesocolic hernia. So named by Sir A. Cooper, when the bowels glide between the layers of the mesocolon. Every surgeon should be aware that the intestines may

be strangulated from the following causes: — 1. Apertures in the omentum, mesentery, or mesocolon, through which the intestine protrudes. 2. Adhesions, leaving an aperture, in which a piece of intestine becomes confined. 3. Membranous bands at the mouths of hernial sacs, which, becoming elongated by the frequent protrusion and return of the viscera, surround the intestine, so as to strangulate it within the abdomen when returned from the sac.

Hernia omentalis. *Epiplocele.* An omental rupture; or a protrusion of the omentum through any of the apertures of the abdomen. Sometimes, according to Sharpe, so large a quantity of the omentum hath fallen into the scrotum, that its weight, drawing the stomach and bowels downwards, hath excited vomiting, inflammation, and symptoms similar to those of the incarcerated hernia.

Hernia oschealis. A scrotal hernia.

Hernia perinealis. Perineal hernia. In men, the parts protrude between the bladder and rectum; in women, between the rectum and vagina. The hernia does not project so as to form an external tumour; and, in men, its existence can only be distinguished by examining from the rectum. In women, it may be detected both from this part and the vagina.

Hernia phrenica. Diaphragmatic, or phrenic hernia. The abdominal viscera are occasionally protruded through the diaphragm, either through some of the natural apertures in this muscle, or deficiencies, or wounds and lacerations in it. The second kind of case is the most frequent. Morgagni furnishes an instance of the first. Two cases related by Dr. Macauley, and two others published by Sir A. Cooper, are instances of the second sort. Another case has been lately recorded by the latter gentleman affording an example of the third kind. Hildanus, Paré, Petit, Schenck, &c. also mention cases of phrenic hernia.

Hernia pudendalis. Pudendal hernia. This is the name assigned by Sir A. Cooper to that which descends between the vagina and ramus ischii, and forms an oblong tumour in the labium, traceable within the pelvis, as far as the os uteri. Sir A. Cooper thinks this case has sometimes been mistaken for a hernia at the foramen ovale.

Hernia scrotalis. *Hernia oschealis. Oscheocele.* Paracelsus calls it *Crepatura.* When the omentum, the intestine, or both, descend into the scrotum, it has these appellations; when the omentum only, it is called *epiplocele.* It is styled a perfect rupture, in contradistinction to a bubonocele, which is the same disorder; but the descent is not so great. The hernia scrotalis is distinguished into the true and false: in the former, the omentum, or intestine, or both, fall into the scrotum; in the latter, an inflammation, or a fluid, causes a tumour in this part, as in hernia humoralis, or hydrocele. Sometimes sebaceous matter is collected in the scrotum; and this hernia is called *steatocele.*

Hernia thyroidealis. *Hernia foraminis ovalis.* Thyroideal hernia. In the anterior and upper part of the obturator ligament there is an opening, through which the obturator artery, vein, and nerve proceed, and through which, occasionally, a piece of omentum, or intestine, is protruded, covered with a part of the peritonæum, which constitutes the hernial sac.

Hernia umbilicalis. Umbilical rupture; which has received, also, the following names: *Exomphalos, Epiploomphalion, Omphalocele,* and *Pneumatomphalos.* The umbilical rupture is so called from its situation, and has, like other herniæ, for its general contents, a portion of intestine, or omentum, or both. In old umbilical ruptures, the quantity of omentum is sometimes very great. Mr. Ranby says, that he found two ells and a half of intestine in one of these, with about a third part of the stomach, all adhering together. Gay and Nourse found the liver in the sac of an umbilical hernia; and Bohnius says that he did also. But whatever are the contents, they are originally contained in the sac formed by the protrusion of the peritonæum.

In recent and small ruptures, this sac is very visible; but in old and large ones it is broken through, at the knot of the navel, by the pressure and weight of the contents, and is not always to be distinguished; which is the reason why it has, by some, been doubted whether this kind of rupture has a hernial sac or not.

Infants are very subject to this disease, in a small degree, from the separation of the funiculus; but, in general, they either get rid of it as they gather strength, or are easily cured by wearing a proper bandage. It is of still more consequence to get this disorder cured in females than in males; that its return, when they are become adult and pregnant, may be prevented as much as possible; for at this time it often happens from the too great distension of the belly, or from unguarded motion, when the parts are upon the stretch.

Dr. Hamilton has met with about two cases annually, for the space of seventeen years, of umbilical hernia, which strictly deserve the name of *congenital* umbilical hernia. The funis ends in a sort of bag, containing some of the viscera, which pass out of the abdomen through an aperture in the situation of the navel. The swelling is not covered with skin, so that the contents of the hernia can be seen through the then distended covering of the cord. The disease is owing to a preternatural deficiency in the abdominal muscles, and the hope of cure must be regulated by the size of the malformation and quantity of viscera protruded.

Hernia uteri. *Hysterocele.* Hernia of the uterus. Instances have occurred of the uterus being thrust through the rings of the muscles; but this is scarcely to be discovered, unless in a pregnant state. It may be occasioned by violent muscular efforts, by blows on the abdomen at the time of gestation, and also by wounds and abscesses of the abdomen, which permit the uterus to dilate the part. Ruysch relates the case of a woman, who becoming pregnant, after an ulcer had been healed in the lower part of the abdomen, the tumid uterus descended into

a dilated sac of the peritonæum in that weakened part, till it hung, with the included fœtus, at her knees. Yet, when her full time was come, the midwife reduced this wonderful hernia, and, in a natural way, she was safely delivered of a son.

Hernia vaginalis. *Elytrocele. Colpocele.* Vaginal hernia. A tumour occurs within the os externum of the vagina. It is elastic, but not painful. When compressed, it readily recedes, but is reproduced by coughing, or even without this, when the pressure is removed. The inconveniences produced are an inability to undergo much exercise or exertion; for every effort of this sort brings on a sense of bearing down. The vaginal hernia protrudes in the space left between the uterus and rectum. This space is bounded below by the peritonæum, which membrane is forced downwards, towards the perinæum; but, being unable to protrude further in that direction, is pushed towards the back part of the vagina. These cases, probably, are always intestinal. Some herniæ protrude at the anterior part of the vagina.

Hernia varicosa. See *Circocele.*

Hernia veneris. *Testiculus venereus.* An old name for a swelled testicle from suppressed gonorrhœa.

Hernia ventosa. See *Pneumatocele.*

Hernia ventralis. A hernia may appear at almost any point of the anterior part of the belly, but is most frequently found between the recti muscles. The portion of intestine, &c. is always contained in a sac made by the protrusion of the peritonæum. Sir A. Cooper imputes its causes to dilatation from congenital deficiencies, lacerations, and wounds of the abdominal muscles, or their tendons. In small ventral herniæ, a second fascia is found beneath the superficial one; but in large ones, the latter is the only one covering the sac.

Hernia ventriculi. *Gastrocele.* A ventral rupture, caused by the stomach protruding through some part of the abdominal parietes. It rarely occurs but at or near the navel.

Hernia vesicalis. *Hernia cystica; Cystocele.* The urinary bladder is liable to be thrust forth from its proper situation, either through the opening in the oblique muscle, like the inguinal hernia, or under Poupart's ligament, in the same manner as the femoral.

This is not a very frequent species of hernia, but does happen, and has as plain and determined a character as any other.

HERNIA'RIA. (*a, æ.* f.; from *hernia*, a rupture: so called from its supposed efficacy in curing ruptures.) The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Digynia.* Rupture-wort.

Herniaria glabra. The systematic name of the rupture-wort. *Herniaria.* This plant, though formerly esteemed as efficacious in the cure of hernias, appears to be destitute, not only of such virtues, but of any other. It has no smell nor taste.

HE'RPES. (*es, is.* m.; ἕρπης; from ἕρπω, to creep: because it spreads and creeps about the skin.) Tetter. A cutaneous disease, known by an assemblage of numerous little vesicles, in clusters, itching very much, and difficult to heal, but terminating in furfuraceous scales. The eruption is preceded, when it is extensive, by considerable constitutional disorder, and is accompanied by a sensation of heat and tingling, sometimes by severe deep-seated pain, in the parts affected. The lymph of the vesicles, which is at first clear and colourless, becomes gradually milky and opake, and ultimately concretes into scabs: but, in some cases, a copious discharge of it takes place, and tedious ulcerations ensue. The disorder is not contagious in any of its forms.

It has been principally confounded with erysipelas, on the one hand, and with eczema, impetigo, and other slowly spreading eruptions, on the other. From erysipelas it may be distinguished by the numerous, small, clustering vesicles, by the natural condition of the surface in the interstices between the clusters, and by the absence of redness and tumefaction before the vesicles appear: and from the chronic eruptions just alluded to, by the purely vesicular form of the cuticular elevations in the commencement, by the regularity of their progress, maturation, and scabbing, and by the limitation of their duration, in general, to a certain number of days.

The various appearances of herpes may be comprehended under the six following heads:

1. *Herpes phlyctænodes.* This species of the eruption is commonly preceded by a slight febrile attack for two or three days. The small transparent vesicles then appear, in irregular clusters, sometimes containing colourless, and sometimes a brownish, lymph; and, for two or three days more, other clusters successively arise, near the former. The eruption has no certain seat: sometimes it commences on the cheeks or forehead, and sometimes on one of the extremities; and occasionally it begins on the neck and breast, and gradually extends over the trunk to the lower extremities, new clusters successively appearing for nearly the space of a week. The included lymph sometimes becomes milky or opake in the course of ten or twelve hours; and, about the fourth day, the inflammation round the vesicles assumes a duller red hue, while the vesicles themselves break, and discharge their fluid, or begin to dry and flatten, and dark or yellowish scabs concrete upon them. These fall off about the eighth or tenth day, leaving a reddened and irritable surface, which slowly regains its healthy appearance. As the successive clusters go through a similar course, the termination of the whole is not complete before the thirteenth or fourteenth day.

The disorder of the constitution is not immediately relieved by the appearance of the eruption, but ceases as the latter proceeds. The heat, itching, and tingling of the skin, which accompany the patches as they successively rise, are sometimes productive of much restlessness and uneasiness, being aggravated especially by external heat, and by the warmth of the bed.

The predisposing and exciting causes are equally obscure. The eruption sometimes occurs in a miliary form, and spreads mo-

extensively over the greater portion of the surface of the body, in young and robust people, who generally refer its origin to cold. But it is liable to appear, in its more partial forms, in those persons who are subject to headaches and other local pains, which are probably connected with derangements of the chylopoietic organs.

The same treatment is requisite for this as for the following species.

2. *Herpes zoster.* This form of the eruption, which is sufficiently known to have obtained a popular appellation, the *shingles*, is very uniform in its appearances, following a course similar to that of small-pox, and the other exanthematic fevers. It is usually preceded, for two or three days, by languor and loss of appetite, rigours, headach, sickness, and a frequent pulse, together with a scalding heat, and tingling in the skin, and shooting pains through the chest and epigastrium. Sometimes, however, the precursory febrile symptoms are slight, and scarcely noticed, and the attention of the patient is first attracted by a sense of heat, itching, and tingling in some part of the trunk, where he finds several red patches, of an irregular form, at a little distance from each other, upon each of which numerous small elevations appear, clustered together. These, if examined minutely, are found to be distinctly vesicular; and, in the course of twenty-four hours, they enlarge to the size of small pearls, and are perfectly transparent, being filled with a limpid fluid. The clusters are of various diameter, from one to two, or even three inches, and are surrounded by a narrow red margin, in consequence of the extension of the inflamed base a little beyond the congregated vesicles. During three or four days, other clusters continue to arise in succession, and with considerable regularity; that is, nearly in a line with the first, extending always towards the spine, at one extremity, and towards the sternum, or linea alba of the abdomen, at the other, most commonly round the waist, like half a sash, but sometimes like a sword-belt, across the shoulder.

While the new clusters are appearing, the vesicles of the first begin to lose their transparency, and on the fourth day acquire a milky or yellowish hue, which is soon followed by a bluish, or livid colour of the bases of the vesicles, and of the contained fluid. They now become somewhat confluent, and flatten or subside, so that the outlines of many of them are nearly obliterated. About this time they are often broken, and, for three or four days, discharge a small quantity of a serous fluid, which at length concretes into thin dark scabs, at first lying loosely over the contained matter, but soon becoming harder, and adhering more firmly, until they fall off about the twelfth or fourteenth day. The surface of the skin is left in a red and tender state; and, where the ulceration and discharge have been considerable, numerous cicatrices or pits are left.

As all the clusters go through a similar series of changes, those which appeared latest arrive at their termination several days later than the first; hence the disease is sometimes protracted to twenty, or even twenty-four days, before the crusts exfoliate.

The febrile symptoms commonly subside when the eruption is completed; but sometimes they continue during the whole course of the disease, probably from the incessant irritation of the itching and smarting connected with it. In many instances, the most distressing part of the complaint is an intense darting pain, not superficial, but deep-seated in the chest, which continues to the latter stages of the disease, and is not easily allayed by anodynes.

Although the *shingles* commonly follow the regular course of fever, eruption, maturation, and decline, within a limited period, like the eruptive fevers, or exanthemata of the nosologists, yet the disorder is not, like the latter, contagious, and may occur more than once in the same individual. The disease, on the whole, is in most cases very slight; and seldom exhibits any untoward symptom, or is followed by much debility: in the majority of cases, it does not confine the patients to the house.

The causes of the *shingles* are not always obvious. Young persons, from the age of twelve to twenty-five, are most frequently the subjects of the disease, although the aged are not altogether exempt from its attacks, and suffer severely from the pains which accompany it. It is most frequent in the summer and autumn, and seems occasionally to arise from exposure to cold, after violent exercise. Sometimes it has appeared critical, when supervening to bowel complaints, or to the chronic pains of the chest remaining after acute pulmonary affections. Like erysipelas, it has been ascribed, by some authors, to paroxysms of anger.

It is unnecessary to speak of the treatment of a disorder, the course of which scarcely requires to be regulated, and cannot be shortened, by medicine. Gentle laxatives and diaphoretics, with occasional anodynes, when the severe deep-seated pains occur, and a light diet, seem to comprise every thing that is requisite in the cure.

In general, no external application to the clustered vesicles is necessary: but, when they are abraded by the friction of the clothes, a glutinous discharge takes place, which occasions the linen to adhere to the affected parts, producing some irritation: under these circumstances, a little simple ointment may be interposed, to obviate that effect. With the view of clearing off the morbid humours, the older practitioners cut away the vesicles, and covered the surface with their unguents, or even irritated it with the nitrico-oxide of mercury, notwithstanding the extreme tenderness of the parts. These pernicious interruptions of the healing process probably gave rise to ulceration, and prolonged the duration of the disorder, and thus contributed to mislead practitioners in their views of the nature of the disease.

3. *Herpes circinatus.* The form of the herpes is vulgarly termed a *ringworm*, and is, in this country, a very slight affection, being unaccompanied with any disorder of the constitution. It appears in small circular patches, in which the vesicles arise only round the circumference: these are small, with moderately red bases, and

contain a transparent fluid, which is discharged in three or four days, when little, prominent, dark scabs form over them. The central area, in each vesicular ring, is at first free from any eruption; but the surface becomes somewhat rough, and of a dull red colour, and throws off an exfoliation, as the vesicular eruption declines, which terminates in about a week, with the falling off of the scabs, leaving the cuticle red for a short time.

The whole disease, however, does not conclude so soon; for there is commonly a succession of the vesicular circles, on the upper parts of the body, as the face and neck, and the arms and shoulders, which have occasionally extended to the lower extremities, protracting the duration of the whole to the end of the second or third week. No inconvenience, however, attends the eruption, except a disagreeable itching and tingling in the patches.

The *herpetic* ringworm is most commonly seen in children, and has been deemed contagious. It has sometimes, indeed, been observed in several children, in one school or family, at the same time: but this was, most probably, to be attributed to the season, or some other common cause; since none of the other species of herpes are communicable by contact. It is scarcely necessary to point out here the difference between this *vesicular* ringworm, and the contagious *pustular* eruption of the scalp and forehead, which bears a similar popular appellation.

The itching and tingling are considerably alleviated by the use of astringent and slightly stimulant applications, and the vesicles are somewhat repressed by the same expedients. It is a popular practice to besmear them with ink: but solutions of the salts of iron, copper, or zinc, or of borax, alum, &c., in a less dirty form, answer the same end.

All the forms of herpes appear to be more severe in warm climates than in our northern latitudes; and the inhabitants of the former are liable to a variety of herpetic ringworm, which is almost unknown here. This variety differs materially from the preceding in its course, and is of much greater duration; for it does not heal with the disappearance of the first vesicles, but its area continually dilates by the extension of the vesicular margin. The vesicles terminate in ulcerations, which are often of a considerable depth; and, while these undergo the healing process, a new circle of vesicles rises beyond them, which passes through a similar course, and is succeeded by another circle exterior to itself: and thus the disease proceeds, often to a great extent, the internal parts of the ring healing as the ulcerous and vesicular circumference expands.

4. *Herpes labialis.* A vesicular eruption upon the edge of the upper and under lip, and at the angle of the mouth, sometimes forming a semicircle, or even completing a circle round the mouth, by the successive rising of the vesicles, is very common, and has been described by the oldest writers. At first, the vesicles contain a transparent lymph, which, in the course of twenty-four hours, becomes turbid, and of a yellowish white colour, and ultimately assumes a puriform appearance. The lips become red, hard, and tumid, as well as sore, stiff, and painful, with a sensation of great heat and smarting, which continues troublesome for three or four days, until the fluid is discharged, and thick dark scabs are formed over the excoriated parts. The swelling then subsides, and in four or five days more the crusts begin to fall off; the whole duration being, as in the other herpetic affections, about ten or twelve days.

This labial herpes occasionally appears as an idiopathic affection, originating from cold, fatigue, &c., and is then preceded, for about three days, by the usual febrile symptoms, shiverings, headach, pains in the limbs and the stomach, with nausea, lassitude, and languor. Under these circumstances, a sort of *herpetic* sore throat is sometimes connected with it; a similar eruption of inflamed vesicles taking place over the tonsils and uvula, and producing considerable pain and difficulty of deglutition. The internal vesicles, being kept in a state of moisture, form slight ulcerations when they break; but these heal about the eighth and ninth days, while the scabs are drying upon the external eruption.

The herpes labialis, however, occurs most frequently in the course of diseases of the viscera, of which it is symptomatic, and often critical; for these diseases are frequently alleviated as soon as it appears. Such an occurrence is most common in bilious fevers, in cholera and dysentery, in peritonitis, and severe catarrhs; but it is not unfrequent in continued malignant fevers, and even in intermittents.

5. *Herpes præputialis.* This local variety of herpes was not noticed by Dr. Willan; but it is particularly worthy of attention, because it occurs in a situation where it is liable to occasion a practical mistake of serious consequence to the patient. The progress of the herpetic clusters, when seated on the prepuce, so closely resembles that of chancre, as described by some authors, that it may be doubted whether it has not been frequently confounded with the latter.

The attention of the patient is attracted to the part by an extreme itching, with some sense of heat; and on examining the prepuce he finds one, or sometimes two red patches, about the size of a silver penny, upon which are clustered five or six minute transparent vesicles, which, from their extreme tenuity, appear of the same red hue as the base on which they stand. In the course of twenty-four or thirty hours, the vesicles enlarge, and become of a milky hue, having lost their transparency; and, on the third day, they are coherent, and assume an almost pustular appearance. If the eruption is seated within that part of the prepuce which is, in many individuals, extended over the glans, so that the vesicles are kept constantly covered and moist (like those that occur in the throat), they commonly break about the fourth or fifth day, and form a small ulceration upon each patch. This discharges a little turbid serum, and has a white base, with a slight elevation at the edges; and by an inaccurate or inexperienced observer it may be readily mistaken for chancre; more especially if any escharotic has

been applied to it, which produces much irritation, as well as a deep-seated hardness beneath the sore, such as is felt in true chancre. If no irritant be applied, the slight ulceration continues till the ninth or tenth day nearly unchanged, and then begins to heal; which process is completed by the twelfth, and the scabs fall off on the thirteenth or fourteenth day.

When the patches occur, however, on the exterior portion of the prepuce, or where that part does not cover the glans, the duration of the eruption is shortened, and ulceration does not actually take place. The contents of the vesicles begin to dry about the sixth day, and soon form a small, hard, acuminated scab, under which, if it be not rubbed off, the part is entirely healed by the ninth or tenth day, when the little indented scab is loosened, and falls out.

This circumstance suggests the propriety of avoiding not only irritative, but even unctuous or moist applications, in the treatment of this variety of herpes. And accordingly it will be found, that, where ulceration occurs within the prepuce, it will proceed with less irritation, and its course will be brought within the period above mentioned, if a little clean dry lint alone be interposed, twice a day, between the prepuce and the glans.

The causes of this eruption on the prepuce are not yet ascertained. Whencesoever it may originate, it is liable to recur in the same individual, and often at intervals of six or eight weeks.

6. *Herpes iris.* This rare and singular morbid appearance, which has not been noticed by medical writers, occurs in small circular patches, each of which is composed of concentric rings, of different colours. Its usual seat is on the back of the hands, or the palms and fingers, sometimes on the instep. Its first appearance is like an efflorescence; but, when it is fully formed, not only the central umbo, but the surrounding rings become distinctly vesicular. The patches are at first small, and gradually attain their full size, which is nearly that of a sixpence, in the course of a week or nine days, at the end of which time the central part is prominent and distended, and the vesicular circles are also turgid with lymph; and, after remaining nearly stationary a couple of days, they gradually decline, and entirely disappear in about a week more. The central vesicle is of a yellowish white colour: the first ring surrounding it is of a dark or brownish red; the second is nearly of the same colour as the centre; and the third, which is narrower than the rest, is of a dark red colour; the fourth, and outer ring, or areola, does not appear until the seventh, eighth, or ninth day, and is of a light red hue, which is gradually lost in the ordinary colour of the skin.

The iris has been observed only in young people, and was not connected with any constitutional disorder, nor could it be traced to any assignable cause. In one or two cases it followed a severe catarrhal affection, accompanied with hoarseness, and also with an eruption of herpes labialis. In others, it had recurred several times in the persons affected, occupying always the same parts, and going through its course in the same periods of time.

No internal medicine is requisite in the treatment of the different species of herpes, except when the constitution is disordered (and then the general antiphlogistic plan must be adopted); for, like the other eruptive diseases, which go through a regular and limited course, they cannot be interrupted or accelerated in their progress by any medicinal expedient; but their termination may be retarded by improper treatment.

Herpes ambulati'vus. A name that has been given to a disease which is, probably, erratic erysipelas.

Herpes depa'scens. An eating or corroding form of herpes.

Herpes esthio'menos. A variety of herpes, where there is great destruction of the skin by ulceration.

Herpes exe'dens. A form of herpes in which there is a rapid spreading of the disease.

Herpes farinosus. This is characterised by its having furfuraceous exfoliations.

Herpes ferus. An erysipelas.

Herpes i'ndicus. A fiery, itchy herpes, peculiar to India.

Herpes milia'ris. Herpes is so called when it begins with an eruption like millet-seeds.

Herpes peri'sceles. The shingles, or *herpes zoster.*

Herpes pustulo'sus. This name has been given to the different forms of acne.

Herpes serpi'go. The ringworm. See *Herpes circinatus.*

Herpes siccus. The dry, mealy tetter.

Herpes zoster. The shingles. See *Herpes.*

HERPETIC. (*Herpeticus*; from *herpes*, a disease of the skin.) Relating to herpes.

Herpetogra'phia. Herpetography. (From ἑρπης, and γραφω, to describe.) The description of herpes.

Herpeto'logy. *Herpetologia.* This term has been applied to the study of herpetic diseases; but it is objectionable, first, because it already exists as a term of zoology applied to the study of reptiles, and, secondly, because in pathology it is quite superfluous.

He'rpeton. (Ερπετον. Ερπετικον; from ἑρπω, to creep.) A creeping pustule or ulcer. — *Hippocrates.*

Herring. See *Clupea harengus.*

Hesmis. An alchemical name for a weight equal to a quarter of a pound.

HESPERI'DEÆ. Fancifully so named from the gardens of the Hesperides. The name of an order of plants in Linnæus's Fragments of a Natural Method, consisting of plants which have rigid evergreen leaves, odorous and polyandrous flowers; as the myrtle, clove, &c.

Hespe'ridine. *Hesperidina.* A peculiar crystallizable matter detected in unripe bitter oranges by Lebreton and Brandes.

Hetero'pathy. (*Heteropathi'a*; from ἑτερος, different, and παθος, affection.) That mode of treating diseases in which a morbid state is removed by inducing a different morbid state. It is opposed to *Homœopathy.*

Hetero'poda. (From ἑτερος, different, and

πους, a foot.) The name of an order of gasteropodous mollusca in Cuvier's system.

HEXAGY'NIA. (*a*, *æ*. f.; from ἑξ, six, and γυνη, a woman, or wife.) The name of an order of plants in the sexual system, which, besides the classic character, have six pistils.

HEXA'NDRIA. (*a*, *æ*. f.; from ἑξ, six, and ανηρ, a man, or husband.) The name of a class of plants in the sexual system, consisting of plants with hermaphrodite flowers that are furnished with six stamens of an equal length.

HEXAPE'TALOUS. *Hexapetalus.* Six-petalled.

HEXAPHA'RMACUM. (From ἑξ, six, and φαρμακον, a medicine.) A plaster mentioned by Paulus Ægineta, consisting of six ingredients.

HEXAPHY'LLOUS. *Hexaphyllus.* Six-leaved.

HE'XIS. (Ἑξις; from ἐχω, to have.) A habit or constitution of body.

HI'ANS. Gaping, applied, in *Botany*, to seed-vessels, &c.

Hibernicus lapis. See *Lapis hibernicus.*

HIBI'SCUS. (*us*, *i*. m.; the Latin name of the marsh-mallow: its real derivation is not known.) The name of a genus of plants in the Linnæan system. Class, *Monodelphia*; Order, *Polyandria.*

HIBISCUS ABELMOSCHUS. The systematic name of the plant, the seeds of which are called musk-seed. *Abelmoschus, Granum moschi, Moschus Arabum, Egyptia moschata, Bammia moschata, Alcea, Alcea Indica, Alcea Egyptiaca villosa, Abrette, Abelmosch, and Abelmusk.* The plant is indigenous in Egypt, and in many parts of both the Indies. The seeds have the flavour of musk. The best comes from Martinique. By the Arabians they are esteemed cordial, and are mixed with their coffee, to which they impart their fragrance. In this country they are used by the perfumers.

Hiccup. See *Singultus.*

HYDRO'A. (Ἱδρωα; from ἱδρως, sweat.) Synonymous with *Sudamina.* See *Sudamina.*

HIDRO'NOSOS. (From ἱδρως, sweat, and νοσος, a disease.) The sweating sickness. See *Sudor anglicus.*

HIDROPY'RETUS. (From ἱδρως, sweat, and πυρετος, a fever.) The same.

HIDRO'TICUS. (From ἱδρως, sweat.) Hydrotic, synonymous with *sudorific.*

HIDUS. Flowers of brass. — *Ruland.*

HI'ERA PI'CRA. (From ἱερος, holy, and πικρος, bitter.) Holy bitter. Aloetic powder, made into an electuary with honey. It is now kept in the form of dry powder, prepared by mixing Socotorine aloes, one pound, with three ounces of white canella.

HIERABO'TANE. (From ἱερος, holy, and βοτανη, a herb: so called from its supposed virtues.) See *Verbena trifoliata.*

HIERACA'NTHA. (From ἱεραξ, a hawk, and ανθος, a flower: so named because it seizes passengers as a hawk does its prey.) A sort of thistle.

HIERA'CIUM. (*um*, *ii*. n.; from ἱεραξ, a hawk: so called because hawks feed upon it, or because it was said that hawks applied the juice of it to cleanse their eyes.) The name of a genus of plants in the Linnæan system. Class, *Syngenesia*; Order *Polygamia æqualis.* Hawk-weed.

Hieracium alpinum. See *Hypochœris.*

Hieracium minus. See *Hypochœris.*

Hieracium montanum. See *Chondrilla.*

HIERACIUM PILOSELLA. The systematic name of the mouse-ear; called also, *Auricula muris, Pylosella, Myosotis,* and *Hieraoulum.* This common plant contains a bitter lactescent juice, which has a slight degree of astringency. The roots are more powerful than the leaves. They are very seldom used in this country.

Hieracium pulcrum. See *Chondrilla.*

Hieraculum. See *Hieracium.*

HIERA'NOSOS. (*us*, *i*. m.; from ἱερος, holy, and νοσος, a disease, *morbus sacer.*) 1. The epilepsy was so called, because it was supposed to be that disease which our Saviour cured in those who were said to be possessed of devils.

2. Chorea has been so called, from the belief that it was induced by the immediate agency of a superior order of beings.

3. Convulsions were formerly so called.

HIERA'TICUM. (Ἱερατικον; from ἱερος, holy.) The epithet of a malagma used in diseases of the stomach and liver, and pains in the bowels.

Highmore, antrum of. See *Antrum Highmorianum.*

HIGUE'RO. The calabash tree. *Crescentia cujete* of Linnæus, the fruit of which is said to be febrifuge.

Hill's balsam of honey. See *Balsam of honey.*

HILL'S ESSENCE OF BARDANA. A solution of guaiac in proof spirit.

HI'LUM. (*um*, *i*. n.) The eye of a seed, or scar or point by which the seed is attached to its seed-vessel or receptacle, and through which alone life and nourishment are conveyed for the perfecting of its internal parts. Consequently all those parts must be intimately connected with the inner surface of this scar, and they are all found to meet there, and to divide or divaricate from that point, more or less immediately. In describing the form or various external portions of any seed, the *hilum* is always to be considered as the base. When the seed is quite ripe, the communication through this channel is interrupted; it separates from the parent plant without injury, a scar being formed on each. Yet the hilum is so far capable of resuming its former nature, that the moisture of the earth is imbibed through it, previous to germination. — *Smith.*

HIMANTO'SIS. (From ἱμας, a thong of leather.) A relaxation of the uvula, when it hangs down like a thong.

HI'MAS. The same.

HIP. 1. The articulation of the thigh with the pelvis. See *Femoris os.*

2. The ripe fruit of the dog-rose. They are chiefly used as a sweetmeat, or as a confection. See *Confectio rosæ caninæ.*

HI'PPACE. (Ἱππακη; from ἱππος, a horse or mare.) The rennet of a colt; also cheese made of mare's milk.

HIPPOCA'MPUS. (*us*, *i*. m. Ἱπποκαμπος; from ἱππος, a horse, and καμπτω, to bend: because its head resembles that of a horse, and its

tail is curved.) A small marine animal. A particular part of the brain is called *hippocampus*, from a fancied resemblance to this animal.

Hippoca'stanum. (*um*, *i.* n.; from *ἱππος*, a horse, and *καστανον*, a chesnut.) The horse-chesnut. See *Æsculus hippocastanum.*

HI'PPOCRAS. An aromatic wine, formerly much used in England. It is made with twelve pints of Canary, and as much Lisbon, two ounces of cinnamon, half an ounce of canella alba, and a drachm of cloves, of mace, of nutmeg, of ginger, and of galangal or cardamoms. These are to be digested for three days, and the liquor strained: lastly, two pounds and a half of refined sugar are to be added.

Hippocrates' sleeve. See *Manica Hippocratis.*

Hippola'pathum. (From *ἱππος*, a horse, and *λαπαθον*, the lapathum: so named from its size.) See *Rumex patientia.*

Hippoma'rathrum. (From *ἱππος*, a horse, and *μαραθρον*, fennel: so named from its size.) See *Peucedanum silaus.*

Hipposeli'num. (From *ἱππος*, a horse, and *σελινον*, purslane: so named because it resembles a large kind of purslane.) See *Smyrnium olusatrum.*

HIPPU'RIS. (*is*, *is.* f.; from *ἱππος*, a horse, and *ουρα*, a tail.) 1. Some herbs are thus named because they resemble a horse's tail.

2. The name of a genus of plants in the Linnæan system. Class, *Monandria*; Order, *Monogynia.* Mare's tail.

Hippuris vulgaris. The systematic name of the horse's or mare's tail. Called also, *Equisetum*, and *Cauda equina.* It possesses astringent qualities, and is frequently used by the common people as tea, in diarrhœas and hæmorrhages. The same virtues are also attributed to the *Equisetum arvense, fluviatile, limosum*, and other species, which are directed indiscriminately by the term *Equisetum.*

HI'PPUS. (*us*, *i.* m.; from *ἱππος*, a horse: because the eyes of those who labour under this affection are continually twinkling and trembling, as is usual with those who ride on horseback.) A repeated dilatation and alternate constriction of the pupil, arising from a spasmodic affection of the iris.

Hir. (From *χειρ*, the hand.) The palm of the hand. — *Turton.*

Hi'ra. (From *hir*, the palm of the hand; because it is usually found empty.) The jejunum. — *Turton.*

HI'RCUS. (*us*, *i.* m.; *quasi hirtus*, from its shaggy hair.) The goat. See *Capra hircus.*

Hircus bezoarticus. The goat which affords the oriental bezoar. See *Bezoar orientale.*

Hi'rquus. A Latin name for the corner of the eye.

HIRSU'TIES. Hairiness: a species of disease in which hair grows in unusual situations, or in more than usual abundance.

HIRSU'TUS. Hairy: applied very generally, in *Natural History*, to that which is hairy or shaggy; to leaves, petals, seeds, &c. of plants; as the petals of the *Menyanthes trifoliata* and *Asclepias crispa*, and the seeds of the *Scandix trichosperma.*

HI'RTUS. (A contraction of *hirsutus.*) Rough-haired: applied to stems of plants; as that of the *Cerastium alpinum.*

HIRU'DO. (*o*, *inis.* f.; *quasi haurudo*; from *haurio*, to draw out: so named from its greediness to suck blood.) See *Leech.*

Hirudo medicinalis. See *Leech.*

Hirundina'ria. (*a*, *æ.* f.; from *hirundo*, the swallow: so called from the resemblance of its pods to a swallow.) Swallow-wort. See *Lysimachia nummularia*, and *Asclepias vincetoxicum.*

HIRU'NDO. (*o*, *onis.* f.) The bird called a swallow. It was formerly esteemed medicinal in epilepsy, diseases of the eyes, &c.

Hispi'dula herba. (From *hispidus*, rough: so named from the rough, woolly surface of its stalks.) See *Gnaphalium.*

HI'SPIDUS. Hispid: bristly. Applied to stems, seeds, &c. of plants. The *Borago officinalis* is a good example of the *caulis hispidus*: the seeds of the *Daucus carota* and *Galium boreale.*

Hives. The popular name, in the north of England and in Scotland, for the *varicella globularis* of Willan.

Hoary. See *Glaucus*, and *Incanus.*

Hog. See *Sus scrofa.*

Hog's fennel. See *Peucedanum.*

Hog's lard. See *Adeps præparata.*

Holce. Ὁλκη. A Greek weight equal to a drachm.

HO'LCUS. (*us*, *i.* m.) 1. The name of a genus of plants in the Linnæan system. Class, *Polygamia*; Order, *Monœcia.*

2. The Indian millet-seed, which is said to be nutritive.

Holcus sorgum. Guinea corn.

Holly. See *Ilex aquifolium.*

Holly, knee. See *Ruscus.*

Holly, sea. See *Eryngium.*

Hollyhock. See *Alcea.*

Holmi'scus. (Dim. of *ὁλμος*, a mortar.) 1. A small mortar.

2. The alveolar cavities or sockets of the teeth.

Holophly'ctis. (From *ὁλος*, whole, and *φλυκτις*, a pustule.) A little pimple which appears all over the body.

Holo'stes. See *Holosteus.*

Holo'steum. See *Holosteus.*

Holo'steus. (*us*, *i.* m.; from *ὁλος*, whole, and *οστεον*, a bone.) Glue-bone. See *Osteocolla.*

Holoto'nicus. (From *ὁλος*, whole, and *τεινω*, to stretch.) That form of tetanus has been so called in which the muscles are universally affected.

Holy thistle. See *Centaurea.*

Holybut. See *Pleuronectes hypoglossus.*

Holywell. See *Malvern.*

Ho'ma. An anasarcous swelling.

Homberg's phosphorus. Ignited muriate of lime.

Homberg's pyrophorus. See *Alum.*

Homberg's salt. See *Boracic acid.*

Homoplata. See *Omoplata.*

HOMO. Man. Man, considered as an object of zoology, is a mammiferous animal belong-

ing to the order *Bimana*, or *two-handed*, of which he constitutes the sole genus. Man is distinguished from other animals by a much greater developement of mind; by the use of articulate speech, as a means of communicating ideas; and by moral and religious feelings, which are unknown to the inferior animals. The human species presents great variety of external form, and of moral and intellectual endowment, according to climate, political condition, and various other circumstances, which influence the physical constitution, and advance or retard the progress of civilization. The following table of the different races of mankind, derived chiefly from the researches of M. Desmoulins, is given by M. Magendie.

1. Celto-Scythi-Arabians.	Hair smooth, silky, plentiful; facial angle open; incisor teeth vertical; cheeks not projecting or large; skin and hair varying from black to white, according to the climate. Inhabit all Europe, but less its central polar countries; Asia to the Ganges, and to the sources of the Irtish; the Atlantic region of Africa, Egypt, and Abyssinia.	1. *Celts.* Black hair; primitive inhabitants of Europe to the west of the Rhine and the Alps, to the ocean and its isles. 2. *Scythians.* White hair. Central Europe, Asia to the sources of the Irtish; Mountains of Belur and Himalayah. 3. *Arabians.* Hair always black. Atlantic Africa, and Asia to the south of Caucasus, as far as the Ganges. 4. *Atlantians.* Olecranian *fossa* of the humerus pierced as in the South African; hair black, chesnut, and fair. *Guanches*, an ancient people of the Canaries.
2. Mongols.	Hair smooth, but stiff and thin; beard thin; eye small, raised obliquely backwards; cheeks projecting, incisors vertical; skin yellow, and hair black; colour invariable under all climates; marriage precocious.	Greenland, the polar coasts of Europe and America, under the name of Laplanders, Samoids, Esquimaux, &c.; all Asia to the east of the Ganges, of the mountains of Belur, and the Irtish.
3. Ethiopians.	Hair woolly; cranium compressed; forehead depressed; nose flattened; facial part of the intermaxillary bone and chin obliquely inclined upon one another, as also the incisors; skin and hair black under all climates.	Africa, from the Senegal, the Niger, and the Bahr-el-Azrek, to within a little of the southern tropic. Separated from the Euro-Africans by a chain of high mountains running parallel to the sea-shore from India.
4. Euro-Africans.	Hair woolly; skin black; cranium less compressed than in the Ethiopians; and forehead almost as projecting as in Europeans; incisors vertical; nose little depressed. Commonly designated negroes of Mozambique.	The eastern coast of Africa, upon the Indian ocean.
5. Austro-Africans.	Hair woolly, and the bones of the nose usually in one single scaly plate, as in Makas, and much more flat and broad than in other Africans; olecranium cavity of the humerus perforated by a hole; incisors and chin much more oblique than in Ethiopians. Skin yellow bistre.	Africa, beyond the southern tropic, less the part corresponding to the eastern coast. 1. *Hottentots*, *Boschiemans*, *Beljuanas*, &c. 2. *Malegaches*, (aborigines of the island,) on the eastern coast of Madagascar. Hair short and woolly; colour of skin deep copper; orbits wider than in the negro.
6. Malays, or Oceanians.	Cranium conformable to that of Europeans; cheeks a little larger; teeth quite alike; hair smooth and black; skin olive or brown, in the same climate where the Arab Indian is as black as the negro. The shores of Indian China, all the Asiatic Archipelago, and Oceanica to Madagascar.	1. *Carolinians*, or natives of New Philippine Islands (Lat. 7°. N. Long. 145°. E.). Form regularly beautiful; shape more full and elevated than the middle of Europe; character mild; quick apprehension. 2. *Dayahs* and *Beadjus* of Borneo, and several of the *Harraforas* of the Moluccas. The whitest of the Malays. 3. *Javanese*, *Sumatrians*, *Timorians*, and *Malays* of the rest of the Indian Archipelago. Lips generally large, nose flat, cheeks projecting; shape smaller than the middle of Europe. Character perfidious and ferocious.

		4. *Polynesians*, properly so called. Generally, tall like the Carolinians, but with visage of Javanese, Sumatrians, &c. 5. *Hovas* of Madagascar. Inhabiting the zone between the eastern shore and the mountains; ordinary size five feet ten inches; colour bright olive; orbits large and square; chin a long transverse oval; nose almost European.
7. Papoos.	Almost negro; hair black, half woolly, very tough, naturally curling; beard black and thin; physiognomy between the black and the Malay; but with teeth somewhat prominent; nasal opening wider still than in the natives of Guinea.	Inhabit the little islands around New Guinea, Waigioo, and New Guinea.
8. Oceanian Negroes.	Colour quite black, cranium compressed and depressed; hair short, very woolly, and curled; nose flat to the root, and very broad; lips thick; facial angle very acute; on the whole, closely approaching the negroes of Guinea. New Guinea, Archipelago *del Esperitu Santò*, or New Hebrides, Andaman isles, Formosa.	Have peopled, or people still, the north of the western Oceanica, some small archipelagos of Polynesia, a great part of the Indian Archipelago, and some countries of Indian China, and the adjacent islands. 1. *Moys*, or *Moyes*, of the mountains of Cochinchina; *Samang*, *Dayak*, &c. of the mountains of Malacca; peopling also the interior of Formosa, the Archipelago of Andaman, and anciently the south of the Isle of Niphon, according to the *Japanese history*. 2. The interior of Borneo, and of some of the Philippine Islands; the interior of the Celebes, and some of the Molucca; anciently the anterior of the isle of Java, according to *Japanese history*. 3. They people exclusively in Australasia, New Caledonia, the Archipelago *del Esperitu Santò*, or New Hebrides, and Van Dieman's land, where they have a length and meagerness of limb disproportioned to the body, as in the *semno-pithecas*, in the genus Guenon. 4. The *Vinzimbars* of the mountains of Madagascar, an island of which the animal population is equally related to the system of organization of Oceanica.
9. Australians.	Hair smooth, black; beard and hair thin; limbs slender, and of a length disproportionate to the body; teeth vertical, nose very broad; forehead depressed and compressed.	New Holland.
10. Columbians.	Head elongated; nose long, projecting, and strongly aquiline; forehead compressed and flattened; considerable height of the jaws; red copper colour in all climates; hair black, never becoming grey; beard thin; forehead more depressed than with the Mongols; nubility precocious; imagination lively and strong; moral character energetic. These characters belong chiefly to the people of North America, and the table-lands of the Cordilleras, as far as Cumana.	*Tchutkis*, of the north-eastern extremity of Asia. The Columbians occupy the whole of North America, all the table-lands and declivities of the Cordilleras, from Chili to Cumana, and the Caribean Archipelago included.

11. Americans.	Head general spherical; forehead broad, but depressed, as in the Mongols; superciliary arches projecting outwards; cheeks prominent; nose flat and depressed at the root; hair long, thick, rigid, and straight; skin neither black, nor yellow, nor copper-coloured; lips very thick; understanding generally obtuse, and moral character extremely debased.	1. *Omaguas, Guaranis, Coroados, Puris, Alures, Ottomacs,* &c. Prominent belly, breast hairy, beard plentiful; size under the medium of the Spaniards; skin of a very dark, dirty, bistre colour; mind indolent, improvident; head of a volume disproportionate to the body, flattened at the top, sunk between the shoulders; all South America, to the south of the Amazon and Orinoco rivers, to the east of the Andes, and of La Plata. The *Guaranis* and *Coroados* are without beard, and without hair upon the breast. 2. *Botocudes.* Skin clear brown, sometimes almost white. *Guiacas* of a very small size; skin almost white; dwelling near the sources of the Orinoco, under the equator. 3. *Mbayas, Charruas,* &c. skin of a brown and all but black colour, without a shade of red; forehead and physiognomy open; nose narrow, depressed at the root; eyes small and confined; teeth vertical; hair long, black, rigid; feet and hands small in proportion, and better made than in the Spaniards; inhabit Paraguay. 4. The *Puelches* and the *Tchuellets,* or *Patagonians,* on the south of La Plata, as far as the straits of Magellan. Size above 5 feet 11½ inches English; hair long; constitution void of any analogy to that of the preceding species.

HOMŒO'PATHY. (*Homœopathi'a*; from *ὁμοιος*, similar, and *παθος*, affection.) A new medical doctrine, promulgated some years since by Dr. Samuel Hahnemann, of Leipsig. According to this doctrine every medicine has a specific power of causing alterations in the healthy system, by which a certain diseased state is set up; but, when a medicine is given to a person already labouring under that disease which the medicine has a natural tendency to produce, the effect will be to resolve the disease, because two similar diseased actions cannot go on simultaneously in the same part. With this view, medicines are given in doses sufficient to excite an action somewhat more powerful than than that of the disease; and the doses which are found to answer this purpose are what are called *infinitesimal* doses, that is, doses which appear to practitioners in general most ridiculously small, as the millionth or quadrillionth part of a grain. In too large doses, medicines homœopathically administered would be productive of the worst results.

It is a principle with Hahnemann that only one medicine is to be administered at a time, and that the medicinal substances employed must be perfectly pure. The homœopathists in general now give doses larger than those recommended by Hahnemann, but still so small that they cannot, on the ordinary principles of medicine, be supposed to have any appreciable effect; they pay great attention, however, to regimen. With respect to the homœopathic theory of the operation of medicines, all that can be said is, that it is a mere whim, unsupported either by reason or by facts. With respect to the practice, it evidently amounts to doing nothing but regulating the diet and habits of the patient. Now, all judicious practitioners have long been agreed, that there are many cases which are best treated in the manner above mentioned; and in which medicine, meaning thereby the administration of drugs, would do more harm than good: hence we need be at no loss to account for the occasional success of homœopathic practice, without admitting that there is any truth in homœopathic principles.

Homo'tonos. (*Ὁμοτονος*; from *ὁμος*, equal, and *τονος*, tone.) A Greek term applied to fevers. It is synonymous with *acmasticos*; which see.

Honey. See *Mel.*

Honey-cup. See *Nectarium.*

Honeysuckle. See *Lonicera.*

Honeycomb-like. See *Favosus.*

Hooded. See *Cucullatus.*

Hoof-shaped. See *Ungulatus.*

Hooping-cough. See *Pertussis.*

Hop. See *Humulus lupulus.*

Hoplochri'sma. (From *ὁπλον*, a weapon, and *χρισμα*, a salve.) A salve which was believed to cure wounds by sympathy; that is, by anointing the instrument with which the wound was made. See *Unguentum armarium.*

Ho'rdein. A peculiar substance found by Proust in barley. It is allied to starch, but is thought to differ from it sufficiently to constitute a peculiar substance.

HORDE'OLUM. (*um, i.* n.; diminutive of *hordeum*, barley.) A little tumour on the eyelids, resembling a barley-corn: vernacularly called a stye. Scarpa remarks, the stye is strictly only a little boil, which projects from the edge of the eyelids, mostly near the great angle of

the eye. This little tumour, like the furunculus, is of a dark red colour, much inflamed, and a great deal more painful than might be expected, considering its small size. The latter circumstance is partly owing to the vehemence of the inflammation producing the stye, and partly to the exquisite sensibility and tension of the skin which covers the edge of the eyelids. On this account, the hordeolum very often excites fever and restlessness in delicate, irritable constitutions; it suppurates slowly and imperfectly; and, when suppurated, has no tendency to burst.

The stye, like other furunculous inflammations, forms an exception to the general rule, that the best mode in which inflammatory swellings can end is resolution; for, whenever a furunculous inflammation extends so deeply as to destroy any of the cellular substance, the little tumour can never be resolved, or only imperfectly so. This event, indeed, would rather be hurtful, since there would still remain behind a greater or smaller portion of dead cellular membrane, which, sooner or later, might bring on a renewal of the stye, in the same place as before, or else become converted into a hard indolent body, deforming the edge of the eyelid.

HO'RDEUM. (*um, i.* n.) 1. The name of a genus of plants in the Linnæan system. Class, *Triandria;* Order, *Digynia.* Barley.

2. The pharmacopœial name of the common barley. See *Hordeum vulgare.*

Hordeum causticum. See *Cevadilla.*

Hordeum distichon. See *Hordeum vulgare.*

Hordeum perlatum. See *Hordeum vulgare.*

HORDEUM VULGARE. The systematic name of the common barley. The seed called barley is obtained from several species of *hordeum*, but principally from the *vulgare*, or common or Scotch barley, and the *distichon* or *hordeum gallicum vel mundatum*, or French barley, of Linnæus. It is extremely nutritious and mucilaginous, and in common use as a drink, when boiled, in all inflammatory diseases and affections of the chest, especially where there is cough or irritation about the fauces. A decoction of barley with gum is considered a useful diluent and demulcent in dysury and strangury; the gum mixing with the urine, sheaths the urinary canal from the acrimony of the urine. Amongst the ancients, decoctions of barley, *κριθη*, were the principal medicine, as well as aliment, in acute diseases. Barley is freed from its husks in mills, and in this state called Scotch and French barley. In Holland, they rub barley into small round grains, somewhat like pearls, which is therefore called *pearl barley*, or *hordeum perlatum.*

Horehound. See *Marrubium.*

HORIZONTAL. *Horizontalis.* Applied to leaves, roots, &c. which spread in the greatest possible degree; as the leaves of *Gentiana campestris*, and roots of the *Anemone nemorosa.*

HORMINUM. (*um, i.* n.; from *ὁρμαω*, to incite: named from its supposed qualities of provoking venery.) See *Salvia sclarea.*

HORN. *Cornu.* 1. An animal substance composed of coagulated albumen, with a little gelatine, and about a half per cent. of phosphate of lime. The horns of the buck and hart are of a different nature, being intermediate between bone and horn. See *Cornu.*

2. A horn or spur. See *Calcar.*

Horn-pock. See *Variola.*

Horn-shaped. See *Cornutus.*

HORRIPILA'TION. (*Horripilatio, onis.* f.; from *horror*, and *pilus*, a hair.) A shuddering or sense of creeping in different parts of the body.

Horse-chesnut. See *Æsculus hippocastanum.*

Horse-radish. See *Cochlearia armoracia.*

Horse-tail. See *Hippuris vulgaris.*

HO'RTUS. (*us, i.* m.; from *orior*, to rise; as being the place where vegetables grow up.) 1. A garden.

2. The genitals of a woman, as being the repository of the human semen.

HORTUS SICCUS. A collection of dried plants, kept in paper or books.

HOSPITAL GANGRENE. A peculiar form of gangrene, which sometimes prevails in hospitals. See *Mortification.*

Hound's-tongue. See *Cynoglossum.*

HOUSE-LEEK. (So called because it grows on the roofs of houses.) See *Sempervivum tectorum.*

HUME'CTANT. (*Humectans;* from *humecto*, to make moist.) Synonymous with *diluent.*

HU'MERAL. *Humeralis.* Belonging to the humerus or arm.

HUMERAL ARTERY. *Arteria humeralis.* Brachial artery. The axillary artery, having passed the tendon of the great pectoral muscle, changes its name to the brachial or humeral artery, which name it retains in its course down the arm to the bend, where it divides into the radial and ulnar arteries. In this course it gives off several muscular branches, three of which only deserve attention: 1. The *arteria profunda superior*, which goes round the back of the arm to the exterior muscle, and is often named the upper muscular artery. 2. Another like it, called *arteria profunda inferior*, or the lower muscular artery. 3. *Ramus anastomoticus major*, which anastomoses round the elbow with the branches of the ulnar artery.

Humeralis musculus. See *Deltoides.*

HU'MERUS. (*us, i.* m.; from *ὠμος*, the shoulder.) 1. The arm, as composed of hard and soft parts, from the shoulder to the fore-arm.

2. The shoulder.

3. The bone of the arm, *os humeri*, or *os brachii.* A long cylindrical bone, situated between the scapula and fore-arm. Its upper extremity is formed, somewhat laterally and internally, into a large, round, and smooth head, which is admitted into the glenoid cavity of the scapula. Around the basis of this head is observed a circular fossa, deepest anteriorly and externally, which forms what is called the neck of the bone, and from the edge of which arises the capsular ligament, which is further strengthened by a strong membraneous expansion, extending to the upper edge of the glenoid cavity, and to the coracoid process of the scapula;

and likewise, by the tendinous expansions of the muscles, inserted into the head of the humerus. The capsular ligament is sometimes torn in luxation, and becomes an obstacle to the easy reduction of the bone. The articulating surface of the head is covered by a cartilage which is thick in its middle part, and thin towards its edges; by which means it is more convex in the recent subject than in the skeleton. This upper extremity, besides the round smooth head, affords two other smaller protuberances. One of these, which is the largest of the two, is of an irregular oblong shape, and is placed at the back of the head of the bone, from which it is separated by a kind of groove, that makes a part of the neck. This tuberosity is divided, at its upper part, into three surfaces: the first of these, which is the smallest and uppermost, serves for the insertion of the supraspinatus muscle; the second, or middlemost, for the insertion of the infraspinatus; and the third, which is the lowest and hindmost, for the insertion of the teres minor. The other smaller tuberosity is situated anteriorly, between the larger one and the head of the humerus, and serves for the insertion of the subscapularis muscle. Between these two tuberosities there is a deep groove for lodging the tendinous head of the biceps brachii; the capsular ligament of the joint affording here a prolongation, thinner than the capsule itself, which covers and accompanies this muscle to its fleshy portion, where it gradually disappears in the adjacent cellular membrane. Immediately below its neck the os humeri begins to assume a cylindrical shape, so that here the body of the bone may be said to commence. At its upper part is observed a continuation of the groove for the biceps, which extends downwards, about the fourth part of the length of the bone, in an oblique direction. The edges of this groove are continuations of the greater and lesser tuberosities, and serve for the attachment of the pectoralis, latissimus dorsi, and teres major muscles. The groove itself is lined with a glistening substance like cartilage, but which seems to be nothing more than the remains of tendinous fibres. A little lower down, towards the external and anterior side of the middle of the bone, it is seen rising into a rough ridge for the insertion of the deltoid muscle. On each side of this ridge the bone is smooth and flat, for the lodgment of the brachialis internus muscle; and behind the middle part of the outermost side of the ridge is a channel, for the transmission of vessels into the substance of the bone. A little lower down, and near the inner side of the ridge, there is sometimes seen such another channel, which is intended for the same purpose. The os humeri, at its lower extremity, becomes gradually broader and flatter, so as to have this end nearly of a triangular shape. The bone, thus expanded, affords two surfaces, of which the anterior one is the broadest, and somewhat convex, and the posterior one narrower and smoother. The bone terminates in four large processes, the two outermost of which are called *condyles*, though not designed for the articulation of the bone. These condyles, which are placed at some distance from each other, on each side of the bone, are rough and irregular protuberances, formed for the insertion of muscles and ligaments, and differ from each other in size and shape. The external condyle, when the arm is in the most natural position, is found to be placed somewhat forwarder than the other. The internal condyle is longer, and more protuberant, than the external. From each of these processes, a ridge is continued upwards, at the side of the bone. In the interval between the two condyles are placed the two articulating processes, contiguous to each other, and covered with cartilage. One of these, which is the smallest, is formed into a small, obtuse, smooth head, on which the radius plays. This little head is placed near the external condyle, as a part of which it has been sometimes described. The other, and larger process, is composed of two lateral protuberances and a middle cavity, all of which are smooth and covered with cartilage. From the manner in which the ulna moves upon this process, it has the name of *trochlea*, or pulley. The sides of this pulley are unequal: that which is towards the little head is the highest of the two; the other, which is contiguous to the external condyle, is more slanting, being situated obliquely from within outwards, so that when the fore-arm is fully extended it does not form a straight line with the os humeri; and, for the same reason, when we bend the elbow, the hand comes not to the shoulder, as it might be expected to do, but to the fore-part of the breast. There is a cavity at the root of these processes, on each of the two surfaces of the bone. The cavity on the anterior surface is divided by a ridge into two, the external of which receives the end of the radius, and the internal one lodges the coronoid process of the ulna in the flexions of the fore-arm. The cavity on the posterior surface, at the basis of the pulley, is much larger, and lodges the oleeranon when the arm is extended. The internal structure of the os humeri is similar to that of other long bones. In new-born infants, both the ends of the bone are cartilaginous, and the large head, with the two tubercles above, and the condyles, with the two articulating processes below, become epiphyses before they are entirely united to the rest of the bone.

HU'MILIS. (From *humi*, on the ground: so named, because it turns the eye downwards, and is expressive of humility.) A name of the inferior straight muscle of the eye. See *Rectus inferior oculi*.

HU'MOR. (*or, oris.* m.; *ab humo*, from the ground: because moisture springs from the earth.) Humour, a general name for any fluid of the body except the blood.

Humor vitreus. The vitreous humour of the eye, so called from its glassy appearance. See *Oculus*.

HUMORAL PATHOLOGY. That pathology which attributed all diseases to disordered states of the fluids, without taking the solids into consideration. It originated with the Greeks, and was universally prevalent till the beginning of last century. We appear now to have run into the opposite extreme, and not

to pay sufficient attention to the state of the fluids in disease.

Humoric. This name is given by M. Piorry to the sound produced by percussion on the stomach, when it is distended with air and liquid.

Humour. See *Humor.*

Humour, aqueous. See *Aqueous humour.*

Humour, vitreous. See *Humor vitreus.*

Humours, cardinal. See *Cardinal humours.*

Humours of the eye. See *Oculus.*

HU'MULIN. The narcotic principle of the hop. See *Humulus.*

HU'MULUS. (*us, i.* m. ; from *humus*, the ground: so named because, without factitious support, it creeps along the ground.) The name of a genus of plants in the Linnæan system. Class, *Dioecia ;* Order, *Pentandria.* The hop.

Humulus lu'pulus. The systematic name of the hop plant: called also *Lupulus*, and *Convolvulus perennis.* The hop is the floral leaf or bractea of this plant: it is dried and used in various kinds of strong beer. Hops have a bitter taste, less ungrateful than most of the other strong bitters, accompanied with some degree of warmth and aromatic flavour, and are highly intoxicating. The hop-flower exhales a considerable quantity of its narcotic power in drying ; hence those who sleep in the hop-houses are with difficulty roused from their slumber. A pillow stuffed with these flowers is said, in some instances, to have induced sleep when other remedies had failed. The young sprouts, called hop-tops, if plucked when only a foot above the ground, and boiled, are eaten like asparagus, and are a wholesome delicacy. The scales of the hop secrete a yellow powder, which is easily separable by means of a fine sieve. According to the experiments of Dr. Ives, of New York, this substance is the active principle of the hop, and is accordingly named *Lupulin.*

HUNGER. *Fames.* The want of solid aliments is characterised by a peculiar sensation in the region of the stomach, called hunger, and by a general feebleness, more or less marked. This feeling is generally renewed after the stomach has been for some time empty : it is variable in its intensity and its nature in different individuals, and even in the same individual. In some its violence is excessive ; in others it is scarcely felt : some never feel it, and eat only because the hour of repast is come. Many persons perceive a drawing, a pressure more or less painful in the epigastric region, accompanied by yawnings, and a particular noise, produced by the gases contained in the stomach, which becomes contracted. When this want is not satisfied it increases, and may become a severe pain : the same takes place with the sensation of weakness and general fatigue, which is felt, and which may increase, so as to render the motions difficult, or even impossible.

Authors distinguish in hunger local and general phenomena. This distinction is good in itself, and may be useful for study: but have not mere gratuitous suppositions been described as local or general phenomena of hunger, the existence of which was rendered probable by this theory? This point of physiology is one of those in which the want of direct experiment is the most strongly felt. The pressure and contraction of the stomach are considered amongst the local phenomena of hunger. "The sides of that viscus," it is said, "become thicker: it changes its form and situation, and draws the duodenum a little towards it ; its cavity contains saliva mixed with air, mucosities, bile, which has regurgitated in consequence of the dragging of the duodenum ; the quantity of these humours increases in the stomach in proportion as hunger is of longer continuation. The cystic bile does not flow into the duodenum ; it collects in the gall-bladder, and becomes abundant and black according to the continuance of abstinence. A change takes place in the order of the circulation of the digestive organs: the stomach receives less blood, perhaps on account of the flexion of these vessels, which is then greater ; perhaps by the compression of the nerves, in consequence of this confinement, the influence of which upon the circulation will then be diminished. On the other hand, the liver, the spleen, the epiploon, receive more, and perform the office of *diverticula :* the liver and the spleen, because they are less supported when the stomach is empty, and then present a more easy access to the blood ; and the epiploon, because the vessels are then less *flexuous,*" &c. The most of these data are mere conjectures, and nearly devoid of proof. After twenty-four, forty-eight, and even sixty hours of complete abstinence, Dr. Magendie says, he never saw the contraction and pressure of the stomach of which some authors speak ; this organ has always presented to him very considerable dimensions, particularly in its splenic extremity : it was only after the fourth and fifth day that it appeared to return upon itself, to diminish much in size, and slightly in position : even these effects are not strongly marked, unless fasting has been very strictly observed.

Bichât thinks that the pressure sustained by the empty stomach is equal to that which it supports when distended by aliments, since, says he, the sides of the abdomen are compressed in proportion as the volume of the stomach diminishes. The contrary of this may be easily proved by putting one or two fingers into the abdominal cavity, after having made an incision in its sides : it will then be easily seen that the pressure sustained by the viscera is, in a certain degree, in direct proportion to the distension of the stomach : if the stomach is full, the finger will be stronger pressed, and the viscera will press outward to escape through the opening ; if it is empty the pressure will be very trifling, and the viscera will have little tendency to pass out from the abdominal cavity. It must be understood, that in this experiment the pressure exerted by the abdominal muscles, when they are relaxed, ought not to be confounded with that which they exert when contracted with force. Also, when the stomach is empty, all the reservoirs contained in the abdomen are more easily distended by the matters which remain some time in them. Perhaps this is the principal reason why bile then accumulates in the gall-

bladder. With regard to the presence of bile in the stomach, that some persons regard as the cause of hunger: unless in certain sickly cases, bile does not enter it, though it continues to flow into the small intestine.

The quantity of mucus that the cavity of the stomach presents is so much greater in proportion to the prolongation of fasting.

Relatively to the quantity of blood which goes to the stomach when empty, in proportion to the volume of its vessels, and the mode of circulation which then exists, the general opinion is, that it receives less of this fluid than when it is full of aliments; but, far from being in this respect in opposition with the other abdominal organs, this disposition appears to be common to all the organs contained in the abdomen.

To the general phænomena of hunger is ascribed a weakness and diminution of the action of all the organs: the circulation and the respiration become slow, the heat of the body lowers, the secretions diminish, the whole of the functions are exerted with more difficulty. The absorption alone is said to become more active, but nothing is strictly demonstrated in this respect.

Hunger, appetite itself, which is only its first degree, ought to be distinguished from that feeling which induces us to prefer one sort of food to another, from that which causes us, during a repast, to choose one dish rather than another, &c.

These feelings are very different from real hunger, which expresses the true wants of the economy; they, in a great measure, depend on civilisation, on habits, and certain ideas relative to the properties of aliments. Some of them are in unison with the season and climate, and then they are equally legitimate as hunger itself; such is that which inclines us to a vegetable regimen in hot countries, or during the heats of summer.

Certain circumstances render hunger more intense, and cause it to return at nearer intervals: such as a cold and dry air, winter, spring, cold baths, dry frictions upon the skin, exercise on horseback, walking, bodily fatigue, and generally all the causes that put the action of the organs in play, and accelerate the nutritive process with which hunger is essentially connected. Some substances, being introduced into the stomach, excite a feeling like hunger, but which ought not to be confounded with it.

There are causes which diminish the intensity of hunger, and which prolong the periods at which it habitually manifests itself: amongst this number are the inhabiting of hot countries and humid places, rest of the body and mind, depressing passions, and, indeed, all the circumstances that interrupt the action of the organs, and diminish the activity of nutrition. There are also substances which, being brought into the digestive canals, prevent hunger, or cause it to cease; as opium, hot drinks, &c.

With respect to the cause of hunger, it has been, by turns, attributed to the providence of the vital principle, to the frictions of the sides of the stomach against each other, to the dragging of the liver upon the diaphragm, to the action of bile upon the stomach, to the acrimony and acidity of the gastric juice, to fatigue of the contracted fibres of the stomach, to compression of the nerves of this viscus, &c. &c.

Hunger arises, like all other internal sensations, from the action of the nervous system; it has no other seat than this system itself, and no other causes than the general laws of organisation. What very well proves the truth of this assertion is, that it sometimes continues though the stomach is filled with food; that it cannot be produced, though the stomach has been sometime empty; lastly, that it is so subject to habit as to cease spontaneously after the habitual hour of repast is over. This is true not only of the feeling which takes place in the region of the stomach, but also of the general weakness that accompanies it, and which, consequently, cannot be considered as real, at least in the first instant in which it is manifested.

Hurtsickle. (So called because it is troublesome to cut down, and sometimes notches the sickle.) See *Centaurea cyanus.*

Husk. See *Gluma.*

Husson's Eau médicinale. See *Eau médicinale.*

HY'ACINTH. *Hyacinthus.* A gem much prized by jewellers. It is a subspecies of pyramidal zircon. It was formerly esteemed in medicine as an antispasmodic and cordial.

HYACI'NTHUS. (*us, i.* m.; said by the poets to be named from the friend of Apollo, who was turned into this flower.) The name of a genus of plants. Class, *Hexandria;* Order, *Monogynia.*

Hyacinthus mu'scari. *Muscari.* The systematic name of the musk-grape flower, which, according to Ray, possesses emetic and diuretic qualities.

Hyacinthus non scriptus. See *Scilla nutans.*

HY'ALOID. (*Hyaloides;* from ὑαλος, glass, and εἰδος, likeness.) Transparent, like glass.

Hyaloid membrane. The capsule of the vitreous humour. See *Oculus.*

HYBERNA'CULUM. (*um, i.* n.) This is defined by Linnæus to be a part of the plant which protects the embryo herb from external injuries. It is an organic body which sprouts from the surface of different parts of a plant, enclosing the rudiments of the new shoot, and which is capable of evolving a new individual perfectly similar to the parent. This is a modification of the definition of Gærtner.

Hybo'ma. Τὸωμα. A gibbosity of the spine.

HY'BRID. (*Hybrida, æ.* m.; from ὑβρις, an injury: because its nature is tainted.) The offspring of two animals or plants of a different species. Neither the hybrid animal, nor hybrid plants, propagate their species.

HYDA'RTHRUS. (*us, i.* m.; from ὑδωρ, water, and αρθρον, a joint.) This disease, called also *hydarthron*, and *hydarthros*, by the Greek and *spina ventosa* by the Arabian physicians, is by us termed, from its colour, a white swelling. In this country it is a very common and an extremely intractable and fatal disease. The varieties of white swelling are very numerous, and might usefully receive particular appellation

Systematic writers have generally been content with a distinction into two kinds, viz. *rheumatic* and *scrophulous*. The last species of the disease they also distinguish into such tumours as primarily affect the bones, and the ligaments and soft parts; and into other cases, in which the ligaments and soft parts become diseased before there is any morbid affection of the bones.

These divisions, Mr. Samuel Cooper, in his Treatise on the Diseases of the Joints, proves to be not sufficiently comprehensive; and the propriety of using the term *rheumatic* he thinks to be very questionable.

The knee, ankle, wrist, and elbow are the joints most subject to white swellings. As the name of the disease implies, the skin is not at all altered in colour. In some instances the swelling yields, in a certain degree, to pressure; but it never pits, and is almost always sufficiently firm to make an uninformed examiner believe that the bones contribute to the tumour. The pain is sometimes vehement from the very first; in other instances, there is hardly the least pain in the beginning of the disease. In the majority of scrophulous white swellings, let the pain be trivial or violent, it is particularly situated in one part of the joint, viz., either *the centre of the articulation*, or the *head of the tibia*, supposing the knee affected. Sometimes the pain continues without interruption; sometimes there are intermissions; and in other instances the pain recurs at regular times, so as to have been called, by some writers, periodical. Almost all authors describe the patient as suffering more uneasiness in the diseased part when he is warm, and particularly when he is in this condition in bed.

At the commencement of the disease, in the majority of instances, the swelling is very inconsiderable, or there is even no visible enlargement whatever. In the little depressions, naturally situated on each side of the patella, a fulness first shows itself, and gradually spreads all over the affected joint.

The patient, unable to bear the weight of his body on the disordered joint, in consequence of the great increase of pain thus created, gets into the habit of only touching the ground with his toes: and the knee being generally kept a little bent in this manner, soon loses the capacity of becoming extended again. When white swellings have lasted a while, the knee is almost always found in a permanent state of flexion. In scrophulous cases of this kind, pain constantly precedes any appearance of swelling; but the interval between the two symptoms differs very much in different subjects.

The morbid joint, in the course of time, acquires a vast magnitude. Still the integuments retain their natural colour, and remain unaffected. The enlargement of the articulation, however, always seems greater than it really is, in consequence of the emaciation of the limb both above and below the disease.

An appearance of blue distended veins, and a shining smoothness, are the only alterations to be noticed in the skin covering the enlarged joint. The shining smoothness seems attributable to the distention which obliterates the natural furrows and wrinkles of the cutis. When the joint is thus swollen, the integuments cannot be pinched up into a fold, as they could in the state of health, and even in the beginning of the disease.

As the distemper of the articulation advances, collections of matter form about the part, and at length burst. The ulcerated openings sometimes heal up; but such abscesses are generally followed by other collections, which pursue the same course. In some cases, these abscesses form a few months after the first affection of the joint; on other occasions, several years elapse, and no suppuration of this kind makes its appearance.

Such terrible local mischief must necessarily produce constitutional disturbance. The patient's health becomes gradually impaired; he loses both his appetite and natural rest and sleep; his pulse is small and frequent; and obstinate debilitating diarrhœa and profuse nocturnal sweats ensue. Such complaints are sooner or later followed by dissolution, unless the constitution be relieved in time, either by the amendment or removal of the diseased part. In different patients, however, the course of the disease, and its effects upon the system, vary very much in relation to the rapidity with which they occur.

Rheumatic white swellings are very distinct diseases from the *scrophulous distemper* of large joints. In the first, the pain is said never to occur without being attended with swelling. Scrophulous white swellings, on the other hand, are always preceded by a pain, which is particularly confined to one point of the articulation. In rheumatic cases, the pain is more general, and diffused over the whole joint.

With respect to the particular causes of all such white swellings as come within the class of rheumatic ones, little is known. External irritation, either by exposure to damp or cold, or by the application of violence, is often concerned in bringing on the disease; but very frequently no cause of this kind can be assigned for the complaint. As for scrophulous white swellings, there can be no doubt that they are under the influence of a particular kind of constitution, termed a *scrophulous* or *strumous* habit. In this sort of temperament, every cause capable of exciting inflammation, or any morbid and irritable state of a large joint, may bring such disorders as may end in the severe disease of which we are now speaking.

In a man of a sound constitution, an irritation of the kind alluded to might only induce common healthy inflammation of the affected joint.

In scrophulous habits, it also seems probable that the irritation of a joint is much more easily produced than in the other constitutions; and no one can doubt that, when once excited in scrophulous habits, it is much more dangerous and difficult of removal than in other patients.

HYDA'TID. (*Hydatis, idis.* f.; from ὕδωρ, water.) 1. The name of a genus of entozoary animals, which are characterised by being formed of a membrane containing a water-like fluid. See *Entozoa*.

2. A tumour or vesicle, consisting of a membrane distended with a water-like fluid.

HY'DERUS. (Ὕδερος; from ὕδωρ, water.) In a general sense, the Greek writers use this word for *dropsy*. Galen uses the phrase λευκοφλεγματιας ὕδερος for *anasarca*; and, according to the editors of Castelli, ὕδερος προς αμιδα, *hydrops ad matulam*, signifies *diabetes*.

HY'DNUM. (*um*, *i.* n.) A genus of the Order *Fungi*; Class, *Cryptogamia*. Some of the species of this genus of mushrooms are eaten on the Continent; all the dark-coloured, with spots on their underscarf, are to be suspected as poisonous. The species occasionally used are the following: —

1. *Hydnum crinaceum*. The hedgehog mushroom.

2. *Hydnum coralloides*.

3. *Hydnum caput Medusæ*, *Fungo istrice*, and two other undetermined analogous species; but not the *Caput Medusæ* of Paulet, which is poisonous.

4. *Hydnum repandum*. The *chevrette*.

5. *Hydnum auriscalpium*. *Brouquichons*, which is said to be excellent.

HY'DRAGOGUE. (*Hydragogus*; from ὕδωρ, water, and αγω, to drive out.) A medicine is so termed, which possesses the property of increasing the secretions or excretions of the body, so as to cause the removal of water from any of its cavities. The term is chiefly applied to cathartics which have this effect, as jalap, gamboge, &c.

HYDRARGYRA'TUS. Of or belonging to mercury.

HYDRA'RGYRI ACETAS. Acetate of mercury: called also *Mercurius acetatus*, and *Pilulæ Keyseri*. By this preparation of mercury, the celebrated Keyser acquired an immense fortune in curing the venereal disease. The dose is from three to five grains. Notwithstanding the encomium given to it by some, it does not appear to be so efficacious as some other preparations of mercury.

HYDRA'RGYRI AMMO'NIO-CHLO'RIDUM. *Hydrargyrum præcipitatum album*. *Calx hydrargyri alba*. Take of bichloride of mercury, six ounces; solution of ammonia, eight fluid ounces. Dissolve the bichloride of mercury in the water, by the aid of heat, and add to this, when cold, the solution of ammonia, frequently stirring the mixture. Wash the precipitated powder till it become tasteless, and then dry it. The product of this process is an insoluble submuriate of mercury and ammonia. It is only used externally, in ointments for some cutaneous affections.

HYDRA'RGYRI BICHLO'RIDUM. *Oxymurias hydrargyri*. *Hydrargyrus muriatus*. *Murias hydrargyri corrosivus*. *Mercurius sublimatus corrosivus*. *Mercurius corrosivus albus*. Oxymuriate of mercury. Bichloride of mercury. Take of mercury, two pounds; sulphuric acid, three pounds; chloride of sodium, a pound and a half. Boil the mercury with the sulphuric acid in a proper vessel until the sulphate of mercury shall be left dry. Rub this, when it is cold, with the chloride of sodium in an earthenware mortar; then sublime with a heat gradually increased. An extremely acrid and violently poisonous preparation.

Given internally, in small doses, it possesses antisyphilitic and alterative virtues, and is of great use in some chronic and cutaneous affections, especially lepra. Externally, applied in form of lotion, it facilitates the healing of venereal sores, and cures the itch. In gargles for venereal ulcers in the throat, the oxymuriate of mercury gr. iii. or iv., barley decoction ℔ j., honey of roses ʒ ij., proves very serviceable; also in cases of tetters, from gr. v. to gr. x. in water ℔ j.; and for films and ulcerations of the cornea, gr. j. to water ʒ iv.

Mr. Pearson remarks, that, "when the sublimate is given to cure the primary symptoms of syphilis, it will sometimes succeed; more especially when it produces a considerable degree of soreness of the gums, and the common specific effects of mercury in the animal system. But it will often fail in removing even a recent chancre; and where that symptom has vanished, during the administration of corrosive sublimate, I have known," says he, "a three months' course of that medicine fail of securing the patient from a constitutional affection. The result of my observation is, that simple mercury, calomel, or calcined mercury, are preparations more to be confided in for the cure of primary symptoms than corrosive sublimate. The latter will often check the progress of secondary symptoms very conveniently; and I think it is peculiarly efficacious in relieving venereal pains, in healing ulcers of the throat, and in promoting the desquamation of eruptions. Yet, even in these cases, it never confers permanent benefit; for new symptoms will appear during the use of it; and on many occasions it will fail of affording the least advantage to the patient from first to last. I do sometimes, indeed, employ this preparation in venereal cases; but it is either at the beginning of a mercurial course, to bring the constitution under the influence of mercury at an early period, or during a course of inunction, with the intention of increasing the action of simple mercury. I sometimes also prescribe it after the conclusion of a course of friction, to support the mercurial influence in the habit, in order to guard against the danger of a relapse. But on no occasion whatever is it safe to confide in this preparation singly and uncombined for the cure of any truly venereal symptoms.

The bichloride of mercury may be given in a liquid form, or made into pills with bread crumb. The dose is from an eighth to a fourth of a grain twice a day.

A solution of it is ordered in the Pharmacopœia, termed *Liquor hydrargyri bichloridi*, which is made by dissolving bichloride of mercury and hydrochlorate of ammonia, of each ten grains, in a pint of distilled water.

This solution is directed in order to facilitate the administration of divisions of the grain of this active medicine. Half an ounce of it contains one fourth of a grain of the salt. The dose is from one drachm to half an ounce.

HYDRA'RGYRI BICYA'NIDUM. Bicyanide of mercury. Take of percyanide of iron, eight

ounces; binoxide of mercury, ten ounces; distilled water, four pints: boil them together for half an hour, and strain. Evaporate the liquor that crystals may form. Wash what remains frequently with boiling distilled water, and again evaporate the mixed liquors that crystals may form.

Bicyanide of mercury may also be prepared by adding as much binoxide of mercury as will exactly saturate it, to hydrocyanic acid distilled from ferrocyanide of potassium with diluted sulphuric acid.

In the first of these processes, the cyanogen quits the iron and unites with the mercury, while the oxygen, leaving the mercury, unites with the iron. In the second process, the oxygen of the binoxide unites with the hydrogen of the hydrocyanic acid, and the cyanogen combines with the mercury. The bicyanide of mercury is used for the preparation of hydrocyanic acid. See *Hydrocyanic acid.*

HYDRARGYRI BINIODIDUM. Biniodide of mercury. Take of mercury, an ounce; iodine, ten drachms; alkohol as much as may be sufficient. Rub the mercury and iodine together, adding the alkohol gradually, until the globules disappear. Dry the powder with a gentle heat, and keep it in a well-stopped vessel.

The biniodide of mercury is of a red colour, approaching to scarlet; it is easily fusible, and sublimes in rhombic scales, which are yellow at first, but become red on cooling. It is insoluble in water. It is soluble in some acids, and in heated alkohol.

This salt consists of two equivalents of iodine, and one of mercury.

It has been used in scrofulous and syphilitic affections, in doses of gr. ss. to gr. j. It has also been applied as an ointment.

HYDRARGYRI BINO'XYDUM. *Oxydrum hydrargyri rubrum. Hydrargyrus calcinatus.* Binoxide of mercury. Red oxide of mercury. Take of bichloride of mercury four ounces, solution of potash twenty-eight fluid ounces, distilled water six pints. Dissolve the bichloride in the water, strain, and add the solution of potash. Pour off the liquor, wash the precipitate till nothing alkaline can be perceived, and dry it with a gentle heat. This preparation of mercury is given with great advantage in the cure of syphilis. Its action, however, is such, when given alone, on the bowels, as to require the addition of opium, which totally prevents it. It is also given in conjunction with opium and camphire, as a diaphoretic, in chronic pains and diseases of long continuance. It is given as an alterative and diaphoretic, in chronic pains and diseases of long continuance. It is given as an alterative and diaphoretic from gr. ss. to ij. every night, joined with camphire and opium, each gr. one fourth or one half. It is violently emetic and cathartic in the dose of gr. iv. to gr. v.

HYDRARGYRI CHLO'RIDUM. *Hydrargyri submurias. Calomelas. Mercurius dulcis sublimatus. Sublimatum dulce.* Calomel. Take of mercury, four pounds; sulphuric acid, three pounds; chloride of sodium, one pound and a half; distilled water as much as may be sufficient. Boil two pounds of the mercury with the sulphuric acid in a proper vessel, until the sulphate of mercury is dry; when this is cold, triturate it with two pounds of mercury, in an earthen mortar, that they may be perfectly mixed. Then add the chloride of sodium, and rub them together until all globules disappear; afterwards sublime. Reduce the sublimed matter to a very fine powder, and wash it carefully with boiling distilled water, and dry it.

Calomel is the most extensively useful of all the preparations of mercury, and its virtues are too well known to require any particular description here. As a purgative, it has a power of correcting morbid states of the abdominal secretions which is not possessed by any other medicine of that class. As a mercurial, it is applicable in a larger number of cases than, perhaps, any other. Its operation is variously modified by combination with opium, antimony, purgatives, &c. The dose is from one grain to twenty, according to the intention with which it is given.

HYDRARGYRI IODI'DUM. Take of mercury, an ounce; iodine, five drachms; alkohol as much as may be sufficient. Rub the mercury and iodine together, until the globules disappear. Dry the powder immediately, with a gentle heat, without the access of light, and keep it in a well-stopped vessel.

The iodide of mercury is a greenish yellow powder. It is insoluble in water. It is decomposed by exposure to light or heat, being resolved into mercury and biniodide; when quickly heated, however, it sublimes nearly or quite unchanged.

Iodide of mercury is composed of one equivalent of iodine, and one equivalent of mercury.

It has been given internally in scrophulous cases, in the dose of from gr. j. to gr. iij.; but it is chiefly employed in the form of ointment.

HYDRARGYRI NITRICO-OXYDUM. *Nitrico-oxydum hydrargyri. Hydrargyrus nitratus ruber. Mercurius corrosivus ruber. Mercurius præcipitatus corrosivus.* Nitric oxide of mercury. Red precipitate. Take of purified mercury, by weight, three pounds; of nitric acid, by weight, a pound and a half; of distilled water two pints. Mix in a proper vessel, and apply a gentle heat, until the mercury be dissolved. Evaporate the liquor, and pulverise what remains. Put this into another shallow vessel, then apply a moderate heat, and raise the fire gradually, until red vapour shall cease to rise. This preparation is very extensively employed by surgeons as a stimulant and escharotic; but its extraordinary activity does not allow of its being given internally. Finely levigated, and mixed with common cerates, it is an excellent application to indolent ulcers, especially those which remain after burns and scalds, and those in which the granulations are indolent and flabby. It is also an excellent caustic application to chancres.

HYDRARGYRI OXYDUM. *Oxydum hydrargyri cinereum. Oxydum hydrargyri nigrum.* The gray or black oxide of mercury. It has received several names: *Æthiops per se; Pulvis mercurialis cinereus; Mercurius cinereus; Turpethum nigrum; Mercurius præcipitatus niger.* Take

of chloride of mercury, an ounce; lime-water, a gallon. Mix them and agitate frequently. Set the mixture aside, and when the oxide has subsided, pour off the liquor. Lastly, wash the precipitate till it be perfectly free from lime, and dry it in the air wrapped in bibulous paper The dose is from gr. ij. to x. There are four other preparations of this oxide in high estimation: —

One made by rubbing mercury with mucilage of gum arabic. Plenk, of Vienna, has written a treatise on the superior efficacy of this medicine. It is very troublesome to make; and does not appear to possess more virtues than some other mercurial preparations. Another made by triturating equal parts of sugar and mercury together. The third, composed of honey or liquorice and purified mercury. The fourth is the blue mercurial ointment. These preparations possess anthelmintic, antisyphilitic, alterative, sialagogue, and deobstruent virtues, and are used in the cure of worms, syphilis, amenorrhœa, diseases of the skin, chronic diseases, obstructions of the viscera, &c.

Hydrargyri oxydum cinereum. See *Hydrargyri oxydum.*

Hydrargyri oxydum nigrum. See *Hydrargyri oxydum.*

Hydrargyri submurias. See *Hydrargyri chloridum.*

Hydrargyri sulphas. See *Hydrargyrum vitriolatum.*

Hydrargyri sulphuretum nigrum. *Hydrargyrus cum sulphure.* Æthiop's mineral. Take of purified mercury, sublimed sulphur, each a pound, by weight. This preparation is called *Hydrargyri sulphuretum cum sulphure* in the last London Pharmacopœia of 1836. Rub them together, till the metallic globules disappear. Some suppose that the mercury is oxidised in this process, but that is not confirmed by the best experiments. The mercury, by this admixture of the sulphur, is deprived of its salivating power, and may be administered with safety to all ages and constitutions, as an anthelmintic and alterative.

Hydrargyri sulphuretum rubrum. Red sulphuret of mercury. *Hydrargyrus sulphuratus ruber. Minium purum. Minium Græcorum. Magnes epilepsiæ. Alzemafor. Amnion. Azamar.* Vitruvius calls it *anthrax.* A red mineral substance composed of mercury combined with sulphur. It is either native or factitious.

1. The *native* is an ore of quicksilver moderately compact, and of an elegant striated red colour. It is found in the duchy of Deuxponts, in the Palatine, in Spain, South America, &c. It is called native vermilion, and cinnabar in flowers.

2. The *factitious* is thus prepared: — "Take of mercury, two pounds; sulphur, five ounces. Having melted the sulphur over the fire, mix in the mercury, and as soon as the mass begins to swell, remove the vessel from the fire, and cover it with considerable force to prevent inflammation; then rub the mass into powder, and sublime." This preparation is called *Hydrargyri bisulphuretum* in the London Pharmacopœia of 1836. It is esteemed a mild mercurial alterative, and given to children in small doses. Hoffmann greatly recommends it as a sedative and antispasmodic. Others deny that cinnabar, taken internally, has any medicinal quality; and their opinion is grounded on the insolubility of it in any menstruum. In surgery its chief and almost only use is in the administration of quicksilver by fumigation. Thus employed it has proved extremely serviceable in venereal cases. Ulcers and excrescences about the pudendum and anus in women are particularly benefited by it; and in these cases it is most conveniently applied by placing a red-hot heater at the bottom of a night stool-pan, and, after sprinkling on it a few grains of the red sulphuret of quicksilver, placing the patient on the stool. To fumigate ulcers in the throat, it is necessary to receive the fumes on the part affected, through the tube of a funnel. By enclosing the patient naked in a box, it has, on some occasions, been contrived to fumigate the whole body at once, and in this way the specific operation of the quicksilver has been very rapidly produced.

This mode of curing the lues venerea is spoken of as confirmed, in a treatise by Sabonette, and by trials made in Bartholomew's hospital.

Mr. Pearson, from his experiments on mercurial fumigation, concludes, that where checking the progress of the disease suddenly is an object of great moment, and where the body is covered with ulcers or large and numerous eruptions, and in general to ulcers, fungi, and excrescences, the vapour of mercury is an application of great efficacy and utility; but that it is apt to induce a ptyalism rapidly, and great consequent debility, and that for the purpose of securing the constitution against a relapse, as great a quantity of mercury must be introduced into the system, by inunction, as if no fumigation had been employed.

HYDRARGY'RIA. (*a, æ.* f.; so called because produced by hydrargyrus.) A name, in some writings, of the erythematous redness which mercury sometimes produces. See *Eczema.*

HYDRA'RGYRUM. (*um, i.* n. Ὑδραργυρος; from ὑδωρ, water, and αργυρος, silver: so named, from its having a resemblance to fluid silver.) *Hydrargyrus.* Quicksilver. A metal of great importance in the arts, and the compounds of which are very extensively used in medicine. See *Mercury.*

Hydrargyrum acetatum. See *Hydrargyri acetas.*

Hydrargyrum cum creta. Mercury with chalk. *Mercurius alkalizatus.* Take of purified mercury, by weight, three ounces; prepared chalk, five ounces. Rub them together, until the metallic globules disappear. This preparation is milder than any other mercurial except the sulphuret, and does not so easily act upon the bowels; it is therefore used largely by many practitioners, and possesses alterative properties in cutaneous and venereal complaints, in obstructions of the viscera, or of the prostate gland, given in the dose of ℈ss. to ʒss., two or three times a day.

HYDRARGYRUM PHOSPHORATUM. This remedy has been observed to heal inveterate venereal ulcers in a very short time, nay, in the course of a very few days, particularly those about the pudenda. In venereal inflammations of the eyes, chancres, rheumatisms, and chronic eruptions, it has proved of eminent service. Upon the whole, if used with necessary precaution, and in the hands of a judicious practitioner, it is a medicine mild and gentle in its operation. The cases in which it deserves the preference over other mercurial preparations are these: in an inveterate stage of syphilis, particularly in persons of torpid insensible fibres; in cases of exostosis, as well as obstructions in the lymphatic system; in chronic complaints of the skin. The following is the formula. ℞ Hydrargyri phosphorati, gr. iv. Corticis cinnamomi in pulverem triti, gr. xiv. Sacchari purif. ʒ ss. Misce. The whole to be divided into eight equal parts, one of which is to be taken every morning and evening, unless salivation takes place, when it ought to be discontinued. Some patients, however, will bear from one to two grains of the phosphate of quicksilver, without inconvenience.

Hydrargyrum præcipitatum album. See *Hydrargyri ammonio-chloridum.*

HYDRARGYRUM PRÆCIPITATUM CINEREUM. This preparation is an oxide of mercury, nearly the same with the *hydrargyri oxydum* of the London Pharmacopœia. It is used as an alterative in cases of pains arising from an admixture of rheumatism with syphilis. It may be substituted for the hydrargyrus sulphuratus ruber, in fumigating ozæna, and venereal ulcerated sore throat, on account of its not yielding any vapour offensive to the patient.

HYDRARGYRUM PURIFICATUM. Purified mercury. *Argentum vivum purificatum.* Take of mercury, by weight, six pounds; iron filings, a pound. Rub them together, and distil the mercury from an iron retort, by the application of heat to it. Purified quicksilver is sometimes administered in its metallic state, in doses of an ounce or more, in constipation of the bowels.

Hydrargyrum vitriolatum. See *Subsulphas hydrargyri flavus.*

HY'DRATE. A compound in which water is chemically combined with some other substance. Thus, when water is poured upon quicklime, the water disappears, and the properties of the lime are modified; the slaked lime which results is a *hydrate of lime.*

HY'DRATED. Chemically combined with water.

HY'DRELÆ'UM. (*um, i.* n.; from *ὑδωρ*, water, and *ελαιον*, oil.) A mixture of oil and water.

HYDRE'NTEROCE'LE. (*e, es.* f.; from *ὑδωρ*, water, *εντερον*, an intestine, and *κηλη*, a tumour.) A hydrocele, or dropsy of the scrotum, attended with an intestinal hernia.

HYDRI'ODATE. *Hydriodas.* A compound of the hydriodic acid with a salifiable base.

HY'DRIO'DIC ACID. *Acidum hydriodicum.* If four parts of iodine be mixed with one of phosphorus, in a small glass retort, applying a gentle heat, and adding a few drops of water from time to time, a gas comes over, which must be received in the mercurial bath. This is hydriodic acid in a gaseous form.

An aqueous hydriodic acid can easily be obtained, very economically, by passing sulphuretted hydrogen gas through a mixture of water and iodine in a Woolf's bottle. On heating the liquid obtained, the excess of sulphur flies off, and leaves liquid hydriodic acid. Hydriodic acid may also be formed by passing hydrogen over iodine at an elevated temperature.

The compounds of hydriodic acid with the salifiable bases are called hydriodates, and may be easily formed, either by direct combination, or by acting on the basis in water with iodine.

None of these salts have yet been applied to any medical purpose, except the hydriodates of potash, soda, and zinc, which are used as external applications to scrophulous tumours.

Hydriodate of potash. See *Potassæ hydriodas.*

Hydriodate of soda. See *Sodæ hydriodas.*

HYDRO'A. (*a, æ.* f.; from *ὑδωρ*, water.) A watery pustule.

HY'DROBRO'MATE. A salt formed by the hydrobromic acid with a base.

HY'DROBRO'MIC ACID. *Acidum hydrobromicum.* An acid composed of equal volumes of hydrogen and bromine. This may be obtained from bromine, water, and phosphorus by a process similar to that from which the hydriodic acid results. The constitution of hydrobromic acid, and its compounds, are analogous to those of the hydrochloric and hydriodic acids.

HY'DROCHLO'RIC ACID. (*Acidum hydrochloricum;* so named from its being a compound of chlorine and hydrogen.) This acid is a compound of equal volumes of chlorine and hydrogen. The following is the process for obtaining it given in the London Pharmacopœia. Take of dried chloride of sodium, two pounds; sulphuric acid, twenty ounces; distilled water, twenty-four fluid ounces. Add the sulphuric acid, previously mixed with twelve fluid ounces of water, to the chloride of sodium in a glass retort. Pour the remainder of the water into a receiver; then, having fitted the retort to it, let the acid distil over into this water by the heat of a sand bath gradually increased. The specific gravity of this acid is stated at 1·10.

When received in glass jars over dry mercury, it is invisible, and possesses all the mechanical properties of air. Its odour is pungent and peculiar; its taste acid and corrosive. The specific gravity of muriatic acid gas, compared with atmospheric air, is 1·269. If an inflamed taper be immersed in it, it is instantly extinguished. It is destructive of animal life; but the irritation produced by it on the epiglottis scarcely permits its descent into the lungs. It is merely changed in bulk by alterations of temperature; it experiences no change of state. Water at the temperature of 40° Fahr. dissolves about 480 times its volume of hydrochloric acid gas, forming liquid acid of specific gravity 1·210.

When potassium, tin, or zinc is heated in contact with this gas over mercury, one half of the volume disappears, and the remainder is pure hydrogen. On examining the solid re-

sidue, it is found to be a metallic chloride. Hence, muriatic acid gas consists of chlorine and hydrogen, united in equal volumes. This view of its nature was originally given by Scheele, though obscured by terms derived from the vague and visionary hypothesis of phlogiston. The French school afterwards introduced the belief that muriatic acid gas was a compound of an unknown radical and water; and that chlorine consisted of this radical and oxygen. Sir H. Davy has proved, by decisive experiments, that, in the present state of our knowledge, chlorine must be regarded as a simple substance, and muriatic acid gas as a compound of it with hydrogen. See *Chlorine*.

In the old process for obtaining muriatic acid, common salt was previously decrepitated, then ground with dried clay, and kneaded or wrought with water to a moderately stiff consistence, after which it was divided into balls of the size of a pigeon's egg: these balls, being previously well dried, were put into a retort, so as to fill the vessel two thirds full; distillation being then proceeded upon, the muriatic acid came over when the heat was raised to ignition. In this process eight or ten parts of clay to one of salt are to be used. The retort must be of stoneware well coated, and the furnace must be of that kind called reverberatory.

It was formerly thought that the salt was merely divided in this operation by the clay, and on this account more readily gave out its acid; but there can be little doubt that the effect is produced by the silicious earth, which abounds in large proportions in all natural clays, and detains the alkali of the salt by combining with it.

Sir H. Davy first gave the just explanation of this decomposition. Common salt is a compound of sodium and chlorine. The sodium may be conceived to combine with the oxygen of the water in the earth, and with the earth itself, to form a vitreous compound; and the chlorine to unite with the hydrogen of the water, forming muriatic acid gas. "It is also easy," adds he, "according to these new ideas, to explain the decomposition of salt by moistened litharge, the theory of which has so much perplexed the most acute chemists. It may be conceived to be an instance of compound affinity: the chlorine is attracted by the lead, and the sodium combines with the oxygen of the litharge, and with water, to form hydrate of soda, which gradually attracts carbonic acid from the air. When common salt is decomposed by oil of vitriol, it was usual to explain the phenomenon by saying, that the acid, by its superior affinity, aided by heat, expelled the gas, and united to the soda. But, as neither muriatic acid nor soda exists in common salt, we must now modify the explanation, by saying that the water of the oil of vitriol is first decomposed, its oxygen unites to the sodium to form soda, which is seized on by the sulphuric acid, while the chlorine combines with the hydrogen of the water, and exhales in the form of muriatic acid gas."

100 parts of dry sea-salt are capable of yielding 62 parts by weight of muriatic acid gas.

The English manufacturers use iron stills for this distillation, with earthen heads: for the purpose of philosophical chemistry, glass should be used.

The muriatic acid of commerce has a straw colour; but this is owing to accidental impurity; for it does not obtain in the acid produced by the impregnation of water with the aëriform acid.

The substances which were formerly regarded as salts of muriatic acid are now considered as *chlorides* of metallic bases, which become muriates or hydrochlorates only when dissolved in water. Combined with nitric acid, it forms the nitro-muriatic acid, or *aqua regia*.

Hydrochloric acid possesses tonic powers. In typhoid fevers, although employed on the Continent with success, it has not proved so beneficial in this country; and, when freely used, it is apt to determine to the bowels. Externally, the muriatic acid has been applied in the form of a bath, to the feet, in gout. When combined with the nitric acid, and diluted with water, it forms the nitro-muriatic bath much celebrated in diseases of the liver and other cases. See *Balneum*.

Hydro-fluoric acid. *Acidum hydrofluoricum*. So called, because it is supposed to be a compound of hydrogen, manna, and fluorine.

This acid was made known by Scheele: the process for procuring it pure was first suggested by Mr. Knight; and its properties were examined by Gay Lussac and Thenard in 1810. When finely powdered *fluoride of calcium*, or *fluor spar* as it is usually called, (carefully selected for its purity,) is distilled with twice its weight of sulphuric acid, a highly volatile and corrosive liquid, which is *hydro-fluoric acid*, is obtained; it acts powerfully on glass and most of the metals: the retort employed in the experiment may be of lead, with a tube and receiver of pure silver; the receiver must be immersed in a mixture of ice and salt. The product is best preserved in a silver bottle, with a well-fitted stopper of the same material. When pure, it is clear and colourless, is very volatile, and smokes when exposed to air: at temperatures above 60° it flies off in vapour. Its specific gravity is 1·0609; but by the gradual addition of a certain proportion of water it acquires a considerable increase of density, the mixture having a specific gravity of 1·25. Its attraction for water exceeds that of sulphuric acid; and when dropped into water it excites a hissing noise, and great heat is evolved. Its vapour is dangerously pungent and irritating, and the liquid acid eminently active upon organic substances; a minute drop of it upon the skin produces a painful sore, and in larger quantities dangerous and malignant ulceration: hence the vessels containing it require to be handled with great caution. Its most characteristic property is the energy with which it acts upon glass: its vapours soon destroy the polish and transparency of all neighbouring glass vessels, and when dropped upon glass, great heat and effervescence are produced, and dense fumes evolved consisting of *fluo-silicic acid*. Diluted with about six parts of water, the acid may be used for *etching upon glass*, which it very effectually accomplishes in a few minutes.

The nature of this powerful and peculiar acid is as yet imperfectly understood, its basis, *fluorine*, not having been obtained in an insulated form. All analogy, however, leads us to regard it as a compound of fluorine and hydrogen. In the voltaic circuit, hydrogen is evolved from it at the negative pole, and the positive platinum wire corroded and converted into a brown compound, probably of fluorine and platinum. Many of the metals also decompose it with the evolution of hydrogen; and peculiar compounds result, *fluorides*, consisting of the metal in combination with fluorine. The action of potassium upon this acid is very energetic; it is attended by explosion, by the liberation of hydrogen, and by the formation of a peculiar soluble saline compound, which is considered as a *fluoride of potassium*.

The hydro-fluoric acid is probably a compound analogous to the other hydracids; that is, constituted of one atom of hydrogen and one of fluorine. This view of its nature, as opposed to its containing oxygen, was first suggested by Ampère, and Davy, and is adopted by Berzelius. "If this acid," he says, "be a hydracid, as we we assume it to be, it will consist of 94·95 fluorine, and 5·05 hydrogen; if, on the other hand, it be a hydrated oxyacid, it consists of 54·34 acid and 45·66 water." Upon the whole, the analogies in favour of the former opinion are too strong to be rejected. — *Brande*.

Hydro-sulphuric acid. *Acidum hydrosulphuricum*. The aqueous solution of sulphuretted hydrogen is so called by Gay Lussac. See *Hydrogen*.

Hydro-sulphurous acid. *Acidum hydrosulphurosum*. When three volumes of sulphuretted hydrogen gas and two of sulphurous acid gas, both dry, are mixed together over mercury, they are condensed into a solid orange yellow body, which Dr. Thompson calls hydro-sulphurous acid.

Hydrocarbonate. See *Carburetted hydrogen*.

Hydroca'rdia. (*a*, *æ*. f.; from ὑδωρ, water, and καρδια, the heart.) *Hydrocordis*. *Hydrops pericardii*. Dropsy of the pericardium. Dropsy of the heart. See *Hydropericardium*.

HYDROCE'LE. (*e*, *es*, f.; from ὑδωρ, water, and κηλη, a tumour.) The term *hydrocele*, used in a literal sense, means any tumour produced by water; but surgeons have always confined it to those which possess either the membranes of the scrotum, or the coats of the testicle and its vessels. The first of these, viz. that which has its seat in the membranes of the scrotum, *anasarca integumentorum*, is common to the whole bag, and to all the cellular substance which loosely envelopes both the testes. It is, strictly speaking, only a symptom of a disease, in which the whole habit is most frequently more or less concerned, and very seldom affects the part only. The latter, or that which occupies the coats immediately investing the testicle and its vessels, hydrocele tunicæ vaginalis, is absolutely local, very seldom affects the common membrane of the scrotum, generally attacks one side only, and is frequently found in persons who are perfectly free from all other complaints.

The anasarca integumentorum retains the impression of the finger. The vaginal hydrocele has an undulating feel.

The hydrocele of the tunica vaginalis testis is a morbid accumulation of the water separated on the internal surface of the tunica vaginalis, to moisten or lubricate the testicle.

From its first appearance, it seldom disappears or diminishes, but generally continues to increase, sometimes rapidly, at others more slowly. In some it grows to a painful degree of distension in a few months: in others, it continues many years with little disturbance. As it enlarges it becomes more tense, and is sometimes transparent; so that if a candle is held on the opposite side, a degree of light is perceived through the whole tumour; but the only certain distinction is the fluctuation, which is not found when the disease is a hernia of the omentum or intestines, or an inflammatory or a scirrhous tumour of the testicle.

Hydrocele cystata. Encysted hydrocele of the spermatic cord resembles the common hydrocele; but the tumour does not extend to the testicle, which may be felt below or behind it, while in the hydrocele of the vaginal coat, when large, the testicle cannot be discovered. In this disease, also, the penis is not buried in the tumour. Sometimes the fluid is contained in two distinct cells; and this is discovered by little contractions in it. It is distinguished from the anasarcous hydrocele by a sensible fluctuation, and the want of the inelastic pitting; from hernia, by its beginning below, from its not receding in an horizontal position, and not enlarging by coughing and sneezing.

Hydrocele funiculi spermatici, or hydrocele of the spermatic cord. Anasarcous hydrocele of the spermatic cord sometimes accompanies ascites, and at other times it is found to be confined to the cellular substance in or about the spermatic cord. The causes of this disease may be obstructions in the lymphatics, leading from the part, in consequence of scirrhous affections of the abdominal viscera, or the pressure of a truss applied for the cure of hernia.

When the affection is connected with anasarca in other parts, it is then so evident as to require no particular description. When it is local, it is attended with a colourless tumour in the course of the spermatic cord, soft and inelastic to the touch, and unaccompanied with fluctuation. In an erect position of the body, it is of an oblong figure; but when the body is recumbent, it is flatter, and somewhat round. Generally it is no longer than the part of the cord which lies in the groin; though sometimes it extends as far as the testicle, and even stretches the scrotum to an uncommon size. By pressure, a great part of the swelling can always be made to recede into the abdomen. It instantly, however, returns to its former situation, on the pressure being withdrawn.

Hydrocele peritonei. The common dropsy of the belly, or ascites.

Hydrocele spinalis. A watery swelling on the vertebræ. See *Hydrorachis*.

HYDROCE'PHALUS. (*us*, *i*. m.; from ὑδωρ, water, and κεφαλη, the head.) *Hydro-*

cephalum. Hydrencephalus. Dropsy of the brain. Dropsy of the head. It is distinguished by authors into *external* and *internal;* into *hydrocephalus membranarum* and *ventriculorum;* into acute and chronic. Dr. Cullen places the acute form, which has dilated pupils, and symptoms of pressure on the brain, amongst his comatose diseases, as a species of apoplexy, and calls it *Apoplexia hydrocephalica;* and the chronic form amongst the intumescentiæ.

Pain in the head, particularly across the brow, stupor, dilatation of the pupils, nausea, vomiting, preternatural slowness of the pulse, and convulsions, are the pathognomic symptoms of this disease, which have been laid down by the generality of writers.

The effusion of serous fluid, which gives name to this disease, is one of the many symptoms which accompany it. It has been stated, in treating of dropsy, and of the more remarkable divisions of dropsical maladies, that it was necessary to consider the primary and intrinsic causes, as well as the result of preternatural action, and this precaution is above all proper in speaking of hydrocephalus; for here much doubt has always existed as to its nosological arrangement. Pathologists, who have had in view chronic hydrocephalus, with dilatation of the sutures of the cranium, and who have traced this condition to a cachectic or scrofulous diathesis, have classed hydrocephalus with dropsy; but it is more common, with systematic writers on medicine, to regard the effusion as an occasional and secondary matter, and to consider the true disease as altogether an inflammation of the brain and membranes. The last-mentioned explanation of the disease is supported by the most approved teachers, and claims the first attention.

Acute hydrocephalus, in its early stages, is characterised by the symptoms of inflammation of the brain. The head is hot, the face flushed, the eyes dull, and without expression. The arteries of the temples and neck pulsate strongly. The child, for this is chiefly an infantile malady, is restless and fretful, evidently suffering pain, while both the countenance and the gestures refer to the head as its seat. There is pyrexia more or less intense, the pulse is accelerated, the skin hot and dry, and the tongue covered with a white fur. The appetite is lost, and sometimes there is vomiting. The bowels are generally costive.

Although there are occasional instances of hydrocephalus occurring at the age of twelve and fourteen, it is, as has been already remarked, chiefly prevalent among children, and in these from the second to the sixth year. This circumstance, with others, makes the *diagnosis* difficult and important. Dr. Abercrombie remarks, that minute attention to the correspondence of the symptoms is of more consequence than any particular symptom. Thus, the peculiar oppression which accompanies a high degree of fever is not an unfavourable symptom; but the same degree of oppression, occurring without fever, or with a very slight fever, would denote a head affection of much danger: a degree of headach and delirium, accompanying a high fever, would only be symptomatic; but, accompanying slight fever, would indicate a dangerous affection of the brain.

Dr. Gregory, in speaking of the diagnosis of hydrocephalus, mentions, as the disease with which it is most commonly confounded, common or typhus fever; and says, the "only manner of guarding against this source of fallacy is by bearing in mind that idiopathic fever is not common in young subjects, and that hydrocephalus is. Unless the evidence, therefore, be very unequivocal (as where the disease can be *distinctly* traced to contagion), the symptoms should always be attributed to hydrocephalus, and not to typhus."

"The second source of difficulty in the diagnosis arises from the *early* symptoms of hydrocephalus, being in every respect the same with those which accompany abdominal irritation; but chiefly from the important pathological principle, that several abdominal diseases, particularly those of children, are liable, in their progress, to affect the brain and nervous system, and to produce symptoms resembling those of the *latter* stages of hydrocephalus. The exact nature of these abdominal affections has been a frequent subject of dispute. By some it is supposed, that derangements in the *hepatic* system have a strong tendency to produce hydrocephalic symptoms; but I do not believe that the liver is more, if even so much, concerned in this, than the stomach and intestinal tract. A mere functional disturbance of these organs gives rise to remitting fever, headach, and vomiting. The presence of worms creates a degree of irritation that in the most striking manner counterfeits hydrocephalus. But, of all the states of abdominal disease which are liable to be mistaken for it, by far the most important is inflammation and ulceration of the mucous coat of the small intestines, particularly the ileum. In its latter stages, I have seen this disease attended in children with coma, dilated pupil, and screaming, constituting a secondary affection of the brain and nervous system.

"With reference to the diagnosis of hydrocephalus, it may further be observed that, in children, the latter stages of what appears to be pneumonia are sometimes attended with coma and screams: the early symptoms, that is to say, having been difficult breathing, a hard pulse, and cough. These cases are extremely deceiving. On dissection, the thoracic viscera often appear healthy, while the ventricles of the brain are perhaps loaded with serum."

Dr. Marshall Hall, in a pamphlet entitled "On a Morbid Affection of Infancy," has quoted, in addition to his own doctrine, the opinions of Dr. Abercrombie, Dr. Good, and others, on the subject of the diagnosis of hydrocephalus, and the importance of considering and treating differently a disorder which resembles it in many respects.

Dr. Abercrombie observes: "In the last stage of diseases of exhaustion, patients frequently fall into a state resembling coma a considerable time before death, and while the pulse can still be felt distinctly. I have many times

seen children lie for a day or two in this kind of stupor, and recover under the use of wine and nourishment. It is often scarcely to be distinguished from the coma which accompanies diseases of the brain. It attacks them after some continuance of exhausting diseases, such as tedious or neglected diarrhœa; and the patients lie in a state of insensibility, the pupils dilated, the eyes open and insensible to light, the face pale, and the pulse feeble. It may continue for a day or two, and terminate favourably, or it may prove fatal. This affection seems to correspond with the apoplexia ex inanitione of the older writers. It differs from syncope, in coming on gradually, and in continuing a considerable time, perhaps a day or two; and it is not, like syncope, induced by sudden and temporary causes, but by causes of gradual exhaustion going on for a considerable time. It differs from mere exhaustion, in the complete abolition of sense and motion, while the pulse can be felt distinctly, and is, in some cases, of tolerable strength. I have seen in adults the same affection, though it is perhaps more uncommon than in children." Again: "The state of infants which I have referred to is a state of pure coma, scarcely distinguishable at first sight from the perfect stupor of the last stage of hydrocephalus, the child lying with the eyes open, or half open, the pupils dilated, the face pale. It is difficult to describe distinctly the appearance, but it is one which conveys the impression of coma rather than of sinking; and I remember, the first time I met with this affection, the circumstance which arrested my attention, and led me to suppose that the disease was not hydrocephalus, and the state somewhat different from coma, was finding, on further inquiry, that it came on after diarrhœa, and not with any symptoms indicating an affection of the head. The child recovered under the use of wine and nourishment.

Dr. Good writes: "I am anxious to call the attention of medical men to a disorder of children, which I find invariably attributed to, and treated as, congestion or inflammation of the brain, but which I am convinced often depends on, or is connected with, the opposite state of circulation. It is chiefly indicated by heaviness of head and drowsiness: the age of the little patients whom I have seen in this state has been from a few months to two or three years; they have been rather small of their age, and of delicate health, or they have been exposed to debilitating causes. The physician finds the child lying on its nurse's lap, unable or unwilling to raise its head, half asleep, one moment opening its eyes, and the next closing them again with a remarkable expression of languor. The tongue is slightly white, the skin is not hot, at times the nurse remarks that it is colder than natural; in some cases there is at times a slight and transient flush; the bowels I have always seen already disturbed by purgatives, so that I can scarcely say what they are when left to themselves: thus, the state which I am describing is marked by heaviness of the head and drowsiness, without any signs of pain; great languor, and a total absence of all active febrile symptoms. The cases which I have seen have been invariably attributed to congestion of the brain; and the remedies employed have been leeches and cold lotion to the head, and purgatives, especially calomel. Under this treatment they have gradually become worse: the languor has increased, the deficiency of heat has become greater and more permanent, the pulse quicker and weaker, and at the end of a few days or a week, or sometimes longer, the little patients have died with symptoms apparently of exhaustion. In two cases, however, I have seen, during the last few hours, symptoms of oppressed brain, as coma and stertorous breathing, and dilated and motionless pupil."

But, to return to the subject of genuine hydrocephalus, and describe its progress and termination.

Dr. Clutterbuck says, "Inflammation of the membranes of the brain, like others, is often slight in degree, and terminates quickly in health. If it be long-continued, though slight, it often ends in serous accumulation, which is known or suspected by the marks of oppressed brain that take place. The pulse then loses its frequency, and often becomes preternaturally slow; the pupils are dilated; there is torpor of the bowels, and, indeed, throughout the whole system. The inflammation now frequently declines, or subsides altogether, the heat of head and of skin disappearing, and the tongue becoming clean. More frequently, however, the continuance of the febrile symptoms shows the continuance of the inflammation, but in very different degrees. If the child is very young, so that the bones are not firmly united, the head gradually enlarges in its dimensions, and becomes misshapen in its figure, and that so obviously and variously as not to require being described. The extent to which the enlargement goes is very various. Sooner or later, it generally stops by the bones uniting, the head remaining afterwards through life preternaturally large. In this case a quantity of fluid remains, without seeming (in many instances at least) to interfere with the proper exercise of the *sensorial functions*, or even with the general health, except that the body is commonly stunted in its growth. Such subjects are always liable to repeated returns of inflammation in the brain or its membranes, and which, sooner or later, in many cases prove fatal. The *ventricles* are always, I believe, the principal seat of the serous accumulation, and they become enlarged and distended in consequence. In most cases, though not all, there is fluid found between the *dura mater* and the *arachnoid* membrane, and, in this case, it makes its way to the basis of the brain, and down the spinal canal. The enlargement of the ventricles appears to take place from a kind of evolution of the brain, without any material injury to the structure, if we may judge from the perfect way in which the functions are sometimes carried on in these cases. The cerebral substance, in extreme cases of this sort, becomes so attenuated by the expansion, as hardly to equal a line in thickness; which has led to the mistake of supposing that, in such cases, the brain had wholly disappeared.

Such is the progress, in the milder forms, of

membranous inflammation of the brain. On many occasions the disease assumes a more active character, and soon spreads to the substance of the brain, as is known by the great disturbance of functions that ensues. Then it is that the restlessness becomes extreme, irritability both of mind and body is excessive, the expression of the countenance is altered, and especially that of the eyes, which are often directed irregularly, with the pupils unequally dilated. The eyelids remain half open, if the child sleeps; there is often delirium, as far as this can be observed in infants; the muscles of the hands and feet are in a state of contraction, and, frequently, general convulsions take place. The fur on the tongue becomes thicker, and of a darker colour; somnolency or stupor follows, and death ensues. The disease often proves fatal, in two or three days, and, in very young infants, sometimes at the very commencement of the inflammation, and then commonly with convulsions. Sometimes the disease is protracted to two or three weeks before it proves fatal, depending chiefly upon the age of the patient. If the disease is thus protracted, it wears at first merely the appearance of ordinary fever, which indeed it is. As the disease advances, the brain begins to be *oppressed*, partly from some degree of serous accumulation, partly from the arterial excitement and consequent distension, so that there is a mixture of the symptoms of *inflamed* with those of *oppressed* brain. In many instances, towards the end, a *paralytic state* of one side of the body is observed, while the limbs on the opposite side, perhaps, are convulsed.

"It is not, therefore," he says, "the mere presence of a certain quantity of fluid in the brain that gives rise to the symptoms of hydrocephalus; and, on the other hand, we have seen a disease go through all the usual symptoms of hydrocephalus, and terminate fatally, without any effusion. The fair conclusion from these facts appears to be, that the prominent symptoms in these cases are not the result of the effusion, but of that disease of the brain of which the effusion is one of the *terminations*. From a variety of facts adduced, there seems little reason to doubt that this disease is of an inflammatory nature; and therefore it follows, that our practice ought to be directed principally to subduing the inflammation at its earliest period, and preventing it from passing into *ramollissement*, which we have seen to be a fatal termination of the disease, even though of small extent and without effusion. This termination, I think, we have every reason to consider as the result most to be dreaded in this class of the inflammatory diseases of the brain; for, in regard to the mere effusion, were the parts otherwise in a healthy state, there does not seem to be any very satisfactory reasons for considering it as a hopeless affection. In other words, I mean to submit, that we have no good reasons for doubting the possibility of serous fluid being *absorbed from the ventricles of the brain*. We are warranted in this supposition, both by the analogy of other serous cavities, and by what we actually see take place in the brain itself. In the other serous cavities, we have every reason to believe that there is constantly going on an absorption of the old fluid, and a deposition of new fluid in its place; and we see them, in a state of disease, relieve themselves by an increased absorption from an excess of fluid that has been deposited. Upon the whole, we have sufficient ground for the following conclusions: —

"1. That, in the ordinary cases of hydrocephalus, the coma and other symptoms attending it are not to be considered as the direct effect of the effusion, but of that morbid condition of the brain of which the effusion is the consequence.

"2. That we have no certain mark which we can rely upon as indicating the presence of effusion in the brain. Slowness of pulse, followed by frequency, squinting, double vision, dilated pupil, paralytic symptoms, and perfect coma, we have seen exist *without any effusion*.

"3. That all these symptoms may exist in connection with a state of the brain which is active, or simply inflammatory. While the disease is the subject of active treatment, adopted with decision at an early period, we have a prospect of arresting its progress in a considerable proportion of cases. The ground of prognosis in particular cases depends, perhaps, in a great measure, upon the activity of the symptoms. The more they approach to the character of active inflammation, our prospect of cutting them short will be greater; and the more they partake of the low scrofulous inflammation, it will be the less. In all of them, the period for active practice is short, the irremediable mischief being probably done at an early period of the disease. These principles bear immediately upon the question. Has hydrocephalus been cured? There is no doubt that many cases have recovered, which exhibited all the usual symptoms of it. Such cases have, by some, been confidently brought forward as examples of hydrocephalus cured; while others have only considered them as remarkable from their singular resemblance to that disease. If the principles now referred to be admitted, we shall see reason to believe that we have no certain rule by which we can decide upon the presence of effusion in the brain; but that all the symptoms usually attending it exist in connection with an inflammatory condition of the brain, which, if allowed to go on, would probably lead to effusion; but which, if treated with *decision in its early stage*, may, in a certain proportion of cases, be treated with success. Whether the fluid can be absorbed, or the disease cured after effusion has taken place, must remain a matter of conjecture, but, from the facts which have been adduced, we have every reason to believe, that, in the ordinary cases of this disease, the *removal of the fluid, if it did take place, would in no respect improve the situation of the patient*, because there would still remain that deep-seated disease of the central parts of the brain which accompanies the effusion in so large a proportion of cases, and which, we have seen, may be fatal without any effusion, yet with all the usual symptoms of hydrocephalus. Hydrocephalus is, then, originally an inflammatory affection, chiefly seated in the substance of the central

parts of the brain: that it generally terminates by *ramollissement* of these parts, combined with serous effusion in the ventricles; and that it may be fatal by the *ramollissement* alone, even of small extent, but with all the symptoms which are commonly considered as characteristic of hydrocephalus."

With regard to the prognosis of hydrocephalus authors have differed. Dr. Abercrombie considers that the ground on which we may expect a cure depends, in a great measure, upon the activity of the symptoms. The more they approach the character of active inflammation, the greater the prospect of cutting them short; and the more they partake of the character of low scrofulous inflammation, the less it will be. The disease must be admitted, in accordance with general testimony, to be always alarming, and not less so, from the obscurity which so commonly accompanies it. In every instance, too, the period for active practice is short.

An accumulation of water in the ventricles of the brain, is one of the most common appearances to be observed on dissection. In different cases, this is accumulated in greater or less quantities. It sometimes amounts to a few ounces. When the quantity of water is considerable, the fornix is raised at its anterior extremity, in consequence of its accumulation, and an immediate opening of communication is hereby formed between the lateral ventricles. The water is of a purer colour and more limpid than what is found in the dropsy of the thorax, or abdomen. It appears, however, to be generally of the same nature with the water that is accumulated in these cavities. In some instances, the water in hydrocephalus contains a very small proportion of coagulable matter, and in others it is entirely free from it.

When the water is accumulated to a very large quantity in the ventricles, the substance of the brain appears to be a sort of pulpy bag, containing a fluid.

The remedial means indicated in cases of acute hydrocephalus, are of the kind usually employed in membraneous inflammation. Blood should be freely drawn by the lancet or by leeches. The treatment must be prompt and active, to give a tolerable chance of success: and the blood should be abstracted either from the temporal artery or jugular vein, proportioning the quantity and repetition to the state of the system. Cold applications to the head are useful. The head must be shaved, and the evaporating lotion applied constantly by rags all over the head; the best is, two ounces of the spirit of sulphuric æther, four ounces of distilled vinegar, and twelve of water, made cold by ice: the evaporation is promoted, and the coldness consequently kept steady, by passing cold air over the head. Purgatives, frequently repeated at the commencement of the attack, are necessary. The pulvis scammonii cum calomelane is an excellent medicine of this class; and the elaterium, which acts by vomiting and purging, has been given with success in cachectic habits, and with a loose cohesion of the flesh, or what is called a leucophlegmatic state of the constitution. Digitalis has been a good deal used, but with very opposite testimony as to its utility. Mercury, in its various forms, and administered in different ways, has enjoyed a high character, but is not without its opponents. The submuriate has been occasionally of decided use, given in the dose of two grains every four hours to children from one to three years of age, and more in proportion to the periods of life. Mercurial ointment rubbed into the extremities has been resorted to with the same view, namely, that of producing a ptyalism under which the inflammatory action has been arrested, and effused fluid absorbed. Blisters, and counter irritants should never be applied previously to depletion, or while there is a high degree of excitement; for under such circumstances they tend to aggravate the disease. Dr. Mills has occasionally used the antimonial ointment as an application to the vertex with benefit, and especially in cases which have supervened to repelled scabies of the hairy scalp.

Chronic hydrocephalus is a very different disease, both in its character and progress, from the acute form which has been described. It is frequently congenital; or, at least, there is a predisposition to it running through families, and developed sooner or later in the different individuals. It is connected with rachitis and scrofula; and is plainly a disease of cachexy and debility. It is this circumstance, doubtless, which has led to the confusion which is found to exist among authorities: the name hydrocephalus implying some connection with dropsical effusion, while the symptoms of active inflammation, which mark the acute disease, place that form among the pyrexial maladies.

Dropsy of the head, like that of every other organ, may proceed from a relaxed condition of the secernents of the brain, a torpitude of its absorbents, or from both.

With the deficiency of tone there is also not unfrequently some deficiency of structure or substance; and it is in consequence of this that the fluid, when morbidly secreted or collected in one part, spreads without resistance to another. A deficiency of structure or substance is sometimes found in the brain itself, and sometimes in the cranium. Generally speaking, there is some deficiency of bony earth; and the bones of the cranium have occasionally been so thin as to be pellucid, and transmit the light of a candle.

This chronic disease is always dangerous, and there is much difficulty in determining its extent, and the degree of cerebral disorganisation which may accompany it. Where, however, it is limited to a weak condition of the excernents of the brain, and medicines are speedily and steadily exhibited, there is a probability of its being removed; but where, on the contrary, no favourable impression can be made on the organ, the general frame partakes by degrees of the debility, the vital powers flag, the limbs become emaciated, and death ensues at an uncertain period; or the patient survives, a miserable spectacle to the world, and a burden to the family perhaps for years. Post mortem examinations of these enlargements of the head have not only found the skull very much enlarged in

size, and altered in its shape,—and it appears exceeding large in proportion to the face,—but on removing the scalp, the bones are found to be very thin, and there are frequently broad spots of membrane in the bone. These appearances are observed where the disease has been of some years' continuance. In some cases, where the quantity of water collected is not great, the substance of the brain has appeared to be indurated, and in others softened. Collections also of a viscid tenacious matter have been discovered in cysts, upon its external surface; tumours have also been found attached to its substance, and in many instances a conversion of a great part of the substance of the cerebrum or cerebellum into hæmatomatous, metanomatous, scrofulous, and other structures.

HYDROCO'TYLE. (*e, es.* f.; from ὕδωρ, water, and κοτυλη, the cotula.) 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Digynia.*

Hydrocotyle vulgaris. Marsh penny wort. This plant has been esteemed for its detersive and vulnerary properties, but is now disused.

HY'DROCYA'NIC ACID. *Acidum hydrocyanicum.* An acid so called from its being a compound of hydrogen and cyanogen. It is also called *Prussic acid* because it was first discovered in Prussian blue.

Prussic acid was discovered by Scheele in 1780; but this chemist obtained it mixed with a variable quantity of water: M. Gay-Lussac first made us acquainted with it in a pure state.

At an ordinary temperature, it is liquid, transparent, and colourless; its taste is at first cool, but soon becomes acrid and irritating: it reddens slightly the tincture of turnsol. Its odour is powerful, and may be deleterious; it is only supportable when diluted with a certain quantity of air, and then resembles the smell of bitter almonds.

Hydrocyanic acid is very volatile: it boils at 26° 5 under a pressure of 0^m, 76, and at 10° sustains a column of mercury of 0^m, 38. It is, however, easily congealed, and this takes place at 50° of cold; when also a few drops are poured upon paper, a part evaporates so rapidly as to produce a degree of cold sufficient to crystallise the remainder. It is the only liquid which possesses this property. Prussic acid is little soluble in water; hence when agitated with ten or twelve times its volume of this fluid, it collects again on the surface like oils and ethers. Alcohol readily dissolves it. When left to itself in a closed vessel, it is sometimes decomposed in less than an hour: it can rarely be preserved for more than a fortnight. According to M. Gay-Lussac, hydrocyanic acid consists of

Carbon	44·27
Azote	52·08
Hydrogen	3·65

Or, of one volume of vaprous carbon, one of azote, and one of hydrogen, condensed into two volumes; or, again, of one volume of cyanogen, and one of uncondensed hydrogen.

In order to obtain hydrocyanic acid, the crystallised deuto-cyanuret of mercury is reduced to powder, and treated with two thirds of its weight of fuming hydrochloric acid. The apparatus to be used consists of a small tubulated retort, to which is adapted a tube of sufficient length, bent to a right angle at one of its extremities; this is placed in a very narrow bottle, or, what is better, in a test tube, surrounded with ice and salt. The horizontal part of the tube, which is adapted to the retort, should contain some fragments of carbonate of lime, succeeded by others of chloruret of calcium. The apparatus being thus adjusted, and placed on a small furnace, the deuto-chloruret of mercury and the hydrochloric acid are to be introduced into the retort through the tube. A gentle heat is then applied, and the decomposition of the deuto-cyanuret of mercury proceeds; the hydrocyanic acid resulting from the action of the hydrochloric acid on the deuto-cyanuret, passes through the tube, and condenses in the test tube, having been deprived, by its contact with the carbonate of lime and chloruret of calcium, of all the water and hydrochloric acid which may have been volatilised along with it.

Vauquelin has proposed to obtain hydrocyanic acid by decomposing cyanuret of mercury with sulphuretted hydrogen. The apparatus differs little from the last. We substitute for the retort a globe containing a mixture of sulphuret of iron and diluted sulphuric acid. The cyanuret of mercury is placed in the horizontal tube already described, and near the end adapted to the globe; beyond this are placed fragments of carbonate of lead and chloruret of calcium, the one to absorb the small quantity of sulphuretted hydrogen that may not have been decomposed by the cyanuret of mercury, the other to absorb the water which the hydrocyanic acid may have brought along with it. This preparation is almost always impure, and contains sulphuretted hydrogen, because a portion of this gas eludes the carbonate of lead intended to absorb it.

If, in the preparation of hydrocyanic acid, according to Gay-Lussac's method, too much hydrochloric acid is added, M. Pelouse states that by the addition of 3 atoms of water, the composition becomes precisely that of formiate of ammonia, and that therefore a great quantity of the latter, and very little prussic acid is formed.

If one drop of pure prussic acid be introduced into the fauces of the strongest dog, he falls dead after one or two convulsive respirations. A few particles applied to the eye produce similar effects almost as suddenly. One drop of the acid diluted with several of alcohol, and injected into the jugular vein, kill the animal as rapidly as if it were struck by lightning. In animals thus poisoned, scarcely any trace of irritability is discoverable in the muscles a few moments after death.

In the Transactions of the Medical Society of Copenhagen, (vol. ii. 1821,) there is a memoir by Dr. Viborg, in which he states that he has given prussic acid to animals, in very large doses, without causing death. It is evident that the acid he employed must have been prepared by Scheele's process, or some other which yields

the acid very impure. To obtain uniform results, which may be compared with each other, the same process should always be adhered to, and we recommend that of Gay-Lussac or Vauquelin.

Prussic acid, when pure, produces the same effects on man as on animals. Even its vapour should be cautiously avoided, since when respired, it occasions acute pains in the chest, and a feeling of oppression which does not subside for some hours. Properly diluted, its action in disease is to allay morbid irritability in certain organs. Given at too short intervals, though in a proper dose, it has been known to produce headach and vertigo, which passed off in a few minutes.

Prussic acid, properly diluted, is employed with success in all cases of morbid irritability of the pulmonary organs. It is advantageously used in nervous and chronic coughs, asthma, and hooping cough, as also in the palliative treatment of phthisis; in the early stage of the latter disease there is reason to believe that it may effect a cure. In England it has been administered with success in hectic cough, sympathetic of some other affection, and also in dyspepsia. Dr. Elliotson has often prescribed it, both in hospital and private practice, prepared according to Vauquelin's process. He has reported more than forty cases of dyspepsia, with or without vomiting, accompanied with considerable pain of the epigastrium, and pyrosis, which were cured by the use of the medicinal prussic acid. He also cites a case of painter's colic, in which Dr. Prout administered the acid with instantaneous benefit. Dr. Elliotson has prescribed it in many affections of the chest, and has almost always found it relieve the harassing cough. Applied externally in lotions, in different diseases of the skin, it has afforded no very marked results in the hands of Dr. Elliotson. Dr. Thomson, however, alleges that he has used it with constant success against the itching and smarting so annoying in these affections, and that he has cured with it several species of cutaneous disease, and especially *acne rosacea*.

M. Jacob Bouchenel has published a very interesting paper on prussic acid as a remedy in chronic pulmonary catarrh, of which he gives four successful cases. He observes that this medicine in small doses produces no more inconvenience than a common linctus; that its use is not proper in the acute stage; and that its success is always most certain when antiphlogistic measures have been previously adopted. He has also employed prussic acid in a case of phthisis, but only with momentary relief of the cough; and doubts whether prussic acid has ever really cured confirmed phthisis. M. Magendie maintains, that he has cured with this medicine individuals who had every symptom of phthisis in the first degree, and even those in a more advanced stage.

In Italy the medicinal hydrocyanic acid has been used to allay morbid irritability of the uterus, even in cases of cancer, and to diminish the activity of the heart in all sthenic diseases.

Professor Brera extols its effects in pneumonia, and recommends it also in rheumatism and as an anthelmintic. Since the professor has employed it in diseases of the heart, Dr. Macleod has tried it in similar cases, and found it allay nervous palpitations, especially those caused by a deranged state of the digestive functions; he has also used it as a palliative in some cases of aneurism of the heart. He never exceeded 28 drops in the twenty-four hours, and has not seen any accident result from the administration of the medicine.

Dr. Frisch, of Nyborg, has relieved intolerable pains occasioned by cancer of the breast, and which had resisted all the antispasmodics, by washing the ulcerated surface with diluted prussic acid. He has likewise found benefit from this medicine in several cases of phthisis, one of which was cured.

Prussic acid, prepared as Scheele directs, is not sufficiently uniform, on account of the latitude which his process allows to the operator. Prepared according to Vauquelin's method, it retains a portion of sulphuretted hydrogen. It is, therefore, better to use the acid afforded by Gay-Lussac's process duly diluted. M. Magendie mixes it with six times its volume, or 8·5 times its weight of distilled water. This mixture he calls *medicinal prussic acid*.

The medicinal prussic acid may also be made by diluting the hydrocyanic acid with six times its volume of alcohol; it thus preserves its active properties better, and evaporates much less quickly than when mixed with water. — *Magendie*. A diluted hydrocyanic acid, adapted to medicinal purposes, has been introduced by the London College of Physicians into their recent pharmacopœia. See *Acidum Hydrocyanicum Dilutum*, in the Supplement.

HYDROCY'STIS. (*is, idis.* f.; from υδωρ, water, and κυστις, a vesicle.) An encysted dropsy.

HYDRO'GARON. Υδρογαρον. A mixture of garum and water. See *Garum*. Aëtius speaks of a purging hydrogaron.

HY'DROGEN. (*Hydrogenium, ii.* n.; from υδωρ, water, and γενναω, to produce: because, with oxygen, it produces water.) The base of inflammable air: a substance not perceptible to the senses in a separate state; but the existence of which is not at all the less certain. Though it cannot be exhibited experimentally uncombined, it can be pursued while it passes out of one combination into another. It cannot, indeed, be arrested on its passage; but it is sure to be discovered, if the proper chemical means be used, when it presents itself in a new compound.

Hydrogen, as its name expresses, is one of the constituent elements of water, from which it can alone be procured. It is plentifully distributed in nature, and acts a very considerable part in the processes of the animal and vegetable economy. It is one of the ingredients in the varieties of bitumen, oils, fat, ardent spirit, æther, and, in fact, all the proximate, component parts of animal and vegetable bodies. It forms a constituent part of all animal and vegetable acids. It is one of the constituents of ammonia, and of various other compound gases.

It possesses so great an affinity for caloric, that

it can only exist separately in the state of gas; it is, consequently, impossible to procure it in the concrete or liquid state, independent of combination.

Solid hydrogen, therefore, united to caloric and light, forms *hydrogen gas.*

This gas, formerly called inflammable air, was discovered by Cavendish, in the year 1768, or, rather, he first obtained it in a state of purity, and ascertained its more important properties, though it had been noticed long before. The famous philosophical candle attests the antiquity of this discovery.

Hydrogen gas possesses all the mechanical properties of atmospheric air. It is the lightest substance whose weight we are able to estimate: when in its purest state, and free from moisture, it is about fourteen times lighter than atmospheric air. It is not fitted for respiration; animals, when obliged to breathe in it, die almost instantaneously. It is decomposed by living vegetables, and its basis becomes one of the constituents of oil, resin, &c. It is inflammable, and burns rapidly when kindled, *in contact with atmospheric air or oxygen gas,* by means of the electric spark, or by an inflamed body; and burns, when pure, with a yellowish lambent flame; but all burning substances are immediately extinguished when immersed in it. It is, therefore, incapable of supporting combustion. It is not injurious to growing vegetables. It is unabsorbable by most substances: water absorbs it very sparingly. The sole product of the combustion of hydrogen gas is water. This fluid consists of two volumes of hydrogen and one of oxygen, or eight parts by weight of oxygen and one of hydrogen. If five volumes of atmospheric air be mixed with two of hydrogen, and a lighted taper applied, or an electric spark sent through the mixture, an explosion takes place, three parts of the gaseous mixture disappear, and water is deposited on the inside of the vessel. If two volumes of hydrogen, and one of oxygen be detonated in a similar manner, the whole is instantly converted into water.

A ready method of obtaining hydrogen consists in subjecting water to the action of a substance which is capable of decomposing this fluid.

1. For this purpose, let sulphuric acid, previously diluted with four or five times its weight of water, be poured on iron filings, or bits of zinc, in a small retort or gas-bottle, called a pneumatic flask, or proof: as soon as the diluted acid comes in contact with the metal, a violent effervescence takes place, and hydrogen gas escapes without external heat being applied. It may be collected in the usual manner over water, taking care to let a certain portion escape on account of the atmospheric air contained in the disengaging vessels.

The production of hydrogen gas in the above way is owing to the decomposition of water. The iron or zinc, when in contact with this fluid, in conjunction with sulphuric acid, has a greater affinity to oxygen than the hydrogen has; the oxygen, therefore, unites to it, and forms an oxide of that metal, which is instantly attacked and dissolved by the acid; the other constituent part of the water, the hydrogen, is set free, which, by uniting with caloric, assumes the form of hydrogen gas. The oxygen is, therefore, the bond of union between the metal and the acid.

The hissing noise, or effervescence, observable during the process, is owing to the rapid motion excited in the mixture by means of the great number of air-bubbles quickly disengaged, and breaking at the surface of the fluid.

We see, also, in this case, that *two* substances exert an attraction, and are even capable of decomposing jointly a *third*, which neither of them is able to do singly; viz., if we present sulphuric acid alone, or iron or zinc alone, to water, they cannot detach the oxygen from the hydrogen of that fluid; but if both are applied, a decomposition is instantly effected. This experiment, therefore, proves that the agency of chemical affinity between two or more bodies may lie dormant, until it is called into action by the interposition of another body, which frequently exerts no energy upon any of them in a separate state. Instances of this kind were formerly called *disposing affinities.*

2. Iron, in a red heat, has also the property of decomposing water, by dislodging the oxygen from its combination with hydrogen, in the following manner: —

Let a gun-barrel having its touch-hole screwed up, pass through a furnace, or large crucible perforated for that purpose, taking care to incline the barrel at the narrowest part; adjust to its upper extremity a retort charged with water, and let the other extremity terminate in a tube introduced under a receiver in the pneumatic trough. When the apparatus is thus disposed, and well luted, bring the gun barrel to a red heat, and when thoroughly red-hot, make the water in the retort boil; the vapour, when passing through the red hot-tube, will yield hydrogen gas abundantly. In this experiment, the oxygen of the water combines with the iron at a red-heat, so as to convert it into an oxide, and the caloric applied combines with the hydrogen of the water, and forms hydrogen gas. It is, therefore, the result of a double affinity, that of the oxygen of the water for the metal, and that of its hydrogen for caloric.

The more caloric is employed in the experiment of decomposing water by means of iron, &c. the sooner is the water decomposed.

Hydrogen combines with a variety of substances forming important products. With oxygen it forms *water;* with nitrogen *ammonia;* with chlorine, *hydrochloric acid;* with sulphur, *sulphuretted hydrogen;* with carbon, *carburetted hydrogen;* with phosphorus, *phosphuretted hydrogen;* with cyanogen, *hydrocyanic acid;* with iodine *hydriodic acid;* with arsenic, *arseniuretted hydrogen;* with tellurium, *telluretted hydrogen;* with potassium,} *potassuretted hydrogen;* with selenium, *seleniuretted hydrogen.* For an account of these substances, see their respective titles.

Besides the ordinary compound of hydrogen and oxygen which forms water, another or a *binoxide of hydrogen* was discovered by Thenard in 1818. The following account of this

interesting substance is taken from Dr. Turner's Elements of Chemistry.

Before describing the mode of preparing this compound, it must be observed that there are two oxides of barium; and that when the peroxide of that metal is put into water containing free muriatic acid, oxygen gas is set at liberty, and the peroxide is converted into protoxide of barium or baryta, which combines with the acid. When this process is conducted with the necessary precautions, the oxygen which is set free, instead of escaping in the form of gas, unites with the hydrogen of the water, and brings it to a maximum of oxidation. For a full detail of all the minutiæ of the process, the reader may consult the original memoir of Thenard: the general directions are the following: — To six or seven ounces of water add so much pure concentrated muriatic acid as is sufficient to dissolve 230 grains of baryta; and after having placed the mixed fluids in a glass vessel surrounded with ice, add in successive portions 185 grains of peroxide of barium reduced to powder, and stir with a glass rod after each addition. When the solution, which takes place without effervescence, is complete, sulphuric acid is added in sufficient quantity for precipitating the whole of the baryta in the form of an insoluble sulphate; in order that the muriatic acid, which had been combined with that earth, may be completely separated from it. Another portion of peroxide of barium, amounting to 185 grains, is then put into the liquid; the free muriatic acid instantly acts upon it, and, as soon as it is dissolved, the baryta is again converted into sulphate by the addition of sulphuric acid. The solution is then filtered, in order to separate the insoluble sulphate of baryta; and fresh quantities of peroxide of barium are added in succession, till about three ounces have been employed. The liquid then contains from twenty-five to thirty times its volume of oxygen gas. The muriatic acid, which has served to decompose the peroxide of barium during the whole process, is now removed by the cautious addition of sulphate of silver, and the sulphuric acid afterwards separated by solid baryta.

Peroxide of hydrogen, as thus prepared, is still diluted with a considerable quantity of water. To separate the latter, the mixed liquids are placed, with a vessel of strong sulphuric acid, under the exhausted receiver of an air-pump. As the water evaporates, the density of the residue increases, till at last it acquires the specific gravity of 1·452. The concentration cannot be pushed further; for, if kept under the receiver after reaching this point, the peroxide itself gradually but slowly volatilises without change.

Peroxide of hydrogen, of specific gravity 1·452, is a colourless transparent liquid without odour. It whitens the surface of the skin when applied to it, causes a prickling sensation, and even destroys its texture if the application is long continued. It acts in a similar manner on the tongue; in addition to which it thickens the saliva, and tastes like certain metallic solutions. Brought into contact with litmus and turmeric paper, it gradually destroys their colour and makes them white. It is slowly volatilised *in vacuo*, a fact which shows that its vapour is much less elastic than that of water. It preserves its liquid form at all degrees of cold to which it has hitherto been exposed. At the temperature of 59° F. it is decomposed, being converted into water and oxygen gas. For this reason it ought to be preserved in glass tubes surrounded with ice.

The most remarkable property of peroxide of hydrogen is its facility of decomposition. Diffused daylight does not seem to exert any influence over it, and even the direct solar rays act upon it tardily. It effervesces from escape of oxygen at 59° F., and the sudden application of a higher temperature, as of 212° F., gives rise to such rapid evolution of gas as to cause an explosion. Water, apparently by combining with the peroxide, renders it more permanent; but no degree of dilution can enable it to bear the heat of boiling water, at which temperature it is entirely decomposed. All the metals, except iron, tin, antimony, and tellurium, have a tendency to decompose the peroxide of hydrogen, converting it into oxygen and water. A state of minute mechanical division is essential for producing rapid decomposition. If the metal is in mass and the peroxide diluted with water, the action is slow. The metals which have a strong affinity for oxygen are oxidized at the same time, such as potassium, sodium, arsenic, molybdenum, manganese, zinc, tungsten, and chromium; while others, such as gold, silver, platinum, irridium, osmium, rhodium, palladium, and mercury, retain the metallic state.

Peroxide of hydrogen is decomposed at common temperatures by many of the metallic oxides. That some protoxides should have this effect, would be anticipated in consequence of their tendency to pass into a higher state of oxidation. The protoxide of iron, manganese, tin, cobalt, and others, act on this principle, and are really converted into peroxides. The peroxide of barium, strontium, and calcium may likewise be formed by the action of peroxide of hydrogen on baryta, strontia, and lime. But it is a singular fact, and I am not aware that any satisfactory explanation of it has been given, that some oxides decompose peroxide of hydrogen without passing into a higher degree of oxidation. The peroxide of silver, lead, mercury, gold, platinum, manganese, and cobalt, possess this property in the greatest perfection, acting on peroxide of hydrogen, when concentrated, with surprising energy. The decomposition is complete and instantaneous; oxygen gas is evolved so rapidly as to produce a kind of explosion, and such intense temperature is excited, that the glass tube in which the experiment is conducted becomes red-hot. The reaction is very great even when the peroxide of hydrogen is diluted with water. Oxide of silver occasions very perceptible effervescence when put into water which contains only 1–50th of its bulk of oxygen. All the metallic oxides, which are decomposed by a red heat, such as those of gold, platinum, silver, and mercury, are reduced to the metallic state when they act

upon peroxide of hydrogen. This effect cannot be altogether ascribed to caloric disengaged during the action: for oxide of silver suffers reduction when put into a very dilute solution of the peroxide, although the decomposition is not then attended by an appreciable rise of temperature.

While the tendency of metals and metallic oxides is to decompose the peroxide of hydrogen, acids have the property of rendering it more stable. In proof of this, let a portion of that liquid, somewhat diluted with water, be heated till it begins to effervesce from the escape of oxygen gas; let some strong acid, as the nitric, sulphuric, or muriatic, be then dropped into it, and the effervescence will cease on the instant. When a little finely divided gold is put into a weak solution of peroxide of hydrogen, containing only 10, 20, or 30 times its bulk of oxygen, brisk effervescence ensues; but on letting one drop of sulphuric acid fall into it, effervescence ceases instantly; it is reproduced by the addition of potash, and is again arrested by adding a second portion of acid. The only acids that do not possess this property are those that have a low degree of acidity, as carbonic and boracic acids; or those which suffer a chemical change when mixed with peroxide of hydrogen, such as hydriodic and sulphurous acids, and sulphuretted hydrogen. Acids appear to increase the stability of the peroxide in the same way as water does, namely, by combining chemically with it. Several compounds of this kind were formed by Thenard, before he was aware of the existence of the peroxide of hydrogen. They were made by dissolving peroxide of barium in some dilute acid, such as the nitric, and then precipitating the baryta by sulphuric acid. As nitric acid was supposed, under these circumstances, to combine with an additional quantity of oxygen, Thenard applied the term oxygenized nitric acid to the resulting compound, and described several other new acids under a similar title. But the subsequent discovery of peroxide of hydrogen put the nature of the oxygenized acids in a clearer light; for their properties are easily explicable on the supposition that they are composed, not of acids and oxygen gas, but of acids united with peroxide of hydrogen.

Peroxide of hydrogen was analysed by diluting a known weight of it with water, and then decomposing it by boiling the solution. According to two careful analyses, conducted on this principle, 864 parts of the peroxide are composed of 466 of water, and 398 of oxygen gas. The 466 of water contain 414 of oxygen, whence it may be inferred that peroxide of hydrogen contains twice as much oxygen as water. A small deficiency of oxygen in this experiment was to be expected, owing to the difficulty of obtaining peroxide of hydrogen perfectly free from water. The peroxide consists, therefore, of hydrogen 1, or one equivalent, and oxygen 16, or two equivalents.

Very curious phenomena are found to result from the action of hydrogen on some of the metals. M. Dobereiner found, that a jet of hydrogen gas, playing upon a piece of spongy platina, or the powder of that metal, in contact with atmospheric air, causes its immediate ignition. The same action takes place with spongy palladium. Iridium grows hot without inflaming, and water is generated. Cobalt and nickel give similar results.

Hydrogen, carburetted. See *Carburetted hydrogen.*

Hydrogen, percarburetted. See *Carburetted hydrogen.*

Hydrogen, subcarburetted. See *Carburetted hydrogen.*

Hydrogen, phosphuretted. See *Phosphorus.*

Hydrogen, subphosphuretted. See *Phosphorus.*

Hydrogen gas, heavy, carbonated. See *Carburetted hydrogen.*

Hydrogen gas, light, carbonated. See *Carburetted hydrogen.*

HYDRO'GURET. A compound of hydrogen with a simple inflammable body or a metal. The substances called hydrogurets are now generally designated by other names: thus *Hydroguret of carbon* is called *Carburetted hydrogen*, &c.

HYDROLA'PATHUM. (*um, i.* n.; from ὑδωρ, water, and λαπαθον, the dock.) See *Rumex hydrolapathum.*

HY'DROMEL. (*Hydromeli*, indeclinable; from ὑδωρ, water, and μελι, honey.) Water impregnated with honey: called also, *Mulsum; Aqua mulsa; Melicratum; Braggat.* Hydromel, after it is fermented, is called vinous hydromel, or mead.

HYDRO'METER. (*Hydrometrum, i.* n.; from ὑδωρ, water, and μετρον, a measure.) The name of an instrument for determining the specific gravity, and thereby the strength, of alkoholic liquids. It is also called *Areometer*, from αραιος, light, and μετρον, a measure — a measure of levity, because the more alkohol the fluid contains the smaller will be its specific gravity.

HYDROME'TRA. (*a, æ.* f.; from ὑδωρ, water, and μητρα, the womb.) *Hydrops uteri.* Dropsy of the womb. It produces a swelling in the hypogastric region, slowly and gradually increasing, resembling the figure of the uterus, yielding to or fluctuating on pressure, without ischury or pregnancy. Sauvages enumerates seven species. It must be considered as a very rare disease, and one that can with difficulty be ascertained.

HYDRO'MPHALUM. (*um, i.* n.; from ὑδωρ, water, and ομφαλος, the navel.) A tumour at the navel containing water. This may arise from mere distention in cases of ascites, or from an umbilical hernia, the sac of which contains serum.

HY'DROMYRI'NGA. (From ὑδωρ, water, and *myringa* or *myrinx*, a barbarous Latin name of the *membrana tympani.*) Dropsy of the tympanum.

HYDRO'NOSOS. (From ὑδωρ, water, and νοσος, a disease.) Watery disease: applied to the sweating-sickness. See *Sudor anglicanus.*

HYDRO-OXYDE. Synonymous with *Hydrate.*

HYDROPEDE'SIS. (From ὑδωρ, water, and πηδαω, to break out.) A violent sweating.

HY'DROPERICA'RDIUM. (*um*, *i.* n.; from *ὕδωρ*, water, and *περικαρδιον*, the pericardium.) *Hydropericardia.* Dropsy of the pericardium. This occurs as a consequence of inflammation of the pericardium, and as an accompaniment of hydrothorax. It is indicated by orthopnœa, palpitation, and irregular action of the heart, preternatural dulness of sound on percussion in the cardiac region, and a sound of fluctuation. It is generally connected with organic disease of the heart, and is always incurable.

HYDROPHO'BIA. (*a*, *æ.* f.; from *ὑδωρ*, water, and *φοβεω*, to fear: so called on account of the dread of water which accompanies the disease.) *Rabies canina. Cynanthropia. Cynolyssa.* Canine madness. This disease is considered by all pathologists as the consequence of a morbid poison, introduced into the system by the bite of a rabid animal. The general features of the disorder correspond perfectly with such a notion; but it is not to be overlooked that a strong analogy exists between hydrophobia and tetanus, and that the former might, with no inconsiderable claim to pathological accuracy, be viewed as a kind of tetanic affection, supervening upon wounds of a particular character. The points of analogy between these diseases will be found in the character and course of the symptoms; but previously it is necessary to notice an important *distinction* that exists between them. Idiopathic tetanus is both a frequent and a very fatal disease. Idiopathic or spontaneous hydrophobia has *never* been known to occur in the human subject, — never at least under such circumstances as to remove all suspicion of preceding local injury.

Hydrophobia has certainly existed from a very early period of the world. The first allusion to it is to be found in the writings of Aristotle; but it is to Cælius Aurelianus that we are indebted for the original description of the symptoms and progress of the disease. From his time unceasing attention has been paid to every phenomenon which it presents, and nothing is wanting, which observation can supply, to perfect our knowledge of it. Like tetanus, however, its cure has hitherto equally evaded the suggestions of pathology, and the blind attempts of empiricism. The investigation of the disease, therefore, must be conducted with a view to elucidate its peculiarities and pathological affinities, without any prospect of practical advantage.

Origin. — From the most distant times inquiries have been directed to ascertain what animals are capable of originating, receiving, and propagating, hydrophobia, and what is the precise mode of its communication from animals to man. The opinions of authors on these subjects have been mixed up with many idle tales; but the following may be taken as a summary of the best established results to which their researches have led. The disease almost always commences among animals of the canine race. It is questionable how far it ever originates even in those of the cat kind. To them, however, it is readily *propagated*, and they possess, equally with dogs, the power of transmitting it to man, and to every species of quadruped. It is a matter of doubt whether birds are susceptible of the disease. Herbivorous animals appear incapable of communicating it, and this is even still better ascertained with regard to man. Innumerable attempts have been made to propagate the disease by inoculating animals with the saliva of persons labouring under hydrophobia, but they have always failed.

Of the causes of this peculiar distemper in dogs nothing certain is known. That it originates *spontaneously* in them is now the general opinion; but it is equally well ascertained that among them it chiefly spreads by inoculation. In respect to the mode of its communication from animals to man, the facts in proof of the reality of a peculiar infectious principle are too numerous to admit of dispute. It is universally allowed that the poison cannot operate on the sound skin. In many instances the wound has been so slight as to escape notice; but it may be stated, as an invariable law, that, for the hydrophobic virus to take effect, it must be applied to an abraded, wounded, or ulcerated surface.

A question has arisen whether the infectious principle resides in the salivary secretion, or in the mucus of the trachea and bronchia. Some have conjectured that it is more or less diffused through all the solids and fluids of the rabid animal. This latter suggestion may at once be set aside; but the former opens a curious subject of inquiry. The appearances of inflammation so common about the pharynx, render it by no means improbable that the mucous secretion of that part may undergo a change, by which it is enabled to propagate the disease.

There is some difficulty in ascertaining how it happens that, of a number of persons bitten by a rabid animal, a certain proportion only are subsequently attacked by hydrophobia. The influence of prophylactic measures may be altogether excluded, and differences of constitutional disposition can hardly be trusted to. The circumstance is probably referable to the ineffectual application of the poison in the cases that escape. This conjecture is rendered the more probable by the acknowledged fact of bites upon the face and hands being always more dangerous than where the tooth had previously passed through cloth or leather.

Hydrophobia, as it affects dogs and other animals, exhibits a very different train of symptoms from that which is observed when man is the subject of the disease. For the former the reader is referred to a very ingenious paper by Mr. Meynell. The phenomena of hydrophobia in man are described as follows by Dr. G. Gregory, partly from his own observation, and partly from the very admirable memoir on hydrophobia, published by Dr. John Hunter, in the Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, vol. i. art. 17.

Incubation of the virus. — The interval between the bite and the development of hydrophobic symptoms (in other words, the *period of incubation* of the virus), is subject to considerable variation. Among the *genuine* cases which

I have seen recorded, the shortest period was twenty-one days, and the longest nine months. From thirty to sixty days usually elapse. Forty days, or six weeks, may be stated as the average; after which time the chances of escape are greatly increased. It is a curious circumstance that, during all this time, there is no local irritation observable in the bitten part, nor any derangement of general health, nor perceptible change in the constitution, provided the person bitten be not under the influence of fear.

Symptoms. — For two or three days previous to the coming on of the more unequivocal symptoms of the disease, the patient often complains of chilliness, some degree of headach, languor and lassitude, low spirits, and restlessness. Frequently also a sense of coldness and numbness is experienced in the bitten part, occasionally amounting to actual pain. This, in some instances, extends up the limb, and it has been observed to follow the course of the nerves rather than that of the absorbents. The freedom of the lymphatic glands from disease, indeed, has often been noticed, and adduced as an argument that the disorder does not depend on the absorption of any virus.

The second or *confirmed* stage of hydrophobia commences with that symptom which gives name to the disease — the horror of liquids. The distressing sense of suffocation, and the violent spasmodic agitation of the whole body, brought on by the sight of liquids, or the attempt to drink, is unquestionably the most remarkable symptom of the disorder. By degrees the disposition to spasm increases so much upon the patient, that not merely the sight of water, but the least exertion of speaking or moving, the slightest noise, or the entrance of a stranger into the room, brings it on. Extreme irritability and sensibility of the whole frame are apparent indeed in every action of the patient, and constitute the unvarying feature of the complaint.

It has been erroneously imagined from the very general use of the term *canine madness*, that delirium is one of its usual symptoms. In a large proportion of hydrophobic cases the mind has continued perfectly clear up to the last moment. In others, where delirium did occur, it was not until a late period of the disease. But though the patient is sensible, he is in the highest degree timid and *nervous*. As the disease advances, the mind is more and more filled with dreadful fears and apprehensions. Excessive anxiety is apparent in the countenance. Almost immediately after the disorder distinctly manifests itself, the respiration is hurried and *gasping*, and the patient commonly complains of an oppression about the præcordia. The pulse is seldom much affected till towards the latter periods of its course, when it becomes small, irregular, feeble, and rapid. Blood has frequently been drawn from the arm; but it does not appear ever to have exhibited any inflammatory crust.

The secretions about the mouth are always very much affected. The saliva is usually viscid, and increased in quantity. The patient complains of a parched mouth and thirst, on which account he continually calls out for drink, which yet no persuasions can induce him to look at, much less to swallow. A frothy saliva is frequently ejected, to the great terror of bystanders; but it arises merely from the patient's inability to swallow.

Hydrophobia is not characterised by any great degree of debility: instances have occurred of persons running a considerable distance, and making great muscular exertion, within a few hours of their death. The degree of bodily weakness which has been observed in particular cases is, perhaps, as much attributable to the remedies employed, as to the natural effects of the disorder. Its duration varies from two to five days, reckoning from the invasion of the *pathognomonic* symptom. The average does not appear to exceed forty hours. The *immediate* cause of death has never been very accurately ascertained, either in the case of tetanus or hydrophobia. Some patients die in a convulsion fit; the greater number sink under the excessive exhaustion of nervous power.

Prognosis and morbid appearances. — The prognosis in hydrophobia may be discussed in a very few words. There does not appear to be, in the records of medicine, a single unequivocal instance of recovery from this disease. A variety of supposed cures may indeed be found. The second volume of the Transactions of the London College of Physicians contains two; but the slightest reflection will convince the reader, that neither in origin, symptoms, nor progress did they substantiate their claim to the character of hydrophobia. It must be viewed, therefore, as the only known disease which has hitherto uniformly resisted the efforts both of nature and of art.

This melancholy fact cannot be imputed to any neglect on the part of the cultivators of morbid anatomy; on the contrary, the appearances on dissection, in those who die of hydrophobia, have been recorded with a degree of minuteness which, favourably as it speaks for their zeal, is a proof at the same time how little aid their labours are calculated to afford to the mere *practitioner* in physic. The usual appearances are, turgescence of vessels (by some called marks of inflammation) about the pharynx, and about the cardiac orifice of the stomach. Sir Astley Cooper, in the course of a minute examination of several dogs who died rabid, found effusion of blood into the cellular membrane connecting the mucous and muscular coats of that organ. No morbid appearance has ever been traced in the brain; and though the spinal marrow has been carefully examined, no important lesion has been detected there. These facts, however, are not decisive against the theory which attributes hydrophobia to a disordered condition of the brain and spinal column; because, from the rapid course of the disease, time is not given for those alterations of structure which are so commonly the results of disordered function. — *Gregory.*

Treatment. — No cure has hitherto been found for this horrible disease when established. The plans which have been said to have been successful in a few cases, have entirely failed in

all others; nor is there, as before observed, a single well-authenticated case on record of recovery from real hydrophobia.

If medical aid can be obtained at the time of the bite, or very soon after, the efficacious means of preventing the absorption of the poison is by removing or destroying the bitten part. This has been done in various ways: the lacerated part has been *amputated* or *dissected* out; in other instances the *actual* and *potential cautery* have been applied. Iron heated nearly to whiteness was used by the ancients. Pure potash, formerly called lapis infernalis, was proposed as a less terrific process. Of these three modes of operating, the potential cautery is the least to be depended on. Of the other two, it is of little consequence which is selected: either will prove sufficiently efficacious alone, if employed early enough, that is, before absorption has taken place; and extensively enough to extirpate or destroy every portion of the bitten part. It has also been strongly recommended to apply a ligature above the bitten part, sufficiently tight to prevent the absorbents from imbibing the virus. But this does not appear likely to answer; for, if the poison be received into the absorbents, it will be carried into the circulation in a circuitous way, if arrested in the regular course.

When the constitutional disease has actually shown itself, the curative processes which have been resorted to are all reducible to one of the four following: —

1. That of stimulating and supporting the vital power, under the severe conflict to which it is exposed.

2. That of suddenly exhausting the system, under the conviction that the disease is inflammatory.

3. That of opposing the poison by certain antidotes.

4. That of considering the disease as highly nervous and spasmodic.

To carry the first intention into effect, volatile alkali, warm and pungent aromatics, with bark, have been resorted to. The confectio aromatica, confectio opii, most of the carbonates of ammonia, essential oils, and cajeput oil, with camphire, were amongst the leading cordials, and the different preparations of cinchona, with or without them.

The means resorted to with a view of suddenly debilitating and exhausting the system, upon the opinion of the disease being inflammatory, are bleeding and purgatives. The former has been said to have cured two cases, very lately, in the East Indies; in consequence of which, though formerly abandoned from its inutility, the bleeding has lately been revived, and carried to the extent of fainting, by large and rapid depletions; and the operation has been repeated almost as long as the powers of life would allow. Under this plan, some cases are loosely recorded as being successful in the last hundred years. There is great reason, therefore, to doubt the efficacy of this practice, which would have been very generally instituted, had it been efficacious. The purgative plan consists in the exhibition of those medicines which have a drastic effect, especially colocynth, camboge, aloes, and the submuriate of mercury: these have been administered in large doses, or such as kept up a continued purgation. Another powerful means of endeavouring to fulfil the same indication is submersion in cold water Celsus appears to have been the first who resorted to it with a view of taking off the spasm of hydrophobia, and quenching the thirst that accompanies it: — "Miserrimum genus morbi; in quo simul æger et siti et aquæ metu cruciatur: quo oppressis in angusto spes est." In this almost hopeless state, the only remedy, he observes, is to throw the patient instantly, and without warning, into a fish-pond, alternately, if he has no knowledge of swimming, plunging him under the water, that he may drink; then raising his head, or forcing him under if he can swim, and keeping him below till he is filled with water, so that the thirst and water dread may be extinguished at the same time. But there is, he further observes, another danger, lest the body of the patient, exhausted and worn out by the submersion, as well as by the disease, be thrown into convulsions: to prevent which, as soon as he is taken out of the pond he is to be put into warm oil. In subsequent times, practitioners have proceeded in a bolder way, regardless of convulsions, and have persevered, at all hazards, in reducing the living power to its last ebb, believing, that the nearer they suffocated the patient, without actually killing him, the greater their chance of success. Van Helmont used to keep the patient submersed while the *Miserere* was chaunted.

With a view of fulfilling the third intention, a vast variety of substances have been put in requisition. The Ophiorrhiza mungos stands the first in this class of antidotes. It has long been supposed to be a specific for the bite of the rattle-snake; and, in India and Ceylon, it is used in the present day as an antidote against the bite of a mad dog. Acids and alkalies were supposed to operate in the same way. The muriatic acid, the sulphuric, and the acetic, were formerly selected. Of the alkalies, the carbonates of ammonia, and the eau de luce, have been largely used, both internally and externally. Mercury, from its being a specific in syphilis, and more especially from its specific action on the salivary organs, the supposed immediate outlet of the poison of rabies, has had a strong claim to general attention, and has been very extensively tried, in various forms, and acquired a high degree of reputation. The grand object with mercurials is to excite a speedy salivation, and maintain it so long as there is supposed to be any danger; and especially where the administration had been delayed till the paroxysm had shown itself. In some few cases this practice is said to have effected a cure; but, like all the others, it has failed in most. As diuretics were supposed to possess a strong alexipharmic power, they have not been without their votaries. Cantharides, and one or two species of scarabei, have been given internally, and applied also externally. The ash-coloured liverwort, or lichen caninus of Linnæus, was once a very popular remedy against canine madness. It was given

in powder, with an equal quantity of black pepper, a drachm and a half of the two forming a dose for an adult, which was taken for four mornings fasting, in half a pint of warm cow's milk: the patient, however, was first to lose nine ounces of blood, and afterwards to be dipped in cold water, for a month together, early in the morning.

The fourth intention regards the highly nervous and spasmodic condition of the system, to allay which antispasmodics and sedatives have been resorted to. Practitioners have universally considered this as the most likely way of subduing the disease; and hence the whole catalogue of antispasmodics and sedatives have been extensively employed: and, indeed, the benefit occasionally derived from volatile alkali, camphire, and cold bathing, must be referred to their antispasmodic virtues. The more direct medicines, however, of this class, are opium, æther, musk, belladonna, nux vomica, hyosciamus, nitrate of silver, and ammoniated copper, oil of amber, and arsenic. Opium alone, and in combination with musk, have been chiefly depended on; but in neither way have the effects been found more beneficial than other means. When the patient can swallow, it is to be administered in full doses; and, if the constriction of the throat prevents the patient swallowing, two grains of opium, dissolved in an ounce of any bland fluid, may be thrown into the rectum, and kept there, every two or three hours. The French practitioners injected a gummy solution of opium into the veins. Two grains of the extract were in this manner thrown in, and the patient was in some degree tranquillised for an hour or two; the dose was doubled towards the evening of the same day. It was repeated at intervals, and at length increased to eight grains at a dose. The relief it afforded, however, was never more than temporary, and he expired on the fifth day from the incursion. Mosch has been said to be a specific antidote in hydrophobia, by Gmelin: but, though given in ample doses in this country, its exhibition has not been followed by any such result as to justify its being depended on. The combination of musk and opium has been very generally tried; and also æther, camphire, oil of amber, &c. at the same time; and such varied compounds, though they certainly bid fair, as the most powerful antispasmodics, failed as generally as other medicines. Musk and cinnabar was supposed to be peculiarly efficacious. The famous powder employed by the natives of Tonquin, and introduced into this country by Mr. Cobb, consisted of sixteen grains of musk, and forty-eight grains of cinnabar, mixed in a gill of arrack. This, taken as a dose, is said to have thrown the patient into a sound sleep and perspiration in the course of two or three hours; and where it did not, the dose was repeated till such effect was produced. Arsenical preparations, and prussic acid, have, under the direction of the most skilful practitioners, had a fair trial, and in every instance been unsuccessful. Besides the remedies already mentioned, there are two or three others. The Ormskirk medicine, so called from the place where its inventor lived, was supposed — for he could not be prevailed on to publish his secret — to consist of powder of chalk, half an ounce; Armenian bole, three drachms; alum, ten grains; powder of elecampane-root, one drachm; oil of anise, six drops. The single dose, thus compounded, is to be taken every morning, for six times, in a glass of water, with a small proportion of fresh milk. The Alisma plantago, or madwort plantain, has for some years been a popular remedy against canine madness, and is depended on in the present day in Russia, where they give the root, reduced to a powder, and spread over bread and butter. Two or three doses are said to be sufficient in the worst cases. In the second number of the Hamburgh Medical Repository, quite a new remedy is mentioned, viz. that of introducing rabid blood into the system. Dr. Ritchmeister of Finland, has collected a number of striking cases, and various authorities, in proof of the blood of a rabid animal, when drunk, being a specific against the canine hydrophobia, even when the symptoms are the most strongly marked. The rabid wolf-dog, or other quadruped, is for this purpose killed, and its blood drawn off and collected as a drink. Chlorine is the last remedy we have to notice, which Brugnatelli o. Pavia, contends has specific powers over this disease; but they are denied by an equally distinguished professor.

Hydrophosphorous acid. See *Phosphorous acid.*

HY'DROPHTHA'LMIA. (*a*, *æ.* f.; from *ὑδωρ*, water, and *οφθαλμος*, the eye.) *Hydrophthalmium.* There are two diseases different in their nature and consequences, thus termed. The one is a mere anasarcous, or œdematous swelling of the eyelid. The other, the true hydrophthalmia, is a swelling of the bulb of the eye, from a morbid increase of the vitreous or aqueous humours.

Hydrophthalmium. See *Hydrophthalmia.*

HY'DROPHTHO'RIC ACID. (*Hydrophthoricus;* from *ὑδωρ*, water, and *phthorum*, a name of fluorine, from *φθορα*, corruption, on account of its supposed corroding power.) Ampère's name for the base of the fluoric acid, called by Davy *fluorine.* See *Hydro-fluoric acid.*

HY'DROPHYSOCE'LE. (*e*, *es.* f.; from *ὑδωρ*, water, *φυση*, *flatus*, and *κηλη*, a tumour.) A name given to a hernia, the sac of which contains fluid and air.

HYDRO'PIC. (*Hydropicus;* from *ὑδρωψ*, the dropsy.) Relating to dropsy. As an *hydropic patient*, or an *hydropic medicine.*

HYDRO'PIPER. (*er*, *eris.* n.; from *ὑδωρ*, water, and *πεπερι*, pepper: so called from its biting the tongue like pepper, and growing in marshy places.) See *Polygonum hydropiper.*

HY'DROPNEUMA'TIC TROUGH. This name has been given to the apparatus generally called the *pneumatic trough.* See *Apparatus, pneumatic.*

HY'DROPNEUMO'NIA. (From *ὑδωρ*, water, and *πνευμων*, the lung.) Serous infiltration of the lungs.

HY'DROPNEUMOSA'RCA. (*a*, *æ.* f.; from *ὑδωρ*, water, *πνευμα*, wind, and *σαρξ*, flesh.) A tumour containing air with liquid and solid matter.

HYDRO'IDES. (From ὑδρωψ, a dropsy, and εἶδος, likeness.) Serous or watery: formerly applied to watery excrements.

HY'DROPS. (*ops, opis.* m.; from ὕδωρ, water.) Dropsy. A preternatural collection of serous or watery fluid in the cellular substance, or different cavities of the body. It receives different appellations, according to the particular situation of the fluid. When it is diffused through the cellular membrane, either generally or partially, it is called *anasarca.* When it is deposited in the cavity of the cranium it is called *hydrocephalus;* when in the chest, *hydrothorax;* when in the abdomen, *ascites;* in the uterus, *hydrometra;* and, within the scrotum, *hydrocele.*

Dropsy is a consequence of so many and such various morbid conditions, that much difficulty has always existed in giving just and general views of its nature. The older and more popular theory regarded debility as its universal cause, and made divisions according merely to the different seats of the fluid collected; as anasarca, hydrocephalus, hydrothorax, &c. Later, the attention of chemists and physicians was drawn to the analysis of the urine discharged during the disease, and of the fluid itself, when it could be procured; and upon the differences thus traced was founded the diagnosis, and the practice of this school of *water doctors.* In the present day, the investigation of the morbid anatomy of disease has led pathologists to explain dropsy, by declaring the existence, in all cases, of some obstacle to the circulation in the blood vessels or lymphatics, or of some inflammation of a secreting surface. But perhaps, as in other instances, the nature of this disease may be, in any given case, best illustrated by a consideration of its history in relation to all the various circumstances which may explain it, but without bestowing an exclusive reliance upon any isolated facts: since, although something is to be learned from each view which is taken, it cannot be asserted that there is any one condition, or symptom, or organic defect so peculiar and so constantly present as to be esteemed essential and necessary to its production. Thus, the diffused dropsy, succeeding to profuse hæmorrhage, and to mercurial salivation, and occurring so commonly as a sequel to chronic wasting diseases, may be probably attributed to a profuse exhalation on the part of the secernents or terminal vessels, which open their mouths too widely, and suffer the serum or other aqueous fluid to escape with too much freedom; or it may proceed from a torpid and inactive condition of the correspondent absorbents occasioning too small a removal of this fluid; or by each of these diseased conditions of both sets of vessels operating at the same time: to which double deviation from healthy action has been applied the name of hydropic diathesis. But the debility, which may be truly called characteristic here, cannot be supposed to exist in the sudden effusions from the membrane enveloping the testicle or the heart, from the tunics of the brain, or of the eye. Dr. Blackall has lately revived and insisted on the method of distinguishing the different varieties of dropsy by attending to the chemical qualities of the urine and effused fluid; and this study of consequences promised a very convenient solution of the difficulties generally found in tracing the causes and character of a disease which shows itself under such different combinations of morbid conditions: but, upon a perusal of the cases where this plan has been pursued, there will not be found so great a constancy in the connexion of their chemical qualities with the morbid phenomena co-existing as to afford a sure basis for classification and practice. Again, the divisions founded upon anatomical observations, which are, in many cases, the only true ones, are rendered less satisfactory by the consideration that the same morbid conditions are often found to exist not conjoined with a dropsical state; and that, where this is present, we are called upon to allow of some general hydropic tendency or cachexy which has been superadded to the structural derangement, as, otherwise, we cannot fully account for this consequence not occurring whenever the imputed causes showt hemselves. Thus, obstructions to the circulation, as aneurisms and ossified valves, exist sometimes for years without producing anasarca; inflammation of the peritonæum, though, in the first instance, causing an effusion of serum, does not necessarily lay the foundation of ascites. And we must, in general, admit the influence of modifying circumstances, even in cases where the occasional cause, be this mechanical obstruction or inflammation, is clearly shown; for neither in kind nor degree is the dropsical effusion always in accordance with the existence of organic mischief.

With regard to the treatment of dropsy, it is evident that it must be extremely various according to circumstances, and can only be conducted with any prospect of success when founded on an accurate knowledge of the cause of the disease. Thus we have acute inflammatory forms of dropsy, which require depletion, sometimes to a great extent, and which admit of a rapid and perfect cure by vigorous practice. We have dropsy as a sequel of exanthematous diseases, arising apparently in some cases from a loss of balance between the secernent and absorbent functions, and in others from subacute inflammatory action, and to be treated accordingly by moderate depletion, or by tonics, or a combination of the two. We have dropsy arising from an insidious affection of the brain, the nature of which is little understood, and over which medicine has little control. We have dropsy as a symptom of organic disease of the thoracic or abdominal viscera, in which the indication is merely to drain off the serum by diuretics and hydragogues, when it accumulates beyond a certain point, a cure being out of the question, because the disease on which the dropsy depends is incurable. Lastly, we have dropsy as a symptom of a broken up constitution, and a general failure of the powers of life; a state in which nature cannot be expected to do much, and art can do next to nothing. See *Anasarca, Ascites, Hydrocephalus, Hydrothorax,* &c.

Hydrops abdominis. Dropsy of the belly. See *Ascites.*

Hydrops ad matulam. Diabetes.

Hydrops articuli. A swelling of a joint is so called, when produced by a serous or lymphatic effusion into the joint or surrounding cellular structure.

Hydrops cysticus. *Hydrops saccatus.* A dropsy enclosed in a bag, or cyst. See *Ascites.*

Hydrops genu. An accumulation of fluid within the capsular ligament of the knee.

Hydrops medullæ spinalis. See *Hydrorachis.*

Hydrops oculi. Dropsy of the eye. See *Hydrophthalmia.*

Hydrops ovarii. Dropsy of the ovarium. See *Ovarium.*

Hydrops pectoris. See *Hydrothorax.*

Hydrops pericardii. See *Hydropericardium.*

Hydrops pu'lmonum. Serous infiltration of the lungs.

Hydrops saccatus. See *Hydrops cysticus.*

Hydrops sacci lachrymalis. Distension of the lachrymal sac from obstruction of the nasal duct.

Hydrops scroti. See *Hydrocele.*

Hydrops siccus. Tympanites has been absurdly so called.

Hydrops uteri. See *Hydrometra.*

Hydropy'retus. (From *ὑδωρ*, water, and *πυρετος*, fever.) The sweating sickness.

HYDRO'RACHIS. (From *ὑδωρ*, water, and *ραχις*, the spine.) *Hydrops medullæ spinalis. Hydrocele spinalis.* Dropsy of the spine. There are two varieties of this disease, the one consisting in serous effusion within the spinal canal, unattended with any malformation of the bones; the other is the case also called *spina bifida*, in which there is an incomplete state of some of the vertebræ, and the membranes of the spinal cord distended with serum, protrude and form a tumour under the skin. For the former the reader is referred to the article *Spinal Cord, Diseases of the.* The latter, which may be considered rather as a malformation than a disease, is not of uncommon occurrence. See *Spina bifida.*

Hydrorachitis. See *Hydrorachis.*

Hy'droro'satum. A drink made of water, honey, and the juice of roses.

Hy'drorrhœ'a. (From *ὑδωρ*, water, and *ῥεω*, to flow.) Gräefe gives this name to the first stage of Egyptian ophthalmia, in which there is a profuse flow of tears.

Hy'drosa'ccharum. (*um*, *i.* n.; from *ὑδωρ*, water, and *σακχαρον*, sugar.) Water sweetened with sugar.

HY'DROSA'RCA. (*a*, *æ.* f.; from *ὑδωρ*, water, and *σαρξ*, the flesh.) 1. Synonymous with *anasarca.*

2. Applied by M. A. Severinus to a tumour containing serosity and fleshy matter.

Hy'drosarcoce'le. (*e*, *es.* f.; from *ὑδωρ*, water, *σαρξ*, flesh, and *κηλη*, a tumour.) Sarcocele, with an effusion of water into the cellular membrane.

Hy'droscle'nic acid. *Acidum hydroselenicum.* (So called because it is a compound of hydrogen and selenium.) Seleniuretted hydrogen. The best process which we can employ for procuring this acid consists in treating the seleniuret of potassium with the liquid muriatic acid. The acid gas evolved must be collected over mercury. This gas is colourless. It has a smell resembling that of sulphuretted hydrogen. It is exceedingly acrid, and instantly inflames the eyes, and destroys for the moment the sense of smell: it produces these effects even when in the smallest quantity. It is highly deleterious. It is more soluble in water than sulphuretted hydrogen.

Hy'droseli'num. (*um*, *i.* n.; from *ὑδωρ*, water, and *σελινον*, purslane.) A species of purslane growing in marshy places.

Hy'drosta'tica. An order of the class *Acalepha*, which have buoyant air vessels.

HYDROSTA'TICS. *Hydrostatica.* (From *ὑδωρ*, water, and *στατικη*, the science which treats of weights.) That branch of physics which treats of the weight, pressure, and equilibrium of liquids.

Hydro'steon. (From *ὑδωρ*, water, and *οστεον*, a bone.) Van Wy gives this name to a deposition of serum in the extremities of the long bones, which sometimes accompanies dropsy of the joints.

Hydrosu'lphate. *Hydrosulphas.* A salt formed by the hydrosulphuric acid with a base.

HY'DROSU'LPHURET. *Hydrosulphuretum.* A compound of sulphuretted hydrogen with a base. See *Sulphur.*

Hydrosulphure'tum stibii luteum. See *Antimonii sulphuretum præcipitatum.*

Hydrosulphure'tum sti'bii rubrum. *Kermes mineralis.* A hydrosulphuret of antimony formerly in high estimation as an expectorant, sudorific, and antispasmodic, in difficult respiration, rheumatism, diseases of the skin and glands.

Hy'drosulphu'ric acid. The gas commonly called sulphuretted hydrogen is so named by some chemists.

Hy'drothei'o'nic acid. (From *ὑδωρ*, water, and *θειον*, sulphur.) Sulphuretted hydrogen has been so called.

HYDROTHO'RAX. (*ax*, *acis.* f.; from *ὑδωρ*, water, and *θωραξ*, the chest.) *Hydrops thoracis. Hydrops pectoris.* Dropsy of the chest. Difficulty of breathing, particularly when in an horizontal posture; sudden startings from sleep, with anxiety, and palpitations of the heart; cough, paleness of the visage, anasarcous swellings of the lower extremities, thirst, and a scarcity of urine, are the characteristic symptoms of hydrothorax; but the one which is more decisive than all the rest, is a fluctuation of water being perceived in the chest, either by the patient himself or his medical attendant, on certain motions of the body.

It is doubtful if hydrothorax be ever an idiopathic disease. In those cases in which it has appeared to be so, it has probable been the result of chronic pleuritis.

The causes which give rise to it are pretty much the same with those which are productive of the other species of dropsy. See *Hydrops.* In some cases, it exists without any other kind of dropsical affection being present; but it

prevails very often as a part of more universal dropsy.

It frequently takes place to a considerable degree before it becomes very perceptible; and its presence is not readily known, the symptoms, like those of hydrocephalus, not being always very distinct. In some instances, the water is collected in both sacs of the pleura; but, at other times, it is only in one. Sometimes it is lodged in the pericardium alone; but, for the most part, it only appears there when, at the same time, a collection is present in one or both cavities of the thorax. Sometimes the water is effused in the cellular texture of the lungs, as well as in the cavity of the thorax. In a few cases, the water that is collected is enveloped in small cysts of a membranous nature, known by the name of hydatids, which seem to float in the cavity; but more frequently they are connected with, and attached to, particular parts of the internal surface of the pleura. Cases of this kind, however, do not come under the head of ordinary hydrothorax.

Hydrothorax often comes on with a sense of uneasiness at the lower end of the sternum, accompanied by a difficulty of breathing which is much increased by any exertion, and which is always most considerable during night, when the body is in an horizontal posture. Along with these symptoms there is a cough, which is at first dry, but which, after a time, is attended with an expectoration of thin mucus. There is likewise a paleness of the complexion, and an anasarcous swelling of the feet and legs, together with a considerable degree of thirst, and a diminished flow of urine. Under these appearances, we have just grounds to suspect that there is a collection of water in the chest; but if the fluctuation can be perceived, there can then remain no doubt as to the reality of its presence.

During the progress of the disease, it is no uncommon thing for the patient to feel a numbness, or degree of palsy, in one or both arms, and to be more than ordinarily sensible to cold. With regard to the pulse, it is usually quick at first, but, towards the end, becomes irregular and intermitting.

Our prognostic in hydrothorax must, in general, be unfavourable, as it has seldom been cured, and, in many cases, will hardly admit even of alleviation, the difficulty of breathing continuing to increase, until the action of the lungs is at last entirely overpowered by the quantity of water deposited in the chest. In some cases, the event is suddenly fatal; but, in others, it is preceded, for a few days previous to death, by a spitting of blood.

Dissections of this disease show that, in some cases, the water is either collected in one side of the thorax, or that there are hydatids formed in some particular part of it; but they more frequently discover water in both sides of the chest, accompanied by a collection in the cellular texture and principal cavities of the body. The fluid is usually of a yellowish colour; possesses properties similar to serum, and, with respect to its quantity, varies very much, being from a few ounces to several quarts. According to the quantity, so are the lungs compressed by it; and, where it is very considerable, they are usually found much reduced in size. Organic diseases of the heart, lungs, or their great vessels are the most frequent of the causes to which hydrothorax may be traced; but scirrhus of some of the abdominal viscera, especially the liver, is also frequently the source of the dropsical affection.

The treatment of this disease must be conducted on the same general plan as that of anasarca. Emetics, however, are hazardous, and purgatives do not afford so much benefit; but the bowels must be kept regular, and other evacuating remedies may be employed in conjunction with tonics. Squill has been chiefly resorted to, as being expectorant as well as diuretic; but its power is usually not great, unless it be carried so far as to cause nausea, which cannot usually be borne to any extent. Digitalis is more to be relied upon; but it will be better to conjoin them, adding, perhaps, some form of mercury, and employing at the same time other diuretics, as the supertartrate or acetate of potash, juniper berries, &c. Where febrile symptoms attend, diaphoretics will probably be especially serviceable, as the pulvis ipecacuanhæ compositus, or antimonials, in small doses; which last may also promote expectoration. Blisters to the chest will be proper in many cases, particularly should there be any pain or other mark of inflammatory action. Myrrh seems to answer better than most other tonics, as more decidedly promoting expectoration; or the nitric acid may be given, increasing the secretion of urine, as well as supporting the strength. The inhalation of oxygen gas is stated to have been in some instances singularly beneficial. Where the fluid is collected in either of the sacs of the pleura, the operation of paracentesis of the thorax may afford relief under urgent symptoms, and, perhaps, contribute to the recovery of the patient.

Hydro'tic. (From ὕδωρ.) Synonymous with *hydragogue*.

Hydro'tis. (From ὕδωρ, water, and ὠς, the ear.) Dropsy of the ear.

Hy'droxa'nthic acid. *Acidum hydroxanthicum*. The acid may be obtained by pouring a mixture of four parts of sulphuric acid, and three of water, on hydroxanthate of potash, and, in a few seconds, adding abundance of water. See *Sulphuret of carbon*. The acid collects at the bottom of the water as a transparent slightly coloured oil. It must be quickly washed with water until free from sulphuric acid. This acid reddens litmus paper powerfully. Its taste is acid and astringent. It was discovered by Zeise of Copenhagen, who has since considered it as an oxy-acid, and called it *xanthic*.

Hydroxure. See *Hydrate*.

HY'DRURET. (*Hydruretum*, *i.* n.) A compound of hydrogen with a metal.

Hygi'dion. Ὑγιδιον. The name of a collyrium mentioned by Paul of Ægina.

HYGIE'A. (*a*, *æ.* f. Ὑγιεια, health, or the goddess of health.) This name was given to a plaster mentioned by Aëtius, which was in high

repute against malignant ulcers, and a number of other diseases.

HYGIE'NE. (*e, es.* f.; from ὑγιαινω, to be well.) *Hygiesis.* Health. Modern physicians have applied this term to that part of *therapeia* which treats of the diet and non-naturals of the sick.

HYGIE'NIC. Relating to hygiene.

Hygiesis. See *Hygiene.*

Hy'gra. (From ὑγρος, moist.) A plaster of a moist consistence.

Hygrempla'strum. (From ὑγρος, moist, and εμπλαστρον, a plaster.) A plaster of a moist consistence.

Hy'groblepha'ricus. (From ὑγρος, humid, and βλεφαρον, the eyelid.) Applied to the excretory ducts of the lachrymal gland.

HY'GROCIRSOCE'LE. (*e, es.* f.; from ὑγρος, moist, κιρσος, a varix, and κηλη, a tumour.) Circocele, with dropsy of the scrotum.

Hygrocolly'rium. (From ὑγρος, liquid, and κολλυριον, a collyrium.) A collyrium composed of liquids.

HYGRO'LOGY. (*Hygrologia, æ.* f.; from ὑγρος, humid or liquid, and λογος, a discourse.) The doctrine of the fluids.

HYGRO'MA. (*a, atis.* n. Ὑγρωμα; from ὑγρος, liquid.) A tumour, the contents of which are serum, a fluid like lymph, matter resembling chocolate grounds, or some other morbid humour, but not pus.

HYGRO'METER. (*Hygrometrum, i.* n.; from ὑγρος, moist, and μετρον, a measure.) Hydrometer. An instrument for measuring the degrees of moisture in the atmosphere. See *Atmosphere.*

HY'GROME'TRIC. Relating to hygrometry.

HYGRO'METRY. The art of ascertaining the degree of moisture of the atmosphere.

Hygro'myrum. (From ὑγρος, moist, and μυρον, a liquid ointment.) An ointment of a liquid consistence.

Hygrophobia. See *Hydrophobia.*

Hygrophthalmic. See *Hygroblepharic.*

Hy'groscope. (From ὑγρος, humid, and σκοπεω, to explore.) Synonymous with *hygrometer.* See *Atmosphere.*

Hygroscopic. Synonymous with *hygrometric.*

Hygroscopy. Synonymous with *hygrometry.*

Hy'grus. (From ὑγρος, humid.) Humid: applied formerly to liquid plasters.

HY'LE. (Ὑλη, matter.) The materia medica, the materia alimentaria, and also the philosopher's stone, have been so called.

HY'MEN. (*en, inis.* m.; from *Hymen*, the god of marriage, because this membrane is supposed to be entire before marriage or copulation.) The hymen is a thin membrane, of a semilunar or circular form, placed at the entrance of the vagina, which it partly closes. It has a very different appearance in different women, but it is generally found in virgins, and is ruptured in the first coition. The presence of the hymen has been very erroneously esteemed the test of virginity: in many females it is naturally wanting; and where it is originally present, it may be destroyed by many causes besides copulation. The remnants of the hymen are called the carunculæ myrtiformes. The hymen is peculiar to the human species. There are two circumstances relating to the hymen which require medical assistance. It is sometimes of such a strong ligamentous texture that it cannot be ruptured, and prevents the connexion between the sexes. It is also sometimes imperforated, wholly closing the entrance into the vagina, and preventing any discharge from the uterus; but both these cases are rare. If the hymen be of an unnaturally firm texture, but perforated, though perhaps with a very small opening, the inconveniences thence arising will not be discovered before the time of marriage, when they may be removed by a crucial incision made through it, taking care not to injure the adjoining parts.

HYMENÆ'A. (*a, æ.* f.; from *Hymen*, the god of marriage: because, as Linnæus informs us, its younger leaves cohere together in pairs, throughout the night.) The name of a genus of plants. Class, *Decandria;* Order, *Monogynia.*

Hymenæa courbaril. The systematic name of the tree which has been said to afford the resin called *gum anime*, which is now fallen into disuse. Some say that the true gum anime is the produce of *H. Martiana.*

HYME'NIUM. (*um, ii.* n.; from ὑμην, a membrane.) The dilated exposed membrane of gymnocarpous mushrooms, in which the seed is placed. See *Gymnocarpi.*

HYMENO'DES. (From ὑμην, a membrane, and ειδος, likeness.) An old term for such urine as is found to be full of little films and pellicles. Hippocrates applies it also to the menstrual discharges when mixed with a tough viscid phlegm.

HYMENOP'TERA. (From ὑμην, a membrane, and πτερον, a wing.) An order of insects which have membranaceous wings.

Hy'o-cho'ndro-glo'ssus. (From ὑοειδες, χονδρος, a cartilage, and γλωσσα, the tongue.) The hyo-glossus muscle is so named by Dumas.

Hyo-epiglottic ligament. A band of cellular membrane which passes from the posterior part of the body of the os hyoides to the base of the epiglottis.

HYO-GLO'SSUS. *Cerato-glossus*, of Douglas and Cowper. *Busio-cerato-chondroglossus*, of Albinus. A muscle situated at the sides between the os hyoides and the tongue. It arises from the basis, but chiefly from the corner of the os hyoides, running laterally and forwards to the tongue, which it pulls inwards and downwards.

HYOI'DES. (From the Greek letter υ, and ειδος, likeness.) Hyoid, or like the Greek letter upsilon.

Hyoides os. This bone, which is situated between the root of the tongue and the larynx, derives its name from its supposed resemblance to the Greek letter υ, and is, by some writers, described along with the parts contained in the mouth. Ruysch has seen the ligaments of the bone so completely ossified, that the os hyoides

was joined to the temporal bones by anchylosis. In describing this bone, it may be distinguished into its body, horns, and appendices. The body is the middle and broadest part of the bone, so placed that it may be easily felt with the finger in the fore-part of the throat. Its fore-part, which is placed towards the tongue, is irregularly convex, and its inner surface, which is turned towards the larynx, is unequally concave. The *cornua*, or horns, which are flat, and a little bent, are considerably longer than the body of the bone, and may be said to form the sides of the *v*. These horns are thickest near the body of the bone. At the extremity of each is observed a round tubercle, from which a ligament passes to the thyroid cartilage. The appendices, or lesser horns, *cornua minora*, as they are called by some writers, are two small processes, which, in their size and shape, are somewhat like a grain of wheat. They rise up from the articulations of the cornua, with the body of the bone, and are sometimes connected with the styloid process on each side, by means of a ligament. It is not unusual to find small portions of bone in these ligaments; and Ruysch, as we have already observed, has seen them completely ossified. In the fœtus, almost the whole of the bone is in a cartilaginous state, excepting a small point of a bone in the middle of its body, and in each of its horns. The appendices do not begin to appear till after birth, and usually remain cartilaginous many years. The os hyoides serves to support the tongue, and affords attachment to a variety of muscles, some of which perform the motions of the tongue, while others act on the larynx and fauces.

Hyoides primus. The sterno-hyoid muscle has been so named.

Hyoides quartus. The omo-hyoideus muscle.

HY'OPHARYNGE'US. (From ὑοειδες, the hyoid bone, and φαρυγξ, the pharynx.) The name of a muscle, so called from its origin in the os hyoides, and its insertion in the pharynx.

Hyophtha'lmus. (*us*, *i.* m.; from ὑς, a swine, and οφθαλμος, an eye: so named from the supposed resemblance of its flower to a hog's eye.) Hog's-eye plant. Most probably the *Buphthalmum spinosum* of Linnæus.

HYOSCIA'MIA. (*a*, *æ.* f.; so called because obtained from hyoscyamus.) A vegetable alkali, extracted from henbane. See *Hyoscyamus niger*.

HYOSCY'AMUS. (*us*, *i.* m.; from ὑς, a swine, and κυαμος, a bean: so named because hogs eat it as a medicine, or it may be because the plant is hairy and bristly, like a swine.) 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Monogynia*.

2. The pharmacopœial name of the henbane. See *Hyoscyamus niger*.

Hyoscyamus albus. This plant, a native of the south of Europe, possesses similar virtues to the hyoscyamus niger.

Hyoscyamus luteus. A species of tobacco, the *Nicotiana rustica* of Linnæus.

Hyoscyamus niger. The systematic name of common or black henbane; called also, *Faba suilla*, *Apollinaris altercum*, *Agone*, and *Altercangenon*. *Hyoscyamus — foliis amplexicaulibus sinuatis, floribus sessilibus*, of Linnæus. The leaves of this plant, when recent, have a slightly fetid smell, and a mucilaginous taste; when dried, they lose both taste and smell, and part also of their narcotic power. The root possesses the same qualities as the leaves, and even in a more eminent degree. Henbane resembles opium in its action more than any other narcotic dose. In a moderate dose it increases at first the strength of the pulse, and occasions some sense of heat, which are followed by diminished sensibility and motion; in some cases by thirst, sickness, stupor, and dimness of vision. In a larger quantity it occasions profound sleep, hard pulse, and sometimes fierce delirium, ending in coma, or convulsions, with a remarkable dilatation of the pupil, distortion of the countenance, a weak tremulous pulse, and eruption of petechiæ. On dissection, gangrenous spots have been found on the internal surface of the stomach. Its baneful effects are best counteracted by a powerful emetic, and by drinking largely of the vegetable acids.

Henbane has been used in various spasmodic and painful diseases; as in epilepsy, hysteria, palpitation, headach, paralysis, mania, and scirrhus. It is sometimes employed as a substitute for opium, where the latter, from idiosyncrasy, occasions any disagreeable symptom. The henbane is free from the constipating quality of the opium, and sometimes has rather a laxative effect.

Henbane is an excellent narcotic when given in a sufficient dose. It is frequently given in too small doses. The extract generally produces a full effect in the dose of five grains, but this quantity may be much increased by degrees. The proper dose of the tincture is two drachms and upwards. The powder of the dried leaves is given in doses of from three to ten grains; but it is of uncertain strength, and therefore less eligible than the extract and tincture, both of which are officinal in the three British pharmacopœias.

M. Brandes has extracted a new alkali from this plant, which he calls *hyosciamia*. It crystallises in long prisms, and, when neutralised by sulphuric or nitric acid, forms characteristic salts.

Hy'opharynge'us. The middle constrictor muscle of the pharynx has been so named by some anatomists, from its origin and insertion.

Hy'othyroide'us. (From ὑοειδες, the hyoid bone, and θυροειδης, the thyroid cartilage.) A muscle named from its origin in the hyoid bone, and insertion in the thyroid cartilage.

Hypa'cticus. (Υπακτικος; from ὑπαγω, *subduco*.) Purgative.

Hypalei'ptrum. (From ὑπαλειφω, to spread upon.) A spatula for spreading ointments with.

Hype'latus. (Υπηλατος; from ὑπελαυνω, *subigo*.) Purgative.

Hyperace'sis. (From ὑπερ and ακουσις, the sense of hearing.) Morbid exaltation of the

sense of hearing. A common symptom in irritable states of the brain.

HYPERÆ'MIA. (From ὑπερ, and αἱμα, blood.) The name given by Andral to congestion of blood in a part, from whatever cause.

HYPERÆSTHE'SIS. (From ὑπερ, and αισθανομαι, to feel.) Morbid increase of sensibility.

HYPERA'PHIA. (From ὑπερ, and αφη, the touch.) Morbid exaltation of the sense of touch.

HYPERBOREAN. Northern. The name given by naturalists to a particular race of mankind. See *Homo*.

HYPERCA'RBONATE. The salts now called *bi-carbonates* have formerly been named *hyper-carbonates*.

HY'PERCATHA'RSIS. (*is, is.* f.; from ὑπερ, *supra*, over or above, and καθαιρω, to purge.) *Hyperinesis. Hyperinos.* An excessive purging from medicines.

HYPERCORYPHO'SIS. (From ὑπερ, above, and κορυφη, the vertex.) A prominence or protuberance. Hippocrates calls the lobes of the liver and lungs *Hypercoryphoses*.

HYPE'RCRISIS. (*is, is.* f. Ὑπερκρισις; from ὑπερ, over or above, and κρινω, to separate.) A critical excretion above measure; as when a fever terminates in a looseness, the humours may flow off faster than the strength can bear, and therefore it is to be checked.

HYPERE'MESIS. (*is, is.* f.; from ὑπερ, in excess, and εμεω, to vomit.) An excessive evacuation by vomiting.

HY'PEREPHIDRO'SIS. (*is, is.* f.; from ὑπερ, above, and εφιδρωσις, excessive sweating.) Immoderate sweating.

HYPERHIDRO'SIS. The same as *hyperephidrosis*.

HYPE'RICUM. (*um, i.* n.; from ὑπερ, over, and εικων, an image or spectre: so named because it was thought to have power over and to drive away evil spirits.) 1. The name of a genus of plants in the Linnæan system. Class, *Polyadelphia;* Order, *Polyandria*. St. John's wort.

2. The pharmacopœial name of the common St. John's wort. See *Hypericum perfoliatum*.

HYPERICUM ANDROSÆMUM. Tutsan or All-heal, Park-leaves, and St. Peter's wort. This plant is the *androsæmum* of the shops, which was formerly used internally as a mild purgative, and externally the fresh leaves were applied to heal ulcers. It is now deservedly fallen into disuse.

HYPERICUM BACCIFERUM. *Caa-opia. Arbuncula gummifera Braziliensis.* A juice exudes from the wounded bark of this plant, in the Brazils, which, in a dry state, resembles gamboge, but is rather darker.

HYPERICUM CORIS. *Coris lutea. Coris legitima cretica.* Bastard St. John's wort. The seeds are diuretic, emmenagogue, and antispasmodic.

HYPERICUM PERFOLIATUM. The systematic name of the St. John's wort; called also, *Fuga dæmonum*, and *Androsæmum. Hypericum perforatum — floribus trigynis, caule ancipiti, foliis obtusis pellucido-punctatis*, of Linnæus. This indigenous plant was greatly esteemed by the ancients, internally in a great variety of diseases, and externally as an anodyne and discutient, but is now very rarely used. The flowers were formerly in our pharmacopœia, on account of the great proportion of resinous oily matter, in which the medical efficacy of the plant is supposed to reside, but are now omitted.

HYPERICUM SAXATILE. *Hypericoides.* The seeds are said to be diuretic and antispasmodic; but have fallen into disuse.

Hyperine'sis. See *Hypercatharsis.*

Hyperi'nos. See *Hypercatharsis.*

HYPERI'NUS. (From ὑπερ, in excess, and ινεω, to evacuate.) Applied to one excessively purged.

HYPERO'A. (From ὑπερ, above, and ωον, the top of a house.) The palate.

HYPEROI'TIS. Inflammation of the palate.

HY'PEROPHARYNGE'US. (From ὑπερ, above, and φαρυγξ, the pharynx.) A muscle named from its situation above the pharynx.

HYPEROSTO'SIS. (*is, is.* m.; from ὑπερ, upon, and οστεον, a bone.) See *Exostosis.*

HYPEROXYMU'RIATE. A compound of the hyperoxymuriatic acid with a base. Such salts are now called *chlorates.*

HYPERSARCO'MA. (*a, atis.* n.; from ὑπερ, in excess, and σαρξ, flesh.) *Hypersarcosis.* A fleshy excrescence.

Hypersarco'sis. See *Hypersarcoma.*

HYPE'RTROPHY. (*Hypertrophi'a, æ.* f.; from ὑπερ, above, and τροφη, nutrition. A morbid increase of any organ, without change in the nature of its substance, arising from an excessive nutrition.

Hypertrophy of the heart. See *Heart, diseases of the.*

HYPNO'BATES. (Ὑπνοβατης; from ὑπνος, sleep, and βαινω, to go.) One who walks in his sleep.

HYPNOLO'GIA. (*a, æ.* f.; from ὑπνος, sleep, and λογος, a discourse.) That part of hygiene which relates to the due regulation of sleeping and waking.

HYPNO'TIC. (*Hypnoticus;* from ὑπνος, sleep.) Somniferous; conducive to sleep. Medicines of this kind belong chiefly to the order of narcotics.

HYPO-SULPHITE. A sulphuretted sulphite.

HYPOÆ'MIA. (*a, atis.* n.; from ὑπο, under, and αἱμα, blood: because the blood is under the cornea.) An effusion of red blood into the chambers of the eye. It is an ill-formed term.

HYPOCATHA'RSIS. (From ὑπο, under, and καθαιρω, to purge.) A slight purging; or the insufficient operation of a purgative.

HYPOCAU'STUM. (*um, i.* n.; from ὑπο, under, and καιω, to burn.) A stove. The subterranean apartment which contained the stoves for heating the ancient baths was also called *hypocaustum*. See *Balneum.*

HY'POCHONDRIA'CISM. (Ὑποχονδριασμος; from ὑπο, and χονδρος, hoarseness.) A roughness in the windpipe: hoarseness.

HYPOCHŒ'RIS. (*is, idis.* f.; from ὑπο, and χοιρος, a hog.) Swine-weed. The name of a genus of plants in the Linnæan system. Class, *Syngenesia;* Order, *Polygamia superflua.*

HYPOCHÆRIS MACULATA. Broad-leaved Hungarian hawkweed; called also, *Hieracium alpinum, Pannonica, Costa herba, Costa pulmonaria, Pilocella major, Dens leonis,* and *Pulmonaria lutea.* This plant grows on high chalky soils, flowers in June, and is much esteemed by foreign practitioners in those pulmonary complaints for which the Iceland liverwort has been administered.

HYPOCHÆRIS MINIMA. *Hieracium minus.* This plant grows in pasture-grounds, and flowers in June and July. It is not now used.

HYPOCHEO'MENOS. (From ὑποχεω, to suffuse.) One who labours under a cataract.

HYPOCHLORO'SIS. (From ὑπο, and χλωρωσις, the green-sickness.) A slight degree of chlorosis.

HYPOCHO'NDRIAC. (*Hypochondriacus;* from ὑπο, under, and χονδρος, a cartilage.) 1. Belonging to the hypochondria.

2. A person affected with lowness of spirits. See *Hypochondriasis.*

HYPOCHONDRIAC REGION. *Regio hypochondriaca.* The spaces in the abdomen that are under the cartilages of the false ribs on each side of the epigastrium. See *Abdomen.*

HY'POCHONDRI'ASIS. (*is, is.* m.; from υποχονδριακος, one who is hipped.) Hypochondriacism. Vapours, lowness of spirits; called also, *Morbus hypochondriacus, Affectio hypochondriaca,* and *Passio hypochondriaca.*

This disease bears so near a resemblance to several of the varieties of genuine melancholy as to be often distinguishable from them with great difficulty; and the more so as it is no uncommon thing for hypochondriacism to terminate in melancholy, or for melancholy to be combined with hypochondriacism. Both may be the result of a predisposing constitution, or may be primarily induced by accidental causes where no such constitution exists; and the predisposition and the accidental causes of the one may become those of the other: for the temperament commonly known by the name of melancholic, and characterised by a lean and dry corporeal texture, small and rigid muscles, a sallow skin, brownish-yellow complexion, little relieved by redness of any kind, deep black and coarse hair, eyes sunk in hollow sockets, large prominent veins, especially in the hands and arms, with a tendency to solitude and private musing, is a common precursor of both. And, in like manner, a sedentary life of any kind, and especially severe study protracted to a late hour in the night, and rarely relieved by social intercourse, exercise, or nugatory amusements, a debauched and dissolute habit, or excesses in eating and drinking, may become causes of either of these maladies, from accessory circumstances that cannot be traced out even where the predisposing temperament does not seem to exist. But, even in those whose health is much deranged, true melancholy seldom arises, except mental causes of grief and distress join themselves to the corporeal ones: and this constitutes one of the characters which distinguishes true melancholy from hypochondriacism. The former may be said to be always excited by mental causes, and consists in various phenomena of grief, despondency, and despair; whereas the latter most commonly arises from corporeal causes, and its mental phenomena consist of erroneous ideas entertained about the patient's own make or body.

The corporeal causes are usually a diseased condition of one or more of the digestive organs. It is also not unfrequently a result of the sudden cessation of some periodical or other habitual discharge, as that of an issue, or of a hæmorrhoidal flux, a chronic ulcer, or some external eruption.

The melancholy man seldom lives long, and his disorder often commences in the meridian of life. He frequently terminates his days by violence, or at the utmost never attains old age. The hypochondriac seldom becomes affected till after the meridian of life, and very generally continues to the stage of longevity.

The common corporeal symptoms are a troublesome flatulency in the stomach or bowels, acrid eructations, costiveness, a copious discharge of pale urine, spasmodic pains in the head and other parts of the body, giddiness, dimness of sight, palpitations, general sleeplessness, and an utter inability of fixing the attention upon any subject of importance, or engaging in any thing that demands vigour or courage. The mental feelings, and peculiar trains of ideas that haunt the imagination and overwhelm the judgment, exhibit an infinite diversity, and lay a foundation for the three following varieties: — vapours, weariness of life, misanthropy, or spleen.

In the *first,* or low spirits, the patient is tormented with a visionary or exaggerated sense of pains, or some concealed disease; a whimsical dislike of particular persons, places, or things; or groundless apprehensions of personal danger or poverty.

Greding gives an account of a medical practitioner who applied to him for assistance, under an impression that his stomach was filled with frogs, which had been successively spawning ever since he had bathed, when a boy, in a pool in which he had perceived a few tadpoles. He had spent his life in trying to expel this imaginary evil, and had travelled to numerous places to consult the first physicians of the day upon his obstinate malady. It was in vain to attempt convincing him that the gurglings he heard were from extricated and erratic wind. He argued himself, says Greding, into a great passion in my presence, and asked me if I did not hear the frogs croak.

The whims that are sometimes seriously entertained under this variety of the disease are so truly ludicrous, that "to be grave exceeds all power of face." One thinks himself a giant, another a dwarf; one is as heavy as lead, another as light as a feather. Marcellus Donatus makes mention of a baker of Ferrara who thought himself a lump of butter, and durst not sit in the sun or come near the fire for fear of being melted. They are all extremely timid, and their fears are exercised upon trifles, or are altogether groundless. Some suspect their nearest and dearest friends of designing to poison them: others dare not be alone in the

dark, lest they should be attacked by ghosts or hobgoblins. They dare not go over a bridge, or near a pool, rock, or steep hill, lest they should be tempted to hang, drown, or precipitate themselves: and, if they come to a place where a robbery or a murder has been committed, they instantly fear they are suspected. Trincavellius had a patient that for three years together could not be persuaded but that he had killed a man, and at length sunk into a confirmed melancholy, and made away with himself for fear of the gallows.

It is a melancholy reflection that the wisest and best of mankind are as open to this affliction as the weakest, and perhaps more so. Pascal himself was at one time so hallucinated with hypochondriacism as to believe that he was always on the verge of an abyss, into which he was in danger of falling; and, under the influence of this terror, he would never sit down till a chair was placed on that side of him on which he thought he saw it, and thus proved the floor to be substantial.

Under the *second variety* we meet with a totally distinct set of morbid feelings and ideas; for the patient is here oppressed with a general listlessness and disgust, an irksomeness and weariness of life, often without any specific reason whatever. Those who, having been actively engaged in the heyday and meridian of life, have retired upon their fortunes with a view of enjoying them in quiet, but who unhappily find themselves fitted for any thing rather than for quiet, are the subjects of this form of hypochondriacism, especially if they have no taste for reading, reflection, or domestic tranquillity, and are too proud to return to the bustle of the world, and the excitement of nicely-balanced speculations. There is here a want of the habitual stimulus to a secretion of sensorial power; in consequence of which the individual sinks into a state of low spirits, and becomes unhappy. A like issue frequently follows upon a life devoted to all the pursuits of sensual gratification, in the course of which the individual has exhausted his stock of enjoyments, and worn out his powers of body and mind before he has reached little more than the midway of his existence. Every thing now palls upon his senses, and he has neither taste nor energy to engage in more rational pursuits.

Burton has well described the state of mind of many that are tormented with this most wretched malady; but still more so those affected with the *third variety*, which is strikingly accompanied with peevishness, general malevolence, and an abhorrence of mankind. "They are soon tired with all things: they will now tarry, now begone; now in bed they will rise, now up, then go to bed; now pleased, and then again displeased; now they like, by-and-by dislike all, weary of all; *sequitur nunc vivendi, nunc moriendi cupido*, saith Aurelianus: discontented, disquieted: upon every light occasion or no occasion, abject; often tempted to make away with themselves; they cannot die, they will not live: they complain, weep, lament, and think they lead a most miserable life: never was any man so bad. Every poor man they see is most fortunate in respect of them: every beggar that comes to the door is happier than they are: jealousy and suspicion are common symptoms in the misanthropic variety. They are testy, pettish, peevish, distrustful, apt to mistake, and ready to snarl upon every occasion, and without any cause, with their dearest friends. If they speak in jest, the hypochondriac takes it in good earnest; if the smallest ceremony be accidentally omitted, he is wounded to the quick. Every tale, discourse, whisper, or gesture he applies to himself; or, if the conversation be openly addressed to him, he is ready to misconstrue every word; and cannot endure that any man should look steadfastly at him, laugh, point the finger, cough, or sneeze. Every question or movement works upon him, and is misinterpreted, and makes him alternately turn pale and red, and even sweat, with distrust, fear, or anger."

As in this species the body is more affected than in any other division of mental alienation, more may often be accomplished by medicine; though we must by no means be inattentive to moral discipline. The skin is very frequently cold and without a free secretion, and hence, general friction with rubefacients and the warmer diaphoretics have often been found serviceable. The digestive organs are almost always torpid, and several of them, especially the stomach and liver, secrete their respective fluids not only in too small a quantity, but of an unhealthy quality, so as to be too viscid, too dilute, or morbidly stimulant. Some kind of acrimony, indeed, is almost always found in the stomach, and particularly that of acidity. And hence aperients, carminatives, and particularly the tonic plan which is recommended for dyspepsia, are manifestly called for, and will often be found serviceable.

Congestions, from weakness of vascular action in one or more of the abdominal viscera, are a frequent result of the present complaint, and not unfrequently a primary cause: and hence we may see why the bleeding piles should be serviceable in so many instances as to obtain from Alberti the name of *medicina hypochondriacorum*, and why leeches repeatedly applied to the anus should often have a like beneficial effect. This is of the greatest importance where the disease has been preceded by a periodical flow of blood from the hæmorrhoidal veins; and should point out to us the necessity of renewing any other discharge or external irritation to which the system may have been accustomed.

It is very doubtful whether opium be admissible, though it is strongly recommended by some respectable writers, and readily had recourse to by hypochondriacs themselves, to relieve their distressful sensations. Cullen asserts peremptorily, that he has always found a frequent use of opiates pernicious in hypochondriasis. It has often, in such cases, been exchanged for other sedatives, but rarely with any decided advantage.

Exercise of all kinds should be encouraged in every modification of the disease, but especially exercise on horseback, though it is seldom in the first and third variety we can succeed in getting a patient to try it. The diet should be

governed by the principles laid down for treating indigestion.

In the *moral management*, assiduous kindness and consoling conversation produce a deeper effect than they seem to do. Loquacity is always hurtful; but a talent for cheerful discourse, intermixed with interesting and amusing anecdotes, frequently draws away the patient's attention from himself, and becomes a most useful palliative. In the variety in which he is perpetually haunted with a feeling of some dreadful disease, which exists nowhere but in his own fancy, the hallucination, when we possess his confidence, should be removed by a candid statement of the fact, and, if necessary, friendly expostulation: but, the moment we find the prepossession is too strong to be removed by argument, it is better to humour the conceit, and to pretend to prescribe for it. It is sometimes necessary, indeed, — for the hypochondriac is often possessed of great cunning, — to drop all pretensions whatever, and to put him in good earnest upon a course of medicines for a disease we know he is as free from as ourselves. Thus, a firm belief that he has an inveterate itch is a common delusion with a patient of this kind, and it will be often found impossible to persuade him that he is cured till his whole body has been repeatedly rubbed over with sulphur or hellebore ointment.

In the second variety, or tædium vitæ, where the time seems to hang intolerably heavy on the patient's hands, from his having, in a mistaken search after happiness, relinquished a life of constant excitement and activity for the fancied delights of rural retirement and quiet, the best and most radical cure would be a return to the situation that has been so unfortunately abandoned: but, if this cannot be accomplished, the patient must be put into a train of pursuits of some other kind. If he be fond of the sports of the country, he should weary himself in the daytime with hunting or shooting, or even horse-racing, rather than be hypochondriacal from idleness; and spend his evenings in the bustle of dinner-parties or cards. And, if he have capacity for higher and more useful occupations, let him plunge headlong into the public concerns of the parish and its neighbourhood, become a member of its select vestries, a trustee of the highways, or a magistrate of the district. The habit of excitement must for some time be maintained, though it be afterwards let down by degrees; and the intermediate steps are of no great importance, so far as they answer their purpose. We are not at present arguing the case upon a principle of ethics or of religion, but merely upon a principle of moral medicine. Yet persons of the above description have been broken in by degrees to a love of domestic quiet, for which they were by no means fitted when they first entered upon it, and who, with a love of domestic quiet, have settled also, as a soberer stage of life has advanced, and reflection has gained ground upon them, into a love of strict moral order, and the higher duties of a conscientious Christian, to which at one time they seemed as little disposed.

HYPOCHO'NDRIUM. (*um, ii.* n.; from *ὑπο*, under, and *χονδρος*, a cartilage.) That part of the body on each side which lies under the cartilages of the false ribs.

HYPO'CHYMA. (*a, æ.* f.; *Ὑποχυμα*, from *ὑποχεω*, to suffuse.) A cataract.

Hypo'chysis. (*is, is.* f.) The same as *Hypochyma.*

Hypoci'stis. (*is, is.* m.; from *ὑπο*, under, and *κιστος*, the cistus.) See *Asarum hypocistis*, and *Cytinus hypocistis.*

Hypocle'pticum. (From *ὑπο*, under, and *κλεπτω*, to steal.) A chemical vessel for separating liquors, particularly the essential oil of any vegetable from the water; and named because it steals, as it were, the water from the oil.

Hypocoe'lon. (From *ὑπο*, under, and *κοιλον*, a cavity.) The part under the orbit of the eye.

Hypocopho'sis. A slight degree of deafness.

Hypocra'nium. (From *ὑπο*, under, and *κρανιον*, the skull.) A collection of pus between the skull and the dura mater has been so called.

HYPOCRATE'RIFORM. (*Hypocrateriformis;* from *υπο*, *χρατηρ*, a cup, goblet, or salver, and *forma*, likeness.) Salver-shaped: applied to leaves so shaped; as those of the *Primula.*

Hypodei'ris. According to Rufus Ephesius, the extremity of the fore-part of the neck.

Hypode'rmis. *Hypoderis.* (From *ὑπο*, under, and *δερμα*, the skin.) The skin over the clitoris, which covers it like a prepuce.

HYPO'GALA. (*a, æ.* f.; from *ὑπο*, under, and *γαλα*, milk: because it is a milk-like effusion, under the cornea.) A collection of white humour, like milk, in the chambers of the eye. There are two species of this disease: the one takes place, it is said, from a deposition of the milk, as is sometimes observed in women who suckle; the other from the depression and rupture of a soft cataract.

HYPOGA'STRIC. (*Hypogastricus;* from *ὑπο*, under, and *γαστηρ*, the stomach.) Belonging to the hypogastrium.

Hypogastric artery. See *Iliac artery.*

Hypogastric plexus. A plexus of nerves, formed by the inferior mesenteric plexus with the sacral on the sides and back part of the rectum and lower and back part of the bladder.

Hypogastric region. *Regio hypogastrica.* See *Hypogastrium.*

HYPOGA'STRIUM. (*um, ii.* n.; from *ὑπο*, under, and *γαστηρ*, the stomach.) The part of the abdomen that reaches from above the pubes to within three fingers' breadth of the navel.

Hy'pogastro'cle. (*e, es.* f.; from *ὑπογαστριον*, the hypogastrium, and *κηλη*, a tumour.) A hernia in the hypogastrium.

Hypoglossal. See *Hypoglossus.*

HYPOGLO'SSUS. (From *ὑπο*, under, and *γλωσσα*, the tongue.) Hypoglossal. The lingual nerves are called also, *nervi hypoglossi, hypoglossal nerves.*

HYPOGLO'TTIS. (*is, idis.* f.; *Ὑπογλωττις*; from *ὑπο*, under, and *γλωττα*, the tongue.) The under part of the tongue: applied, also, to a lozenge to be kept under the tongue until dissolved.

Hypoglu'tis. (From ὑπο, under, and γλουτος, the nates.) The fleshy part under the nates, towards the thigh.

Hypo'mia. (From ὑπο, under, and ωμος, the shoulder.) The part subjacent to the shoulder.

Hyponitrous acid. See *Nitrogen.*

Hypo'nomos. (From ὑπονομος, a subterraneous place.) A deep phagedænic ulcer or fistulous ulcer.

Hypope'dium. (From ὑπο, under, and πους, the foot.) A cataplasm for the sole of the foot.

Hypo'phasis. (From ὑποφαινομαι, to appear a little.) *Hypophasia.* That state of the eye in which the eyelids are half open, and only the white of the eye is seen.

Hypo'phora. (From ὑποφερομαι, to be carried or conveyed underneath.) A deep fistulous ulcer.

Hypophosphoric acid. This name has been given to an acid which M. Dulong has shown to be merely a combination of the *phosphoric* and *phosphorous* acids.

Hypophosphorous acid. Pour water on the phosphuret of barytes, and wait till all the phosphuretted hydrogen be disengaged. Add cautiously to the filtered liquid dilute sulphuric acid, till the barytes be all precipitated in the state of sulphate. The supernatant liquid is hypophosphorous acid, which should be passed through a filter. It is a powerful deoxidising agent. It unites with the alkalis and alkaline earths, and all its salts are soluble in water.

Hypophtha'lmion. (*um*, *i.* n.; from ὑπο, under, and οφθαλμος, the eye.) The part under the eye which is subject to swell in a cachexy or dropsy.

HYPO'PYUM. (*um*, *ii.* n.; from ὑπο, under, and πυον, pus: because the pus is under the cornea.) *Hypopion. Piosis. Abscessus oculi.* An accumulation of a fluid like pus, which takes place in the anterior chamber of the aqueous humour, and frequently, also, in the posterior one, in consequence of severe acute ophthalmy, particularly the internal species. This viscid matter of the hypopyum is commonly called pus: but Scarpa contends that it is only coagulating lymph. The symptoms portending an extravasation of coagulable lymph in the eye, or an hypopyum, are the same as those which occur in the highest stage of violent acute ophthalmy, viz. prodigious tumefaction of the eyelids; the same swelling and redness as in chemosis; burning heat and pain in the eye; pains in the eyebrow and nape of the neck; fever, restlessness, aversion to the faintest light, and a contracted state of the pupil.

Hypori'nion. (*um*, *i.* n.; from ὑπο, under, and ριν, the nose.) The part of the upper lip below the nostrils; also the hair which grows on that part.

HYPOSA'RCA. (From ὑπο, under, and σαρξ, flesh.) *Hyposarcidios.* A collection of fluid or air in the cellular membrane.

Hypospa'dia. (From ὑποσπαω, to draw under.) That malformation of the urethra, in which it terminates under the glans penis. The word ὑποσπαδιαιος, is used by Galen to designate an individual who is the subject of this malformation; and from this word the *hypospadia* is derived.

Hypospathi'smus. (From ὑπο, under, and σπαθη, a spatula.) A surgical operation, which consisted in making three incisions in the forehead down to the pericranium, letting the blood flow, and then passing a spatula between the soft parts and the pericranium. It is described by Paulus Ægineta, Lib. vi. c. 6.

Hypospha'gma. (From ὑπο, under, and σφαζω, to kill.) *Aposphagma.* A rupture of the veins in the tunica adnata of the eye, chiefly from external injury. — *Paulus Ægineta.*

Hyposta'phyle. (From ὑπο, and σταφυλη the uvula.) Relaxation of the uvula.

Hypo'stasis. (Ὑποστασις; from ὑφιστημι, to subside.) A sediment from the urine.

Hyposulphurous acid. An acid detected by Sir J. Herschel, of which little is yet known.

Hyposulphu'ric acid. An acid discovered by Welter and Gay Lussac. It is formed by passing a current of sulphurous acid gas through water containing peroxide of manganese in fine powder. It is inodorous, and, unlike the sulphuric acid, forms soluble salts with baryta, strontia, lime, and oxide of lead.

HYPO'THENAR. (*ar*, *eris.* n.; from υπο, under, and θεναρ, the palm of the hand.) 1. A muscle which runs on the inside of the hand.

2. That part of the hand which is opposite to the palm.

Hypo'theton. (*um*, *i.* n.; from ὑπο, under, and τιθημι, to put.) A suppository, or medicine introduced into the rectum, to procure stools.

Hypozo'ma. (From ὑποζωννυμι, to bind round. The diaphragm.

Hypsiglo'ssus. (From ὑψιλοειδες, the hyoid bone, and γλωσσα, the tongue.) A muscle named from its origin in the os hyoides, and its insertion in the tongue.

HYPSILOID. (*Hypsiloides.* From ὑψιλον, the Greek letter, and ειδος, resemblance.) 1. The *os hyoides.*

2. The hyoglossus muscle.

HYPU'LUS. (From ὑπο, under, and ουλη, a cicatrix.) An ulcer unsoundly healed, under the cicatrix of which there is sanies.

Hyssop. See *Hyssopus.*

Hyssop, hedge. See *Gratiola.*

Hyssopi'tes. (From ὑσσωπος, hyssop.) Wine impregnated with hyssop.

HYSSO'PUS. (*us*, *i.* m. Ὑσσωπος; from *Azob*, Hebrew.) 1. The name of a genus of plants in the Linnæan system. Class, *Didynamia;* Order, *Gymnospermia.* Hyssop.

2. The pharmacopœial name of the common hyssop. See *Hyssopus officinalis.*

Hyssopus capitatus. Wild thyme.

Hyssopus officinalis. The systematic name of the common hyssop. *Hyssopus — spicis secundis, foliis lanceolatis,* of Linnæus. This exotic plant is esteemed as an aromatic and stimulant, but is chiefly employed as a pectoral, and has long been thought useful in humoral asthmas, coughs, and catarrhal affections; for this purpose, an infusion of the leaves, sweetened with honey or sugar, is recommended to be drunk as tea.

HY'STERA. (*a*, *æ*. f.; from *ὑστερος*, behind: so called because it is placed behind the other parts.) The womb. See *Uterus*.

HYSTERA'LGIA. (*a*. *æ*. f.; from *ὑστερα*, the womb, and *αλγος*, pain. Pain in the womb from any cause; but the term has been used particularly to designate spasmodic pain after childbirth.

HYSTE'RIA. (*a*, *æ*. f.; from *ὑστερα*, the womb, from which the disease was supposed to arise.) *Passio hysterica*. Hysterics.

This complaint appears under such various shapes, imitates so many other diseases, and is attended with such a variety of symptoms, which denote the animal and vital functions to be considerably disordered, that it is difficult to give a just character or definition of it; and it is only by taking an assemblage of all its appearances, that we can convey a proper idea of it to others. The disease attacks in paroxysms, or fits. These are sometimes preceded by dejection of spirits, anxiety of mind, effusion of tears, difficulty of breathing, sickness at the stomach, and palpitations at the heart; but it more usually happens that a pain is felt on the left side, about the flexure of the colon, with a sense of distension, advancing upwards, till it gets into the stomach, and, removing from thence into the throat, it occasions, by its pressure, a sensation as if a ball was lodged there, which by authors has been called *globus hystericus*. The disease having arrived at this height, the patient appears to be threatened with suffocation, becomes faint, and is affected with stupor and insensibility; whilst, at the same time, the trunk of the body is turned to and fro, the limbs are variously agitated; wild and irregular actions take place in alternate fits of laughter, crying, and screaming; incoherent expressions are uttered, a temporary delirium prevails, and a frothy saliva is discharged from the mouth. The spasms at length abating, a quantity of wind is evacuated upwards, with frequent sighing and sobbing, and the woman recovers the exercise of sense and motion, with or without recollection of what has taken place during the fit; feeling, however, a severe pain in her head, and a soreness over her whole body. In some cases, there is little or no convulsive motion, and the person lies seemingly in a state of profound sleep, without either sense or motion. Hiccough is a symptom which likewise attends, in some instances, on hysteria; and now and then it happens that a fit of hysteria consists of this alone. In some cases of this nature it has been known to continue for two or three days, during which it frequently seems as if it would suffocate the patient, and proceeds, gradually weakening her, till it either goes off, or else occasions death by suffocation: but this last is extremely rare. Besides hiccough, other slight spasmodic affections sometimes wholly form a fit of hysteria, which, perhaps, continue for a day or two, and then either go off of themselves, or are removed by the aid of medicine. In some cases, the patient is attacked with violent pain in the back, which extends from the spine to the sternum, and at length becomes fixed upon the region of the stomach, being evidently of a spasmodic nature, and often pevailing in so high a degree as to cause clammy sweats, a pale cadaverous look, coldness of the extremities, and a pulse hardly perceptible. The Cullenian species are —

1. *Hysteria chlorotica*, from a retention of the menses.

2. *Hysteria à leucorrhœa*, from a fluor albus.

3. *Hysteria à menorrhagia*, from an immoderate flow of the menses.

4. *Hysteria libidinosa*, from sensual desires.

Hysteric affections occur more frequently in the single state of life than in the married; and usually between the age of puberty and that of thirty-five years; and they make their attack oftener about the period of menstruation than at any other. They occur, though rarely, in men as well as in women.

They are readily excited, in those who are subject to them, by passions of the mind, and by every considerable emotion, especially when brought on by surprise: hence, sudden joy, grief, fear, &c., are very apt to occasion them. They have also been known to arise from imitation and sympathy.

Women of a delicate habit, and whose nervous system is extremely sensible, are those who are most subject to hysteric affections; and the habit which predisposes to their attacks is acquired by inactivity and a sedentary life, grief, anxiety of mind, a suppression or obstruction of the menstrual flux, excessive evacuations, and a constant use of a low diet, or of crude unwholesome food.

Hysteria differs from hypochondriasis in the following particulars, and, by paying attention to them, may always readily be distinguished from it: — Hysteria attacks the sanguine and plethoric; comes on soon after the age of puberty; makes its onset suddenly and violently, so as to deprive the patient of all sense and voluntary motion; is accompanied with a sensation of a ball rising upwards in the throat, so as to threaten suffocation; is attended usually with much spasmodic affection; is more apt to terminate in epilepsy than in any other disease; and, on dissection, its morbid appearances are confined principally to the uterus and ovaria.

The reverse happens in hypochondriasis. It attacks the melancholic; seldom occurs till after the age of thirty-five; comes on gradually; is a tedious disease, and difficult to cure; exerts its pernicious effects on the membranous canal of the intestines, as well by spasms as wind; is more apt to terminate in melancholy, or a low fever, than in any other disease; and, on dissection, exhibits its morbid effects principally on the liver, spleen, and pancreas, which are often found in a diseased state.

Another very material difference might be pointed out betwixt these two diseases, which is, that hysteria is much relieved by advancing in age, whereas hypochondriasis usually becomes aggravated.

The two diseases have often been confounded together; but, from considering the foregoing circumstances, it appears that a proper line of distinction should be drawn between them.

The hysteric passion likewise differs from a

syncope, as in this there is an entire cessation of the pulse, a contracted face, and a ghastly countenance: whereas in the uterine disorder there is often something of a colour, and the face is more expanded; there is, likewise, a pulse, though languid; and this state may continue some days, which never happens in a syncope.

It differs from apoplexy in the general absence of coma, and stertorous respiration, and in the state of the pulse, which, in hysteria, is generally natural, and never presents any characteristic disorder as in apoplexy.

It differs from epilepsy in the minor degree of insensibility, and in its general physiognomy; although it must be confessed that hysteria, in its more intense forms, is often with difficulty distinguished from epilepsy, and indeed appears to pass into it.

However dreadful and alarming an hysteric fit may appear, still it is seldom accompanied with danger, and the disease never terminates fatally, unless it changes into epilepsy, or that the patient is in a very weak reduced state.

The indications in this disease are, 1. To lessen the violence of the fits. 2. To prevent their return by obviating the several causes. Where the attack is slight, it may be as well to leave it, in a great measure, to have its course. But, where the paroxysm is severe, and the disease of no long standing, occurring in a young plethoric female, as is most frequent, and especially from suppression of the menses, a moderate abstraction of blood should be made, and will often afford speedy relief. If this step do not appear advisable, and the disorder be rather connected with the state of the primæ viæ, an emetic may check its progress, if the patient can be got to swallow during a remission of the convulsions. At other times, the application of cold water to the skin, more or less extensively; strong and disagreeable odours, as hartshorn, burnt feathers, &c.; rubbing the temples with ether; antispasmodics, particularly opium, by the mouth or in glyster; the pediluvium, &c. may be resorted to, according to the state of the patient. During the intervals, we must endeavour to remove any observable predisposition: in the plethoric, by a spare diet, exercise, and occasional purgatives; in those who are weakly, and rather deficient in blood, by proper nourishment, with chalybeates, and other tonic medicines. The state of the uterine function must be particularly attended to, as well as that of the primæ viæ: those cathartics are to be preferred which are not apt to occasion flatulence, nor particularly irritate the rectum, unless where the menses are interrupted, when the aloetic preparations may claim a preference; and the perspirations should be maintained by warm clothing, particularly to the feet, with the prudent use of the cold bath. The mind ought also to be occupied by agreeable and useful pursuits, and regular hours will tend materially to the restoration of the general health.

HYSTERITIS. (*is, idis.* f.; from *ὑστερα*, the womb.) *Metritis.* Inflammation of the womb. This disease is characterised by fever, heat, tension, tumour, and pain in the region of the womb; pain in the os uteri when touched, and vomiting.

In natural labours, as well as those of a laborious sort, many causes of injury to the uterus, and the peritonæum which covers it, will be applied. The long continued action of the uterus on the body of the child, and the great pressure made by its head on the soft parts, will further add to the chance of injury. Besides these, an improper application of instruments, or an officiousness of the midwife in hurrying the labour, may have contributed to the violence. To these causes may be added exposure to cold, by taking the woman too early out of bed after delivery, and thereby throwing the circulating fluids upon the internal parts, putting a stop to a secretion of milk, or occasioning a suppression of the lochia.

An inflammation of the womb is sometimes perfectly distinct, but is more frequently communicated to the peritonæum, Fallopian tubes, and ovaria; and, having once begun, the natural functions of the organ become much disturbed, which greatly adds to the disease. It is oftener met with in women of a robust and plethoric habit than in those of lax fibres and a delicate constitution, particularly where they have indulged freely in food of a heating nature, and in the use of spirituous liquors. It never prevails as an epidemic, like puerperal fever, for which it has, probably, often been mistaken; and to this we may, with some reason, ascribe the difference in the mode of treatment which has taken place among physicians.

An inflammation of the uterus shows itself usually about the second or third day after delivery, with a painful sensation of the bottom of the belly, which gradually increases in violence, without any kind of intermission. On examining externally, the uterus appears much increased in size, is hard to the feel, and, on making a pressure upon it, the patient experiences great soreness and pain. Soon afterwards there ensues an increase of heat over the whole of the body, with pains in the head and back, extending into the groins, rigors, considerable thirst, nausea, and vomiting. The tongue is white and dry, the secretion of milk is usually much interrupted, the lochia are greatly diminished, the urine is high-coloured and scanty, the body is costive, and the pulse hard, full, and frequent.

These are the symptoms which usually present themselves when the inflammation does not run very high, and is perfectly distinct; but when it is so extensive as to affect the peritonæum, those of irritation succeed, and soon destroy the patient.

Uterine inflammation is always attended with much danger, particularly where the symptoms run high, and the proper means for removing them have not been timely adopted. In such cases, it may terminate in suppuration, scirrhus, or gangrene.

Frequent rigors, succeeded by flushings of the face, quickness and weakness of the pulse, great depression of strength, delirium, and the sudden cessation of pain and soreness in the region of the abdomen, denote a fatal termination. On

the contrary, the ensuing of a gentle diarrhœa, the lochial discharge returning in due quantity and quality, the secretion of milk recommencing, and the uterus becoming gradually softer and less tender to the touch, with an abatement of heat and thirst, prognosticate a favourable issue.

When shiverings attack the patient, after several days' continuance of the symptoms, but little relief can be afforded by medicine, the event being generally fatal. In this case, the woman emaciates and loses her strength, becomes hectic, and sinks under colliquative sweating, or purging.

Upon opening the bodies of women who have died of this disease, and where it existed in a simple state, little or no extravasated fluid is usually to be met with in the cavity of the abdomen. In some instances, the peritonæal surfaces have been discovered free from the disease; whilst, in others, that portion which covers the uterus and posterior part of the bladder has been found partially inflamed. The inflammation has been observed, in some cases, to extend to the ovaria and Fallopian tubes, which, when cut open, are often loaded with blood. The uterus itself usually appears of a firm substance, but is larger than in its natural state, and, when cut into, a quantity of pus is often found. Gangrene is seldom, if ever, to be met with.

Hysterocē'le. (*e, es.* f.; from *ὑστερα*, the womb, and *κηλη*, a tumour.) See *Hernia uteri.*

Hy'sterocystoce'le. (From *ὑστερα*, the womb, *κυστις*, the bladder, and *κηλη*, a tumour.) Hernia of the uterus with displacement of the bladder.

Hysteroma'nia. From *ὑστερα*, the womb, and *μανια*, madness.) Furor uterinus. See *Nymphomania.*

Hy'steron. (From *ὑστερος*, afterwards: so named because it comes immediately after the fœtus.) The placenta.

Hystero'physa. (*a, æ.* f.; from *ὑστερα*, the womb, and *φυσα*, flatus.) A distension of the womb, from a collection of air in its cavity.

Hy'sterotomato'cia. (From *ὑστερα*, the womb, *τεμνω*, to cut, and *τοκος*, parturition.) The extraction of the child by the Cæsarian operation.

Hysteroto'mus. (From *ὑστερα*, the womb, and *τεμνω*, to cut.) A kind of *bistouri caché*, which has been used to divide the neck of the womb.

HYSTERO'TOMY. (*Hysterotomia, æ.* f.; from *ὑστερα*, the womb, and *τεμνω*, to cut.) See *Cæsarian operation.*

Hysteropto'sis. (*is, is.* f.; from *ὑστερα*, the womb, and *πιπτω*, to fall.) A falling down of the womb. See *Prolapsus uteri.*

HYSTRICI'ASIS. (From *ὑστριξ*, a hedgehog, or porcupine.) A disease of the hairs, in which they stand erect, like porcupine quills. An account of this rare disease is to be found in the *Philosophical Transactions*, No. 424.

Hy'stricis lapis. See *Bezoar hystricis.*

Hystri'tis. See *Hysteritis.*

I.

Ia'tralei'ptes. (*Ιατραλειπτης*; from *ιατρος*, a physician, and *αλειφω*, to anoint.) The Greek name for a physician who cured diseases by *inunction*, friction, and other external remedies. There was a sect of *Ιατραλειπται*, of which Prodicus, a disciple of Esculapius, was the founder.

Ia'trochy'mia. The doctrine or practice of the Iatrochymists. See *Iatrochymicus.*

Ia'trochy'micus. (*us, i.* m.; from *ιατρος*, a physician, and *χυμια*, chemistry.) *Chymiater.* The physicians of the chemical school of which Paracelsus was the head were called *Iatro-chymici.*

Ia'troli'ptice. (From *ιατρος*, a physician, and *αλειφω*, to anoint.) The method of curing diseases by unction.

Ia'tro-mathema'ticus. (From *ιατρος*, a physician, and *μαθεματικος*, a mathematician.) An Iatro-mathematician, or mathematical physician. The Iatro-mathematicians were a sect of which Borelli may be considered as the chief. They attempted to explain the actions of the living body, and the operation of remedies, on mechanical principles. The Iatro-mathematical school owed its modern origin to the atomic philosophy of Descartes; but the principle of a mechanical system of medicine is of high antiquity: the *pores* and *atoms* of Asclepiades constitute him a true Iatro-mathematician. The mathematical doctrine was supported by many distinguished physicians, as Bellini, Baglivi, J. Bernoulli, Keill, the Robinsons, Wintringham, Mead, and Pitcairn. It was, perhaps, notwithstanding, the most absurd of all the doctrines that have had any extensive influence on medicine.

Iatro'phic acid. The active principle of the seed of the croton tiglium, which is now called *crotonic acid*, was at first named *Iatrophic acid* by Pelletier and Caventou, from their erroneously supposing the seeds to be those of the *Iatropha curcas.*

Ibe'ris. (*is, idis.* f.; so named from

Iberia, the place of its natural growth.) 1. The name of a genus of plants in the Linnæan system. Class, *Tetradynamia*; Order, *Siliculosa*.

2. The pharmacopœial name of the *Sciatica cresses*. See *Lipidium iberis*.

Ibirace. See *Guaiacum*.

IBI'XUMA. (From ἰβισκος, the mallow, and ἰξος, glue: so named from its glutinous or soapy qualities.) The herb soap-wort, *Saponaria officinalis*.

ICE. *Glacies*. Water made solid by the application of cold. It is frequently applied to the head in cases of inflammation of the brain, and used by surgeons to resolve external inflammations, to stop hæmorrhages, and constringe relaxed parts.

Iceland moss. See *Cetraria Islandica*, in the Supplement.

Iceland moss. See *Cetraria*, in the Supplement.

ICE'SIUM EMPLA'STRUM. A plaster, the name of which ought to be written Hicesium, the Greek being ἱκεσια, or ἱκεσιος. It was composed of litharge, oil, vinegar, verdigris, euphorbium, myrrh, &c., and was in high repute as an application to scrofulous tumours, abscesses, gout, &c.

I'CHOR. (*or, oris*, m. Ιχωρ.) A thin, aqueous, and acrid discharge.

I'CHOROUS. Of the nature of ichor.

I'CHTHYA. (*a, æ*. f. Ιχθυα, a fish-hook; from ιχθυς, a fish.) 1. The skin of the *Squatina*, or monk-fish.

2. The name of an instrument like a fish-hook for extracting the fœtus.

Ichthy'asis. See *Ichthyosis*.

ICHTHYOCO'LLA. (*a, æ*, f.; from ιχθυς, a fish, and κολλα, glue.) *Colla piscium*. Isinglass. Fish-glue. This substance is almost wholly gelatine; 100 grains of good dry isinglass containing rather more than 98 of matter soluble in water.

Isinglass is made from the air-bladder or sound of the *acipenser huso* and other species of sturgeon. It may be obtained also from many other fish. Jackson informs us that the sounds of cod afford this substance; and that the lakes of America abound with fish from which the very finest sort may be obtained.

Isinglass receives its different shapes in the following manner:—The sounds are taken from the fish while sweet and fresh, slit open, washed from their slimy *sordes*, divested of a very thin membrane which envelopes the sound, and then exposed to stiffen a little in the air. In this state, they are formed into rolls about the thickness of a finger, and in length according to the intended size of the staple; a thin membrane is generally selected for the centre of the roll, round which the rest are folded alternately, and about half an inch of each extremity of the roll is turned inwards.

Isinglass is best made in the summer, as frost gives it a disagreeable colour, deprives it of weight, and impairs its gelatinous principle.

Isinglass, boiled in milk, forms a mild nutritious jelly, and is thus sometimes employed medicinally. This, when flavoured by the art of the cook, is the *blanc-mangé* of our tables. A solution of isinglass in water, with a very small proportion of some balsam, spread on black silk, is the court-plaster of the shops.

ICHTHYO'PHAGUS. (*us, i*. m.; from ιχθυς, a fish, and φαγω, to eat.) A fish-eater. One who lives on fish without any other animal diet. Some savage tribes live almost exclusively on fish, and were therefore named by the ancients Ichthyophagi.

ICHTHYOPHAGIA. (Same etymon.) An exclusive addiction to a diet of fish.

ICHTHYO'SIS. (*is, is*. f.; from ιχθυς, a fish: on account of the resemblance of the scales to those of a fish.) The fish-skin disease. It is characterised by a thickened, hard, rough, and, in some cases, almost horny texture of the integuments of the body, with some tendency to scaliness, but without the deciduous exfoliations, the distinct and partial patches, or the constitutional disorder, which belong to Lepra and Psoriasis.

1. *Ichthyosis simplex*. In its commencement this disease exhibits merely a thickened, harsh, and discoloured state of the cuticle, which appears, at a little distance, as if it were soiled with mud. When further advanced, the thickness, hardness, and roughness become much greater, and of a warty character, and the colour is nearly black. The roughness, which is so great as to give a similar sensation to the finger passed over it as a file, or the roughest shagreen, is occasioned by innumerable rugged points, into which the surface is divided. These hard papillæ, or prominences, differ somewhat in their form and arrangement in different parts of the body, as well as in different stages of the complaint. Some of them appear to be of uniform thickness from their roots upwards; while others have a short narrow neck, and broad irregular tops. The former occur where the skin, when healthy, is soft and thin; the latter, where it is coarser; as about the olecranon and patella, and thence along the outside of the arms and thighs. On some parts of the extremities, however, especially about the ankles, and sometimes on the trunk of the body, these scaly excrescences are flat and large, and occasionally imbricated, like the scales of carp. In other cases, they have appeared separate, being intersected by whitish furrows.

This unsightly disease appears in large continuous patches, which sometimes cover the greater part of the body, except the flexures of the joints, the inner and upper part of the thighs, and the furrow along the spine. The face is seldom severely affected; but the mammæ, in females, are sometimes encased in this rugged cuticle. There is also an extremely dry and unperspirable condition of the whole skin, and a thickened brittle state of the cuticle in the palms of the hands and soles of the feet. The disease often commences in childhood, and even in early infancy.

This affection has been found to be very little under the control of medicine: stimulating ointments and plasters have been industriously applied, with no material effect; and the disorder has been known to continue for several

years, with occasional variations. Dr. Willan trusted to the following palliation by external management: — "When a portion of the hard scaly coating is removed," he says, "it is not soon produced again. The easiest mode of removing the scales is to pick them off carefully with the nails from any part of the body, while it is immersed in hot water. The layer of cuticle which remains after this operation is harsh and dry; and the skin did not, in the cases I have noted, recover its usual texture and softness: but the formation of the scales was prevented by a frequent use of the warm bath, with moderate friction."

The skin is occasionally cleared of this harsh eruption by bathing in the sulphureous waters, and rubbing it with a flannel or rough cloth, after it had been softened by the bath; but the cuticle underneath does not recover its usual condition, but remains bright and shining, and the eruption recurs. The only good effect from internal medicine has been from the use of pitch, which has occasioned the rough cuticle to crack and fall off, without the aid of external means, and left a sound skin underneath. This medicine, made into pills with flour, or any farinaceous powder, may be taken to a great extent, not only without injury, but with advantage to the general health; and affords one of the most effectual means of controlling the languid circulation, and the inert and arid condition of the skin. Upon the same principle, the arsenical solution would probably be beneficial in ichthyosis.

2. *Ichthyosis cornea.* Several cases of a rigid and horny state of the integuments, sometimes partial, but sometimes extending nearly over the whole body, have been recorded by authors; and occasionally such a condition of the cuticle has been accompanied with the actual production of excrescences of a horny texture. These, however, are rare occurrences.

The ordinary formation of horny excrescences in the human body, of which many examples have been described, from the time of the Arabians downwards, is, however, unconnected with any general rigidity of the cuticle. These excrescences have been improperly called horns; for they are purely of cuticular growth, having no connection with the bones or other parts beneath, and consisting of a laminated callous substance, contorted and irregular in form, and not unlike isinglass in appearance and texture. They originate from two or three different diseased conditions of the cuticle; as from warts, encysted tumours, steatomata, &c. Morgagni has mentioned the growth of a horn on the sinciput of an old man, the basis of which was a wart; and other authors have noticed the same fact. In the most numerous instances, however, they have arisen from the cavity of encysted tumours, of very slow growth, which were lodged under the cuticle of the scalp, or over the spine, after the discharge of their contained fluid. In one case, a horn of this sort was the result of inflammation and discharge from a small steatomatous tumour of many years' continuance. Nearly the whole of these examples have occurred in women of advanced age.

If these excrescences are sawed or broken off, they invariably resprout. Excision, with the complete destruction of the cyst, or morbid secreting surface, is the only effectual remedy, when they have appeared, and a preventive during the growth of the primary tumour.

ICOSA'NDRIA. (*a*, *æ*. f.; from εικοσι, twenty, and ανηρ, a man, or husband.) The name of a class of plants in the sexual system of Linnæus, consisting of those which have hermaphrodite flowers furnished with twenty or more stamina that are inserted into the inner side of the calyx, or petals, or both. By this last circumstance is this class distinguished from *Polyandria*.

ICTERI'TIA. (*a*, *æ*. f.; from *icterus*, the jaundice.) 1. The same as *Icterus*.

2. Erysipelas has been called *Icteritia rubra*. *Icteritia rubra*. See *Icteritia*.

I'CTERUS. (*us*, *i*. m.; named from its likeness to the plumage of the golden thrush, of which Pliny relates, that if a jaundiced person looks on one, the bird dies, and the patient recovers.) The jaundice. This disease has received a variety of names, as *Morbus arcuatus*, or *arquatus*, *Aurigo*, *Morbus regius*, *Morbus luteolus*, &c. It is characterised by yellowness of the skin and eyes, first observable in the tunica albuginea; the fæces are white, and the urine of a deep colour, from an admixture of bile.

Jaundice mostly comes on with languor, inactivity, loathing of food, disturbed sleep at night, acidities of the stomach and bowels, frequent sense of nausea. As it advances in its progress, the skin and eyes become of a deep yellow: there is a bitter taste in the mouth, with frequent nausea and vomiting; the urine is very high coloured; the stools are of a grey or clayey appearance; and a dull obtuse pain is felt in the right hypochondrium, which is much increased by pressure.

The remote and exciting causes of jaundice are many. It takes place most usually in consequence of an interrupted excretion of bile, from an obstruction in the ductus communis choledochus, which occasions its absorption into the blood-vessels. The causes producing this, are thick or inspissated bile; biliary calculi in the gall-bladder and its ducts; spasmodic constriction of the ducts themselves; the pressure made by a pregnant uterus; or an enlargement of the abdominal viscera, from tumours, &c.

The proximate cause of jundice, is the presence of bile in the blood, which transmits it to the vessels which carry only the serous part, and hence gives the yellow colour to the skin, the intensity of which varies according to the quantity in the circulating blood, and the degree of concentration. When the colour is very intense, and the disease is protracted, it occasionally causes a green or olive hue, and the disease is called *green jaundice*; when the quality is more concentrated still, and the disease of long duration, it gives a darker colour, and then it is termed the *black jaundice*. Most instances of green and black jaundice are connected with diseased structure of the liver.

From the remote or exciting causes, jaun-

dice has been distinguished into the following species: —

1. *Icterus infantum.* Jaundice of infants, or yellow-green. It affects children at or soon after their birth, and usually continues for some days. It has generally been supposed to arise from the meconium, impacted in the intestines, preventing the flow of bile into them. The effects produced by it, are languor, indolence, a yellow tinge of the skin, and a tendency to sleep. It is mostly a mild disease, and soon gives way to small and repeated doses of castor oil. If this does not remove it, a grain of the submuriate of mercury may be given with the oil, or an emetic, which generally emulges the common cholidic duct of some tenacious bile that wanted to be expelled.

2. *Icterus gravidarum.* Jaundice of pregnant women. This takes place, now and then, about the seventh or eighth month of pregnancy, and is caused by pressure of the uterus on the bile ducts. It seldom proceeds to a total obstruction of the bile, which passes occasionally as the position of the female is changed. Gentle aperients, and lying on the left side, are the best means of meeting it. After delivery it vanishes.

3. *Icterus biliosus,* or *cholæus.* This species, which is very common, is produced by a thick inspissated bile, plugging up the mouth of the ductus communis choledochus. It comes on very insidiously; is not attended by any pain, and soon gives way to proper treatment.

A vomit at the commencement is often beneficial in removing the bile, which comes away sometimes by the mouth, but more frequently by the bowels; very tenacious, like birdlime, high coloured, and even black. Though an emetic is occasionally thus serviceable, it is not always so; and even when so, further medical treatment is required, or the disease returns, for it depends mostly on a morbid secretion, more usually than on too rapid an absorption of the finer parts of the bile. Mercury, in small doses, is required with the regular administration of saline aperients: the pilula hydrargyri, in the dose of two, three, or five grains every night, and a brisk purgative every other morning. If the jaundice have not vanished, the common black dose of senna and salts; but if the bile be flowing in its natural course, though vitiated, small doses of Epsom salts, in the compound infusion of roses, or the Cheltenham waters, will be best calculated to meet the object. This species of jaundice is occasionally very protracted, and requires not only that the condition of the bile be corrected, but also that the energy of the liver be increased, which is, in mere chronic forms, in a state of debility. Plummer's pills should be occasionally given, with a course of mild bitters, as taraxacum, colomba, gentian, &c., with saline aperients.

4. *Icterus calculosus* or *cholelithicus.* Gall-stone jaundice. This is caused by a gall-stone, formed in the gall bladder, getting out of the bladder into the cystic or common choledic duct, and there stopping the bile in its course into the bowels. It has the common symptoms of jaundice; but, in addition to these, there is violent pain at the pit of the stomach, darting between the shoulders. It is an extraordinary thing that, with this, the pulse is not affected; and this not affecting the pulse, is considered as the leading pathognomonic symptom. The pain, in some, is extremely acute, ceasing for a short time, and then returning again; in others there is only a slight uneasiness felt about the region of the liver; but its particular seat is the gall-duct, just where it enters the duodenum. The calculi are of various sizes and composition. See *Gall-stone.*

The treatment of this species consists in allaying the pain by opiates, in doses proportioned to the degree of pain. If it be very severe, from 50 to 100 drops of laudanum should be administered in camphire-jalap, and repeated according to circumstances. Fomentations to the painful parts are serviceable, and, above all, a warm bath. The bowels are to be kept open by castor oil, and irritability of stomach allayed by carbonic acid gas, from a saline draught, or hypercarbonated soda water. However tardy the passage of the gall-stone, such means are to be continued.

5. *Icterus spasmodicus.* Spasmodic jaundice. This is, of all, by far the most common species. It is generally caused by violent mental emotions, and particularly by sudden and great fear: but cold to the lower extremities, acrimonious and indigestible food, pips of oranges, and the round worm, will also cause it. It is ushered in by a sense of fulness of the stomach, nausea, and languor; a violent pain at the pit of the stomach soon succeeds, and sometimes sickness; occasionally an incessant vomiting, and an utter impossibility of retaining either food or medicine. The pain increases, and extends towards the right shoulder, or spreads round the loins. The epigastric region is mostly distended, and pressure gives pain. The bowels are costive, and moved with difficulty. The urine soon becomes of a deep blood-like colour. The surface of the body is soon of a yellow colour, and this is preceded by an obvious yellowness of the sclerotic membrane of the eye. A wet-nurse often has the disease without the milk being coloured: but if the obstruction be not removed in a fortnight or thereabout, the milk has a little yellowish hue.

It is no unusual thing for jaundice, supposed to be produced by spasmodic contraction of the gall-duct, to become a chronic disease; the pain, in these cases, ceases with the other distressing symptoms, and little inconvenience results.

Spasmodic jaundice is to be treated by opiates and relaxants. Opium is to be administered in doses proportioned to the extent of pain; and fomentations and warm bath are to be resorted to occasionally. A blister to the pit of the stomach is often successful in relaxing the spasm. Great good results, when the stomach will bear it, from the compound powder of ipecacuanha, in regular and small doses, and the use of warm pediluvium at bed-time.

6. *Icterus hepaticus.* Hepatic jaundice. This embraces all instances of jaundice that are produced by organic diseases of the liver, gall

bladder, pancreas, or any other viscus, and by tumours in the vicinity, as aneurism, enlarged glands, or adventitious structures, which, by pressure on, or by encompassing the, gall-ducts, or by destroying them, cause jaundice. Hepatic jaundice is mostly accompanied by a dull and sometimes a severe pain; and it is a chronic disease for the most part, and attended by itching and defœdations of the skin, anasarcous swellings of the legs, and frequently ascites.

Being always symptomatic of some organic disease, the remedies must be such as those diseases require.

The prognosis in jaundice. — In infants, immediately after birth, and during pregnancy, little or no danger is to be apprehended; if, however, the sleepiness prevent the infant taking the breast for two or three days, there will be no chance of its living. The spasmodic species seldom proves fatal under proper management; but if fever should supervene, and run high, danger is present, and proportioned to the violence of its symptoms. Delirium is always a bad symptom, and the harbinger of a fatal termination.

The regimen in jaundice. — The diet must be accommodated to the state of the stomach, as well as that of the system. When there is retching, sickness, and vomiting, no food will be proper; and if, from length of time, it is called for, farinaceous slops in small quantities, as arrow-root, sago, tapioca, with very dilute brandy, unless its use is interdicted by an inflammatory state of the system. Raw eggs are much resorted to.

In the chronic forms, the strength is to be kept up by a generous diet and cheerful company, moderate exercise, and especially riding on horseback.

Particular medicines in the cure of jaundice. — There are few diseases that have to boast of a greater number of specifics, and no specifics so little worthy of the name.

The *curcuma, chelidonium majus, polytrichum commune*, highly as they were praised a century ago, are now forgotten.

The *millepedes*, which were swallowed a hundred or two daily, are, very properly, never thought of.

The seeds of common hemp, or *cannabis sativa*, boiled in milk, or made into an emulsion, are esteemed by German physicians, but never used in this country.

Dandelion, or the *leontodon taraxacum*, is much esteemed in this country by many, and thought little of by others. The best way of administering it, is to make a strong decoction of the whole plant; and where it cannot be had, the extract will do, if well prepared.

The *mineral alkalis* and *soap* are universally resorted to. The best way of giving them is to combine them with rhubarb, or colocynth, or aloes; thus: ℞. Saponis duri, sodæ carbonatis exsiccatæ, āā gr. vj.; extracti colocynthidis compositi, gr. ij.; mucilaginis acaciæ crassioris, q. s.: fiant pilulæ tres, ter in die capiendæ. Soda may be taken at the same time in the common beverage. Half an ounce of Castile soap, dissolved in a quarter of a pint of warm milk, and taken every morning, is as good a formula as any: but Castile soap may be formed into five-grain pills, and four or six taken three or four times a day. Many have supposed the alkalies and soap possessed the power of dissolving biliary calculi. This is much to be questioned, even if they came in contact with them. Their beneficial operation is by supplying the chyme with a substitute for the bile, especially when aloes or colocynth are given with them.

The *Bath waters*, used internally and externally. These were much resorted to until very ately. By their warmth they are likely to be beneficial in chronic cases, especially where relaxants are wanting.

The *Cheltenham waters.* These are excellent, and much resorted to in all chronic cases.

The *chlorine bath*, better known by the name of Dr. Scott's nitro-muriatic acid bath. It is very surprising how the use of these baths will emulge the gorged ducts, and attenuate the viscid bile.

Mercury. Of all the medicines given in the cure of jaundice, there is none so beneficial as the oxides and submuriate of mercury when spasmodic irritation is removed. They should be given in alterative doses, and great care should be taken not to produce salivation, which is unnecessary, by keeping the bowels open.

The *bitter stomachics.* Gentian, calumba, and quassia are much esteemed, and especially when given with saline aperients.

The *mineral acids*, especially the nitric. In long continued jaundices, the causes of which are obscure, if attended by much dyspepsy, and all chronic cases of jaundice, are attended by more or less of indigestion, nitric acid should be tried. I have known it often very serviceable. An infusion of roses, calumba, quassia, and aurantium, may be acidulated with it, and a dose given three times a day. The sulphuric acid is the next best, and the muriatic the last.

Icterus albus. The white jaundice. See *Chlorosis.*

Icterus niger. Black jaundice. See *Icterus.*

Icterus viridis. Green jaundice. See *Icterus.*

I'CTUS. (*us, ūs.* and *ti.* m.; from *ico*, to strike.) 1. A stroke or blow.

2. The pulsation of an artery.

3. The sting of a bee or other insect.

Ictus solis. A stroke of the sun. See *Coup de Soleil.*

IDEO'LOGY. (*Ideologia, æ.* f.; from ἰδεα, a thought, and λογος, a discourse.) The doctrine of ideas. The philosophy of the mind. See *Mens.*

Idiocrasia. See *Idiosyncrasy.*

Idiocy. See *Amentia.*

IDIOPA'THIC. (*Idiopathicus*; from ἰδιος, peculiar, and παθος, an affection.) A disease which is primary, and not symptomatic of, or consecutive upon, any other disease, is styled *idiopathic.* The term is opposed to *symptomatic* or *sympathetic.*

IDIOSY'NCRACY. (*Idiosyncrasia, æ.* f.;

from ιδιος, peculiar, συν, with, and κρασις, a temperament.) A peculiarity of constitution, in which a person is affected by certain agents, which, if applied to the generality of persons, would produce no effect: thus some people faint at the sight of blood; others have violent inflammation induced on the skin by substances that have usually no such effect; others again, suffer from asthma if exposed to the odour of ipecacuan.

Idiotism. See *Amentia.*

Idiotro'pia. (From ιδιος, peculiar, and τρεπω, to turn.) The same as *Idiosyncrasia.*

Ie'semum. Jessamine. See *Jasminum.*

Igasu'ric acid. *Ascidum Igasuricum.* Pelletier and Caventou, in their experiments on the *faba Sancti Ignatii*, and *nux vomica*, having observed that these substances contained a new vegetable base, called strychnine, in combination with an acid, sought to separate the latter, in order to determine its nature. It appeared to them to be new, and they called it igasuric acid, from the Malay name for the *faba Sancti Ignatii.* This bean, according to the chemists above named, is composed of igasurate of strychnia, a little wax, a concrete oil, a yellow colouring matter, gum starch, bassorine, and vegetable fibre.

IGNA'TIA. (*a*, *æ.* f.; so named by Linnæus, because the seeds are known in the Materia Medica, by the name of Saint Ignatius's beans.) The name of a genus of plants. Class, *Pentandria;* Order, *Monogynia.*

Ignatia amara. The systematic name of the plant which affords St. Ignatius's bean, called *Faba indica*, *Faba Sancta Ignatii*, and *Faba febrifuga.* These beans are of a roundish figure, very irregular and uneven, about the size of an ordinary nutmeg, semitransparent, and of a hard, horny texture. They have a very bitter taste, and no considerable smell. They are said to be used in the Phillippine islands in all diseases, acting as an emetic purgative. Infusions are given in the cure of intermittents, &c. It is from this bean that the igasurate of strichnia is obtained. See *Igasuric acid.*

Ignatii faba. See *Ignatia amara.*

Ignatius's bean. See *Ignatia.*

I'GNIS. (*is*, *is.* m.) Fire. 1. The evolution of heat and light which attends combustion. There have been several theories proposed respecting fire, but no one as yet is fully established. See *Caloric*, and *Light.*

2. Val Helmont, Paracelsus, and other alchemists, applied this term to what they considered as universal solvents.

3. In *Medicine*, the older writers used it to express the heat, redness, acrimony, and erosive power of a disease.

Ignis actualis. The actual cautery.

Ignis calidus. A gangrene; or a violent inflammation, just about to degenerate into gangrene, were formerly so called by some.

Ignis columellæ. Erysipelas has been so called.

Ignis fatuus. A luminous appearance or flame, frequently seen in the night in different country places, and called in England *Jack with a lantern*, or *Will with the wisp.* It seems to be mostly occasioned by the extrication of phosphorus from rotting leaves and other vegetable matters. It is probable, that the motionless ignes fatui of Italy, which are seen nightly on the same spot, are produced by the slow combustion of sulphur, emitted through clefts and apertures in the soil of that volcanic country.

Ignis frigidus. A gangrene was so called, because when mortification takes place the part loses its natural heat.

Ignis gehennæ. The fire of hell. The universal solvent was so called by the alchemists.

Ignis persicus. 1. Erysipelas.

2. A carbuncle.

Ignis potentialis. The potential cautery. See *Cautery.*

Ignis rotæ. Fire for fusion. It is when a vessel which contains some matter for fusion is surrounded with red-hot coals.

Ignis sacer. See *Sacer.*

Ignis sancti antonii. See *Erysipelas.*

Ignis sapientum. Heat of horse-dung. — *Ruland.*

Ignis sylvaticus. The wild-fire rash. See *Strophulus volaticus.*

Ignis volagrius. The same.

Ignis volaticus. The same. See *Strophulus volaticus.*

Ignition. (From *ignis*, fire.) The act of catching fire, or the state of a burning substance. See *Combustion.*

Ikan radix. A somewhat oval, oblong, compressed root, brought from China. It is extremely rare, and would appear to be the root of some of the orchis tribe.

I'laphis. A name in Myrepsus for the burdock. See *Arctium lappa.*

I'LEAC PASSION. (*Passio iliaca.* Ειλεος, ιλεος, is described as a kind of a colic, the seat of which is the intestinum ileum.) This disease is also called *Volvulus*, *Miserere mei*, *Convolvulus*, *Chordapsus*, and *Tormentum.* It consists of severe griping pain, vomiting of a fæcal matter, and costiveness, accompanied by retraction and spasms of the abdominal muscles.

The griping pain is very severe: the person at first vomits bilious fluid, which soon smells like fæces, and at length becomes perfectly stercoraceous, from the peristaltic motion of the bowels being inverted through their whole course; so that, after a time, injections thrown into the rectum will pass along the whole tract of the intestines into the stomach, and escape through the mouth by vomiting. In some cases the skin becomes yellow. Ileus arises from many causes, and is generally symptomatic of other diseases. 1. The most common cause is strangulated hernia; and so frequent an attendant is it on ruptures, that the conviction of no such a thing existing should in every instance be carefully ascertained by practitioners. Many cases of women have been dissected, in which the surgeon had decided that there was no strangulation, where a small portion of the gut was found confined, and had killed the patient.

2. Another frequent cause is an *intus-susception*, or a retention of a part of the bowel within another. Dr. Good, who considers an

inflammatory state as productive of ileus, gives an excellent explanation of how this happens. The dissection of persons, he observes, who have died of the stercoraceous or inflammatory colic, has shown, in some cases, that one portion of the affected intestine, constringed and lessened in its diameter, has fallen into another portion, and thus produced an involution or introsusception. The fact is not difficult to be accounted for, and it will readily explain the great torture which is often suffered under this grievous malady. In every case in which the intestinal tube is weakened, there is a very copious extrication of air, producing, in many instances, a palpable distension of the parietes of the abdomen. In ileus there is also, in conjunction with this, a strong inversion of the peristaltic action, operating from the rectum to the stomach, and forcing back whatever recrement or other materials are co-acervated in any part of the intestines. These, by intermixing with the elastic vapour of the intestinal tube, become very voluminous, and distend it to its utmost range, wherever distension can be accomplished. Then if, as is generally the case, a violent spasmadic constriction exists in one or more parts, the distensive force just mentioned, cannot expel the contents, and the two powers are thus brought into immediate contact; and while the gut is rigidly contracted above, it is widened almost to bursting below; and, during the struggle which ensues, the contracted or collapsed part is forced into the other, and thus an intus-susception takes place. In some cases, though very seldom, it happens, that in the midst of this spasmodic commotion, portions of the bowels have become twisted into nooses and knots, in which the portion, forming an encircling cord or bridle, has been drawn so tight as to produce strangulation. In most cases of the ileac passion, there is a mixture of immediate causes; and though there may be intus-susception, which is not common, there is also always inverted peristaltic motion, more or less of spasmodic contraction, and inflammation of the peritoneal covering.

Acrid, cold, and indigestible esculents, cold beverages on a heated stomach, taking cold in the feet when disposed to intestinal derangements, unalimentary substances swallowed by mistake, as metallic money, pieces of glass, plum, cherry, or other fruit stones, worms, calculous or other balls congested in the intestines and obstructing the regular movement, as scybala, gall-stones, intestinal calculi, are mentioned as having produced ileus: and, as a symptomatic affection, it is common in herniæ, tumours, cancerous or otherwise, and stricture. It has also supervened gout and rheumatism.

The medical treatment consists in removing the exciting causes, if possible, by carminative aperients, fomentations, and glysters; and if, at the commencement, there are evidences of an inflammatory state, blood should be abstracted freely from the arm, and by leeches on the abdomen.

The griping and spasmodic pain, and a restoration of the intestines from a state of inverted action to their proper peristaltic motion, which is sure to remove their constipation, are the points to which attention is to be directed. Dry and humid fomentations, and warm baths, and warm and copious glysters, afford a rational chance of success. The last should be rendered emolliient by an admixture of oil, and aperient by the addition of infusions of senna, or decoction of colocynth, so that both intentions of cure should be carried forward at the same time. In combination with these, opium, and various other narcotics, may be tried: thus,

℞. Infus. sennæ compositi, ℥j.
Olei olivæ, f. ʒiv.
Tincturæ opii, f. ʒij. Misce. Or,
℞. Extracti colocynthidis compositi, ʒij.
Tincturæ hyoscyami, f. ʒiij.
Infusi anthemidis, ℥j. Misce. Or,
℞. Olei ricini, f. ʒij.
Decocti avenæ tenuioris, f. ℨvj.
Tincturæ hyoscyami, f. ʒiij. Misce.

One or other of these should be tried occasionally about every six hours, and attention should be given to prevent them immediately returning.

Sir John Pringle speaks highly in favour of a decoction of poppies, which should be thrown up in large quantities, and have been found to succeed, not only in quieting the spasmodic pains, but in obtaining evacuations, after other injections, purgatives by the mouth, fomentations, and opiates, have been tried without effect. To render this kind of injection more active, where it is desirable, two drachms of the extract of poppies may be dissolved in a quart of a strong decoction of the capsules, or heads.

Purgatives, combined with antispasmodics, should also be administered by the mouth: though the vomiting is sometimes so incessant, that little or nothing can be got to remain on it, and vast quantities of vitiated and varied secretions are poured out. Calomel is decidedly the most likely to answer, in doses of about two, three, or four grains. It occupies the smallest space, and, in the form of pill, has the fairest chance of being retained. A saline draught, in the act of effervescing, may be given occasionally. Many practitioners are in the habit of combining opium with the submuriate, which, nevertheless, has a tendency to retard its action; but as the opium may mitigate the spasm, and diminish the pain, it will commonly be found a useful adjunct. Calomel is, in my opinion, more to be depended on than any other aperient; but as it is slow in its operation, it is well to give the solutions of the common saline aperients in an effervescing state, at intermediate periods.

Dr. Cullen, on the advice of De Haën, recommends a continued stream of warm water, thrown forcibly and with a proper syringe into the rectum, so that it may play upon the constricted portion of the intestine, and declares that he has found this remedy to be one of the most powerful and effectual.

When the ordinary means, and particularly those of warm injections, and warm bath, fail, some practitioners have been courageous enough to try cold applications, both internally and externally. Sir George Baker tells us that a

physician of credit informed him, he had once prescribed the cold bath with success. Citois affirms that, in several species of colic, this was his constant practice, and even in the midst of winter; and calls upon all his fellow-citizens to attest that most of his patients, thus treated, had been restored to health: the propriety of the practice is, however, very much to be questioned.

Ileaca passio. See *Ileac passion.*

I'LECH. *Ylech.* By this word, Paracelsus seems to mean a first principle.

ILEI'TIS. Inflammation of the *Ileum.* See *Inflammation of the stomach and intestines.*

ILEO-CŒCAL VALVE. *Valvula ileo cæculis.* The valve situated at junction of the *ileum* and *cæcum.* See *Intestine.*

ILEO-COLIC ARTERY. *Arteria ileo-colica.* A branch of the superior mesenteric artery, distributed to the *ileum* and commencement of the *colon.*

ILEO-LUMBAR ARTERY. *Arteria ileo-lumbalis.* A branch of the internal iliac artery, distributed to the psoæ and iliacus internus muscles.

I'LEUM. (*um, i.* n.; from ειλεω, to turn about; from its convolutions.) *Ileum intestinum.* The last portion of the small intestines, about fifteen hands' breadth in length, which terminates at the valve of the cæcum. See *Intestine.*

ILEUS. (*us, i.* m.) See *Ileac passion.*

I'LEX. (*ex, icis.* f.; the name of a genus of plants in the Linnæan system. Class, *Tetrandria;* Order, *Tetragynia.*) The holly.

ILEX AQUIFOLIUM. The systematic name of the common holly: called also, *Agria, Agrifolium,* and *Aquifolium.* The leaves of this plant, *Ilex — foliis ovatis acutis spinosis,* of Linnæus, have been known to cure intermittent fevers; and an infusion of the leaves, drank as tea, is said to be a preventative against the gout.

ILEX CASSINE. *Cassina. Apalachine gallis.* This tree grows in Carolina; the leaves resemble those of senna, blackish when dried, with a bitter taste, and aromatic smell. They are considered as stomachic and stimulant. They are sometimes used as expectorants; and when fresh are emetic.

I'LIA. (The plural of *Ile,* ειλη.) 1. The flanks, or that part in which are enclosed the small intestines.

2. The small intestines.

I'LIAC. (*Iliacus;* from *ilia,* the flanks.) Belonging, situated near to, or connected with, parts about the flanks.

ILIAC ARTERIES. *Arteriæ iliacæ.* The arteries so called are formed by the bifurcation of the aorta, near the last lumbar vertebra. They are divided into *internal* and *external.* The *internal iliac,* also called the *hypogastric artery,* is distributed in the fœtus into six, and in the adult into five branches, which are divided about the pelvis; viz. the little iliac, the gluteal, the ischiatic, the pudical, and the obturatory; and in the fœtus, the umbilical. The *external iliac* proceeds out of the pelvis through Poupart's ligament, to form the femoral artery.

ILIAC REGION. The side of the abdomen, between the ribs and the hips.

Ili'acus. See *Iliac.*

ILIACUS INTERNUS. *Iliacus,* of Winslow. A thick, broad, and radiated muscle, which is situated in the pelvis, upon the inner surface of the ilium. It arises fleshy from the inner lip of the ilium, from most of the hollow part, and likewise from the edge of that bone, between its anterior superior spinous process and the acetabulum. It joins with the psoas magnus, where it begins to become tendinous, and passing under the ligamentum Fallopii, is inserted in common with that muscle. The tendon of this muscle has been seen distinct from that of the psoas, and, in some subjects, it has been found divided into two portions. The iliacus internus serves to assist the psoas magnus in bending the thigh, and in bringing it directly forwards.

ILI'ADUS. *Iliadum. Ileidos. Iliaster.* Terms applied by Paracelsus to the first matter of all things, consisting, according to him, of mercury, salt, and sulphur. He also used these terms in a variety of other acceptations, which the curious reader may find detailed in Castelli's Lexicon. Ed. Lipsiæ, 1713.

ILI'NGOS. (Ιλιγγος; from ιλιγξ, a vortex.) Vertigo, with temporary abolition of sight. See *Scotodynia.*

I'LIUM OS. (*Ilium, i.* n.; from *ilia,* the small intestines: so named because it supports the ilia.) The haunch-bone. The superior portion of the os innominatum, which, in the fœtus, is a distinct bone. See *Innominatum os.*

ILLE'CEBRA. (*a, æ.* f.; enticement; why so called we know not.) See *Sedum acre.*

ILLI'CIUM. (*um, ii.* n.; *ab illiciendo,* denoting an enticing plant, from its being very fragrant and aromatic.) The name of a genus of plants in the Linnæan system. Class, *Polyandria;* Order, *Polygynia.*

ILLICIUM ANI'SATUM. The systematic name of the yellow-flowered aniseed tree: the seeds of which are called the star aniseed. *Anisum stellatum, Anisum sinense,* and also *Semen badian.* They are used with the same views as those of the *Pimpinella anisum.* The same tree is supposed to furnish the aromatic bark, called *cortex anisi stellati,* or *cortex lavola.*

ILLINCTUS. The same as *Linctus.*

ILLI'TIO. (*o, onis.* f.; from *illino,* to anoint.) The process of anointing.

ILLO'SIS. (*is, is.* f.: from ιλλος, the eye.) A distortion of the eyes.

ILLUTAME'NTUM. Any substance used in illutation. See *Illutatio.*

ILLUTA'TIO. (*o, onis.* f.; from *in,* and *lutum,* mud.) Illutation: a besmearing any part of the body with mud, and renewing it as it grows dry, with a view of heating, drying, and discussing. It was chiefly done with the mud found at the bottom of mineral springs; but various artificial illutamenta were also used.

I'LLYS. (From ιλλος, the eye.) A person who squints, or who has distorted eyes.

I'LYS. (From ιλυς, mud.) 1. The fæces of wine. An obsolete term.

2. The sediment in stools, which resembles fæces of wine.

3. The sediment in urine, when it resembles the same.

Imagination. See *Mens.*

IMBECI'LITAS OCULORUM. Celsus speaks of the *Nyctalopia* by this name.

IMBER'BIS. Beardless. Applied generally in natural history.

IMBIBI'TION. (*Imbibitio, onis.* f.; from *imbibo*, to receive into.) The absorption of a liquid into the pores of a solid. M. Magendie considers imbibition as a property universal throughout the organic tissues, with the exception of the epidermis; and regards it in these, as in inorganic bodies, as referrible merely to capillary attraction.

IMBRICA'TUS. Imbricate: tiled; like tiles upon a house. Applied to leaves; as those of the *Euphorbia paralia.*

IMME'RSUS. Immersed: plunged under water. In *Botany*, this term is applied to leaves which are naturally under the water, and are different from those which naturally float. See *Leaf.* It is remarked by Linnæus, that aquatic plants have their lower, and mountainous ones their upper, leaves most divided, by which they better resist the action of the stream in one case, and of the wind in the other.

2. In *Anatomy*, this term has been applied by Bartholine, and some other anatomists, to the *Subscapularis* muscle, because it is hidden or sunk.

IMPASTA'TIO. (From *Pasta*, a paste.) The formation of a paste.

IMPA'TIENS. (*ens, entis.* f.; from *in*, not, and *patior*, to suffer: because its leaves recede from the hand with a crackling noise, as impatient of the touch, or from the great elasticity of the sutures of its seed vessel, which is completely impatient of the touch, curling up with the greatest velocity, and scattering round the seeds, the instant any extraneous body comes in contact with it.) The name of a genus of plants. Class, *Pentandria*; Order, *Monogynia.*

IMPATIENS BALSA'MINA. This plant has been considered vulnerary and diuretic, but is not now in use.

IMPATIENS NOLI ME TANGERE. This species is believed to possess diuretic virtues.

IMPERATO'RIA. (*a, æ.* f.; from *impero*, to overcome: so named because its leaves extend and overwhelm the lesser herbs which grow near it.) 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Monogynia.*

2. The pharmacopœial name of the master-wort. See *Imperatoria ostruthium.*

IMPERATORIA OSTRU'THIUM. The systematic name of the master-wort. Called also *Magistrantia.* The roots of this plant are imported from the Alps and Pyrenees, notwithstanding it is indigenous to this island: they have a fragrant smell, and a bitterish pungent taste. The plant, as its name imports, was formerly thought to be of singular efficacy; and its great success, it is said, caused it to be distinguished by the name of *divinum remedium.* At present it is considered merely as an aromatic, and consequently is superseded by many of that class which possess superior qualities.

IMPERFECT. *Imperfectus.* Applied to such flowers as want either anther or pistil, or both.

IMPERFORATION. (*Imperforatio, onis*; f.) The preternatural occlusion of any part which is usually pervious; thus *imperforation of the vagina*, of the rectum, &c.

IMPETI'GINES. (The plural of *impetigo*; from *impeto*, to infest.) An order in the class *Cachexiæ* of Cullen, the genera of which are characterised by cachexia deforming the external parts of the body with tumours, eruptions, &c.

IMPETI'GO. (*o, onis.* f.) A disease of the skin, called the humid or running tetter. It is characterised by the appearance of the small psydracious pustules. It is not accompanied by fever, not contagious, nor communicable by inoculation. It chiefly occurs on the extremities, and under the following forms: —

1. The *impetigo figurata* is the most common variety of the moist tetter. It appears in circumscribed patches, of various figures and magnitude, which are usually smaller and more circular on the upper, and larger, oval, and irregular on the lower extremities. The patches consist at first of clusters of the yellow psydracious pustules, set close together, and surrounded by a slight inflammatory border; the whole being somewhat raised, but the pustules not very prominent or acuminated. In a few days the pustules break, and discharge their fluid; the surface becomes red and excoriated, shining as if it were stretched, but exhibiting numerous minute pores, from which a considerable ichorous discharge is poured out, accompanied with much troublesome itching, heat, and smarting. The discharge soon concretes partially into thin yellowish or greenish scabs; but still continues to ooze from under the scab which it forms. In the course of three or four weeks, as the quantity of the discharge diminishes, the scabs dry and fall off, leaving the surface of the cuticle red, rough, and somewhat thickened, and at the same time extremely brittle, and liable to crack and to be excoriated; so that the ichorous discharge and scabbing are easily reproduced, and the disease is often thus much prolonged in its duration. Occasionally fresh crops of the psydracious pustules re-appear, as at the commencement; and the whole course of the eruption is repeated.

When the impetigo figurata is beginning to heal, the patches undergo a process somewhat similar to that which takes place in the lepra vulgaris. The amendment commences at the centre of the patch, which first subsides, leaving the border elevated: at length this also disappears; but the cuticle, which was the seat of the patch, remains for some weeks red, shining, and tender.

But though this is the most usual and regular, it is by no means the uniform progress of impetigo: for this eruption, like scabies and eczema, varies so much in its phænomena, as almost to bid defiance to arrangement. Sometimes the patches enlarge by the formation of successive pustular margins; an exterior circle of pustules arising, while the preceding border

is drying, to be followed by others which go through the same course, until the patch attains a considerable extent. The area, in the mean time, becomes dry and rough, with a scaly or scabby incrustation in its centre. This impetiginous *ringworm* bears a considerable resemblance to the herpes circinatus, which spreads by a succession of *vesicular* borders. A severe form of this tetter occurs in hot climates, according to the testimony of physicians who have prastised there. Sometimes the papulæ of the lichen agrius become pustular, or are intermixed with psydracia, and the disease assumes all the characters of impetigo.

But the affinity of impetigo with the vesicular diseases is manifested by a common variety of it, in the upper extremities, in which the psydracious pustules are intermixed with transparent vesicles, resembling the pustules in size and form. Where this intermixture occurs, the disease is much more troublesome, from the extreme irritation, itching, smarting, and heat, which accompany it; and much more tedious and difficult of cure. It takes place chiefly on the hand, about the knuckles and sides of the fingers, or on the wrist; and the space between the metacarpal bones of the forefinger and thumb is usually the seat of one of the blotches. The vesicles are slower in their progress than the psydracia: they remain many days transparent, but not much elevated, the cuticle over them being thick in that situation. When they break, an acrid ichor is discharged, which produces inflamed points where it touches the cuticle, and these become vesicles or psydracia. Each vesicle, thus broken is not disposed to heal; but the cuticle round its base now becomes inflamed and raised, and discharges a thin ichor when in any degree irritated. The vesicles appear, in slow succession, at a little distance from each other, and from the pustules; and at length an irregular blotch is produced, of a red, chopped, and thickened cuticle, interspersed with the rising eruptions, little humid ulcers, and chops or fissures. The sense of burning and intense itching, accompanying especially the first rise of the vesicles, is extremely distressing, and is much aggravated by the irritation of almost every application that is resorted to.

2. The *impetigo sparsa* differs from the preceding rather in the *form*, than in the nature and progress of the eruption: for, with the exception of the indeterminate distribution of the pustules, which are not congregated in circumscribed clusters, but dispersed without any regular order along the extremities, and sometimes about the neck and shoulders, the foregoing description is applicable to both species of the disorder. The impetigo sparsa more frequently occurs in the lower extremities, than the former; and is, in that situation, more troublesome and obstinate. In elderly people, especially of debilitated habits, the excoriations are liable to pass into deep, irregular ulcers, surrounded by a purplish colour, and often accompanied with œdema.

These two forms of impetigo are not always traced to any obvious exciting cause: but they are frequently preceded by some derangement of the digestive organs, languor, and headach. A predisposition to the disease appears to be connected with the sanguine temperament, with a thin soft skin, and a relaxed and bloated habit of body; or with the sanguineo-melancholic temperament, a spare form, and a thin but harsh skin. Certain seasons appear to have great influence on the disease, in those who are predisposed to it. The accession of the eruption has been ascribed to violent exercise, intemperance, cold, and sudden depressing passions, especially fear and grief.

Local tetters are produced by the action of particular irritants on the cuticle, which soon disappear when the source of irritation is withdrawn. The affection of the hands and fingers, in those who work among sugar, which is called the grocer's itch, is of this nature; and similar eruptions are produced on the hands of bricklayers, by the acrid stimulus of lime. It is worthy of remark, that both the grocer's and the bricklayer's itch is, in some individuals, a pustular, and in others a vesicular, eruption, referable to the eczema; but in neither case contagious, as the popular appellation might lead us to suppose.

Local pustular patches are also the result of the application of the tartrate of antimony to the skin by friction, and in some cases of the application of blisters, and other stimulating plasters. These pustules are liable to extend considerably beyond the blistered or stimulated part, and sometimes continue to arise in succession for a fortnight or more; and many of them often assume the form of phlyzacia, or of large, protuberant pustules, with a hard, elevated, and inflamed base. Some of these even acquire the size of small boils, and suppurate deeply and slowly, with great pain, and considerable restlessness and feverish heat in the night.

The impetigo figurata and sparsa are sometimes confounded with two contagious diseases, of the pustular order, porrigo and scabies. The appellation of *ringworm*, which is popularly given to the oval or circular patches of the first, has partly contributed to occasion this mistake. They differ, however, from the contagious circles of porrigo, inasmuch as they seldom affect children, occur principally on the extremities, and do not continue to discharge a purulent and glutinous, but, after the first eruption, an ichorous, humour; nor do they form the thick, soft, and copious scabs of porrigo—not to mention the absence of contagion.

The prevalence of transparent vesicles in the patches of impetigo may mislead an incautious or inexperienced observer into a suspicion that the disease is scabies: but the copious exudation of ichor, the rough, reddened, and fissured cuticle, the magnitude and slow progress of the vesicles, and the heat and smarting which accompany the itching, in this form of impetigo, will serve in general to determine the diagnosis. In the strictly purulent form of scabies, the pustules about the hands arise to a much greater magnitude and elevation than the psydracia; they are filled with a thick yellow pus, and are more considerably inflamed round their base.

In the incipient state of these two forms of

mpetigo, it is useful to administer sulphur internally, in such quantities as not to induce purging; and, if there is much irritability or inflammation of the cuticle, a portion of nitre or crystals of tartar may be advantageously combined with it. The impetigo sparsa commonly yields to these medicines, if diligent ablution with tepid water be at the same time employed. But when the disease is of long standing, it requires a treatment somewhat similar to that recommended for inveterate psoriasis; namely, the diet drinks, decoctions of sarsaparilla and cinchona, with the fixed alkalis and antimonials. The mercurial alteratives, however, in this affection, are of essential assistance to this plan of cure; such as small doses of cinnabar, the hydrargyrus cum cretâ, or Plummer's pill.

The external applications adapted to these forms of impetigo, especially to the figured species, are the mild desiccative unguents; for, in the majority of cases, the irritable surface of the tetter will not bear stimulants with impunity. When the discharge is considerable, the ointments prepared with the oxide of zinc alone, or united with saturnine ointment, or with the white precipitated oxide of mercury, are the most efficacious in allaying the inflammatory condition of the excoriated surface, and in reducing the quantity of the discharge. When there is less of this irritability and exudation, the ointment of the nitrate of mercury, much diluted, as with five or six parts of simple ointment, will be beneficial. From the too active employment of this unguent, and still more of the nitrico-oxide of mercury, by practitioners unacquainted with the character of the disorder, a great aggravation of the eruption and of the sufferings of the patient, is sometimes occasioned.

In some instances, indeed, the skin, under this impetiginous affection is peculiarly sensible to the stimulus of mercury, whether employed internally or externally. But the most irritable of all the varieties of impetigo are those in which vesicles abound; in some of which the zinc and saturnine applications, and even simple cerd, occasion an aggravation of the symptoms. In these cases, it is particularly necessary to keep the parts covered, with a view to avoid the effects of friction from the clothes, as well as of heat and of cold; to wash the surface daily with some emollient fluid, such as milk and water, or an infusion of bran; to interdict the use of soap; and to besmear the part with cream, or an emulsion of almonds. A lotion prepared of boiling mallow, digitalis, and poppy-heads, has been found serviceable, where the parts were very painful.

In the drier and less irritable forms of the impetigo, the use of the waters of Harrowgate is the most effectual remedy, and likewise the best preventive of its returns; under the same circumstances, the warm sea-water bath, followed by a course of bathing in the open sea, is productive of great benefit.

3. *Impetigo erysipelatodes.* This form of the disease, in its commencement, presents nearly the ordinary appearances of erysipelas; namely, redness and puffy swelling of the upper part of the face, with œdema of the eyelids; and is accompanied with slight febrile symptoms for the space of two or three days. But, on a minute examination, the surface, instead of the smooth polish of erysipelas, is found to exhibit a slight inequality, as if it were obscurely papulated; and in a day or two the true character of the disease is manifested by the eruption of numerous psydracious pustules over the inflamed and tumid skin, instead of the large irregular bullæ of erysipelas. These pustules first appear below the eyes, but soon cover the greater part of the face, and sometimes extend to the neck and breast: they are accompanied with a distressing sense of heat, smarting, and itching. When they break, they discharge a hot and acrid fluid, which adds to the irritation and excoriation of the surface. In this painful condition the face remains for ten days or a fortnight, when the discharge begins to diminish, and to concrete into thin yellowish scabs. But, on the interstices between the scabs, fresh pustules arise at intervals, with renewed heat and pain, and subsequently discharge, ulcerate, and form scabs like the former. The disease continues thus severe and troublesome for an uncertain period, from one to two or three months, and ultimately leaves the cuticle in the same dry, red, and brittle state which remains after the other forms of impetigo. The constitution is scarcely disturbed during the progress of this disease, and is much less disordered in the outset than in erysipelas.

In the commencement of the disease, purgative medicines, with the antiphlogistic regimen, afford great alleviation to the symptoms; but when the copious exudation and scabbing take place, the cinchona, in considerable doses, alone, or with the sarsaparilla, or mineral acids, is administered with the greatest benefit. The same local treatment is requisite as in the other forms of the eruption; viz. tepid ablution, with emollient liquids; the application of the mildest ointments; and the use of sea-bathing, or of the sulphureous waters, in its decline.

4. *Impetigo scabida.* In this more rare and severe form of the disease, one or more of the limbs becomes encased in a thick, yellowish, scabby crust, not unlike the bark of a tree, which is accompanied with a disagreeable heat and itching, and renders the motion of the affected limbs difficult and painful. This crust is the result of the concretion of an acrimonious humour, which is discharged in great abundance from numerous psydracious pustules, as they successively form, break, and ulcerate over the surface of the limb. The concretion commences about the third or fourth week, when the discharge begins to abate, and invests the whole of the arm from the elbow to the wrist, or the leg from the knee to the ankle. After some time longer, the scabby coating is divided by large cracks or fissures, from which a thin ichor exudes, and concretes into additional layers of scabs. If any portion of the scab be removed, the excoriated surface pours out its fluid again, and fills up the space with a new concretion. In the lower extremities, the disease is most severe and obstinate, is ultimately conjoined

with anasarca, and often produces severe ulceration. The incrustation sometimes extends to the fingers and toes, and destroys the nails; and, as in other similar instances, the new ones are thick, notched, and irregular.

This species requires the same internal medicines which have been recommended for the inveterate forms of the preceding varieties, especially the sulphureous waters. The chief peculiarity of its treatment consists in clearing the surface of its incrustation, and correcting the morbid action of the superficial vessels. The thick scab can only be softened and gradually removed by perseverance in the application of the steam of warm water to it, for a short time, daily. Those parts of the surface, which are thus cleared, must be covered with soft linen, or oiled silk, after tepid ablution, twice a day; and some of the unguentum zinci, or a much diluted ointment of nitrate of mercury, with common cerate, containing a fourth or fifth part of the mercurial, must be interposed.

5. The *impetigo rodens* is a rare but intractable species of the disease, probably of a cancerous nature, in which the cellular membrane is affected, as well as the skin, and seems to shrink away, as the ulceration and discharge go on. The disorder commences with a cluster of pustules, sometimes intermixed with vesicles, which soon break, and discharge, for a long period of time, an acrid humour, from open pores or from under scabs; and the skin and cellular texture are slowly, but deeply and extensively, corroded, with extreme irritation and pain, which are only to be alleviated by large doses of opium. The disease commonly begins on the side of the chest or trunk of the body, and gradually extends itself.

IMPETUM FACIENS. The name given by Boerhaave to the vital energy. The expression is a translation of the word ἐνορμοῦν used by Hippocrates; and Boerhaave published a book on the subject, intitled *Impetum faciens Hippocrati dictum*. The word, however, by which Hippocrates seems most generally to have designated the vital energy or principle, is φυσις — *nature*. See *Life*.

I'MPIA HERBA. (Said to be so called because it grows only on barren ground.) See *Gnaphalium*.

IMPLICA'TUS. Implicate. Celsus, Scribonius, and some others, call those parts of physic so, which have a necessary dependance on one another; but the term has been more significantly applied, by Bellini, to fevers, where two at a time afflict a person, either of the same kind, as in the case of a double tertian; or of different kinds, as in the case called a *semitertian*, which is a mixture of a tertian and a quotidian.

IMPLU'VIUM. (From *impluo*, to shower upon.) 1. The shower bath.

2. An embrocation.

IMPOSTHUMA. *Imposthume*. A term corrupted from *apostema*. An abscess.

Imposthume. See *Imposthuma*.

Impotency. See *Sterility*.

IMPREGNA'TION. *Impregnatio*. See *Conception*, and *Generation*.

INANI'TION. (*Inanitio, onis.* f.; from *inanio*, to empty.) The absence of nutrition from want of food. Starvation.

INCANTA'TION. (*Incantatio, onis.* f.; from *incanto*, to enchant.) A way of curing diseases by charms, much practised in ancient times, and adopted also by Paracelsus, Van Helmont, and other enthusiasts among the moderns.

INCA'NUS. Hoary. Applied to stems and leaves which are covered with a kind of scaly mealiness; as that of the *Artemisia absinthium*, and *Atriplex portulacoides*. See *Glaucus*.

INCE'NDIUM. (From *incendo*, to burn.) *Incensio*. A burning fever or inflammation. Synonymous with *phlogosis*.

INCERNI'CULUM. (From *incerno*, to sift. 1. A strainer, or sieve.

2. A name for the pelvis of the kidney, from its office as a strainer.

INCIDE'NTIA. (From *incido*, to cut.) A name given to medicines which were supposed to promote the discharge of phlegm, by cutting it as it were, and destroying its viscidity. The term is now obsolete.

INCINERA'TION. (*Incineratio*; from *incinero*, to reduce to ashes.) The reduction of any substance to ashes by combustion.

INCISI'VUS. Relating to the incisor teeth. A term applied to certain parts situated near the incisor teeth.

Incisivum foramen. See *Foramen incisivum*.

Incisivus inferior. See *Levator labii inferioris*.

Incisivus lateralis. See *Levator labii superioris alæque nasi*.

Incisivus medius. See *Depressor labii superioris alæque nasi*.

INCI'SOR. (*or, oris.* m.; from *incido*, to cut, from its use in cutting the food.) The four front teeth of both jaws are called *incisores*, because they cut the food. See *Teeth*.

INCISO'RIUM. (*um, i.* n.; from *incido*, to cut.) A table whereon a patient is laid for an operation.

INCISORIUM FORAMEN. The same as the *foramen incisivum*.

INCI'SUS. (From *incido*, to cut.) Cut; snipped: applied, in *Botany*, synonymously with *dissectus*, to leaves; as those of the *Geranium dissectum*.

INCOMPATIBLE. Substances which cannot with propriety be prescribed together in the same formula, on account of their having a chemical action on each other, are said to be *incompatible*.

INCOMPLE'TUS. Incomplete: applied to flowers, such as want either the cup or the blossom: the tulip, for example, wants the cup.

INCONTINE'NTIA. (*a, æ.* f.; from *in*, and *contineo*, to contain.) Incontinence. Inability to retain the natural evacuations. Thus we say, incontinence of urine, &c.

INCRA'SSANS. (From *incrasso*, to make thick.) Formerly applied to medicines supposed to have the property of thickening the fluids. *Incrassantia medicamenta*.

INCREME'NTUM. Increase: growth. See *Nutritio*.

I'NCUBUS. (*us, i.* m.; from *incubo*, to

lie upon: because the patient fancies that something lies upon his chest.) The nightmare. See *Ephialtes.*

INCU'RVUS. Curved inwards: applied to leaves. See *Inflexus.*

I'NCUS. (*us, udis.* f.; a smith's anvil.) The largest of the bones of the tympanum, so named from its shape. See *Auris.*

Indented. See *Sinuatus.*

I'NDEX. (*ex, icis.* c. g.; from *indico,* to point out: because it is generally used for that purpose.) The fore-finger.

Indian arrow-root. See *Maranta.*

Indian cress. See *Tropæolum majus.*

Indian date-plum. See *Diospyros lotus.*

Indian fig. See *Cactus opuntia.*

Indian leaf. See *Malabathrum.*

Indian pink. See *Spigelia.*

Indian rubber. See *Caoutchouc.*

Indian wheat. See *Zea mays.*

INDIA'NA RADIX. Ipecacuanha.

I'NDICA CAMO'TES. The potatoe.

I'NDICANT. (*Indicans;* from *indico,* to show.) Relating to an indication. See *Indication.*

INDICATING DAYS. *Dies indicantes.* Critical days.

INDICA'TION. (*Indicatio, onis.* f.; from *indico,* to show.) In medical language, an indication is that which demonstrates what ought to be done. It is threefold: *preservative,* which relates to the preservation of health; *curative,* which relates to the cure of a present disease; and *vital,* which respects the powers and reasons of diet. The scope from which indications are taken, or determined, is comprehended in this distich: —

—— *Ars, ætas, regio, complexio, virtus,*
Mos et symptoma, repletio, tempus, et usus.

INDICA'TOR. (*or, oris.* m.; from *indico,* to point: so named from its office of extending the index, or fore-finger.) An extensor muscle of the fore-finger, situated chiefly on the lower and posterior part of the fore-arm. *Extensor indicis,* of Cowper. *Extensor secundii internodii indicis proprius, vulgo indicator,* of Douglas. It arises, by an acute fleshy beginning, from the middle of the posterior part of the ulna; its tendon passes under the same ligament with the extensor digitorum communis, with part of which it is inserted into the posterior part of the fore-finger.

INDICUM LIGNUM. Logwood.

INDICUS MORBUS. The venereal disease. Because it was supposed to have been caught from the North American Indians by the followers of Columbus, and by them imported into Europe.

INDI'GENOUS. (*Indigenus; ab indu, i. e. in et geno, i. e. gigno,* to beget.) Applied to things which are peculiar to any country, as animals, plants, or diseases.

Indigestion. See *Dyspepsia.*

I'NDIGO. A blue colouring matter extracted from the *Indigofera tinctoria.* Anil, or the indigo plant.

INDIGO'FERA. (From *indigo,* and *fero,* to bear.) The name of a genus of plants. Class, *Diadelphia;* Order, *Decandria.*

INDIGOFERA TINCTORIA. *Indigofera anil.* The systematic name of the plant which affords indigo.

INDU'RANS. (From *induro,* to harden.) Applied to medicines which were supposed to condense the animal fibres — *Medicamenta indurantia.*

INDU'SIUM. (*um, ii.* n.; from *induco,* to cover or draw over.) A shirt or under garment. 1. A name of the amnios, from its covering the fœtus like a shirt.

2. The name given by most botanists to the involucrum, or thin membraneous covering of the fructification of ferns.

Its varieties are,

1. *Inducium planum,* flat; as in the genus *Polypodium.*

2. *Pellatum,* connected with the seed by a filament or stalk; as in *Aspidium filix mas.*

3. *Corniculatum,* round and hollow; as in *Equisetum.*

INEQUA'LIS. Unequal. Applied to a leaf when the two halves are unequal in dimensions, and the base end parallel; as in *Eucalyptus resinifera.*

INE'RMIS. (From *in,* priv. and *arma.*) Unarmed: opposed, in designating leaves, to *spinous.*

Infection. See *Contagion.*

I'NFERUS. Inferior. Much used in *Botany:* thus, a blossom is said to be *beneath* when it includes the germen, and is attached to the part immediately below it; as the blossom of sage, borage, &c. A germen is *beneath* when it is placed below the attachment of the blossom, and therefore not included within it; as in *Lonicera, Ribes, Cratægus,* &c.

INFIBULA'TIO. (From *infibulo,* to button together.) 1. An impediment to the retraction of the prepuce.

2. Synonymous with *ancteriasmus.*

INFLAMMABLE. (*Inflammabilis;* from *inflammo,* to burn.) Chemists distinguish by this term such bodies as inflame with facility. See *Combustion.*

Inflammable air. See *Hydrogen gas.*

Inflammable air, heavy. See *Carburetted hydrogen.*

INFLAMMATION. (*Inflammatio, onis;* f. from *inflammo,* to set on fire.) Inflammation is a state which may in general be said to be characterised by *pain, swelling, heat,* and *madness.* Of these the first, although often the most urgent, is, in fact, the least constant symptom. It is much felt in external inflammations, and in those which affect the outer coverings of the different viscera, but is little felt in some cases of inflammation of the internal membranes, and of the substance of viscera (perhaps because the parts affected in those cases have fewer nerves of common sensation); and is often excited only by occasional impressions made on the affected parts. The increased temperature, in all probability exists in every case of inflammation; but it seldom amounts to more than a few degrees; it is of course often concealed from the observer; and, as the sensibility to heat is less general over the body than the susceptibility of common sensation, the heat of

inflammation is less generally felt by the patient than the pain.

The swelling and redness, although very various in degree, in form, shade of colour, &c., in different cases, and often concealed from view, likewise exist, more or less, in every case of inflammation; and depend, in the first instance, not on any extravasations, but on the distension of the small vessels of the part, and on the passage of the colouring matter of the blood into vessels which had before hardly, if at all, admitted it.

But in order that inflammation may be clearly distinguished from all other states of any living texture, it is necessary to add to these four characters two other distinctive marks: 1st, That the affection should remain fixed in the part for at least some hours; — and, 2dly, That unless the affection be speedily and artificially arrested in its course, more or less of *extravasation* should show itself from the vessels of the part, first, of the serous part of the blood only, but afterwards of a more glutinous fluid, or even of the solid matters, — constituting the different inflammatory effusions to be presently considered. This last character, drawn from the local effects, rather than the symptoms, of inflammation, is the only sure mark of distinction between this state and mere congestion of blood, already considered.

These are the characters which appear, on careful consideration of the phenomena of inflammation in all parts of the body, and after exclusion of all individual and local peculiarities, to be the most uniformly present, and therefore the most essential parts of its history, in its earliest stages. But in many individual cases, these are in a great measure concealed from view; and, in order both to secure the recognition of this condition of individual parts, and also to understand the manner in which it gradually deranges the living action of other parts, and endangers life, it is necessary to observe minutely and generalise the *effects* which are found by experience to result from it, — *first*, in the condition of the system at large; *secondly*, in the *functions* of individual organs, — either those that take on the diseased action themselves, or those most closely connected with them.

I. The effects of local inflammation on the system at large, may be ranked under two heads, 1. The inflammatory fever, and, 2. The inflammatory state of the blood; both of which very generally attend inflammation of any considerable extent and intensity, and in many cases, bear a tolerably uniform proportion to its amount.

Of the combination and succession of symptoms which constitute the state called fever, it is generally allowed that the most uniform and characteristic are (as stated in Cullen's definition of Pyrexiæ) a sense of coldness and debility, succeeded by increased heat of skin, and increased frequency of pulse, and by a general derangement of the other functions, of which continued debility of the voluntary muscles is an important part.

The general derangement of functions, during the febrile state, may be thus arranged.

1. During the first, or cold stage (which is almost always observed, and always very important to be marked, as fixing the date of the febrile attack,) there is very generally, for a short time, besides the increased frequency of pulse, more or less of depression or debility of the heart's action, and afterwards an increase of the force, and sharpness or quickness of its pulsations, as well as of their frequency, to which change, and the concomitant rise of temperature, the term *Febrile Reaction* is properly applied. In the decline (whether temporary or permanent) of the febrile state, the usual change is in the pulsations becoming softer, or taking place more slowly, as well as becoming less frequent; but there may be many variations in the pulse in the course of fever, before that improvement takes place.

2. The functions of secretion, exhalation, and nutrition, in all parts of the body, are more or less diminished during the febrile state; as appears from the surface being more parched, or any sweat being temporary, and ineffectual in cooling the surface; from the mouth and tongue being clammy, or dry, with the feeling of thirst; from the appetite being deficient, and digestion imperfect; from the bowels being costive (unless there be a special affection of their mucous membrane;) from the urine, sometimes limpid and abundant in the cold stage, soon becoming high coloured, and often turbid and acrid; from the morbid secretion of ulcers, and the morbid exudation of eruptions on the surface, usually abating or disappearing; and from the general wasting of the body.

3. The respiration is often somewhat irregular, and attended with a sense of anxiety in the cold stage of fever, and becomes always somewhat more frequent than natural, when the febrile reaction is established; and the heat of the surface becomes greater than natural at the same time, although by no means in exact proportion to the strength and frequency of the pulse.

4. The functions of the nervous system are very often and variously affected during the febrile state. 1. The *sensations* are generally somewhat blunted in the first stage, when the febrile depression is most strongly marked, and often morbidly increased, at least partially, when the reaction is established. Pains of the back and limbs, and more especially of the head, are also natural accompaniments of the earlier stages of fever, independently of any inflammation in the parts pained. 2. There is, in general, disinclination to voluntary muscular exertion, and *debility* on attempting it, so important as to be introduced into the general definition of fever; but there is occasionally, during the febrile state, especially when the more active kind of delirium is present, an excitement and transient morbid energy of voluntary action, even when the circulation has become feeble; and there is more frequently, during some part of the febrile state, irregular and involuntary action of the voluntary muscles, tremors, subsultus tendinum, or even convulsions. 3. There is always, during fever, more or less affection of the *mental faculties;* at first a degree of

torpor, which is often succeeded, when the reaction is established, by a morbid rapidity, and more generally by a morbid energy, of the different mental acts composing the train of thought, with a peculiar difficulty of exerting the power of voluntary attention, from which there naturally results some confusion of thought, and often such hallucination as characterises delirium; and this febrile condition of the mental faculties often blends itself with, or passes gradually into coma.

It is chiefly by greater or less predominance of different parts of the combination of symptoms now sketched, that the species of varieties of fever are distinguished from each other; and that called *Inflammatory Fever*, which most commonly attends inflammation, is especially denoted by the following circumstances:—1. That the febrile reaction of the vascular system is stronger, and more enduring; 2. That there is less derangement of the secretions; and, 3. That there is less disorder of the nervous system, — than in those fevers which cannot be so distinctly ascribed to local inflammation as their cause. On the other hand, when the vascular reaction is feebler, or less permanent, the derangement of the secretions more obvious, and the nervous system earlier and more decidedly affected, and especially if that affection shows itself by depression, and tendency to stupor, rather than by more active delirium, the form of fever is said to be *typhoid*.

Several other circumstances, in regard to the fever which accompanies inflammation, demand notice.

1. Although the febrile symptoms are generally regarded as the effects of the local inflammation, and accordingly, are generally posterior to some part of the local symptoms in date, yet there are instances, — not only in the case of specific inflammations attending febrile exanthemata (of which the whole pathology is different.) — but of simply inflammatory diseases, pneumonia, cynanche tonsillaris, mastodynia, &c. where the febrile attack precedes any local symptoms; and perhaps may contribute to excite them. And there are other cases, particularly in irritable constitutions, where the febrile symptoms last for a time (*e. g.* a few days,) after the local symptoms of inflammation have subsided, and where these do not recur.

2. Although intense and extensive inflammation is usually attended with high fever, and *vice versâ*, yet the proportion is by no means uniform. The degree of febrile symptoms, attending a given extent of inflammation, is generally increased by youth, plethoric habit, and sanguine temperaments, and lessened by the reverse of these. In some, even vigorous constitutions, the degree of fever excited by active inflammation is slight; and there are some organs, as the tonsils, the inflammation of which is frequently attended with a degree of fever quite disproportioned to their size, or importance in the system.

3. Although the febrile symptoms attending the earlier stage of the inflammation have generally the character of inflammatory fever, as above distinguished, yet deviations from this type of fever are frequently seen, and may be referred to two heads, as they depend either *first*, on the peculiarity of the part affected, or *secondly*, on the action of some other cause influencing the system simultaneously with the inflammation itself.

Of the modification of the fever of inflammation by the part affected, the most important instance is in the case of inflammation of the stomach and intestines; where the fever is characterised by an early and often very rapid depression of the heart's action, strongly resembling, and evidently illustrated by, the effect on the heart's action of violent injuries of the abdomen, which is familiar to all surgeons. An effect somewhat similar results from active inflammation of the kidneys, uterus, bladder, and larger joints.

The modification of the fever of inflammation by the action of a concurrent cause affecting the system, is remarkably seen, 1. In the case of inflammation from an injury which has given a violent shock or concussion; 2. In the case of inflammation occurring in a constitution in which the nervous system has been habitually influenced by peculiar stimuli, such as alkohol taken in excess; 3. In the case of inflammation attended with the introduction of peculiar animal poisons into the system.

In all these cases, the fever attending inflammation shows a less forcible and less enduring reaction, and is attended with more derangement, both of the secretions and of the functions of the nervous system, than is usual; and therefore assumes, more or less exactly, the form to which the term *typhoid* is applied.

The state of the blood which usually attends inflammation, of considerable intensity, is that in which it shows the buffy coat, *i. e.* in which a separation, more or less complete, of the fibrin from the colouring matter of the crassamentum takes place spontaneously during coagulation.

It is stated in the article *Sanguis*, that this separation does not depend on the circumstance of slow coagulation of the blood and consequent subsidence of the colouring matter, but that there appears to be in this state a repulsion between the particles of the fibrin and the red matter; causing them to separate from each other before the fibrin has become solid, or in films so thin, that they separate laterally instead of vertically. This repulsion may or may not coexist with a strong aggregation of the particles of the fibrin among themselves; but in most cases of violent inflammation there is both the complete separation and the strong aggregation; the effect of which is a buffy coat, both thick and strong, *i. e.* contracted.

A thin buffy coat, implying imperfect separation of the fibrin from the colouring matter, usually attends cases of slight or very partial inflammation only. A thick, but loose, flabby buffy coat, implying more separation from the colouring matter, but weak aggregation of the particles of fibrin among themselves, is generally observed where another cause of disease of the system (*e. g.* contagious fever) coexists with local inflammation. It appears from the observations of Gendrin, that the proportion of

albumen in the serum of sizy blood, and especially in that part of the serum which is entangled in the buffy coat itself, is much greater than in the serum of healthy blood.

The buffy coat is seen on the blood in some persons, chiefly of a plethoric habit, without inflammatory disease existing in them, and is often found in the blood of pregnant women; but in these cases it is seldom thick or very firm. The formation of the buffy coat, though not dependent on slow coagulation, is of course facilitated by that circumstance; and when coagulation is much hastened, a complete separation of the parts of the crassamentum cannot take place. Hence blood which is drawn in a small stream, or spread over a flat surface, as its coagulation takes place quickly, is not apt to show the buffy coat; and this is probably also the reason why blood drawn from weakened or fainting persons, which is more serous, and coagulates more quickly than most venous blood, seldom shows the buffy coat; and why the last drawn blood in a bleeding on account of inflammation, is usually the least sizy.

In a few cases the last drawn blood is the most sizy, and that especially when the pulse, previously depressed, becomes fuller and stronger by reason of the bleeding; probably because the capillary circulation becoming more free, and more serum being admitted there, the blood in the large veins then becomes less serous, and the coagulation takes place more slowly.

Inflammation, even when violent, generally lasts for a day or two, before it causes the blood to show the buffy coat. It is not yet ascertained whether the blood in the veins leading from an inflamed part, becomes sizy sooner than that in other veins of the body; but microscopical observations on the changes which take place in the blood in the capillary vessels of an inflamed part render this supposition probable.

II. The concurrence of the symptoms already considered is generally sufficient to indicate the existence of inflammation, even when seated in internal parts; but there are almost always more local symptoms, indicating a peculiar derangement of the function of some particular organ, which enables us more decidedly to fix on the seat of the inflammation. These local symptoms are such as denote *alteration of the function*, either of the part that is inflamed, or of an adjoining part, or of a part connected with it in function, or by known sympathies, although not adjacent.

1. When any internal part is inflamed, its own functions are in general perceptibly, though somewhat variously altered. Thus inflammation of the heart and large arteries causes generally preternatural, and sometimes irregular impulse of the heart, inflammation of the lungs causes dyspnœa, and soon alters the sound produced by the air entering the lungs; inflammation of the serous or synovial membranes causes increase and alteration of the serum naturally effused into these cavities, which often becomes obvious to the observer; inflammation of the mucous membrane of the air-passages or bowels, leads to increased and altered secretions there, and consequent *profluvia*; inflammation of the serous, or perhaps more especially of the muscular coat of the bowels, causes costiveness; inflammation of the kidneys alters the composition of the urine, that of the bladder renders its excretion difficult and painful; inflammation of the brain leads generally to derangement of some part of its functions, to palsy, spasm, delirium, or coma; inflammation of the eye or ear augments the sensibility to light or sound, while inflammation of the lining membrane of the nose blunts the sensibility to smells; inflammation of muscles or their coverings, or of motor nerves, greatly impedes or wholly prevents the motion of the parts they are destined to move.

But there are many cases of important, at least apparent, exception to this rule, especially in the case of those internal viscera, the whole of which is not required for the outward manifestation of their functions. Thus a portion of the liver may be inflamed, without the flow of bile being perceptibly altered; and experience shows, that portions of the lungs, and of the brain, may be inflamed, without the usual alterations of the functions of these parts being observed.

2. Alteration of the functions of parts adjoining those that are actually inflamed, is seen in the painful and difficult deglutition caused by inflamed parotids, tonsils, or larynx, in the painful and difficult descent of the diaphragm, when the peritoneum or liver is inflamed, &c.

3. When inflammation of the liver causes pain of the right shoulder, inflammation of the bladder pain at the point of the urethra, inflammation of the spinal cord, pain stretching round the abdomen, or inflammation of the hip-joint pain at the knee, we have examples of the phenomenon considered formerly under the name of sympathetic sensation: and when inflammation of the brain, liver, stomach, bowels (especially their serous coat), kidneys or bladder, causes vomiting, the diaphragm and abdominal muscles take on a sympathetic action; the sensations which excite them to the act of vomiting being excitable by irritation of all these parts. Again, when inflammation of the mucous membrane of the trachea or bronchia causes violent and painful cough, when that of the colon or rectum causes painful and ineffectual tenesmus, or that of the mucous coat of the bladder causes strangury, the actions excited are only an excessive degree of those sympathetic actions of various and sometimes distant muscles, which the natural sensations of these parts excite, for useful and important purposes. And in all these cases, the sympathetic phenomena, when coexistent with other symptoms of inflammation, are an important indication of its seat. — *Alison.*

Inflammation either subsides, leaving the affected part in a healthy state, or it terminates in one of several ways, involving more or less serious lesion of the part.

Whatever opinion may be formed regarding the *precise* condition of the blood-vessels in inflammation, it is obvious, from the general tenour of the phenomena now described, that they are loaded with an unusual proportion of blood. This is, for all practical purposes, the

essence of inflammation; of such increased quantity of blood the vessels must be *relieved*, before they can be restored to their natural healthy condition and mode of action. The terminations of inflammation therefore consist for the most part of the several modifications of *effusion*.

1. *Resolution.* — When an inflamed part gradually regains its healthy state without any derangement of its structure, or any *sensible* effusion from its vessels, the disease is said to terminate by *resolution*. This is invariably the object of the physician; but the surgeon may have cause to regret it, because he occasionally excites inflammation with a view of profiting by some of its subsequent stages. Resolution may happen, first, without medical aid, when the inflammation is very slight; but far more frequently it takes place when, secondly, the requisite *unloading* of the vessels has been effected by *local* or *general* blood-letting, or, in milder cases, by local cold and purging. It is a most fortunate provision of nature that such relief may be afforded by emptying vessels at a distance from the actual seat of disease. Were it not for this, every case of acute inflammation of the lungs would prove fatal. We judge of the tendency to resolution by the *gradual* giving way of the symptoms of inflammation, particularly by the diminution of pain, and by the pulse becoming *soft*.

2. *Increased secretion.* — The second termination of inflammation is an increase of the natural secretions of the part. In membranes which have an external outlet, such as the several mucous membranes, this is almost equivalent to resolution. In the shut cavities, as those of the pleura, pericardium, and peritonæum, such a termination of inflammation is more to be dreaded; but in many cases the fluid thus effused is gradually absorbed, and health ultimately restored.

3. *Hæmorrhage, dropsy, and effusion of coagulable lymph.* — The third mode by which inflammation terminates is *effusion* from the vessels of the part, either of blood or of its principal constituent parts, serum, and fibrine. The mucous membrane of the bowels, when inflamed, frequently relieves itself by a discharge of pure blood. In some cases the *serum* of the blood is effused, as in hydrocephalus and inflammation of the tunica vaginalis testis. In other cases the *coagulating lymph* of the blood is effused, forming adhesions, as in pleurisy and peritonitis. A peculiar gelatinous fluid is thrown out in rheumatism, and a saline matter in gout. The consequences of these effusions vary according to the violence of the inflammation, and the situation and structure of the part affected. Adhesions from pleuritic inflammation are productive of little or no inconvenience; occurring in peritonæal inflammation, they sometimes lead to incurable marasmus or ileus. The effusion of serum from inflamed vessels forms a part, and a very important part, of the general pathology of *dropsy* (as explained in various parts of this work). When effusion takes place in the substance of the solid viscera, they become hardened, or *hepatised*, and are rendered more or less unfit for the due performance of their functions.

4. *Suppuration.* — The fourth termination of inflammation is the effusion of a new product of the blood, called *pus*, a bland fluid, of the colour and consistence of cream. When this is poured out into some cavity formed during the process of inflammation, an *abscess* is said to exist; when the purulent matter forms upon an exposed surface, *ulceration* is said to be established. This subject opens an extensive field of inquiry, in which the labours of John Hunter have been successfully exerted. He pointed out the remarkable analogy which subsists between pus and a secreted fluid, an ulcerating and a secreting surface. The symptoms by which we judge of suppuration having taken place in an internal organ are the following: — A change from the lancinating to the throbbing pain. A sensation of weight or fulness in the inflamed part. The pulse continuing frequent, but becoming soft and full. The occurrence of rigors and of night sweats, — in other words, the development of *hectic fever*. See *Abscess*.

5. *Destruction of the inflamed part.* — In the most aggravated cases of acute inflammation the part dies. This most formidable of all its terminations may be either gradual and partial, or complete. Partial destruction is called sloughing, or phagedenic ulceration; total destruction, sphacelus, gangrene, or mortification. Such a result may happen in three ways: — 1. From the excessive violence of the first stage of inflammation, rendering it impossible for the vessels to restore themselves by any kind or degree of effusion. But as the tendency to gangrene often shows itself early, and without any particular violence of the first stage, it must be ascribed, *secondly*, to a *septic* tendency in the disease itself, as in the case of plague. The malignity of that contagion so overpowers the nervous system, that the vessels of the inflamed part are unable to resist the shock of the disease and the part itself dies. 3. The disposition to gangrene is, in many instances, independent both of the *nature* and of the *violence* of the inflammation, and is referable simply to the weakness of the patient's habit, which is unable to oppose resistance, even to a mild attack. The occurrence of gangrene is marked by — 1. The sudden cessation of pain. 2. A sinking and irregular pulse. 3. A change in the expression of countenance, from that of febrile excitement to exhaustion. 4. Delirium. 5. Cold sweats. See *Mortification*.

It remains to be stated, that several of these terminations of inflammation may be going on at the same time. Thus a mucous membrane may throw out a *muco-purulent* fluid. Flakes of coagulable lymph may float in the serum which an inflamed peritonæum has thrown out. Some portions of the cellular membrane may suppurate whilst others mortify. — *Gregory*.

The phenomena and terminations of inflammation are greatly influenced by the texture in which it occurs — a truth of the utmost importance in pathology, and which was first distinctly apprehended by Dr. Carmichael Smyth. Since his time the study of general anatomy has afforded it a more extensive application. The following are the varieties of inflammation,

according to texture, which are most distinctly known.

1. *Inflammation of the skin.* — The effects of inflammation on this part of the body are very various: such as the formation of rashes, as in scarlatina, roseola, &c.; pustules, as in small-pox, porrigo, &c.; vesicles, as in chicken-pox, herpes, &c.; papulæ, as in measles, lichen, &c.; scales, as in lepra; ulceration with loss of substance; and also gangrene.

2. *Inflammation of mucous membranes.* — This is characterised by swelling and dryness; effusion of mucus, or of matter of a puriform character — a mixture of the two, appropriately termed muco-purulent; of a serous fluid, and coagulable lymph. These different products of inflammation are sometimes colourless, at others yellow, and sometimes red like currant jelly. The mucous membranes are likewise liable to softening, thickening, passive hæmorrhage, ulceration, contraction, sloughing, and tubercular formation.

Some of these effects are common to the mucous lining of the air passages, alimentary canal, and urinary passages, as for instance, copious exudations of mucus, softening, thickening, and passive hæmorrhage. Others are not so; tubercular formation, for instance, is more frequently met with in the alimentary canal. Ulceration is sometimes found in the air tubes, but more frequently in the stomach and bowels, particularly the latter, rarely in the bladder. Some parts of the mucous membrane of the same canal are more liable to inflammation and ulceration than others; for instance, the termination of the ilium and the colon. Inflammation is more liable to terminate in the exudation of coagulable lymph in some parts than others; it is seen most frequently in the windpipe and rectum, although other parts are not altogether exempt.

Considerable vascularity is not alone a certain proof of inflammation having existed in the mucous membranes before death, because it may be found only in depending parts of the canals; and congestions of this membrane may be occasioned by diseases of the heart and lungs, and by any other cause which obstructs the circulation of the blood.

3. *Inflammation of the cellular membrane.* — This terminates in effusion of blood, of lymph, of serum, of pus; — in induration and gangrene. Inflammation in this tissue is generally termed phlegmonous, and although the cellular membrane is so extensive and loose in its texture, the disease tends to circumscribe itself by a sanatory process, and the effused matter to make its way to the surface of the body. Occasionally, though rarely, the inflammation has a tendency, from the first, to spread very extensively, from peculiar circumstances, which have never been satisfactorily explained. This is termed "diffuse cellular inflammation." Sometimes the death of a small portion of the cellular membrane takes place; then the affection is called carbuncle.

4. *Inflammation of fibrous membranes.* — Fibrous membrane is the tissue which is generally supposed to be affected in gout and rheumatism; the chief peculiarities are said to be, that it never terminates in suppuration, ulceration, or gangrene, and that the functions of the brain are rarely disturbed during the course of the disease. It is said to terminate sometimes by effusion of a gelatinous nature, or deposition of calcareous matter. This subject ought to be held as being open to future investigation; it is by no means proved that the inflammation which attends gout or rheumatism is situated in such a texture. All the phenomena and the terminations of these diseases, tend to confirm a suspicion, that it is seated in the extremities of nerves, more particularly when we reflect upon the sudden metastases. At all events, it is rather strange that so many authors should make the assertion, that inflammation of fibrous membranes *never* terminates in suppuration and ulceration. What do they call the periosteum? But this question is too intricate and extensive, and some may think, too surgical, to be investigated in this work.

5. *Inflammation of serous membranes.* In a state of health serous membranes show few red vessels, and their surfaces exhale a thin serous fluid, which is just sufficient to bedew them. When inflamed, red vessels are seen during life, an effusion takes place either of serum or lymph or of both. Sometimes the effusion is limpid, or turbid like whey: at other times it looks like pus, and occasionally it is greenish, or resembles lees of wine; often large masses of coagulable lymph are discovered glueing the parts together. Adhesions between the different viscera of the thorax and of the abdomen seem to be effected by means of intervening portions of lymph, which subsequently become organised. The quantity of the effused matter is sometimes small, amounting only to a few ounces, at others there are several pounds.

A bloody effusion is sometimes found, more particularly in the abdomen. Ecchymosis not unfrequently takes place when the inflammatory action is very violent. There can be no doubt that tubercles form *occasionally* under a sub-acute and chronic inflammation of this class of membranes, more particularly in the peritoneum, *pleura pulmonalis*, and arachnoid coat. Emphysema also occurs in the cellular tissue immediately under the peritoneum. It has been proved by experiment, that the peritoneum, however vascular under acute inflammation during life, loses its red appearance even during the act of death. In chronic inflammation, it is sometimes found very red in colour, and thickened in texture.

Ulceration is also to be considered as an occasional, although rare, effect of inflammation in serous membranes.

Gangrene is one of the rarest results of inflammation of serous membranes, and it is to be doubted whether it ever occurs when the diseased action is confined to this tissue.

6. *Inflammation of the solid viscera.* The first circumstance generally perceived is the presence of an unusual quantity of blood in the affected organ. The first change in the structure of the viscus is softening. Hardening is owing, in general, to chronic inflammation. Generally speaking suppuration is not a frequent

result of inflammation in the substance of the viscera. Abscesses of the liver, however, are very common.

7. *Inflammation affecting glands.* This has an aptitude to terminate speedily in suppuration. Sometimes, however, they suppurate very slowly, and occasionally induration takes place. — *Mackintosh.*

The terminations of inflammation in different textures are stated more at large under the respective heads of inflammation of particular organs in different parts of this dictionary.

With respect to the predisposing causes of inflammation, and the state of system which renders an individual most obnoxious to it, there has been considerable difference of opinion.

Dr. Cullen states, that the inflammatory diathesis chiefly prevails in systems of the greatest vigour. A full habit of body, a plethoric state of vessels, and *tension of fibre*, are the terms usually employed to express the state of the system, when predisposed to acute inflammation. In such habits we often meet with genuine inflammatory diseases; but the student must bear in mind that this is neither the only state of body in which they occur, nor is it even the most common. He will find, that when the constitution is *below par*, when it has been weakened by previous diseases, by low living, by anxiety of mind, or excessive bodily fatigue, continued for a long period of time, inflammation of the most acute kind is often excited, which runs as rapid a course, and is attended with symptoms as violent, as inflammation occurring in persons full of blood, and of the most robust habit.

The state of *weakness* then, of *irritability*, and of *atony*, is at least as favourable to the development of inflammation as that of *plethora* and *tension*. The intermediate state is that which affords the surest preservative against the attack, not only of inflammatory, but of every other description of disorder. To that kind of inflammation which occurs in robust habits, the term *entonic* has been applied; *atonic* to that which takes place in a reduced state of the system. As expressive of a pathological principle, these terms are not objectionable; but in *practice* the several kinds of inflammation are to be treated on the same principles. It is with reference to prognosis, and the extent to which measures of depletion are to be pushed, that the study of the predisposition to inflammation is principally useful.

Inflammation sometimes arises in the human frame unexpectedly, and from causes wholly unknown; but at other times we can define its exciting causes with considerable certainty. Among the most important of the acknowledged causes of internal inflammation, will be found the following: — Mechanical and chemical irritants; — Cold; — Acrimony of the blood and humours; — Morbid poison; — Contagion; and Metastasis.

1. *Mechanical and chemical irritants.* — The phrenitis of infants has been traced to blows and falls; gastritis to poison; enteritis to the presence of hardened fæces; nephritis to calculus in the kidney; ophthalmia to dust and sand; erysipelas to leech-bites, or the distension of the skin from dropsy.

2. *Cold.* — This is the most important of all the exciting causes of internal inflammation. There is scarcely any form of it which does not occasionally owe its origin to cold; and many inflammatory affections, as rheumatism and pleurisy, have no other cause of the smallest practical importance. The period of time that elapses between the application of cold and the occurrence of inflammatory symptoms is subject to great variety. In the case of sore throat, it often follows in the course of a few hours. In that of acute rheumatism, a week, or even a fortnight, has been known to elapse. Sudden atmospheric changes, whether from heat to cold, or from cold to heat, are the frequent sources of internal as well as external inflammation. The change from great cold to great heat appears to be the most prejudicial. The vessels are thereby distended to a dangerous extent. It is thus that chilblains are formed; and many of the severest cases of pneumonia arise in this way. Several circumstances concur to augment the danger of *catching cold*, the principal of which are violent exercise, and insufficient clothing.

3. *Acrimony of the fluids.* — Some forms of inflammation, which, to a superficial observer, might appear to arise without any assignable cause, have their origin in a peculiar state of body, the nature of which is not always understood, but which the older physicians supposed to consist in some acrid state of the fluids or humours. This is well exemplified in the phenomena of gout, and in the inflammation of absorbent glands occurring in scrofulous children on the approach of winter. The most striking illustration of this principle, however, is to be found in the frequent occurrence of thoracic and abdominal inflammation during the progress of typhoid and malignant fevers, implicating the fluids of the body. Several forms of chronic cutaneous inflammation appear to have their origin in an acrid or unhealthy state of the blood. This has been called the *scorbutic acrimony.*

4. *Morbid poison.* — The existence of a morbid poison in the system is a frequent occasion of internal inflammation. This principle was illustrated in the phenomena of the plague, small-pox, measles, and the other exanthemata. It is equally exemplified in those of secondary syphilis, where inflammation of the fauces, iris, and joints is obviously attributable to such a source. The bite of the rattlesnake excites a peculiar kind of inflammation in the cellular membrane. Anatomists frequently suffer from the absorption of matter formed in the course of disease, especially of *acute* disease, such as peritonitis. In irritable habits this induces not merely inflammation of the glands and cellular membrane, but also of internal structures, often of the most acute and dangerous kind. Closely allied to this is the important but well-ascertained fact of the origin of many inflammatory affections from *contagion.* Two species of Cynanche are contagious (parotidæa and maligna). There is a contagious form of Ophthalmia. Erysipelas is contagious under certain

circumstances. So, in all probability, is Dysentery. There is reason to suspect that one of the forms of peritoneal inflammation (the peritonitis puerperarum) is occasionally propagated in the same way.

5. *Metastasis.* — The last cause of internal inflammation which it will be necessary to notice is *metastasis*, or the translation of inflammation from one organ or structure to another. This is a very curious but obscure point in pathology. It is exemplified in the ophthalmia which succeeds gonorrhœa; in the inflammation of the testicle which succeeds the mumps; in the inflammation of the pericardium which succeeds rheumatism; in the inflammation of the brain which succeeds erysipelas of the face. In what manner the metastasis is effected has never yet been developed. It appears, however, that something may be referred to *sympathy from similarity of structure*, for in most cases of metastasis it will be found that the structures primarily and secondarily affected have an affinity to each other. — *Gregory.*

The theory of inflammation has occupied a number of ingenious reasoners in all ages, but it still remains immersed in the deepest obscurity.

The following extract from Dr. Bostock's physiology contains a full statement of the opinions that have been held, and a candid and judicious estimate of their merits.

"It is generally agreed that the capillaries are the immediate seat of the inflammatory action, and that when any change occurs in the large vessels, it is to be attributed to a secondary or consequential operation, originating from the affection of the minute arteries. All the four symptoms mentioned above, redness, heat, pain, and swelling, may be attributed to one primary cause, an increase in the size of the minute vessels, by which they are enabled to admit of more than the ordinary quantity of blood to be received into them; but a great diversity of opinion has prevailed concerning the mode in which the blood is conveyed or retained there, or concerning what has been termed the proximate cause of inflammation.

After the vital power of the vessels had been established by Stahl and his disciples, the phenomena of local inflammation were referred to this action; and, as all the natural operations of the arterial system seemed to be augmented during this state, so it followed, almost as an obvious consequence, that inflammation essentially consists in increased action of the capillaries. For a clear and candid statement of the opinions which have been entertained upon the state of the blood-vessels in inflammation, I may refer the reader to Dr. Thomson's Lectures on Inflammation, p. 71—75; and Hastings's Treatise on the Mucous Membrane of the Lungs, p. 67. et seq. A strong objection to this supposition was, however, quickly perceived, that the effect of the vital action of the vessels is contraction, while, as we observed above, the very essence of inflammation consists in an increase of the capacity of the vessels. But the ingenuity of the physiologists was not baffled by this difficulty; various means were invented to accommodate the theory to the facts, depending upon the presence of some obstacle which the blood was conceived to meet with in its passage through the vessels, which, at the same time, was not incompatible with their increased diameter. Boerhaave attributed the obstruction to a change in the texture of the blood itself, by which it became more thick and viscid, acquiring, what he called, a state of lentor, and to this lentor he added the further hypothesis, that the increased action of the arteries forces the larger particles of the blood into vessels, which, in their natural condition, are too small to receive them. This constitutes the *error loci* of the mathematical physiologists, and by the lentor and *error loci* were the phenomena of local inflammation explained by Boerhaave and his numerous disciples, until this, like most of their other speculations, was assailed by the powerful genius of Cullen. In place of the mechanical doctrine of Boerhaave, Cullen substituted his favourite hypothesis of spasm; for he admitted the increased action of the vessels in local inflammation, while he was aware that, without some counteracting circumstance, this increased action would produce effects totally inconsistent with the actual phenomena. Haller was quite aware that an increased action of the arteries must have a tendency to diminish their capacity, and employed this consideration as an argument against the muscularity of the capillaries. We shall, however, find, upon due reflection, that the spasm of Cullen is equally unfounded, and perhaps even less intelligible, than the lentor and *error loci* of the Boerhaavians; and, accordingly, his explanation has been generally regarded as incomplete; yet since his time no regular attempt has been made to reconcile the increased action of the vessels with their enlarged diameters.

In this dilemma, a totally different view of the question has been taken, according to which, local inflammation is to be attributed to a diminished action of the capillaries. This hypothesis, which appears to have been originally proposed by Vacca, an Italian physiologist, about the middle of the last century, was first brought forwards in a clear and consistent form by Mr. Allen, who, for some years, lectured in Edinburgh on the animal economy: it was adopted by Dr. Wilson Philip, who performed a series of experiments in support of it, and has been since embraced by Dr. Parr, Dr. Thomson, and Dr. Hastings (On the Mucous Membrane, p. 71. et seq.). Dr. Thomson and Dr. Hastings likewise supported the hypothesis by numerous experiments. Although Philip, Thomson, and Hastings agree in the main point, that inflammation essentially consists in diminished action of the capillary arteries, they differ respecting the actual state of the vessels. Dr. Philip supposed that the constant effect of inflammation is to dilate the vessels, and to diminish the velocity of their contents. (Treatise on Febrile Diseases, v. iii. p. 15. et seq.; also Preface to 4th ed. p. vii.; and Med. Chir. Trans. v. xii. p. 407.) Dr. Thomson concludes that the velocity is sometimes increased and sometimes diminished (Lect. on Inflammation, p. 89); while Dr. Hastings adopts the opinio

of Dr. Philip, that, in the proper inflammatory state, the velocity of the fluids is always retarded. (On the Mucous Membrane, p. 91. et alibi.) It may be worth noticing, that the article "Inflammation," in the Dict. des Scien. Méd. t. xxiv. p. 525. et seq. written by Boyer in 1818, contains no account of either the hypothesis or experiments of the English physiologists: inflammation is referred, according to the old doctrine, to the increase of vital action.

According to Mr. Allen's hypothesis, the redness, heat, pain, and tumour are to be ascribed to the increased quantity of blood which the vessels contain in consequence of their relaxed state; the symptoms, therefore, which had been usually attributed to excessive action he ascribes to this partial stagnation of the fluids, together with a kind of struggle between the loss of power in the part, and the unusual stimulus to which it is thus subjected. Although this doctrine of the proximate cause of inflammation may, at first view, seem to counteract our established notions upon the subject, yet it will, I think, be found upon examination to be more consistent in all its parts, and to accord better with the various phenomena both of pathology and of physiology, than any of the speculations which had preceded it, derived from the principle of increased action combined with obstruction. And, indeed, if we take into account that the exact seat of the inflammatory action is not visible to the eye, and that, according to the hypothesis of Dr. Hastings, the state of active inflammation consists in an increased action of the larger arteries, while the capillaries are in their natural state, it will approximate this hypothesis, at least as to all pathological and practical consequences, pretty nearly to the old doctrine. But I must add, that I think we are not arrived at that degree of knowledge on the subject, which will enable us to form a decisive opinion respecting it. Waiving, therefore, the regular discussion of the hypothesis, I shall conclude by a few observations which may be of some use to those who are inclined to investigate the proximate cause of inflammation with more minuteness.

The theory of inflammation has been lately discussed, in an ample and luminous manner, by Mr. James Earle, in a series of essays in the successive numbers of the Medical Gazette. He conceives that the essence of inflammation consists in obstruction of the minute vessels, and that its greater or less degree of activity depends principally upon the relation between the degree of obstruction and consequent dilatation, and the compulsive force of the blood. He does not admit of the proper contractility of the capillaries; and, therefore, refers all the actual force of the circulation to the action of the heart. On this, as well as on some minor points, I must dissent from the doctrine of Mr. Earle; but I must recommend the attentive perusal of his essays to those who are interested in the progress of physiological science, as containing much valuable information on the various topics on which he treats. Dr. Alison takes a totally different view of the subject; he ascribes the effect to a vital action in the fluids, not in the vessels or in any of the solids.

Although we may conceive that the phenomena of inflammation are as readily explicable upon the hypothesis of diminished as of increased contractility of the capillaries, yet it appears to me that both the exciting causes of this affection, and the treatment, coincide more with the idea of excessive than of defective action. All those circumstances which we are usually in the habit of considering as stimulants excite inflammation; and where the same effect is brought about by sedatives, or by agents of a more doubtful operation, still we can generally perceive the existence of what has been termed reaction, which is the immediate precursor of the change in the state of the circulation. In the same way the remedies for inflammation appear to me more adapted to remove or relieve an excess than a defect of vital energy, as for this purpose, except under peculiar circumstances, we always apply either direct or indirect sedatives, and find stimulants to be as injurious as the others are beneficial. From these considerations I am induced to recur to the former idea of increased action being the proximate cause of inflammation, or, at least, as being essential to it, and to inquire whether there be no correct method of combining a state of increased action with distention of the vessels. This, it is obvious, must be accomplished by obstruction in some form or other, either arising from the nature of the fluid, or from the difficulty with which it leaves the vessels after it has entered into them. Now, although we may agree with Cullen that Boerhaave adduced no sufficient proof of the existence of his lentor and *error loci*, yet it does not follow that no alteration in the condition of the blood exists. May we not conceive, that by the inflammatory action the proportion of fibrin is increased, or that the fibrin already present acquires a greater tendency to coagulate? That the solid contents generally of the blood are augmented, either by an increased quantity being thrown into the vessels, or a portion of the more fluid part being removed? May not some new arrangement take place with respect to the globules, so that they may coalesce or be more strongly attracted together? Or, without having recourse to any speculations of this kind, may we not conceive it possible that, if the minute arteries are contracting more vigorously than ordinary, their relaxation will be proportionably great, so as to allow of the different parts of the blood, as the fibrin and the globules, to be admitted into vessels which are generally impervious to them, and which, when once entered, from the *vis à tergo* on the one hand, and from the decreasing diameter of the vessels as they divide into small branches on the other, are forcibly detained, and produce all those symptoms which seem to originate from mechanical obstruction? These considerations are thrown out rather to show what may be conceived as a possible occurrence, than from the idea of our possessing any evidence of their actual existence. They may, however, show that we have not a sufficiently intimate acquaintance with the sub-

ject to enable us to decide peremptorily respecting the proximate cause of inflammation."

The treatment of inflammation may be distinguished into two general divisions; — the employment of remedies adapted to the removal or mitigation of the local affection, and the administration of remedies adapted to the removal or extinction of the general symptoms. Though, in consequence of the intensity of the latter class of complaints bearing a very accurate proportion to the severity of the local inflammation, the remedial measures calculated to remove or assuage the latter are also well suited to the mitigation of the former, and in many cases the febrile disorder subsides as the local disease is controlled; yet it is proper to observe some distinction both in specifying and in describing the employment of individual remedies of each class. In the management of inflammation, in short, the physician should always direct his attention to the nature and tendency of the local affection, and should observe assiduously the state of the inflamed organ, and its changes under the use of remedies; but he should also not neglect the general febrile symptoms, and should arrange his therapeutic measures accordingly.

It has been already shown that inflammation in every texture has a tendency to the formation of new products, and the destruction, more or less extensive, of the tissue in which it takes place. In certain favourable circumstances, indeed, of constitution and vigorous organic properties, or under the seasonable use of various agents, it is possible for the inflammatory action to be resolved; and the chief duty of the rational physician is to know the circumstances under which this is most likely to take place, and by all means to prevent the formation of new products, and the destruction of the tissue.

Though we possess no direct means of accomplishing these objects, it is always practicable to effect them more or less perfectly by the use of indirect measures. As inflammation depends on the concurrence of remote exciting causes and predisposition with proximate causes, the only direct curative method is, by putting a stop to their operation, to counteract, if not to subdue, their effects. When the adoption of these measures is inadequate to check the new orgasm, as all the morbid products are prepared from the blood, by diminishing the quantity of that fluid generally, and diminishing the proportion contained in the vessels of the inflamed tissue, resolution is more readily effected than if the vessels be left to themselves. Though it is impractible to restore their tone and energy to the capillary vessels of an inflamed part, it is possible, by diminishing the mass of their contents, to give them less to do, and to place their exhausted powers more upon a level with the duty which they have to perform. It is hence necessary, in all cases of inflammation, to employ more or less freely those measures which act on the sanguiferous system.

The first and most effectual of these is blood-letting, general and local. The first is indicated when the local inflammation is accompanied with great and evident fever, when the patient is young, robust, and vigorous, when the disease is in its commencement or fully established — not when it is declining, when the inflammation is seated in an organ essential to life, and when, consequently, it is liable, if allowed to proceed, to injure irreparably the structure of the part.

In order to be efficient in controlling inflammation, full bleeding should be carried to the extent of making a great and evident impression on the vascular system, especially as indicated by the change in the number and beats of the pulse, by the appearance of the countenance, by the relief afforded to the urgent symptoms of the disease, especially the pain, and by the amelioration effected in the functions of the affected organ. If these objects be not attained by one blood-letting of considerable amount, it is requisite to repeat the evacuation; and in some instances of visceral inflammation, the extent to which the evacuation requires thus to be carried, both in amount and by repetition, is very great. It may be from 60 to 100 ounces in adults. Blood-letting in this manner operates at once on the local affection, and on the general disorder.

In most instances of inflammation seated in any important organ, with evident symptoms of symptomatic fever, one, two, or three large blood-lettings from the system will be adequate to subdue the disease. In some instances, however, in which the symptomatic fever is either not violent in proportion to the local affection, or is already subdued by general evacuation, or in which it is inexpedient to carry general evacuation farther, it becomes necessary to draw blood from the vessels of the inflamed part, or from the nearest accessible region, to it, for instance, from the temples, scalp, frontal or occipital regions, in inflammation of the brain, or its membranes; from the surface of the chest, sides, or the inter-scapular region, in inflammation of the lungs, or their bronchial membrane; and from the surface of the belly, in the case of inflammatory symptoms in the peritoneum, or any of the organs invested by that membrane. These local evacuations, which may be accomplished either by the application of leeches, or by scarifying and cupping, or by numerous minute punctures, not only tend to unload directly the vessels of the part, and, by thus relieving them of part of their contents, enable them to propel the residual mass more easily, but, by thus diminishing directly, swelling, and abating distension, tend materially to relieve painful sensations, heat, and other symptoms, and thereby tend to alleviate sometimes the signs of general disorder.

The curative effects of local blood-letting are most clearly evinced in inflammation of the eyes, of the throat, of the articulations, and their constituent tissues, of the breast of the female, and the *testis* of the male, and in the inflammatory swelling, pain, and redness attending attacks of rheumatism, gout, and rheumatic gout; because in these instances, the blood, which is most conveniently drawn by leeches, can be taken from vessels very closely connected with those of the affected organ.

Upon the same principle, in inflammation of the mucous surfaces, it is desirable, by applying leeches to these surfaces, if accessible, to draw

blood immediately from them. Thus, in inflammation of the eye, it is common to scarify the *conjunctiva*, and occasionally to apply leeches immediately upon it; and in inflammation of the rectum and vagina, Dr. Craigie has directed the application of leeches to the mucous surfaces of these cavities with great benefit.

Evacuation of blood by means of the cupping-glass is a more precise method of depletion, and is suited to affections of the lungs, of the joints, and of the *fasciæ*, and the nervous trunks.

Of local bleeding, by means of numerous punctures or incisions, for the removal of inflammation, the most favourable examples are seen in diffuse inflammation of the cellular membrane and skin, in whitloe, in inflammation of the *fasciæ* (*Sparganitis*), and in the erysipelatous inflammation attacking the lower extremities of seamen. The practice of drawing blood, indeed, from the vessels of inflamed parts by means of incisions is suited to almost every species of inflammation affecting the exterior tissues of the body. It is found by far the most effectual remedy in general inflammation of gun-shot wounds, and other contused wounds; it might occasionally be used with advantage in controlling inflammation of the articular tissues; and it has been proposed by Dr. Prichard as to the scalp, in order to mitigate the intensity and arrest the progress of cerebro-meningeal inflammation.

With the means now mentioned, it is necessary to conjoin the use of various auxiliary local remedies, which are conceived to operate in abating the intensity of the inflammatory process. These are various; but it is at present convenient to enumerate them in the order of relaxants or emollients, refrigerants or sedatives, and revellents or counter-irritants.

The administration of relaxants is found to be useful in the early stage of many inflammatory affections, in abating some of the painful sensations with which the process is attended. The most effectual, and perhaps that to which all remedies of this kind are referable, is warmth applied in the humid or dry form, more or less directly, to the affected part. Of this description are fomentations by warm water, either pure or medicated, fomentations by means of watery vapour, and fomentations by means of poultices. The whole of these agents operate on the general principle of diminishing tension, relaxing the rigidity of parts almost mechanically, and favouring, by the least painful means, the tendency to one or other of the natural terminations. The vapour of warm water is often very effectual in relieving the sense of soreness, rawness, and dryness of several of the mucous surfaces when inflamed. The best rule in the employment of this agent is to make the temperature agreeable to the feelings of the patient. Inflammation in the eyes, the testicle, or any other gland, is often thus most readily treated.

Various applications of a refrigerant or sedative character are employed in certain forms of inflammation with much advantage. Of most of these the essential principle is cold, in whatever mode applied, whether by means of cold water, ice, snow, saline solutions, as sal-ammoniac or common salt, or the metallic astringent solutions, as sugar of lead, white vitriol, &c. Their employment is chiefly indicated in the case of inflammations seated on the surface, and unconnected with disorder of the lungs, heart, stomach, or liver, or intestines,—after and along with suitable evacuation, and when the sense of heat is very great, and evidently contributes much to the sufferings of the patient. Cold applied to the shaven scalp is a powerful means of abating inflammation or congestion of the brain or its membranes. It is very effectual in abating the scorching heat and pain of erysipelatous inflammation; and it often is beneficial in alleviating the burning heat and swelling of gout. The application of cold is contra-indicated in inflammatory affections of the throat, windpipe, lungs, heart, stomach, and intestines. In affections of the glandular system it is injurious at the commencement, but favourable at the termination.

The use of the metallic astringent salts is principally indicated in inflammations of the mucous surfaces without much congestion of the vessels, and in abrasions of the skin.

Sedative and narcotic substances are not unfrequently employed as local applications in the treatment of various inflammatory affections. Of this kind are watery solutions of opium, decoction of poppy heads, decoction or infusion of hemlock, bitter-sweet, henbane, deadly nightshade, and similar narcotic substances. It is extremely doubtful whether the application of such means is accordant with correct physiological principles; for, as inflammation is certainly not primarily an affection either of the inherent properties, or of the nervous system of the tissues, it is difficult to perceive in what manner narcotics can operate efficiently. By diminishing sensibility, they may alleviate pain, or prevent it from being felt very acutely; but they cannot operate on the process of inflammation itself. At the close of the disease, however, and after suitable evacuation, they may be useful in abating tenderness or morbid sensibility. In general, they are applied along with cold; but the decoction of poppy capsules is a convenient mode of applying a warm sedative in cases of inflammation of parts on the surface of the body.

Revellent or counter-irritant agents, or those which, by irritating or inflaming a sound surface, diminish the inflammation of a diseased organ, are very beneficial under certain conditions and restrictions. Considered according to their physiological effects in the treatment of inflammation, they are either rubefacient, or such as cause erythematous redness,—vesicating, or such as cause erysipelatous inflammation,—vesiculating, or such as bring out vesicles,—pustulo-facient, or such as cause pustular inflammation,—and cauterising, or such as produce death, more or less complete, of the surface.

For effecting the first purpose, the application of sinapisms, friction by the ammoniated oil, or turpentine, are the most usual means. Vesication is most usually induced by the ointment of the blistering fly, but may be effected by the sudden application of boiling water or steam. Vesicular inflammation is excited by friction

with croton oil; pustular inflammation is induced by tartar-emetic ointment; and death of the surface may be occasioned by any of the mineral acids, caustic potass, butter of antimony (the chloride), or the hot iron.

Erythematous counter-irritation is chiefly useful in rheumatism and rheumatic or neuralgic pains. Vesication is most generally practised in all instances of deep-seated inflammation of internal organs over the corresponding surface of the skin. The principal condition regarding its employment is, that in cases of inflammation with acute fever, it ought not to be put in practice without previous blood-letting, or until the symptoms of general fever, and the urgent pain of the part, have been abated by these and similar evacuant measures. A species of imperfect vesication, induced by nitrate of silver, is sometimes beneficial as a counter-irritant; but it is most effectual as a check to spreading inflammation, and as a means of inducing a new action. The counter-irritant effect of friction with croton-oil, or tartar-emetic ointment, is chiefly suited to moderate the violence of chronic inflammation, seated either in the thoracic or abdominal viscera. Caustics, actual and potential, or those agents which destroy part of the integuments, and are hence followed by a long-continued ulcerative inflammation, are, perhaps, still more effectual in counteracting the progress, and moderating the intensity, of chronic inflammation of the thoracic viscera, of the cuticular tissues, and of the bones. Setons and issues act nearly in the same manner. The whole of these remedies, which operate more or less upon the principle of transferring morbid action from one tissue or set of tissues to another, are chiefly indicated in the treatment of inflammatory action, which has either been chronic from the commencement, or which, after being acute, has become chronic.

Such is a general view of the principal remedies to be employed in the treatment of the local affections in inflammation.

The management of the symptomatic fever of inflammation is to be conducted upon the general principles already explained in considering the treatment of simple continued fever, and may be briefly designated under the general name of the antiphlogistic treatment. These consist, together with blood-letting, of low diet, the use of diluents, purgatives, emetics in nauseating or diaphoretic doses, especially tartar-emetic and other antimonials, mercurials in alterative doses, especially calomel combined with opium, and such sedative medicines as foxglove and lead. The particular circumstances requiring the use of each of these remedial agents, or two or more combined, will be fully considered under the head of particular inflammatory diseases.

It is requisite, nevertheless, here to mention, that, in the treatment either of the symptomatic fever of inflammation, or the still more general affection of the system denominated the *phlogistic diathesis*, the principal object is, to employ that system of dietetic rules named the antiphlogistic regimen. As these symptoms acquire much of their intensity from the general fulness of the vascular system, and as this is always closely connected with the quantity and quality of articles employed as food and drink, it becomes necessary to regulate both in such a manner, as to abate, diminish, and obviate that congestion or plethora which the vascular system thus acquires, and in this manner to counteract the irritation thus induced.

The most effectual mode of accomplishing these purposes, is to withdraw entirely all animal diet, and every sort of food or drink containing animal matter, and all malt or fermented liquors, and to restrict the patient rigidly to the use of aqueous diluents, the vegetable ptisans, and such small quantities of farinaceous food, and the saccharine fruits, as may be sufficient to sustain life, without stimulating in any degree the heart or arteries. The employment of cathartic medicines is also requisite to remove morbid secretion, to prevent accumulation, and remove all irritation from the mucous membrane of the alimentary canal. If, under these means, the symptoms of general phlogistic disposition do not appear to abate, the appropriate remedy is tartar-emetic in divided doses, or digitalis, given so as to produce some degree of giddiness, faintness, and complete loss of appetite. — *Craigie.*

Emetic tartar, in very large doses, has been employed of late years in the treatment of several inflammatory diseases, especially in inflammation of the lungs; and some are of opinion that it possesses a specific power, since it has been observed to act beneficially without producing any sensible effect. In general, however, it is a most depressing agent; and, even admitting it to possess all the efficacy which its advocates claim for it, it may fairly be doubted whether, in most cases, a severe hypercathasis, and keeping the patient in a state approaching to syncope for a length of time, may not leave more permanent debility than a reasonable abstraction of blood.

In scrofulous inflammation, or inflammation dependent on the strumous *diathesis*, and in chronic and asthenic inflammation generally, it has been supposed that this proscription of animal diet and fermented liquors is neither requisite nor beneficial; and many practitioners have represented that they have beneficially recommended these articles, sometimes in moderate quantities, sometimes rather liberally. That there may be cases of asthenic and strumous inflammation, in which the use of animal food and wine or malt liquor may seem to be beneficial, is not impossible. But it must be remembered that the recovery of such cases, or the subsidence of the inflammatory symptoms, does not prove the safety or beneficial influence of the practice. In short, it is the general result of accurate observation and long experience, that even in strumous and chronic inflammation it is beneficial to regulate the diet, to diminish the allowance of animal food, if not to withdraw it, and to restrict the patient to diet consisting chiefly of milk, grain, and similar unstimulating articles.

When inflammation has proceeded to suppuration, it is generally advantageous to augment the allowance of food, and in some instances to allow a proportion of wine or malt liquor.

For the local management of the effects of inflammation, we refer to the treatises on surgery.

In the treatment of the phlogistic diathesis and chronic inflammation, much attention to clothing and exercise is also requisite. As in these states of the system the vessels of the skin are not only less energetic than usual, but liable to have their circulation and secretions readily deranged by exposure to cold or atmospheric vicissitudes, it is of the utmost consequence to prevent the operation of these agents, or to counteract their effects. This is to be done, in the *first* place, by means of flannel clothing, or clothing at least of woollen materials; in the *second* place, by frequent frictions of the surface, so as to promote the circulation; and, *thirdly*, by exercise, either active, to as great an extent as the strength of the patient will endure, or, if this be impracticable, by means of passive exercise or gestation.

Cold bathing, which is occasionally recommended, is always unsafe, and should never be allowed unless under the superintendence of the medical adviser. Warm or tepid bathing is much more beneficial; but even this must be practised with due attention to its effects. — *Craigie.*

2. In *Chemistry.* See *Combustion.*

Inflammation of the bladder. See *Cystitis.*

Inflammation of the brain. See *Encephalitis.*

Inflammation of the breast. See *Mastitis.*

Inflammation of the cellular membrane. See *Inflammation.*

Inflammation of the choroid membrane. See *Iritis.*

Inflammation of the dura mater. See *Encephalitis.*

Inflammation of the eye. See *Ophthalmitis.*

Inflammation of the intestine. See *Inflammation of the stomach and intestines.*

Inflammation of the iris. See *Iritis.*

Inflammation of the kidney. See *Nephritis.*

Inflammation of the liver. See *Hepatitis.*

Inflammation of the lungs. See *Pneumonitis.*

Inflammation of the peritonæum. See *Peritonitis.*

Inflammation of the pia mater. See *Encephalitis.*

Inflammation of the pleura. See *Pleuritis.*

Inflammation of the retina. See *Retinitis.*

Inflammation of the stomach. See *Inflammation of the stomach and intestines.*

Inflammation of the stomach and intestines. This may attack the peritoneal or the mucous coat, and in either case may involve the muscular structure. See *Peritonitis.* The mucous membrane of the *stomach* is liable to inflammation from a variety of causes, but the principal are excess in the use of ardent spirits, and poison.

The idiopathic gastritis mucosa of drunkards is characterised by pain at the epigastrium, vomiting, even of the mildest ingesta, low fever, and that trembling hand which never fails to accompany diseases of alkoholic origin. When in its utmost intensity the vessels of the mucous membrane often give way, and a burst of hæmorrhage succeeds.

The *cure* of this disease can be effected only by that most difficult of all things, a reformation in the habits of a drunkard. Its relief may be obtained by leeches to the epigastrium, followed by a blister, and the internal administration of some mild mucilage, such as the mistura amygdalæ, holding in solution five grains of nitre, which may be repeated three times a day.

The second source of gastritis mucosa is poison. It has been supposed that the immediate cause of death by arsenic is inflammation of the stomach; but Sir Benjamin Brodie has shown the incorrectness of this as a general proposition. Occasionally, after a certain interval, inflammation of the mucous membrane of the stomach does come on in consequence of arsenic, and the case published by Dr. Roget may be brought forward as an instance; but even there, the symptoms of high nervous irritation predominated greatly over those of local inflammation. Dr. Baillie states that, on dissection of those who die from the effects of arsenic, an intense degree of redness appears in the inner membrane of the stomach. Portions of it are sometimes destroyed, and occasionally a thin layer of coagulable lymph is thrown out. Such appearances, however, cannot be relied on as unequivocal proofs of poisoning by arsenic; but the further prosecution of this subject is especially in the province of the medical jurist.

Inflammation of the mucous membrane of the small intestines occurs in *adults*, both as an idiopathic affection, and as symptomatic of other diseases, — in an *acute* as well as chronic form. The symptoms by which it is characterised are not always very distinct; and hence it is that the disease, though by no means uncommon, has hitherto remained without any appropriate designation from nosological writers. It was by some authors called the intestinal catarrh. Mucous enteritis appears to be its legitimate denomination. Dr. Pemberton was the first author who treated of it as a distinct disease.

Symptoms. — Mucous enteritis is attended with a diffused soreness over the whole abdomen, rather than with pain. This is sometimes increased on pressure, but never to the extent that prevails on peritoneal inflammation. There is no considerable tension in the belly. The pulse is quick, with thirst, *languor*, and considerable febrile oppression. By these symptoms we distinguish *inflammation* of the mucous membrane of the bowels, from that state of *irritation* of the membrane, which exists in common cases of diarrhœa; but it must never be forgotten, that the two states of disease are closely allied, and, in fact, run into each other by insensible degrees. The tongue in mucous enteritis is *red and smooth*, and eruptions take place about the lips. Vomiting is frequently noticed, with loss of appetite, indigestion, and irregularity in the alvine evacuations. Diarrhœa is almost uniformly present; the stools are slimy, and tinged with blood. In severe cases, pure blood is occasionally passed in considerable quantity. An increased secretion of mucus from the intestines constitutes one of the principal features of the disease. It must be confessed, however, that in the appearance of the

evacuations there is considerable diversity. In some instances, inflammation exists to a considerable extent, while the motions differ but slightly from those of common diarrhœa. Nothing, perhaps, more strikingly distinguishes this complaint than that degree of morbid irritability of the whole intestinal canal, by which food, even of the lightest kind, or a little cold water, taken into the stomach, stimulates the rectum to immediate contraction.

Prognosis. — The disease is always tedious, but not commonly fatal. It occasionally proves so, with or without supervening peritoneal inflammation, or it passes into a chronic state, in which the patient at length sinks exhausted. The chronic form of the affection is marked by pain of the abdomen, diarrhœa alternating with costiveness, increasing weakness and emaciation, hectic fever, and a tongue preternaturally red, or aphthous. It is certainly a curious circumstance, that the appetite, in this state of disease, often continues good.

Morbid anatomy. — The appearances, on dissection, vary with the degree of violence in the inflammatory action, or, what amounts nearly to the same thing, with the period of disease at which death takes place. Sometimes we observe only an increased redness of the whole membrane; at other times, irregular patches of inflammation may be traced, elevated sensibly above the sound parts. The lower end of the ileum has been long observed to be the most common situation of these morbid appearances. Ulcers are frequently met with there, of an oval shape, having elevated ridges. Sometimes a considerable extent of the inner membrane of the intestine is seen completely stripped from the muscular coat, or hanging attached to it in tattered shreds. In a few cases the ulceration perforates the peritoneal coat, and a portion of the contents of the intestine passes into the general cavity of the abdomen, producing inflammation that speedily proves fatal. Mucous inflammation of the intestines sometimes, although rarely, advances to mortification.

Causes. — The causes of this affection of the internal membrane of the bowels are not very well understood. A disposition seems to be given to it by irregular habits of life. The state of the atmosphere has probably at times some share in producing it, for it will be seen occasionally to prevail with almost epidemic frequency. It is sometimes observed to occur in its idiopathic form from accidental exposure to cold and moisture, and one attack certainly favours a recurrence of the complaint. Mucous enteritis, however, is far more commonly a symptomatic than an idiopathic affection. It appears in the progress of continued fever, especially the low nervous or typhoid fever, scarlet fever, consumption, and all diseases attended with hectic; and it is one of the many sequelæ of measles. It would seem, indeed, as if inflammation and ulceration of this structure readily took place, whenever the system was in the state either of very high or very long protracted inflammatory excitement.

Treatment. — If the disease, when idiopathic, comes under treatment in an early stage, great advantage will be derived from taking away ten or twelve ounces of blood from the arm. This will very often be found to give an immediate check to its advance. At a later period, leeches to the abdomen prove an excellent substitute, and they may be repeated according to the urgency of the symptoms. Active purgatives of all kinds are carefully to be avoided, such as extr. colocynthidis compos. jalap, scammony, and senna. The secretions of the bowels, being very vitiated, must not remain pent up in the body, but their evacuation must be entrusted to the mildest means — two spoonfuls of castor oil, eight grains of rhubarb, or two drachms of manna.

When diarrhœa and irritable bowels constitute (as they generally do) the leading features of the complaint, the remedies to be relied on are demulcents and anodynes. Some practitioners have great confidence in the hydr. cum creta, believing that the mercury may contribute something to the relief of the inflamed membrane. Starch injections, with laudanum, are useful where the tenesmus is troublesome; but sometimes the mechanical irritation which enemata produce more than counterbalances their good effects. Fomentations to the bowels are always serviceable, and the warm bath is an excellent resource. Particular attention should be paid to the diet of the patient, which should be of the lightest kind. Even broths should be strictly prohibited in the early periods of the disease.

Such are the general principles which guide the physician in the management of this severe disease. The choice of remedies may be left in a great degree to his own discretion.

Where the stomach is irritable, and rejects fluid medicines, the acetate of morphia may be administered in the form of pill.

When the feverish symptoms subside, and diarrhœa lessens, the tone of the bowels may be supported, and a healthier action induced, by some gentle tonic.

When the disease has assumed a chronic form, with extensive ulceration, the treatment is very precarious. Astringents and bitters, with laudanum, are indispensable with the view of checking the diarrhœa, but the astringent tinctures should carefully be avoided. Dr. Gregory thinks the compound infusion of catechu less irritating than any of those to which he has given trial. The decoction of logwood, or of pomegranate, with a due proportion of laudanum, are also valuable remedies. A pill, consisting of one grain of calomel with three of the extr. hyoscyami, may be administered at night with considerable advantage. Change of air may be advised, and a milk diet. — *Gregory.*

Inflammation of the large intestine gives rise to those symptoms which constitute what is generally called *dysentery.* See *Dysentery.*

Inflammation of the testicle. See *Orchitis.*

Inflammation of the tunica arachnoides. See *Encephalitis.*

Inflammation of the urethra. See *Urethritis.*

Inflammation of the uterus. See *Hysteritis.*

Inflammation of a vein. See *Phlebitis.*

INFLAMMATORY. (*Inflammatorius;*

from *inflammatio.*) Of the nature of inflammation.

Inflammatory crust. The buffy coat of the blood. See *Sanguis* and *Inflammation.*

Inflammatory fever. See *Febris.*

Infla'tio. (*o, onis.* f.; from *inflo*, to puff up.) In *Pathology*, a windy swelling. See *Pneumatosis.*

INFLA'TUS. Inflated: applied, in *Botany*, to parts which are distended like a blown bladder; as *legumen inflatum*, seen in *Astragalus vesicarius;* and the distended and hollow perianths of the *Cucubalus behen*, and *Physalis alkekengi*, in fruit.

INFLE'XUS. Curved, or bent inwards; synonymous to *incurvus;* applied to leaves, petals, &c.; as the petals of the *Pimpinella* and *Chærophyllum.*

INFLORE'SCENCE. (*Inflorescentia, æ.* f.; from *infloresco*, to flower, or blossom.) A term used by Linnæus to express the particular manner in which flowers are situated upon a a plant: denominated by preceding writers, *modus florendi*, or manner of flowering.

It is divided into *simple*, when solitary, and *compound*, when many flowers are placed together in one place.

The first affords the following distinctions: —

1. The *Pedunculate*, furnished with a stalk; as in *Gratiola* and *Vinca.*

2. *Sessile*, adhering to the plant without a flower-stalk; as in *Daphne mezereum*, and *Zinia pauciflora.*

3. *Cauline*, when on the stem.

4. *Rameal*, when on the branch.

5. *Terminal*, when on the apex of the stem, or branch; as *Paris quadrifolia* and *Chrysanthemum leucanthemum.*

6. *Axillary*, in the axilla; as in *Convallaria multiflora.*

7. *Foliar*, on the surface of the leaf; as in *Phyllanthus.*

8. *Radical*, on the root; as *Carlina acaulis, Crocus*, and *Colchicum.*

9. *Latitant*, concealed in a fleshy receptacle; as in *Ficus carica.*

Again, it is said to be, —

1. *Alternate;* as in *Polyanthus tuberosa.*

2. *Opposite;* as in *Passiflora hirsuta.*

3. *Unilateral*, hanging all to one side; as *Erica herbacea*, and *Silene amœna.*

4. *Solitary;* as in *Campanula speculum* and *Carduus tuberosus.*

The second, or compound inflorescence, has the following kinds: —

1. The *Verticellus*, or whorl.
2. The *Capitulum*, or tuft.
3. The *Spica*, or spike.
4. The *Racemus*, or cluster.
5. The *Corymbus*, or corymb.
6. The *Umbella*, or umbel.
7. The *Cyma*, or cyme.
8. The *Fasciculus*, or fascicle.
9. The *Panicula*, or panicle.
10. The *Thyrsus*, or bunch.
11. The *Spadix*, or sheath.
12. The *Amentum*, or catkin.

INFLUE'NZA. (*a, æ*, f. The Italian word for influence.) Epidemic catarrh is so named, because it was supposed to be produced by a peculiar influence of the stars. See *Catarrhus.*

Infra-orbitary foramen. *Foramen infra orbitarium.* A foramen in the superior maxillary bone, immediately below the orbit. It gives egress to the infra-orbitary twig of the second branch of the fifth pair of nerves, and to a small twig of the internal maxillary artery.

Infrascapula'ris. (From *infra*, beneath, and *scapula*, the shoulder-blade.) A muscle named from its position beneath the scapula. See *Subscapularis.*

INFRASPINA'TUS. (From *infra*, beneath, and *spina*, the spine.) A muscle of the humerus, situated on the scapula. It arises fleshy, from all that part of the dorsum scapulæ which is below its spine; and from the spine itself, as far as the cervix scapulæ. The fibres run obliquely towards a tendon in the middle of a muscle, which runs forwards, and adheres to the capsular ligament. It is inserted, by a flat thick tendon, into the upper and outer part of the large protuberance on the head of the os humeri. Its use is to roll the os humeri outwards, to assist in raising and supporting it when raised, and to pull the ligament from between the bones. This muscle and the supraspinatus are covered by an aponeurosis, which extends between the costæ, and edges of the spine of the scapula, and gives rise to many of the muscular fibres.

INFUNDIBULIFORM. *Infundibuliformis.* Funnel-shaped: applied, 1. in *Botany*, to plants, when the blossom consists of one petal, the lower part of which is tubular, the upper part conical; as in *Primula, Cynoglossum*, &c.

2. In *Anatomy*, to the circular ligament of the atlas, and to a fascia connected with the anatomy of hernia. See *Fascia.*

INFUNDI'BULUM. (*um,'i.* n.; a funnel: from *infundo*, to pour in.) 1. A canal that proceeds from the lower and anterior part of the third ventricle of the brain, to the pituitary gland. See *Encephalos.*

2. The beginnings of the excretory duct of the kidney, or cavities into which the urine is first received, from the secretory cryptæ, are called *infundibula.* See *Kidney.*

INFUSO'RIA. Infusory animals. A class of the animal kingdom, comprehending those animalcules which are found in infusions of organic substances, and in stagnant waters. See *Animal kingdom.*

INFU'SUM. (*i.* n.; and *infusio, onis.* f.: from *infundo*, to pour in.) An infusion. A preparation made by pouring water, of any required degree of temperature, on such substances as have a loose texture, as thin bark, wood, in shavings or small pieces, leaves, flowers, &c., and suffering it to stand a certain time. The process itself, as well as the liquor resulting from it, is called *infusion.* The following are among the most approved infusions.

Infusum anthemidis. Infusion of camomile. Take of camomile flowers, five drachms;

boiling distilled water, a pint. Macerate for ten minutes, in a lightly covered vessel, and strain. For its virtues, see *Anthemis nobilis*.

Infusum armoraciæ compositum. Compound infusion of horseradish. Take of fresh horseradish root sliced, mustard seeds bruised, of each one ounce; boiling distilled water, a pint. Macerate for two hours, in a lightly covered vessel, and strain; then add compound spirit of horseradish, a fluid ounce. See *Cochlearia armoracia*.

Infusum aurantii compositum. Compound infusion of orange-peel. Take of orange-peel, dried, half an ounce; lemon-peel, fresh, two drachms; cloves, bruised, a drachm; boiling distilled water, a pint. Macerate for a quarter of an hour, in a lightly covered vessel, and strain. See *Citrus aurantium*.

Infusum calumbæ. Infusion of calumba. Take of calumba root, sliced, five drachms; boiling distilled water, a pint. Macerate for two hours, in a lightly covered vessel, and strain. See *Calumba*.

Infusum caryophylli. Infusion of cloves. Take of cloves, bruised, three drachms; boiling distilled water, a pint. Macerate for two hours, in a lightly covered vessel, and strain. See *Eugenia caryophyllata*.

Infusum cascarillæ. Infusion of cascarilla. Take of cascarilla bark, bruised, an ounce and a half; boiling distilled water, a pint. Macerate for two hours, in a lightly covered vessel, and strain. See *Croton cascarilla*.

Infusum catechu compositum. Compound infusion of catechu. Take of extract of catechu, ground, six drachms; cinnamon bark, bruised, half a drachm; boiling distilled water, a pint. Macerate for an hour, in a lightly covered vessel, and strain. See *Acacia catechu*.

Infusum cinchonæ. Infusion of cinchona. Take of lance-leaved cinchona bark, bruised, an ounce; boiling distilled water, a pint. Macerate for two hours, in a lightly covered vessel, and strain. See *Cinchona*.

Infusum cusparieæ. Infusion of cusparia. Take of cusparia bark, bruised, five drachms; boiling distilled water, a pint. Macerate for two hours, in a lightly covered vessel, and strain. See *Cusparia febrifuga*.

Infusum digitalis. Infusion of fox-glove. Take of purple fox-glove leaves, dried, a drachm; boiling distilled water, a pint. Macerate for four hours, in a covered vessel, and strain; then add spirit of cinnamon, half a fluid ounce. See *Digitalis purpurea*.

Infusum diosmæ. Take of the leaves of diosma, an ounce; boiling distilled water, a pint. Macerate for four hours, in a lightly covered vessel, and strain. This infusion has been introduced into the London pharmacopœia of 1836. See *Diosma*.

Infusum gentianæ compositum. Compound infusion of gentian. Take of gentian root, sliced, orange-peel, dried, of each two drachms; lemon-peel, fresh, four drachms; boiling distilled water, a pint. Macerate for an hour, in a lightly covered vessel, and strain. See *Gentiana lutea*.

Infusum lini. Infusion of linseed. Take of linseed, bruised, an ounce; liquorice root, sliced, half an ounce; boiling water, two pints. Macerate for two hours, near the fire, in a covered vessel, and strain. See *Linum usitatissimum*.

Infusum Krameriæ. Take of the root of Krameria an ounce; boiling distilled water a pint. Macerate for four hours, in a lightly covered vessel, and strain. This infusion has been lately introduced into the London pharmacopœia.

Infusum lupuli. Take of hops, six drachms; boiling distilled water, a pint. Macerate for four hours, in a lightly covered vessel, and strain. See *Humulus lupulus*.

Infusum pareiræ. Take of the root of pareira, six drachms; boiling distilled water, a pint. Macerate for two hours, in a lightly covered vessel, and strain. This infusion is recently introduced into the London pharmacopœia. See *Cissampelos pareira*.

Infusum quassiæ. Infusion of quassia. Take of quassia wood, two scruples; boiling distilled water, a pint. Macerate for two hours, in a lightly covered vessel, and strain. See *Quassia amara*.

Infusum rhei. Infusion of rhubarb. Take of rhubarb root, sliced, three drachms; boiling distilled water, a pint. Macerate for two hours, in a lightly covered vessel, and strain. See *Rheum*.

Infusum rosæ compositum. Take of the petals of red rose, dried, three drachms; boiling water, a pint; dilute sulphuric acid, a fluid drachm and a half; sugar, six drachms. Pour the water upon the petals of the rose, in a glass vessel; then add the acid, and macerate for six hours. Lastly, strain the infusion, and add the sugar to it. See *Rosa gallica*.

Infusum scoparii. Take of fresh broom tops, an ounce; boiling distilled water, a pint. Macerate for two hours, in a lightly covered vessel, and strain. See *Cytisus scoparius*, in the Supplement.

Infusum sennæ compositum. Infusion of senna. Take of senna leaves, fifteen drachms; ginger root, sliced, four scruples; boiling water, a pint. Macerate for an hour, in a lightly covered vessel, and strain. See *Cassia senna*.

Infusum serpentariæ. Infusion of Virginian snake-root. Take of serpentaria, half an ounce; boiling distilled water, a pint. Macerate for four hours, in a lightly covered vessel, and strain. See *Aristolochia serpentaria*.

Infusum simaru'bæ. Infusion of simarouba. Take of simarouba bark, bruised, half a drachm; boiling water, half a pint. Macerate for two hours, in a covered vessel, and strain. See *Quassia simarouba*.

Infusum tabaci. Infusion of tobacco. Take of tobacco leaves, a drachm; boiling water, a pint. Macerate for an hour, in a covered vessel, and strain. See *Nicotiana*.

Infusum valerianæ. Take of valerian, half an ounce; boiling distilled water, a pint. Macerate for two hours, in a lightly covered vessel, and strain. See *Valeriana officinalis*.

INGE'STA. (*Ingestus* from *ingero*, to

throw in.) A term applied to the aliments taken into the body, as opposed to *egesta*, the matters excreted.

INGLU'VIES. (*es, ei.* f.) 1. Gluttony. 2. The craw, crop, or gorge of a bird.

INGRAVIDATION. (From *in*, and *gravidus*, big with young.) The same as pregnancy.

I'NGUEN. (*en, inis.* n.) The groin. The lower and lateral part of the abdomen, above the thigh.

I'NGUINAL. (*Inguinalis;* from *inguen*, the groin.) Appertaining to the groin.

INGUINAL ARTERY. The external iliac in the groin.

Inguinal hernia. See *Hernia.*

Inguinal ligament. See *Poupart's ligament.*

INHALATION. The drawing in of fumes or vapours along with the breath. The inhalation of the vapour of warm water is very serviceable in some cases of inflammation of the mucous membrane of the air passages and throat. The steam may be rendered anodyne by the addition of henbane seeds, poppy-heads, ether, or opium; or gently stimulant by vinegar, &c. Tar vapour is of great service in chronic bronchitis, in which disease iodine and chlorine have also lately been found useful. See the *Supplement.*

INHUMA'TION. (*Inhumatio, onis.* f.; from *inhumo*, to put into the ground.) 1. The placing of a patient in an earth bath. See *Balneum.*

2. Some chemists have fancied thus to call that kind of digestion which is performed by burying the materials in dung, or in the earth.

I'NION. Ινιον. The occiput. — *Rufus ephesius.*

INJACULA'TIO. (From *injaculor*, to shoot into.) So Helmont calls a disorder which consists of a violent spasmodic pain in the stomach and an immobility of the body.

INJE'CTION. (*Injectio, onis.* f.; from *injicio*, to cast into.) 1. A medicated liquor to be thrown into a natural or preternatural cavity of the body by means of a syringe. Those injections which are thrown into the rectum are called *enemata.*

2. A liquid thrown into the vessels of the dead body to display them more distinctly. Anatomists use injections of various colours and compositions.

3. In pathology, the presence of an increased quantity of blood in the vessels of a part is sometimes called injection of the vessels.

Ink, sympathetic. See *Sympathetic ink.*

INNERVA'TION. The vital process by which a part is supplied with nervous energy.

INNOMINA'TUS. (From *in*, priv. and *nomen*, a name.) Some parts of the body are so called: thus, the pelvic bones which in the young subject are three in number, to which names are given, become one in the adult, which is without a name. An artery from the arch of the aorta, and the fifth pair of nerves, have also had this unmeaning designation applied to them.

INNOMINATA ARTERIA. The first branch given off by the arch of the aorta. It soon divides into the right carotid and right subclavian arteries.

INNOMINATI NERVI. The fifth pair of nerves. See *Nervous system.*

INNOMINATUM OS. (So called, because the three bones of which it is originally formed grow together, and form one complete bone, which is thus left nameless.) A large irregular bone, situated at the side of the pelvis. It is divided into three portions, viz. the iliac, ischiatic, and pubic, which are usually described as three distinct bones.

The *os ilium*, or haunch-bone, is of a very irregular shape. The lower part of it is thick and narrow; its superior portion is broad and thin, terminating in a ridge, called the *spine* of the ilium, and more commonly known by the name of the *haunch.* The spine rises up like an arch, being turned somewhat outward, and from this appearance, the upper part of the pelvis, when viewed together, has not been improperly compared to the wings of a phæton. This spine, in the recent subject, appears as if tipped with cartilage; but this appearance is nothing more than the tendinous fibres of the muscles that are inserted into it. Externally, this bone is unequally prominent, and hollowed for the attachment of muscles; and internally, at its broadest fore part, it is smooth and concave. At its lower part, there is a considerable ridge on its inner surface. This ridge, which extends from the os sacrum, and corresponds with a similar prominence, both on that bone and the ischium, forms, with the inner part of the ossa pubis, what is called the brim of the pelvis. The whole of the internal surface, behind this ridge, is very unequal. The os ilium has likewise a smaller surface posteriorly, by which it is articulated to the sides of the os sacrum. This surface has, by some, been compared to the human ear; and, by others, to the head of a bird; but neither of these comparisons seem to convey any just idea of its form or appearance. Its upper part is rough and porous; lower down it is more solid. It is firmly united to the os sacrum by a cartilaginous substance, and likewise by very strong ligamentous fibres, which are extended to that bone from the whole circumference of this irregular surface. The spine of this bone, which is originally an epiphysis, has two considerable tuberosities, one anteriorly, and the other posteriorly, which is the largest of the two. The ends of this spine too, from their projecting more than the parts of the bone below them, are called spinal processes. Before the anterior spinal process, the spine is hollowed, where part of the sartorius muscle is placed; and below the posterior spinal process there is a very large niche in the bone, which, in the recent subject, has a strong ligament stretched over its lower part, from the os sacrum to the sharp-pointed process of the ischium; so that a great hole is formed, through which pass the great sciatic nerve, and the posterior crural vessels, under the pyriform muscle, part of which is likewise lodged in this hole. The lowest, thickest, and narrowest part of the ilium, in conjunction with the other two portions of each os innominatum, helps to form the acetabulum for the os femoris.

The *os ischium*, or hip-bone, which is the

lowest of the three portions of each os innominatum, is of a very irregular figure, and usually divided into its body, tuberosity, and ramus. The body externally forms the inferior portion of the acetabulum, and sends a sharp-pointed process backward, called the spine of the ischium. This is the process to which the ligament is attached, which was just now described as forming a great foramen for the passage of the sciatic nerve. The tuberosity is large and irregular, and is placed at the inferior part of the bone, giving origin to several muscles. In the recent subject, it seems covered with a cartilaginout crust; but this appearance, as in the spine of the ilium, is nothing more than the tendinous fibres of the muscles that are inserted into it. The tuberosity, which is the lowest portion of the trunk, supports us when we sit. Between the spine and the tuberosity is observed a sinuosity, covered with a cartilaginous crust, which serves as a pulley, on which the obturator muscle plays. From the tuberosity, the bone, becoming narrower and thinner, forms the ramus, or branch, which, passing forwards and upwards, makes, with the ramus of the os pubis, a large hole, of an oval shape, the *foramen magnum ischii*, which affords, through its whole circumference, attachment to muscles. This foramen is more particularly noticed in describing the os pubis.

The *os pubis*, or share-bone, which is the smallest of the three portions of the os innominatum, is placed at the upper and fore part of the pelvis, where the two ossa pubis meet, and are united to each other by means of a very strong cartilage, which constitutes what is called the *symphisis pubis*. Each os pubis may be divided into its body, angle, and ramus. The body, which is the outer part, is joined to the os ilium. The angle comes forward to form the symphysis, and the ramus is a thin apophysis, which, uniting with the ramus of the ischium, forms the *foramen magnum ischii*, or *thyroideum*, as it has been sometimes called, from its resemblance to a door or shield. This foramen is somewhat wider above than below, and its greatest diameter is from above downwards, and obliquely from within outwards. In the recent subject, it is almost completly completely closed by a strong fibrous membrane, called the *obturator* ligament. Upwards and outwards, where we observe a niche in the bone, the fibres of this ligament are separated, to allow a passage to the posterior crural nerve, an artery and vein. The great uses of this foramen seem to be to lighten the bones of the pelvis, and to afford a convenient lodgment to the obturator muscles. The three bones now described as constituting the os innominatum on each side, all concur to form the great *acetabulum*, or cotyloid cavity, which receives the head of the thigh-bone; the os ilium and os ischium making each about two fifths, and the os pubis one fifth, of the cavity. This acetabulum, which is of considerable depth, is of a spherical shape. Its brims are high, and, in the recent subject, it is tipped with cartilage. These brims, however, are higher above and externally than they are internally, and below, where we observe a niche in the bone (namely, the ischium), across which is stretched a ligament, forming a hole for the transmission of blood-vessels and nerves to the cavity of the joint. The cartilage which lines the acetabulum is thickest at its circumference, and thinner within, where a little hole is to be observed, in which is placed the apparatus that serves to lubricate the joint, and facilitate its motions. We are likewise able to discover the impression made by the internal ligament of the os femoris, which, by being attached both to this cavity, and to the head of the os femoris, helps to secure the latter in the acetabulum. The bones of the pelvis serve to support the spine and upper parts of the body, to lodge the intestines, urinary bladder, and other viscera, and likewise to unite the trunk to the lower extremities. But, besides these uses, they are destined, in the female subject, for other important purposes; and the accoucheur finds, in the study of these bones, the foundation of all midwifery knowledge. Several eminent writers are of opinion that, in difficult parturition, all the bones of the pelvis undergo a certain degree of separation. It has been observed, likewise, that the cartilage uniting the ossa pubis is thicker, and of a more spongy texture, in women than in men, and therefore more likely to swell and enlarge during pregnancy. That many instances of a partial separation of these bones, during labour, have happened, there can be no doubt; such a separation, however, ought by no means to be considered as an uniform and salutary work of nature, as some writers seem to think, but as the effect of disease. But there is another circumstance, in regard to this part of osteology, which is well worthy of attention; and this is, the different capacities of the pelvis in the male and female subject. It has been observed, that the os sacrum is shorter and broader in women than in men; the ossa ilia are also found more expanded: whence it happens, that in women the centre of gravity does not fall so directly on the upper part of the thigh as in men, and this seems to be the reason why, in general, they step with less firmness, and move their hips forward in walking. From these circumstances, also, the brim of the female pelvis is nearly of an oval shape, being considerably wider from side to side, than from the symphisis pubis to the os sacrum; whereas, in men, it is rounder, and every where of less diameter. The inferior opening of the pelvis is likewise proportionably larger in the female subject, the ossa ischia being more separated from each other, and the foramen ischii larger, so that where the os ischium and os pubis are united together, they form a greater circle: the os sacrum is also more hollowed, though shorter, and the os coccygis more loosely connected, and, therefore, capable of a greater degree of motion than in men.

INOCULA'TION.) (*Inoculatio, onis.* f.) The insertion of a poison into any part of the body. It was first practised by physicians with that of the small-pox, because we had learned from experience, that by so doing we generally procured fewer pustules, and a much milder disease than when the small-pox was taken in a natural way. Although the advantages were evident,

yet objections were raised against inoculation, on the notion that it exposed the person to some risk, when he might have passed through life without ever taking the disease naturally; but it is obvious that he was exposed to much greater danger, from the intercourse which he must have with his fellow-creatures, by taking the disorder in a natural way. It has been adduced, that a person is liable to take the small-pox a second time, when produced at first by artificial means; but such instances are very rare, and appear to relate as much to the natural as to the inoculated disease. We may conjecture that, in most of those cases, the matter used was not variolous, but that of some other eruptive disorder, such as the chicken-pox, which has often been mistaken for the small-pox. However, since the discovery of the preventive power of the cow-pock, small-pox inoculation has been rapidly falling into disuse. See *Cow-pox*.

To illustrate the benefits arising from inoculation, it has been calculated that a third of the adults die who take the disease in a natural way, and about one seventh of the children; whereas of those who are inoculated, and are properly treated afterwards, the proportion is probably not greater than one in five or six hundred.

Inoculation is generally thought to have been introduced into Britain from Turkey, by Lady Mary Wortley Montague, about the year 1721, whose son had been inoculated at Constantinople, during her residence there, and whose infant daughter was the first that underwent the operation in this country. It appears, however, to have been well known before this period both in the south of Wales and Highlands of Scotland. Mungo Park, in his travels into the interior of Africa, found that inoculation had been long practised by the Negroes on the Guinea coast; and nearly in the same manner, and at the same time of life, as in Europe. It is not clearly ascertained where inoculation really originated. It has been ascribed to the Circassians, who employed it as the means of preserving the beauty of their women. It appears more probable that accident first suggested the expedient among different nations, to whom the small-pox had long been known, independently of any intercourse with each other; and what adds to the probability of this conjecture is, that in most places where inoculation can be traced back, for a considerable length of time, it seems to have been practised chiefly by old women, before it was adopted by regular practitioners.

Many physicians held inoculation in the greatest contempt at first, from its supposed origin; others, again, discredited the fact of its utility; while others, on the testimony of the success in distant countries, believed in the advantages it afforded, but still did not think themselves warranted to recommend it to the families they attended; and it was not until the experiment of it had been made on six criminals (all of whom recovered from the disease and regained their liberty), that it was practised, in the the year 1726, on the royal family, and afterwards very generally adopted.

To insure success from inoculation, the following precautions should strictly be attended to: —

1. That the person should be of a good habit of body, and free from any disease, apparent or latent, in order that he may not have the disease and a bad constitution, or perhaps another disorder, to struggle with at the same time.

2. To enjoin a temperate diet and proper regimen; and, where the body is plethoric, or gross, to make use of gentle purges, together with mercurial and antimonial medicines.

3. That the age of the person be as little advanced as possible, but not younger, if it can be avoided, than four months.

4. To choose a cool season of the year, and to avoid external heat, either by exposure to the sun, sitting by fires, or in warm chambers, or by going too warmly clothed, or being too much in bed.

5. To take the matter from a young subject, who has the small-pox in a favourable way, and who is otherwise healthy, and free from disease; and, when fresh matter can be procured, to give it the preference.

Where matter of a benign kind cannot be procured, and the patient is evidently in danger of the casual small-pox, we should not, however, hesitate a moment to inoculate from any kind of matter that can be procured; as what has been taken in malignant kinds of small-pox has been found to produce a very mild disease. The mildness or malignity of the disease appears, therefore, to depend little, or not at all, on the inoculating matter. Variolous matter, as well as the vaccine, by being kept for a length of time, particularly in a warm place, is apt, however, to undergo decomposition by putrefaction; and then another kind of contagious material has been produced.

In inoculating, the operator is to make a moderate-sized puncture or scratch in the arm of the person, rubbing that part of the lancet which is besmeared with matter repeatedly over it, by way of insuring the absorption; and, in order to prevent the matter being wiped off, the shirt-sleeve ought not to be pulled down until the part is dry.

A singular circumstance attending inoculation is, that when this fails in producing the disease, the inoculated part nevertheless sometimes inflames and suppurates, as in cases where the complaint is about to follow; and the matter produced in those cases is as fit for inoculation as that taken from a person actually labouring under the disease. The same happens very frequently in inoculation for the cow-pox.

If, on the fourth or fifth day after the operation, no redness or inflammation is apparent on the edge of the wound, we ought then to inoculate in the other arm, in the same manner as before; or, for greater certainty, we may do it in both.

Some constitutions are incapable of having the disease in any form. Others do not receive the disease at one time, however freely exposed to its contagion, even though repeatedly inoculated, and yet receive it afterwards by merely approaching those labouring under it.

On the coming on of the febrile symptoms,

which is generally on the seventh day in the inoculated small-pox, the patient is not to be suffered to lie a-bed, but should be kept cool, and partake freely of antiseptic cooling drinks. See *Variola.*

INOSCULA'TION. (*Inosculatio, onis.* f.; from *in*, and *osculum*, a little mouth.) *Anastomosis.* The union of the extremities of vessels.

INSA'NIA. (*a, æ.* f.; from *in*, not, and *sanus*, sound.) Insanity, or deranged intellect. See *Mania.*

INSANITY. *Insanitas.* Madness. No author has yet succeeded in giving a satisfactory definition of the state of insanity, as opposed to that of sound mind; yet every body knows the practical difference between being mad and being in one's senses; the definition, therefore, is not of much importance, and, instead of attempting one, we shall proceed to give an outline of the different forms of mental disease. Dr. Prichard, in his admirable work on insanity, to which we are much indebted in the present article, includes its several varieties under the four following heads: —

1. *Moral insanity*, or madness consisting in a morbid perversion of the natural feelings, affections, inclinations, temper, habits, moral dispositions, and natural impulses, without any remarkable disorder or defect of the intellect, or knowing and reasoning faculties, and particularly without any insane illusion or hallucination.

The three following modifications of the disease may be termed *Intellectual insanity*, in contradistinction to the preceding form. They are severally: —

2. *Monomania*, or partial insanity, in which the understanding is partially disordered or under the influence of some particular illusion, referring to one subject, and involving one train of ideas, while the intellectual powers appear, when exercised on other subjects, to be in a great measure unimpaired.

3. *Mania*, or raving madness, in which the understanding is generally deranged; the reasoning faculty, if not lost, is confused and disturbed in its exercise; the mind is in a state of morbid excitement, and the individual talks absurdly on every subject to which his thoughts are momentarily directed.

4. *Incoherence*, or dementia. By some persons it may be thought scarcely correct to term this a form of insanity, as it has been generally considered as a result and sequel of that disease. In some instances, however, mental derangement has nearly this character from the commencement, or at least assumes it at a very early period. We are therefore justified in stating it, after Pinel, to be a fourth and distinct form of madness. It is thus characterised by that justly celebrated writer: "Rapid succession or uninterrupted alternation of insulated ideas, and evanescent and unconnected emotions; continually repeated acts of extravagance; complete forgetfulness of every previous state; diminished sensibility to external impressions; abolition of the faculty of judgment; perpetual activity."

We may, then, describe insanity as a chronic disease, manifested by deviations from the healthy and natural state of the mind, such deviations consisting either in a *moral perversion*, or a disorder of the feelings, affections, and habits of the individual, or in *intellectual derangement*, which last is sometimes partial, namely, in *monomania*, affecting the understanding only in particular trains of thought; or general, and accompanied with excitement, namely, in *mania*, or *raving madness*; or, lastly, confounding or destroying the connexions or associations of ideas, and producing a state of *incoherence.*

Each of these forms demands separate notice.

I. *Moral insanity.* — This form of mental derangement has been described as consisting in a morbid perversion of the feelings, affections, and active powers, without any illusion or erroneous conviction impressed upon the understanding; it sometimes coexists with an apparently unimpaired state of the intellectual faculties.

There are many individuals living at large, and not entirely separated from society, who are affected in a certain degree with this modification of insanity. They are reputed persons of a singular, wayward, and eccentric character. An attentive observer will often recognise something remarkable in their manners and habits, which may lead him to entertain doubts as to their entire sanity; and circumstances are sometimes discovered, on inquiry, which add strength to his suspicion. In many instances, it has been found that an hereditary tendency to madness has existed in the family, or that several relatives of the person affected have laboured under other diseases of the brain. The individual himself has been discovered to have suffered, in a former period of life, an attack of madness of a decided character. His temper and dispositions are found to have undergone a change; to be not what they were previously to a certain time: he has become an altered man, and the difference has, perhaps, been noted from the period when he sustained some reverse of fortune, which deeply affected him, or the loss of some beloved relative. In other instances, an alteration in the character of the individual has ensued immediately on some severe shock which his bodily constitution has undergone. This has been either a disorder affecting the head, a slight attack of paralysis, a fit of epilepsy, or some febrile or inflammatory disorder, which has produced a perceptible change in the habitual state of the constitution. In some cases, the alteration in temper and habits has been gradual and imperceptible, and it seems only to have consisted in an exaltation and increase of peculiarities, which were always more or less natural and habitual.

In a state like that above described, many persons have continued for years to be a source of apprehension and solicitude to their friends and relatives. The latter, in many instances, cannot bring themselves to admit the real nature of the case. The individual follows the bent of his inclinations; he is continually engaging in new pursuits, and soon relinquish-

ing them, without any other inducement than mere caprice and fickleness. At length the total perversion of his affections, the dislike, and perhaps even enmity, manifested towards his dearest friends, excite greater alarm. When it happens that the head of a family labours under this ambiguous modification of insanity, it is sometimes thought necessary, from prudential motives, and to prevent absolute ruin from thoughtless and absurd extravagance, or from the results of wild projects and speculations, in the pursuit of which the individual has always a plausible reason to offer for his conduct, to make some attempt with a view to take the management of his affairs out of his hands. The laws have made inadequate provision for such contingencies, and the endeavour is often unsuccessful. If the matter is brought before a jury, and the individual gives pertinent replies to the questions that are put to him, and displays no particular mental illusion, a feature which is commonly looked upon as essential to madness, it is most probable that the suit will be rejected.

Persons labouring under this disorder are capable of reasoning or supporting an argument upon any subject within their sphere of knowledge that may be presented to them; and they often display great ingenuity in giving reasons for the eccentricities of their conduct, and in accounting for and justifying the state of moral feeling under which they appear to exist. In one sense, indeed, their intellectual faculties may be termed unsound; they think and act under the influence of strongly excited feelings, and persons accounted sane are, under such circumstances, proverbially liable to error both in judgment and conduct.

Esquirol and Georget both recognise the same form of disease, and the former considers moral perversion as constant and essential in every species of madness. The affirmation of Esquirol is, however, much too general, as instances are not wanting in which patients, labouring under mental alienation, have exhibited an amiable moral disposition, and an undisturbed flow of the natural affections. The ordinary connexion between insanity and moral depravity is nevertheless striking; indeed, the latter is sometimes the earliest indication of the former. It is justly remarked by Dr. Haslam, that young persons who exhibit an uncontrollable disposition to vice, notwithstanding the influence of excellent moral precept and example, frequently become deranged in their intellect as they advance in life. It is equally true, that when insanity is hereditary in a family, one member of it may be absolutely deranged, while another, with unimpaired intellect, shall exhibit a frantic violence in his passions, or an inveterate immorality in his habits.

There is a form of mental derangement peculiar to old age, which constitutes a variety of moral insanity.

This disordered state makes its appearaace in old men who have never before been insane or suspected of any tendency to mental derangement. It consists, like other forms of moral insanity, in a morbid excitement of passions and a remarkable perversion of the temper and propensities. The whole moral character of the person is changed. 'The pious,' says Dr. Burrows, 'become impious, the content and happy discontented and miserable, the prudent and economical imprudent and ridiculously profuse, the liberal penurious, the sober drunken.' In some elderly persons, impulses which had long been effete become, of a sudden, excited, and a strong tendency to vicious habits is displayed. 'In fact, the reverence which age and the conduct suited to it always command is converted into shame and pity at the perversion of those moral and social qualities which, perhaps, have hitherto adorned the patient's declining days.' This description coincides accurately with the character of moral insanity. There are instances, though rare, of the appearance of hallucinative madness in old persons, but the case we have now described is of a different character, and consists in a disordered condition of the moral or active powers alone.

II. *Monomania.* — This is the form of insanity formerly termed *melancholia*, which term is frequently inapplicable, since the hallucination under which the patient labours is sometimes quite the reverse of gloomy. The term *monomania*, first suggested by M. Esquirol, is of more general applicability, and expresses the characteristic feature of the affection.

"This form of insanity," says Dr. Prichard, "is characterised by some particular illusion or erroneous conviction impressed upon the understanding, and giving rise to a partial aberration of judgment. The individual affected is rendered incapable of thinking correctly on subjects connected with the particular illusion, while in other respects he betrays no palpable disorder of mind."

"The notion, however, which many persons entertain as to the nature of this disease, is far from being correct in its full extent. It is supposed that the mind of the monomaniac is perfectly sound when its faculties are exercised on any subject unconnected with a particular impression, which in itself constitutes the entire disease. Cases are indeed on record, which, if faithfully related, fully come up to this description. In general, the real character of monomania is very different. The individual affected is, under ordinary circumstances, calm, and exhibits no symptom of that perturbation and constant excitement which are observed in raving madness. But, on careful inquiry, it will be found that his mind is in many respects in different condition from that of perfect health. The habits and disposition have, perhaps, been long, in a greater or less degree, in the state which characterises moral insanity. If we advert to the order and connexion of morbid phenomena, we often learn that on a settled and habitual melancholy, or on a morose and sullen misanthropy, long growing and indulged, or on some other disordered and perverted state of the feelings and affections, a particular illusion has more recently supervened. An indi-

vidual of melancholic temperament, who has long been under the influence of circumstances calculated to impair his health, and call into play the morbid tendencies of his constitution, sustains some unexpected misfortune, or is subjected to causes of anxiety; he becomes dejected in spirits, desponds, broods over his feelings till all the prospects of life appear to him dark and comfortless. His inclinations are now so altered that no motive has sufficient influence over him to rouse him to voluntary and cheerful exertion. During this period, if questioned as to the causes of his mental dejection, he will probably assign no particular reason for it. At length, his gloom and despondency becoming more and more intense, his imagination fixes upon some particular circumstance of a distressing nature, and this becomes afterwards the focus round which the feelings which harass him concentrate themselves. This circumstance is often some real, occasionally some trifling, act of delinquency, for which the individual expresses the strongest, and perhaps disproportionate, self-condemnation. In other instances, an unreal phantom suggests itself, in harmony with the prevalent tone of the feelings, which at first haunts the mind as possible, and is at length admitted as reality. Other individuals begin by indulging morose and unfriendly sentiments towards all their acquaintance, magnifying in imagination every trifling neglect into a grievous contumely. They fancy, at length, that they find in some casual occurrence glaring proofs of premeditated designs to ruin them and expose them to the contempt and derision of society. The disease, in these cases, has its real commencement long before the period when the particular illusion, which is only an accessary symptom, is discovered, and even before it became impressed on the imagination; but it is not until that impression has taken place, that the case assumes the proper character of monomania."

It may be observed, that the illusion of the monomaniac usually bears a close relation to his former habits of thought; and that monomania generally supervenes on some disordered state of the moral feelings. In reasoning on insanity, much instruction may be derived from an attentive observation of what passes in our own minds; for the mind of a maniac is composed of the same materials as that of a sane person — but their equilibrium is lost.

Now, it must have occurred to every man who has been much occupied with moral reflections, to dwell so long on some one point on which his feelings were deeply interested, that his judgment has begun to lose its ascendancy, and he has felt the necessity of receding from the subject as one which his mind was no longer equal to grapple with, and of allowing his faculties to recover their wonted elasticity amid the diversions and occupations of ordinary life. Had he continued to indulge in such contemplations, insanity might have been the result.

Supposing a sane state of mind, there would appear to be this difference in the effect of too long continued attention to subjects of a purely intellectual, and to those of a moral, character: in the former instance, the mind becomes simply fatigued, and cannot get any further in the inquiry; in the latter there is a tendency to illusion, and the object is magnified or distorted: hence many men go mad of love or religion, for one who takes his start from mathematics or chemistry.

As the illusions of monomania are connected with the peculiar impressions which have been predominant in the mind of the individual, so they must necessarily partake largely of the genius of the age and country in which he lives — its politics — its philosophy — and its superstitions. Thus the Greeks were hunted by furies, the Jews possessed by demons, the Europeans of unenlightened ages bound by the spells of witches, and the men of later times mystified by the dreams of religious or political fanaticism, or tormented by the horrors of ideal pecuniary embarrassment.

It is not always easy to draw the line between hypochondriasis and monomania, since the illusions of the latter state sometimes have reference to bodily ailments.

A great number and variety of cases coming under the same head, of monomania associated with fear and despondency, are instances in which the apprehensions of the individual are concentrated on his bodily feelings, or relate to some diseased or preternatural state in which he conceives himself to exist. In the first stage this disease is hypochondriasis; the patient dwells constantly on some trifling ailments, which he magnifies in apprehension, broods over, and on account of which he makes himself miserable. In this form, hypochondriasis constitutes a variety of moral insanity, and a hundred cases of this description are to be found for one which actually makes the transition into erroneous belief. When this change has taken place, the disorder is accounted a decided one of insanity; as when a man fancies that his head has grown larger than his body, that his legs are made of glass, that he has a wolf or a fish in his stomach. The absurd ideas which the diseased imagination frames, in order to account for trifling bodily suffering, are as numerous as they are strange and surprising. Dr. Prichard mentions a lunatic who laboured apparently under neuralgic pains. He fancied that the physician, to whose care he was confided, had the power of torturing him by electricity, and that invisible wires were spread through every part of the house, as conductors of the fluid, which was used at night as the instrument of cruel and tyrannical persecution. Many a flatulent hypochondriac has fancied the existence of a goblin or demon in his stomach; and the association between his internal feelings and the idea by which it was accounted for, has become so firm, that nothing in future has been capable of changing it.

III. *Mania.* — It is not necessary to be diffuse on the phenomena of mania. The utter subversion of the intellectual and moral powers, which constitutes this affection, defies classification; all the faculties are over excited without any permanent object on which to exercise themselves. Dr. Prichard gives, as a general

illustration of this form of disease in its greatest intensity, an abstract of the description by Chiaruggi, which is cited with high commendation by Professor Heinroth.

"Among the phenomena of the first stage of this disease, we are at first struck by impetuous, audacious, shameless habits, a bold menacing aspect; the natural evacuations are deficient; the skin becomes of a slaty colour; the forehead contracted; the eyebrows drawn up; the hair bristled; the breathing hurried. The countenance begins to glow; the eyes become fiery and sparkling; the looks are wandering, and scarcely ever fixed; the eyelids are by turns drawn widely open, and closely shut; the eyeballs are prominent, as if pushed forward out of the orbits. With this wild and menacing appearance is combined a patient endurance of hunger, and a remarkable insensibility of cold. If sleep visits the patient at all, it is short, unquiet, and easily disturbed. In the second stage, anger, violence, and the loss of reason, manifest themselves in their greatest intensity; shrieking, roaring, raging, abusive expressions and conduct towards the dearest friends and the nearest relations, who are now looked upon as the bitterest enemies. The patient tears his clothes to tatters, destroys, breaks in pieces whatever comes in his way. A striking and characteristic circumstance is the propensity to go quite naked. Whoever touches the patient is abused or struck by him. Strange confused ideas, absurd prejudices, occupy the mind. Stillness soon follows, or a murmuring sound, as if the patient were alone: on the other hand, when he is alone, talking and gesticulating as if he were in company. If such individuals are confined and tied during the height of their paroxysms, for their own security or that of others, nothing can be compared to the truly satanical expression which their countenances display. In this state they throw hastily away, with cries and shrieks, all the food presented to them, except fluids, which thirst compels them to receive. When, after some days, hunger begins to be felt, they swallow every thing with brutal greediness; they even devour, as it has often been observed, their own excrements, which, black and offensive, escape from them in great quantity, or smear with them clothes, beds, and walls. Notwithstanding his constant exertion of mind and body, the muscular strength of the patient seems daily to increase; he is able to break the strongest bonds, and even chains; his limbs seem to acquire a remarkable nimbleness and pliability, and a singular aptitude of performing movements and actions which appear almost supernatural. Chiaruggi saw a woman, who, clothed in a strait-waistcoat, and laced down in her bed like a child in a cradle, drew out her limbs from this double confinement with the greatest nimbleness and pliancy. Bold, however, and impudent as such patients are, yet they are, according to common observation, although not without exceptions, easily daunted by a strong threatening voice, by the sight of stocks, by close though harmless restraint. After their violence has expended itself, they become still, gloomy, appear to be reflecting or brooding over something; but they break out again, before it can be anticipated, into a new storm of rage. At length comes on the *third stage*. A real cessation of violent paroxysms now ensues, exhaustion, sleep, though unquiet, disturbed by fearful dreams. The pulse is small, the aspect of the whole body squalid, the countenance pallid and meager. The patient is obdurately silent, or sings and laughs in a strange manner, or chatters with incessant volubility. These uncertain intervals, which often put on the appearance of fatuity, are frequently interrupted by new but short renewals of violence. Memory for the most part remains unimpaired through all the stages, and during the highest intensity of the disease the senses appear to acquire an unusual degree of acuteness and susceptibility. A patient who had recovered described to Chiaruggi all the scenes of his wild reverie and long-continued mental perturbation. It has often been observed that maniacal patients of this description are never attacked by any epidemic, and are seldom affected by any contagious malady. According to Mead and many others, even consumptive disorders, dropsies, and other chronic maladies, have disappeared on the accession of violent insanity. When patients are not freed from the disease after a succession of attacks, which come on like so many paroxysms of fever, one or the other of the following events ensues: either the powers of mind are exhausted to that degree that the disease subsides into a permanent fatuity; or this appearance of fatuity is only a space of calmness interposed between relapses of violent madness, which now and then break out, like the eruptions of a volcano, after a long period of repose; or the patient falls into a state of melancholy, or of complete mental confusion; or, finally, his madness becomes chronical, and he scarcely recovers from this condition, in which sense and understanding appear to be lost in incoherence. Chiaruggi saw a woman who had sat during twenty-five years on a stone floor, in a fearfully demented state, beating the ground with her chains without ceasing by day or by night."

It is often observed that violent mania soon arrives at a kind of imperfect crisis, the intensity of the symptoms abates, and the disease passes into a chronic state. M. Esquirol thinks that this change generally, or, at least, frequently, takes place within a month from the first accession of an acute attack.

The ultimate tendency of insanity is to produce a state of mental decay or *dementia*. The transition to this, however, is gradual, consisting of a stage of protracted mental derangement, in which the majority of patients in lunatic asylums are found to exist for years, and which sometimes continues during life, without ever terminating in complete dementia. This state is a combination of mania, or monomania, and dementia, in which the symptoms of these different forms of insanity are not distinctly marked, but in some measure blend and pass into each other.

The symptoms belonging to one form of madness are often confounded with those of

another, and from the combination there results, as it has been remarked by a writer of extensive observation and research, an assemblage of phenomena which bears little or no similitude to the description found in books, and commonly entertained.

Some writers have maintained that, in all cases of insanity, there are successive periods of monomania, mania, and dementia; but such an opinion must have been formed from very limited observation, and is certainly incorrect.

IV. *Dementia.* — This is a state in which imperfectly defined and unconnected ideas chase each other rapidly through the mind; the powers of continued attention and reflexion are lost, and even the perceptive faculty at length becomes indistinct. Dr. Prichard describes the phenomena of dementia as referable to four distinct stages: —

1. That of *impaired memory*, which obtains especially with regard to recent events.

2. That of *irrationality* — a total loss of reasoning power, arising from the absence of voluntary control over the thoughts.

3. That of *incomprehension*, in which the patient cannot understand any thing that is said to him.

4. That of *inappetency, or loss of instinct and volition*, in which the individual loses even his animal instincts, and does not obey the calls of nature.

He observes, that dementia approaches most gradually when it occurs as the accompaniment of old age, and that its several degrees are most distinctly recognised in such instances.

Such are the forms to one or other of which, or to a mixture of several, every case of insanity may be referred. We have now to notice certain morbid conditions, which occur as complications of insanity, and materially influence the prognosis and the treatment.

General paralysis. — There is a peculiar modification of paralysis which often accompanies the advanced stages of insanity, and especially those cases which are passing, or have already degenerated into dementia. M. Esquirol was the first writer who directed the attention of physicians to this morbid state, and pointed out the incurable nature of insanity complicated with paralysis.

This form of paralysis is much more frequent in men than in women. Of 109 insane paralytic patients, who came under the care of M. Esquirol, at Charenton, during three years, 95 were males. The same author made similar observations at the Bicêtre, and the fact has been corroborated by Dr. Foville, chief physician to the asylum at St. Yon, near Rouen. Of 334 lunatics at that institution, 31 were paralytic, and of these 22 were men. At Charenton, M. Esquirol has found the proportion of paralytics still greater, forming no less than one sixth of the whole number of patients; of 609 cases of insanity, 109 were also paralytic. The proportion of male to female cases is immense: thus of 366 male lunatics, 95 were paralytic; of 253 females, only 14.

M. Calmeil has marked three degrees in the general paralysis of the insane. The first degree is characterised merely by an impediment in the motions of the tongue, which renders the articulation imperfect, the patient drawling and stammering, like an intoxicated person; the tongue, however, can be naturally protruded, and the muscles of the mouth and face preserve their usual position. In the second degree the defect of articulation is greater, and the patient is incapable of uttering a word distinctly. The limbs are now affected with paralysis; the patient rises from his chair with difficulty, by fixing his hands upon its arms, and when he attempts to walk, his gait is tottering. When in the recumbent posture, he moves all his limbs with freedom. The upper extremities are less affected than the lower, yet in some instances the arms are impeded in their movements, and raised to the head with difficulty. The chin has a tendency to fall upon the chest, from the relaxation of the muscles of the neck, and the trunk is ill poised upon the pelvis, from the impaired action of its muscles. The senses in general are much obtunded; the patient however still continues to feel, see, hear, and smell. The excretions escape without notice, whether from paralysis of the sphincters, or the inattention of the patient — more probably the latter. Patients affected with this degree of paralysis are generally in an advanced stage of dementia. In the third degree, the patient is nearly reduced to a state of vegetation. Articulation is almost or entirely lost. The patient cannot stand, and at last loses all power of moving the lower extremities; the hand and arms are less completely paralysed. Frequently no trace of intelligence remains; the patient waits till food is put into his mouth; he is insensible to the calls of nature; and though he still retains the senses of sight and taste, and perceives strong odours, he pays no attention to surrounding objects. In the first and second stages, just described, the functions of organic life are nearly in a healthy state; the circulation is natural, sleep undisturbed, excretion is duly performed, and the flesh remains firm and plump. In the third stage, however, digestion is impaired, and the frame becomes emaciated. At length the integuments slough on those parts most subjected to pressure, œdema of the most depending parts supervenes, and hectic fever closes the scene. Death seldom occurs as the simple consequence of the cerebral disease, the abdominal or thoracic viscera being generally affected.

Dissection has proved that this species of paralysis is almost uniformly connected with chronic inflammation of the substance of the brain, especially near its surface. The observations of M. Calmeil on this subject will be presently alluded to. From numerous observations of MM. Calmeil, Esquirol, and others it results that this kind of paralysis commences in some instances, a long time after the accession of insanity, in others simultaneously with it, while in a few it precedes it. M. Calmeil states that, at Charenton, the paralysis generally supervened soon after the commencement of insanity. A few cases have occurred to M. Esquirol, in which patients seized with general

paralysis have retained perfect vigour of intellect for some time, but have subsequently fallen into a state of mental derangement. The mean duration of the paralysis of the insane is stated by Calmeil at thirteen months; and he confirms the observation of Esquirol, that few patients survive longer than three years. The disorder is generally progressive, though a few individuals have suddenly recovered so far as to be able to walk several miles a day, and to resume, for a time, their ordinary occupations. The prognosis, however, is, on the whole, most unfavourable. M. Royer Collard, during twenty years' experience in a very large establishment, did not witness a single recovery. Esquirol and Calmeil agree in considering the malady as generally incurable; the former, however, has seen three, and the latter two, instances of recovery.

Diseases of the brain. — The disturbed state of the brain in insanity has reference rather to its operations as the organ of the mind, than to its general functions as a part of the corporeal frame. Many lunatics have remained in asylums for thirty, forty, or fifty years; nor are cases of unusual longevity wanting among the insane. Still, however, the brain is in a morbid state, and hence very liable to inflammation and congestion, with their ordinary results, as apoplexy, palsy, and convulsive affections, to which the insane are much more liable than other persons.

Diseases of the thoracic and abdominal viscera. — Many insane patients die of diseases of the abdominal and thoracic viscera. Such complications of insanity are too frequent to be regarded as accidental, although it may puzzle pathologists to account for them. We should be much disposed to regard defective innervation as a frequent cause of their occurrence; it being established, by the experiments of Dr. Wilson Philip, that the abstraction of the nervous energy from a part gives rise to disordered action of its minute vessels. The coexistence of phthisis with insanity is so frequent as to have been made the subject of particular observation. M. Esquirol states that phthisis often precedes or accompanies the invasion of melancholia. The patient loses his strength, and becomes emaciated; he has slow fever, sometimes accompanied with cough and diarrhœa, while the symptoms of insanity are rather increased than diminished, and continue until death. On dissection, the lungs are found to be tuberculated, or affected with melanosis. Dr. Greding found that 40 out of 100 maniacs, and 20 out of 24 melancholics, laboured under phthisis: according to the same writer, 76 out of 100 maniacs, and 20 out of 24 melancholic patients, had effusion in one or both cavities of the pleura.

Diseases of the heart are not uncommon. M. Foville found some organic change in the heart or great vessels in five out of six of all the bodies of lunatics which he examined after death, during three years: the most frequent morbid state was hypertrophy. Dr. Prichard concurs in the opinion of M. Foville, that these lesions are more frequently results of the continued violence done to the thoracic organs by the agitation, efforts, and cries of the patient, than predisposing causes of cerebral disease.

Diseases of the intestinal canal are frequent among the immediate causes of death. A protracted state of obstinate constipation is at length succeeded by, or alternates with, diarrhœa, which terminates in fatal dysentery. On examination after death, the intestines are found loaded with indurated matter, or empty and pale, with discoloured patches, abrasions, ulcerations, or gangrenous spots in the mucous coat.

Cachectic diseases. — In the advanced stage of insanity, cachectic disorders are prevalent; as scaly or papular eruptions, scorbutic affections of the gums, furunculi, and a disposition to sloughing in different parts of the body. These are accompanied by diarrhœa and griping pains, and the patient dies in a state of extreme emaciation.

Such are the more important of those causes of death which seem to have some peculiar relation to the state of insanity. There are some others to which, though they may be considered as accidental, the physical condition of insane patients renders them particularly obnoxious. Among these are pulmonary catarrh and typhoid fever: cephalic fevers are, as might be expected, peculiarly fatal to lunatics. The diagnosis of accidental diseases in the insane is attended with much difficulty, since they have a great tendency to make unfounded complaints, and either conceal or are insensible to the presence of real disease. Patients should therefore be carefully watched; and altered habits, and the expression of dejection and suffering in the countenance of a lunatic, should lead to an immediate examination of his physical state, as they probably indicate the approach of some serious malady.

The prognosis of insanity is greatly influenced by a variety of circumstances. Under judicious treatment a large proportion of cases recover. In many instances the recovery is complete and permanent; in others, and perhaps the majority, the disease is curable only to a certain point, and the patient retains such a susceptibility to it, that, although he may be perfectly rational, a studious avoidance of all sources of mental inquietude is necessary to keep him so; and, even when all tendency to insanity appears to have passed away, the fact of its having once existed affords ground for fearing its recurrence; an observation which is true with reference to all the diseases of the nervous system.

The termination of mania in dementia has already been noticed. The circumstances which chiefly influence our prognosis in insanity are the following: —

1. *The complication of insanity with other cerebral disorders.* — The most unfavourable complication is that of general paralysis; if this affection be present, even in the slightest degree, the case must generally be considered hopeless. Epilepsy is also a very unfavourable complication; it is much less so, however, in those cases where the fits occur only at periods of high maniacal excitement, as the effects of a

transient cause, than in those where violent mania appears as the sequel or occasional interlude of inveterate epilepsy, which latter case is a very desperate one.

2. *The form of the disease.* — This is of great importance with reference to the event. The following comparative statement of recoveries among the patients at Charenton is given by M. Esquirol.

Mania . .	115 cases out of	226
Monomania	91 . . .	289
Dementia .	3 . . .	99
	209	614

In the total number of cases are included 109 paralytics, 19 epileptics, and 4 idiots; so that the number of curable cases may be considered as reduced to 487, of which number more than two fifths were restored. "It is remarkable," observes Dr. Prichard, "that the greater sanability of maniacs, in comparison with monomaniacs, had place only in males. From this it would appear that monomania is comparatively a more curable disease in females than in men."

3. *The period of the disease.* — This is a very important consideration; the chance of recovery being much greater when the case comes early under treatment. In the practice of Dr. Willis, nine out of ten are stated to have recovered when placed under his care within three months after the first attack. Under similar circumstances, Dr. Finch treated successfully 61 cases out of 69. Dr. Burrows cured 221 out of 242 recent cases; and the practice of the Retreat, near York, affords a proportion of at least seven recoveries out of eight recent cases.

A table of recoveries at the Gloucester Lunatic Asylum is given on the authority of Mr. Hitch, the resident medical officer, which affords similar results, and contains some examples of restoration to reason after so long a duration of insanity, as to show that we ought never absolutely to despair.

Age. — M. Esquirol has found that the most favourable age for recovery is between the twentieth and thirtieth year, and that few are cured after the age of fifty. From the table of recoveries at Charenton, it appears that the greatest number of cures were in patients from twenty-five to thirty, and from thirty to thirty-five years of age. The proportion of recoveries diminishes progressively from the forty-fifth year onwards. The diminution is more abrupt in women, and more uniform in men. Cases occurring before the twentieth year are most numerous in males. In men the disease most frequently makes its invasion from twenty to twenty-five, and from twenty-five to thirty; in women between twenty-five and thirty. The experience of Charenton shows that advanced age does not preclude hope, twenty men having recovered after their fiftieth year; in which number are included four out of twelve lunatics who were more than seventy years old.

5. *Sex.* — Insanity has generally been observed to be more curable in women than in men.

6. *Season*, and the *circumstances of the constitution*, are alluded to by our author as modifying the prognosis; these, however, we need not dilate upon.

The general proportion of recoveries, in cases of all kinds, is very differently estimated by different writers. The experience of Dr. Burrows affords 240 cures in an aggregate of 296 cases of various descriptions — 221 in 242 recent cases, 19 in 64 old cases — giving an average of 81 in 100 cases of all sorts, and 91 in 100 recent cases.

Dr. Jacobi ascribes the large proportion of recoveries in England to the practice, which he believes to obtain in this country, of discharging patients from the asylums too soon after apparent restoration. In this gentleman's establishment at Sieburg, in Westphalia, 40 out of 100 cases were dismissed completely cured, and 6 with alleviation of symptoms. Dr. Prichard justly remarks, that Jacobi is certainly mistaken in supposing that patients are dismissed too early from lunatic asylums in England. "It is plainly not the interest of those who conduct private establishments to err on this side; and, in most of the public hospitals in this country, the proportion of recoveries is by no means so great as to require such an explanation."

M. Esquirol has for many years been engaged in extensive researches into the statistics of lunatic asylums. In the Dict. des Sciences Méd. he gives the following table of recoveries, taken from the reports of the French establishments: —

Fr. Lunatic Asylums.	Dates.	Admis.	Rec.
Charenton, from Nov. 22. 1798 to 1800, 22 July,		97...	33
	1803	499...	161
Salpètrière ...	from 1801 to 1805 ...	1002...	407
— ...	from 1804 to 1813 ...	2005...	1218
— ...	from 1806 to 1807 ...	531...	286
— ...	from 1812 to 1814 ...	891...	413
In M. Esquirol's private establ.	from 1801 to 1813 ...	335...	173
	Totals	5360	2691

In a still larger calculation, contained in the Mem. Acad. Roy. Med., 4968 cures are reported out of 12,592 cases, treated at the Salpètrière and Bicêtre. A more recent report of the same eminent observer, referring to the practice of Charenton in 1826–28, gives a proportion of recoveries amounting to one third of cases of all descriptions; and an official report, made at Paris in 1825, of the state of lunatic hospitals for the three preceding years, affords nearly a corresponding result; the recoveries being 34 in 100, including cases deemed curable and incurable. Esquirol has collected the following statements from English lunatic hospitals: —

English Lunatic Asylums.	Dates.	Admis.	Reco.
In Bethlem Hospital, from 1784 to 1794 ...		8874 ...	2557
— —	in 1813 ...	422 ...	204
In St. Luke's	from 1751 to 1801 ...	6458 ...	2811
In York Asylum		599 ...	286
In the Retreat near York,	from 1801 to 1814 ...	163 ...	60
	Totals	16516	5918

From these calculations it appears that the proportion of cures formerly obtained in English lunatic asylums was, in some instances, less than that which is reported from the celebrated hospitals in France. This is the more remarkable when we take into our account the peculiar

regulations of the great lunatic establishments of London. The hospitals of Bethlem and St. Luke impose certain exclusions, elsewhere unknown. They reject all patients who have been more than twelve months insane; those affected by paralysis, however slight, and by epilepsy or convulsive fits; idiots, the aged and infirm; those discharged uncured from other hospitals: there are, likewise, other exclusions besides those above mentioned; and all persons who have not recovered at the expiration of one year are dismissed. Yet, on comparing the reports of these hospitals with those of other institutions, the regulations of which are less favourable to a high proportion of cures, and where no selection or exclusion exists, we do not find, as Dr. Burrows remarks, the relative number of recoveries to be so great as might be expected. It is indeed surprising to observe that the reports of Bethlem Hospital, of a century and a half ago, give a greater proportion of cures than those of many years preceding 1817, when an improvement took place in the arrangements of that establishment. Dr. Burrows remarks, on the authority of Stow, who derived his information from Dr. Tyson, physician to Bethlem Hospital, that from 1684 to 1703, 1294 patients were admitted, of whom 890 were cured, which is a proportion of two in three. But from 1784 to 1794, 1664 patients were admitted, of whom 574, or rather more than one in three, recovered.

So great a difference could not be accounted for by any presumed inferiority of skill in the practitioners, or of arrangement in the institutions of this country; nor is there any reason to believe that any such inferiority existed. Since the removal of Bethlem Hospital to a new site the average of recoveries has greatly increased. From a table drawn up by Mr. Lawrence for Dr. Prichard, it appears that, out of 2060 cases, admitted between 1819 and 1833, 1124, or considerably more than one half, were cured. The report of the Stafford Asylum, from 1818 to 1828, gives about 43 cures in every 100 cases; that of Wakefield County Asylum, from 1819 to 1826, about 42 in 100. A report of the Lancaster County Asylum, obtained by Dr. Pritchard through Dr. Whalley, states a proportion of recoveries amounting to about 40 in 100 of the total number of cases (1750) from 1817 to 1832. A report from the Gloucester Asylum, drawn up by Mr. Hitch, and referring to the years 1823–32, gives a very favourable list of recoveries, — 234 out of 516 cases; without taking into account a considerable number of recoveries which afterwards took place among those dismissed as relieved and on trial. In this establishment there is no selection of cases, lunatics of all descriptions being freely admitted. Dr. Prichard concludes a very ample and excellent view of this important subject with a table obtained from Mr. Tuke of York, from which it appears that, out of 334 patients, admitted into the Retreat in that city, from 1812 to 1833, 168 have recovered, 50 have died, 37 have derived no benefit and been removed, 10 have left the asylum in an improved state, and 69 remain.

The chief predisposing causes of insanity are hereditary predisposition, which is by far the most influential, the melancholic temperament, and diseases or injuries of the brain. Many other causes, however, both moral and physical, might be enumerated as predisposing to one or other form of insanity. Our limits will not allow us to enter into these subjects; nor do they, indeed, admit of much elucidation in the present state of our knowledge.

The chief exciting causes of insanity are injuries and diseases of the brain, intoxication, insolation, excess in venery, intestinal irritation, and morbid conditions of the uterine system. In this country, it is well known that a large proportion of the cases found in the public asylums have been brought thither by dram-drinking.

Some very interesting tables, illustrative of the comparative influence of different causes in the production of insanity, are given by Dr. Pritchard.

The morbid anatomy of the brain in cases of insanity has occupied the attention of many careful observers; but their researches have as yet thrown very little light on the pathology of the disease. The following are the most important of the observations which have been made.

Greding has recorded the following facts: —

1. In the *cranium*. — "Experience has proved," as he says, "that the skulls of almost all insane persons have a natural shape." Of sixteen cases only of the whole number examined, viz. nearly 220, the forehead was contracted, the temples compressed, and the occiput large and expanded. In a few the head was elongated and compressed at the temples. Some had a head almost round, or of a square shape: these were epileptic idiots. Two had small heads, quite circular: these were epileptic madmen. Of 216 cases, including those of madmen, idiots, and epileptics, the skull was unusually thick in 167: this fact was observed in 78 out of 100 cases of raving madness, and in 22 among 30 of idiotism. In many cases the cranium was remarkably thin. Holes were observed in the inner table in 115 out of 216 cases: in other instances bony projections from the inner surface.

2. *Membranes*. — Dura mater firmly adherent to the skull in 107 out of 216 cases; in a few instances of a blueish black colour, thickened and partially ossified. Pia mater thickened and opaque more or less in 86 out of 100 cases of mania; beset with small spongy bodies in 92 out of 100: these bodies were often united to the surface of the brain, and were, in some instances, the seats of ossific deposits.

3. *Brain*. — Cerebral substance softer than usual in 118 out of 216 cases: soft and pulpy in 51 cases of mania out of 100, as likewise in 19 out of 24 cases of melancholia, in 8 out of 20 epileptics, and in 16 out of 30 idiots. Those maniacs who had the cerebrum softened had the cerebellum still more soft and pulpy.

4. *Effusions*. — Between the dura and pia mater in 120 out of 216 cases; in 58 out of 100 maniacs. Between the pia mater and the surface of the brain in 28 among 100 maniacs. Lateral ventricles in 29 very full of serum, in

23 ready to burst; in 10 among 24 melancholics astonishingly distended. Third ventricle quite full in 57 of 100 maniacs, and in 16 of 24 melancholics. Fourth ventricle ready to burst in 80 out of 100 maniacs, and quite empty in only 3: completely distended in every one of 24 melancholics.

Other appearances. — Plexus choroides in a nearly healthy state in only 16 out of 216 cases, thickened and full of hydatids in 96 out of 100 maniacs. Lateral ventricles either larger or smaller than natural in many cases. Softness of parts of the brain, as of the tubercula quadrigemina in some cases.

Haslam has given the histories of 37 cases of madness, with the appearances discovered on dissection. In not one of these cases were the brain and its membranes free from morbid appearances. In almost all, either the membranes bore marks of former inflammation, or their vessels were distended with blood. There was effusion of serum between the membranes in 16 cases, and in the lateral ventricles in 18. The consistence of the brain was firmer than natural in 9 cases, softer in 7, and not perceptibly altered in 20. The cranium was thicker than usual in 3 cases, and thinner in 3. In several cases a peculiar looseness of the scalp was observed.

Georget has noticed the following appearances: —

Irregular conformations of the cranium, the prominences of which are developed irregularly, those of the right side being generally larger than those of the left; some skulls having the lateral diameter of equal extent with the antero-posterior, and the cavities of the base irregular in extent; some skulls, one in twenty, thickened partially or generally; more frequently the bones hard, white, without diploë, resembling ivory; some very light. Dura mater rarely changed; sometimes adherent to the skull, thickened, containing deposits of bone. Arachnoid displaying in places additional laminæ of a red or grey colour; sometimes thickened but smooth. Pia mater injected; or thickened and infiltrated with serum, giving at first the appearance of a gelatinous deposit. Volume of the brain sometimes less than the cavity of the cranium seems to require. Some brains very hard, cut with difficulty; the white substance glutinous, elastic, and suffering distension; more frequently the brain is soft, the grey matter being pale and yellowish, and the white substance discoloured, of a dirty white, the colour and consistence of these portions almost confounded. The convolutions separated by serosity, and the pia mater thickened. Interior cavities of the brain appearing in some instances very large, in others small, often filled with a serous fluid remarkably clear and limpid; plexus choroides exsanguious, containing hydatiform vesicles. Partial softenings of the brain; erosions, ulcerations of the surface of the ventricles. Cerebellum generally softer than the cerebrum; sometimes partially softened. Mesocephalon, medulla oblongata, and medulla spinalis, rarely displaying morbid changes of structure.

Bayle, after extensive observations at Charenton, comes to the conclusion that the proximate cause of insanity is seated, not in the substance of the brain, but in its membranes, from the inflammation of which effusions follow, producing the symptoms of different degrees of compression of the brain, corresponding accurately with those of insanity in its progressive stages. With respect to M. Bayle's *nouvelle doctrine*, it may be remarked, that his anatomical observations differ from those of all other inquirers, and that his pathological views seem to be somewhat at variance with facts. The progressive symptoms of insanity are not those of gradually increasing compression of the brain: if they were so, a case of chronic hydrocephalus would be one of insanity; instead of which, it is well known that children affected with the former are usually particularly acute and intelligent.

Calmeil, labouring in the same field as the last-mentioned writer, has made his observations exclusively on the *general paralysis* of the insane; and most of the phenomena noticed by him agree with those which other morbid anatomists have found in connexion with mental derangement, whether complicated with paralysis or not.

The consistence of the white substance is generally natural, except that, in a few instances, it is harder than usual in the convolutions. The grey substance contiguous to the pia mater is softened, and reduced to a pulp, to the depth of a quarter or half a line; it is separated into laminæ, of which the external adheres to the pia mater, and the colour of the cortical substance undergoes a peculiar change. All these phenomena are referred by M. Calmeil to inflammation of the cortical substance, which he considers as the proximate cause of the general paralysis of the insane.

M. Foville has still more recently investigated the brain in cases of insanity. In many leading particulars his observations agree with those of M. Calmeil; but certain appearances, which the latter regards as confined to general paralysis, are connected by Foville with mental derangement. M. Foville has remarked, in the cortical and medullary substances of the brain, various changes of consistence, colour, and nutrition. In the most acute cases of mania the cortical substance has presented an intensely red colour, approaching to that of erysipelas. Among the chronic changes in this substance the most frequent is an increased firmness and density of its surface, extending to no great depth, but constituting a distinct lamina, smooth externally, and internally irregular, which, when torn off, leaves the subjacent surface red, soft, and mammillated. The colour of this superficial lamina is considerably paler than natural. M. Foville has noticed morbid appearances somewhat similar to those just described, in the brains of wild animals which have died in a state of confinement. Among the appearances observed in the medullary substance, one of the most remarkable is an almost fibro-cartilaginous hardness, usually accompanied with a splendid white colour: the colour is not uniformly white, being sometimes yellowish or grey. This indu

ration is conjectured, by M. Foville, to arise from a matting together of the cerebral fibres by adhesive inflammation. According to this writer, the fibrous mass of the hemispheres is formed by the superposition of several distinct layers of substance, connected by a very fine cellular tissue: these planes, which are easily separable in the healthy state, become inseparable in the induration of the brain accompanying madness. M. Foville found these morbid adhesions in all the cases of general paralysis which he examined, except two.

We must not omit to mention that this anatomist thinks he has traced some morbid alterations of the *nerves*, in connexion with hallucination of the senses: in a female lunatic, who had been tormented by optical illusions, the optic nerves were found hard and semitransparent through a great part of their thickness.

The two principal inferences drawn by M. Foville from his researches are, 1. That morbid changes in the cortical substance are directly connected with mental derangement. 2. That morbid changes in the white substance are directly connected with disorder of voluntary motion. The uniform detection of disease in the cortical substance, in cases of general paralysis, induced M. Calmeil to ascribe the loss of muscular power to such disease; M. Foville, however, contends that this conclusion cannot be legitimately derived from the facts, since, in all his cases, although the cortical substance was diseased, there was also induration, serous infiltration, or softening in the white substance, and, in most instances, adhesion of the principal medullary planes to each other.

Such are the principal observations which have been made in the morbid anatomy of insanity.

Notwithstanding the labour and ingenuity that have been devoted to the subject, nothing is yet known of the real proximate cause of insanity; there is, however, one point connected with its pathology which admits of discussion: namely, whether insanity be a disease of the *mind* or of the body. It appears, however, not a little extraordinary that there should be two opinions on this subject among men accustomed to think, since the notion of disease of the *mind* is utterly incompatible with either of the possible views of our intellectual constitution. If, according to the doctrine of the materialist, thought is a mere function of the brain, as the biliary secretion is a function of the liver, insanity is merely a disordered state of this function — the soul, as an abstract thinking principle, being out of the question; if, again, there be in man an independent and immaterial thinking principle, of which we, for our own part, have no doubt, it is absurd to talk of this principle being diseased, except as a metaphor, since disease means deranged action in a material organism — at least, this is the only signification we can attach to the term. The notion that the soul or immaterial thinking principle is actually diseased in insanity, though generally abandoned in this country as entirely unphilosophical, has several eminent advocates in Germany, who build their opinion on the unsatisfactory results of anatomical investigations, and the acknowledged influence of moral causes in the production of mental alienation. Professor Heinroth, who adopts this doctrine in its fullest extent, has deduced from it a conclusion as monstrous in morals as it is false in fact — namely, that *moral depravity* is the essential cause of madness! Heinroth has been fully answered by Jacobi, who refers to many examples of insanity occurring in the most pious and excellent individuals, and cites in particular the case of Madame Lavater, the wife of the celebrated physiognomist, a lady remarkable for her amiable character, who, at an advanced period of life, became insane, and continued for a long time in a state of the deepest melancholy. She recovered her reason, however, some months before her death, and evinced all the excellent dispositions which were natural to her.

The treatment of insanity resolves itself into *medical* and *moral*. With respect to the former the general principle which should guide our practice is simple. Of the actual physical state which constitutes insanity we are entirely ignorant: we cannot, therefore, at present hope to strike off the root of the disease; we know, however, that certain morbid conditions of the brain and other organs accompany its progress, and exercise an important influence on the event of the case; to these, therefore, the resources of medicine should be directed, according to the general principles of the science — always keeping in view, however, that we are not dealing with ordinary idiopathic affections, but with the accompaniments of a peculiar and usually a protracted malady. Although medical treatment has great influence in many cases, the moral treatment is, on the whole, the more important, since by means of this we have the more direct control over the mental disorder. The moral treatment of insanity is a subject of great extent, and one into which it would be out of character to enter in a work like the present.

INSE'CTA. (From *inseco*, to cut into, on account of the deep fissures by which one part of their body is divided from another.) Insects. A class of articulated animals. See *Animal kingdom*.

INSE'SSUS. *Insessio*. (From *insideo*, to sit upon.) A hot-bath, simple or medicated, over which the patient sits.

INSIDIOUS. *Insidiosus*. Pathologists give this name to diseases which do not at first appear so formidable as they are, and which are apt to elude the attention of the practitioner.

INSIPIE'NTIA. (From *in*, not, and *sapientia*, wisdom.) Synonymous with *dementia*.

INSOLA'TIO. (*o, onis*. f.; from *in*, and *sol*, the sun.) Insolation. Exposure to the direct rays of the sun. This is a frequent source of disease. Chemists subject bodies to insolation with a view to certain changes in their constitution; the colour of bodies is particularly affected by this process: bleaching affords a familiar illustration.

INSPIRA'TION. (*Inspiratio, onis*, f.; from *in*, and *spiro*, to breathe.) In physiology, the act of drawing the air into the lungs. See *Respiration*.

INSTINCT. (*Instinctus, ûs*. m.) That power of living bodies by which they spontaneously assume those modes of action which are

necessary for the preservation of the individual, or the perpetuation of the species, independently of any intelligence.

Insulation. Applied in electricity to the state of a body surrounded by non-conductors. See *Electricity*.

I'NTEGER. Entire. Applied to leaves, perianths, petals, &c.: *folium integrum*, means an undivided leaf; and it is said of the simple leaves, as those of the orchises and grasses. It is opposed to cloven, gashed, indented, &c.; but it does not signify that it is not serrated or scolloped. When, however, a leaf is said to be very entire (see *Integerrimus*), it is not even scalloped or serrated. The female flower of the oak affords an example of the *perianthium integrum*; and the petals of the *Nigella arvensis* and *Silene quinque-vulnera* are described as *petala integra*.

INTEGE'RRIMUS. Most perfect or entire. Applied to leaves, the margin of which has no teeth, notches, or incisions. It regards solely the margin; whereas the *folium integrum* respects the whole shape, and has nothing to do with the margin.

Intellect. See *Mens*.

INTERCO'STAL. (*Intercostalis*; from *inter*, between, and *costa*, a rib.) A name given to muscles, vessels, &c. which are between the ribs.

Intercostal arteries. *Arteriæ intercostales.* The arteries which run between the ribs. The superior intercostal artery is a branch of the subclavian. The other intercostal arteries are given off from the aorta.

Intercostal muscles. *Intercostales externi et interni.* Between the ribs on each side are eleven double rows of muscles: these are the *intercostales externi* and *interni*. Galen has very properly observed, that they decussate each other like the strokes of the letter X. The *intercostales externi* arise from the lower edge of each superior rib, and, running obliquely downwards and forwards, are inserted into the upper edge of each inferior rib, so as to occupy the intervals of the ribs, from as far back as the spine to their cartilages; but from their cartilages to the sternum there is only a thin aponeurosis covering the internal intercostales. The *intercostales interni* arise and are inserted in the same manner as the external. They begin at the sternum, and extend as far as the angles of the ribs, their fibres running obliquely backwards. These fibres are spread over a considerable part of the inner surface of the ribs, so as to be longer than those of the external intercostales. Some of the posterior portions of the internal intercostals pass over one rib, and are inserted into the rib below. Verheyen first described these portions as separate muscles, under the name of *infracostales*. Winslow has adopted the same name. Cowper, and after him Douglas, calls them *costarum depressores proprii*. These distinctions, however, are altogether superfluous, as they are evidently nothing more than appendages of the intercostals. The number of these portions varies in different subjects. Most commonly there are only four, the first of which runs from the second rib to the fourth, the second from the third rib to the fifth, the third from the fourth rib to the sixth, and the fourth from the fifth rib to the seventh. The internal intercostals of the two inferior false ribs are frequently so thin as to be with difficulty separated from the external; and, in some subjects, one or both of them seem to be altogether wanting.

Intercostal nerve. *Nervus intercostalis.* Great intercostal nerve. Sympathetic nerve. The great intercostal nerve arises in the cavity of the cranium, from a branch of the sixth and one of the fifth pair, uniting into one trunk, which passes out of the cranium through the carotid canal, and descends by the sides of the bodies of the vertebræ of the neck, thorax, loins, and os sacrum: in its course, it receives the small accessory branches from all the thirty pair of spinal nerves. In the neck, it gives off three cervical ganglions, the upper, middle, and lower; from which the cardiac and pulmonary nerves arise. In the thorax, it gives off the splanchnic or anterior intercostal, which perforates the diaphragm, and forms the semilunar ganglions, from which nerves pass to all the abdominal viscera. They also form in the abdomen ten peculiar plexuses, distinguished by the name of the viscus to which they belong, as the cœliac, splenic, hepatic, superior, middle, and lower mesenteric, two renal, and two spermatic plexuses. The posterior intercostal nerve is dispersed in accessory branches about the pelvis and ischiatic nerve. Many opinions have been entertained with respect to the functions of this nerve, or, rather, system of nerves. Some regard it as the great centre of the organic life, as the cerebro-spinal system is that of the animal life; others regard it as associating the functions of all the other parts of the nervous system; others again deny it either of these offices; and M. Magendie questions whether the great sympathetic be a nerve at all.

Intercostal veins. These accompany the intercostal arteries, and empty their blood into the vena azygos.

INTERCU'RRENT. *Intercurrens.* Diseases which occur sporadically during the prevalence of epidemic or endemic diseases have been termed *intercurrent diseases* — *morbi intercurrentes*.

Inte'rcus aqua. A dropsy between the skin and the flesh. See *Anasarca*.

INTERDE'NTIUM. (*um*, *i.* n.; from *inter*, between, and *dens*, a tooth.) The intervals between teeth of the same order.

Interdigi'tium. (*um*, *i.* n.; from *inter*, between, and *digitus*, a toe, or finger.) As corns or warts between the toes or fingers.

Interfemi'neum. (From *inter*, between, and *femur*, the thigh.) The space between the anus and pudendum. See *Perineum*.

Intergastrum. A barbarous term applied by Paracelsus to the decussation of the optic nerves.

Interlu'nius. (From *inter*, between, and *luna*, the moon: because it was supposed to affect those who were born in the wane of the moon.) An old epithet of epilepsy. — *Morbus interlunius*.

INTERMITTENT. (*Intermittens*; from *intermitto*, to discontinue.) An intermittent

disease is one which ceases and returns again at regular or uncertain periods, as agues, &c.

Intermittent fever. See *Ague.*

INTERNO'DIS. The space between the joints: applied to a flower-stalk or pedunculus when it proceeds from the intermediate part of a branch between two leaves; as in *Ehretia internodis.*

INTERNU'NTII DIES. (From *internuncio*, to go between.) Applied in the doctrine of critical days synonymously with *dies indices.*

INTERO'SSEI MANUS. These are small muscles situated between the metacarpal bones, and extending from the bones of the carpus to the fingers. They are divided into *internal* and *external;* the former are to be seen only on the palm of the hand, but the latter are conspicuous both on the palm and back of the hand. The *interossei interni* are three in number. The first, which Albinus names *posterior indicis*, arises, tendinous and fleshy, from the basis and inner part of the metacarpal bone of the fore-finger, and likewise from the upper part of that which supports the middle finger. Its tendon passes over the articulation of this part of these bones with the fore-finger, and, uniting with the tendinous expansion that is sent off from the extensor digitorum communis, is inserted into the posterior convex surface of the first phalanx of that finger. The second and third, to which Albinus gives the names of *prior annularis* and *interosseous auricularis*, arise, in the same manner, from the basis of the outsides of the metacarpal bones that sustain the ring-finger and the little finger, and are inserted into the outside of the tendinous expansion of the extensor digitorum communis that covers each of those fingers. These three muscles draw the fingers into which they are inserted towards the thumb. The *interossei externi* are four in number; for among these is included the small muscle that is situated on the outside of the metacarpal bone that supports the fore-finger. Douglas calls it *extensor tertii internodii indicis*, and Winslow, *semi interosseus indicis.* Albinus, who describes it among the interossei, gives it the name of *prior indicis.* This first interosseus externus arises by two tendinous and fleshy portions. One of these springs from the upper half of the inner side of the first bone of the thumb, and the other from the ligaments that unite the os trapezoides to the metacarpal bone of the fore-finger, and likewise from all the outside of this latter bone. These two portions unite as they descend, and terminate in a tendon which is inserted into the outside of that part of the tendinous expansion from the extensor digitorum communis that is spread over the posterior convex surface of the fore-finger. The second, to which Albinus gives the name of *prior medii*, is not quite so thick as the last-described muscle. It arises by two heads; one of which springs from the inner side of the metacarpal bone of the fore-finger, chiefly towards its convex surface, and the other arises from the adjacent ligaments, and from the whole outer side of the metacarpal bone that sustains the middle finger. These two portions unite as they descend, and terminate in a tendon, which is inserted, in the same manner as the preceding muscle, into the outside of the tendinous expansion that covers the posterior part of the middle finger. The third belongs likewise to the middle finger, and is therefore named *posterior medii* by Albinus. It arises, like the last-described muscle, by two origins, which spring from the roots of the metacarpal bones of the ring and middle fingers, and from the adjacent ligaments, and is inserted into the inside of the same tendinous expansion as the preceding muscle. The fourth, to which Albinus gives the name of *posterior annularis*, differs from the two last only in its situation, which is between the metacarpal bones of the ring and little fingers. It is inserted into the inside of the tendinous expansion of the extensor digitorum communis, that covers the posterior part of the ring finger. All these four muscles serve to extend the fingers into which they are inserted, and likewise to draw them inwards, towards the thumb, except the third, or *posterii medii*, which, from its situation and insertion, is calculated to pull the middle finger outwards.

INTEROSSEI PEDIS. These small muscles, in their situation between the metatarsal bones, resemble the interossei of the hand, and, like them, are divided into *internal* and *external.* The *interossei pedis interni* are three in number. They arise, tendinous and fleshy, from the basis and inside of the metatarsal bones of the middle, the third, and the little toes, in the same manner as those of the hand, and they each terminate in a tendon that runs to the inside of the first joint of these toes, and from thence to their upper surface, where it loses itself in the tendinous expansion that is sent off from the extensors. Each of these three muscles serves to draw the toe into which it is inserted towards the great toe. The *interossei externi* are four in number. The first arises, tendinous and fleshy, from the outside of the root of the metatarsal bone of the great toe, from the os cuneiforme internum, and from the root of the inside of the metatarsal bone of the fore-toe. Its tendon is inserted into the inside of the tendinous expansion that covers the back part of the toes. The second is placed, in a similar manner, between the metatarsal bones of the fore and middle toes, and is inserted into the outside of the tendinous expansion on the back part of the fore-toe. The third and fourth are placed between the two next metatarsal bones, and are inserted into the outside of the middle and third toes. The first of these muscles draws the fore-toe inwards towards the great toe. The three others pull the toes, into which they are inserted, outwards. They all assist in extending the toes.

INTERO'SSEOUS. (*Interosseus;* from *inter*, between, and *os*, a bone.) Between bones: applied to muscles, ligaments, &c. which are situated between bones.

INTERPELLA'TUS. (From *interpello*, to interrupt.) A term applied by Paracelsus to a disease attended with irregular or uncertain paroxysms.

INTERPOLA'TI DIES. (From *interpolo*, to renew.) Paracelsus uses this phrase synonymously with intercalary days.

INTERRU'PTUS. Interrupted; broken in its regular form: applied to spikes, leaves, &c.; as the spike of the *Betonica officinalis*. A stem is sometimes interrupted by the intervention of leaves, or smaller sets of flowers.

INTERSCAPU'LIUM. (*um, i.* n.; from *inter*, between, and *scapula*, the shoulder-blade.) 1. The spine of the scapula. — *Bartholin.*

2. The fossa on each side of the spine of the scapula. — *Vander Linden.*

INTERSE'PTUM. (*um, i.* n.; from *inter*, between, and *septum*, an inclosure.) The uvula, or the septum narium.

INTERSPINA'LIS. (From *inter*, between, and *spina*, the spine.) Muscles, nerves, &c. are so named which are situated between the processes of the spine.

INTERSPINALES. The portions of muscle between the spinous processes of the neck, back, and loins, distinguished by the names of *interspinales colli, dorsi, et lumborum*. Those which connect the processes of the back and loins are rather small tendons than muscles: they draw these processes nearer to each other.

INTERSTI'TIAL. (From *intersto*, to stand between.) Applied to a substance which is situated in the interstices of an organ, or to an action which takes place in those interstices. As *interstitial matter* — *interstitial absorption*, *&c.*

I'NTERTRANSVERSA'LES. Four distinct small bundles of muscular fibres which fill up the spaces between the transverse processes of the vertebræ of the loins, and serve to draw them towards each other.

INTERTRI'GO. (*o, inis.* f.; from *inter*, between, and *tero*, to rub.) An excoriation, or galling of the skin, about the anus, groins, axilla, or other parts of the body, attended with inflammation and moisture. It is most commonly produced by the irritation of the urine, or from riding; in infants it often arises without any external cause. It is relieved by the liquor plumbi acetatis dilutus, ointment of flowers of zinc, powdered starch, and the compound sarcocolla powder.

INTERVE'RTEBRAL. Situated between the vertebræ.

Intervertebral cartilages. See *Vertebræ.*

Intestinal canal. See *Intestine.*

INTE'STINE. (*Intestinum, i.* n.; from *intus*, within.) The convoluted membranous tube that extends from the stomach to the anus, receives the ingested food, retains it a certain time, mixes with it the bile and pancreatic juice, propels the chyle into the lacteals, and covers the fæces with mucus, is so called. The intestines are situated in the cavity of the abdomen, and are divided into the small and large, which have, besides their size, other circumstances of distinction. The whole length of the intestinal tube in the human subject is about six times that of the body. The small intestine comprises about the upper four fifths of the tube, and the large intestine the remaining fifth.

The *small* intestines are supplied internally with folds, called *valvulæ conniventes*, and have no bands on their external surface. The *large* intestines have no folds internally; are supplied externally with three strong muscular bands, which run parallel upon the surface, and give the intestines a saccated appearance; they have also small fatty appendages, called *appendiculæ epiploicæ*.

The first portion of the intestinal tube, for about the extent of twelve fingers' breadth, is called the *duodenum*: it lies in the epigastric region, makes three turnings, and, between the first and second flexure, receives, by a common opening, the pancreatic duct and the ductus communis choledochus. It is in this portion of the intestines that chylification is chiefly performed. The remaining portion of the small intestines is distinguished by an imaginary division into the jejunum and ileum.

The *jejunum*, which commences where the duodenum ends, is situated in the umbilical region, and is mostly found empty: hence its name. It is every where covered with red vessels, and, about an hour and a half after a meal, with distended lacteals.

The *ileum* occupies the hypogastric region and the pelvis; is of a more pallid colour than the former, and terminates by a transverse opening into the large intestines, which is called the *valve of the ileum, valve of the cæcum, or the valve of Tulpius.*

The beginning of the large intestines is firmly tied down in the right iliac region, and, for the extent of about four fingers' breadth, is called the *cæcum*, having adhering to it a worm-like process, called the *processus cæci vermiformis*, or *appendicula cæci vermiformis*. The great intestine then commences *colon*, ascends towards the liver, passes across the abdomen, under the stomach, to the left side, where it is contorted like the letter *S*, and descends to the pelvis: hence it is divided in this course into the *ascending portion*, the *transverse arch*, and the *sigmoid flexure*. When it has reached the pelvis it is called the *rectum*, whence it proceeds, in a straight line, to the anus.

The intestinal canal is composed of three membranes or coats; a *common* one from the peritonæum, a *muscular coat*, and a *mucous* or *villous coat*, the villi being formed of the fine terminations of arteries and nerves, and the origins of lacteals and lymphatics. The mucous coat is perforated by the ducts of numerous simple glands or follicles, by which it is supplied with mucus. These glands are solitary or in clusters. The former are named *Brunner's glands*, and are most numerous in the duodenum, though they exist throughout the tube; the latter are named *Peyer's glands*, which are found in the jejunum and ileum, but most numerously in the ileum. The intestines are connected with the spine by the mesentery; the duodenum has also a peculiar connecting cellular substance, as have, likewise, the colon and rectum, by means of which the duodenum is firmly accreted to the back, the colon to the kidneys, and the rectum to the os coccygis, and, in women, to the vagina. The remaining portion of the tube floats in the cavity of the abdomen. The arteries of this canal are branches of the *superior* and *inferior mesenteric*, and the *duodenal*. The veins evacuate their blood into the vena portæ.

The nerves are branches of the eighth pair and intercostals. The *lacteal vessels*, which originate principally from the jejunum, proceed to the glands, in the mesentery.

INTESTI'NA. The name given by Cuvier to worms inhabiting the bodies of other animals. See *Animal Kingdom*.

INTOXICATION. (*Intoxicatio*; from *in*, and *toxicum*, a poison.) The effect of an alkoholic liquor taken in excess.

I'NTRAFOLIA'CEOUS. *Intrafoliaceus.* Within the leaves: applied to stipulæ which are above the footstalk, and internal with respect to the leaf; as in *Ficus carica*, and *Morus nigra*.

I'NTROSUSCE'PTION. *Introsusceptio.* (From *intro*, within, and *suscipio*, to receive.) *Intus-susceptio. Invaginatio. Volvulus.* When one portion of intestine slips within another the accident is called *introsusception*. It takes place more frequently near the termination of the ilium than in any other situation. See *Ileac Passion*.

I'NTUS-SUSCE'PTION. (*Intus-susceptio*; from *intus*, within, and *suscipio*, to receive. 1. Synonymous with *introsusception*.

2. Nutrition. The interstitial deposition of particles, by which the existence of living bodies is sustained and their waste supplied.

I'NTYBUS. (*us*, *i.* m.; from *in*, and *tubus*, a tube: so named from the hollowness of its stalk.) See *Cichorium endivia*.

I'NULA. (*a*, *æ.* f.; contracted or corrupted from *helenium*, ἕλενιον, fabled to have sprung from the tears of Helen.) 1. The name of a genus of plants in the Linnæan system. Class, *Syngenesia*; Order, *Polygamia superflua*.

2. The herb elecampane. See *Inula helenium*.

Inula, common. See *Inula helenium*.

INULA CRITHMOIDES. *Caaponga* of the Brazilians; called also, *Trifolia spica*, and *Crithmum marinum non spinosum*. The leaves and young stalks of this plant are pickled for the use of the table; they are gently diuretic.

INULA DYSENTERICA. The systematic name of the lessor inula, or flea-bane; called likewise, *Conyza media*, *Arnica Suedensis*, *Arnica spuria*, and *Conyza*. *Inula — amplexicaulibus, cordato oblongis; caule villoso, paniculato; squamis calycinis, setaceis*, of Linnæus. This indigenous plant was once considered as possessing great anti-dysenteric virtues. The whole herb is to the taste acrid, and, at the same time, rather aromatic. It is now fallen into disuse.

INULA HELENIUM. The systematic name of the common inula, or elecampane, called *Enula campana*, and *Helenium*. *Inula — foliis amplexicaulibus ovatis rugosis subtus tomentosis, calycum squamis ovatis*, of Linnæus. This plant, though a native of Britain, is seldom met with in its wild state, but mostly cultivated. The root, which is the part employed medicinally, in its recent state has a weaker and less grateful smell than when thoroughly dried, and kept for a length of time, by which it is greatly improved; its odour then approaching to that of Florentine orris root. It was formerly in high estimation in dyspepsia, pulmonary affections, and uterine obstructions, but is now fallen into disuse. From the root of this plant Rose first extracted the peculiar vegetable principle called *inulin*. Funke has since given the following as the analysis of elecampane root: — A crystallisable volatile oil; inulin; extractive; acetic acid; a crystallisable resin; gluten; a fibrous matter. See *Inulin*.

I'NULIN. In examining the *Inula helenium*, or *Elecampane*, Rose imagined he discovered a new vegetable product, to which the name of *Inulin* has been given. It is white and pulverulent, like starch. When thrown on red-hot coals, it melts, diffusing a white smoke, with the smell of burning sugar. It yields, on distillation in a retort, all the products furnished by gum. It dissolves readily in hot water; and precipitates almost entirely on cooling, in the form of a white powder; but, before falling down, it gives the liquid a mucilaginous consistence. It precipitates quickly on the addition of alkohol. It is obtained by boiling the root of this plant in four times its weight of water, and leaving the liquid in repose.

INU'STION. (From *in*, and *uro*, to burn.) The operation of a cautery.

INVERECU'NDUM OS. (From *in*, not, and *verecundus*, modest.) An obsolete name of the frontal bone, from its being regarded as the seat of impudence.

INVERMINA'TION. (*Inverminatio*; from *in*, and *vermis* a worm.) Certain diseased states of the intestinal canal give rise to the formation or evolution of entozoary animals, or worms as they are called, the principal varieties of which have been already noticed in the article *entozoa*. Under the present title of *invermination* we shall consider the morbid states occasioned by the presence of these animals.

Worms often inhabit the human intestines without producing any inconvenience. Ascarides have, in many instances, infested the alvine channel for twenty or thirty years without any serious evil, and, for the greater part of the time, been known only to exist there from their being seen in the expelled fæces. When, however, the canal becomes irritated by them, a number of symptoms arise, both locally and in distant parts, so that they may be arranged into primary and secondary; and the latter are either symptomatic or sympathetic.

1. *Primary symptoms* are those which exist in the part where the worms are, and, consequently, are local: these occasion griping pains, more particularly about the navel; the presence of worms eliminated with or without the fæces; fœtid breath; acrid eructations; slimy stools; and inflammation of the bowels.

2. The *secondary symptoms* are, occasional sickness and vomiting, variable and voracious appetite, wasting away of the body, heat and itching about the anus, and a vast number of sympathetic affections; for the most remote parts of the system have been known to afford symptoms from this very frequent source of irritation; the stomach and bowels, when that irritation is caused by worms: there are not merely symptoms, such as headach, vertigo, disturbed dreams, grinding of the teeth during sleep, picking of the nose, tenesmus, paleness of the coun-

tenance, dizziness, &c.; but also the formation of a regular disease, as verminous colic, a remittent fever, a state that stimulates hydrocephalus, convulsion fits, chorea Sancti Viti, peripneumonia, and even hæmorrhages.

The treatment of verminous symptoms and diseases consists in getting rid of the worms, by destroying them, or driving them from the body, and by strengthening the system generally, particularly the alvine canal. Both these intentions may sometimes be pursued simultaneously. A decided vermifuge process is, however, yet a desideratum in medical practice; because worms lie for the most part so low in the bowels, and are so completely involved in viscid mucus, or other slime, that even oil of turpentine, tobacco infusion, and mercurials, which readily enough destroy them out of the body, seldom go directly home to them when within it; and because, also, most of the medicines which are likely to produce this effect have a tendency to weaken the stomach and bowels, and thus render them a fitter habitation for worms.

The bowels should always be kept loose, by which the slime in which the worms burrow is continually passing out of the intestines.

If this bed, that so much favours the generation as well as the growth of the worms, does not pass of by mild aperients, more active ones should be given; for it is necessary to remove it as much as possible, in order to give the anthelmintic medicines a better chance of acting upon the worms.

The list of vermifuges is almost interminable. They may conveniently be divided into two classes: —

1. Those that dislodge and drive away intestinal worms by some mechanical or other external action; as all drastic purges, all oleaginous vermifuges; as oil of olives, beech nuts, castor, and turpentine, sulphur, petroleum, sea salt, tin filings, crude quicksilver, Plenck's grey mucilage of it, the lunar pill of Boerhaave, and the down of the pods of cowhage.

2. Those that destroy them by killing them before they are expelled; as the male fern, hellebore, fœtid hellebore, cavadilla, tansy, savine, rue, dittany, tobacco, worm-seed, the bark of the bulgewater tree, and of the cabbage tree, the spigelias, and Indian scabiosa. Many of these are hardly worth noticing.

The First Class.

The vermifuges, which are *simply purgative*, even the most active and drastic, seem to have little other effect than that of clearing away the slime in which most of the worms are enveloped, and thus exposing their naked and tender bodies to the action of other and more direct anthelmintics. Even aloes and colocynth, which unite a bitter principle to a cathartic power, are now well known to be incapable of poisoning them. They are, nevertheless, very useful, and especially with children, whose bowels are very much loaded with mucus.

Little or no dependence can be placed on the oily vermifuges, except the *terebinthinate*: these have been found highly serviceable. The vermicular ascarides rarely resist the oil of turpentine, when given in a dose sufficiently large to reach the rectum, or when injected into the rectum, and they have been discharged in great abundance. The best injections are these: —

℞. Terebinthinæ venetæ, saponis mollis, singulorum, ℥ss.; aquæ puræ, f. ℥viij.; misce pro enemate.

℞. Olei terebinthinæ rectificati, f. ℥j.; decocti avenæ tenuioris, f. ℥viij.: misce pro enemate.

These are for adults; and one or other may be administered every or every other day, with directions to retain them as long as possible.

The rectified oil of turpentine is given, in the dose of from half a drachm to a tea-spoonful, to a child ten years old, and from half an ounce to an ounce to an adult, in any convenient vehicle, as milk, gruel, peppermint, or any distilled water, once or twice a week, according as may be found necessary. Much larger doses have been found necessary, and more frequently repeated, when the stomach and bowels have been accustomed to spirituous liquors. In delicate and weak habits the above dose will sit uneasy on the stomach, and very much disquiet the system. In most cases it produces a slight vertigo, which soon passes by; and in some it acts like a glass of strong spirit, and produces a state very like to intoxication. These effects require always a diminution of the dose when repeated. There are several other terebinthinate preparations which have been in vogue as vermifuges, and which have been supposed to agree better with some stomachs; as the *Hungarian balsam*, and *oleum templinum*. Less valuable are some empyreumatic oils; as the *petroleum*, and animal oil from horns.

Sulphur: the *sulphureous* Harrogate *waters*. These act in the same way as, but are much less efficacious remedies than, oil of turpentine.

Tin filings. On what the anthelmintic virtues of these depend is yet undetermined: most probably their operation is mechanical. They have been given principally against the tape-worm, but seldom with benefit. The dose is from one scruple to two drachms or more in syrup.

Crude quicksilver most probably proves a vermifuge in the same way; though its oxides, the gray mucilage of Plenck, and the lunar pill of Boerhaave, have, perhaps, some peculiar property which kills the worms.

Cowhage, the *Dolichos pruriens* of Linnæus, is, of all those means which act mechanically on worms, the most powerful. It is the prickly and pungent down of the pod, which is scraped off, and mixed with any syrup. It is a common remedy, and an excellent one, in the West Indies, but seldom administered in this country.

The Second Class.

Almost all the vermifuges of this class possess great pungency and bitterness; and it is the former principle, and not the bitterness, which is the active part.

The *semen santonici*, or worm-seed. These are the produce of the *Artemisia santonica* of Linnæus, and are said to be a very good vermifuge in hot climates: those, however, which are found in our shops do not maintain tha

character. Of nearly the same efficacy is the *Juniperus sabina*, the *Tanacetum vulgare*, the *Origanum dictamnus*, and *Chænopodium anthelminticum*, now almost forgotten as vermifuges.

Assafœtida was once esteemed a powerful destroyer of worms; and it is probable that, near its native place, this juice may be more efficacious than in this country, where its anthelmintic powers are not believed.

Hellebore, helleboraster, and the cevadilla, a species of veratrum, are all drastic purgatives and pungent bitters. Although formerly esteemed, they are never thought of in this country as vermifuges.

Tobacco, like the last, is so powerful in its operation as never to be selected.

Gamboge is believed to possess some specific power in addition to its purgative; for it is generally given with calomel and scammony to expel tape-worms.

Besides these, there are some anthelmintics which are supposed to possess a specific power: viz.

The *Areca oleracea*, or cabbage-tree palm. The bark of the shoots of this is made into an infusion, decoction, syrup, and powder. It has a mucilaginous and sweetish taste, and an agreeable smell. In a large dose it vomits and purges violently, but does not remove worms from operating in this way, but in small doses which sit easy upon the stomach; from which it would appear that the anthelmintic power is a specific one.

The *Andira inermis*, or cabbage tree. This is very similar to the former, and is employed in the same way.

The *Aspidium filix mas*, or male fern. This is much esteemed in the cure of tape-worm. Madam Noufer's mode of expelling the tape-worm, which seldom failed, is detailed under the article *Aspidium*.

The *Spigelia anthelmia*, and *Marylandica*, or Indian pinks, or worm grasses. These are acrid narcotics, and, though esteemed in their native places, are seldom given in this country.

The *Fucus helminthocorton*, or Corsican worm weed. This at one time got into great repute as a vermifuge, but has now fallen into neglect.

Mare's-milk. This has been given in Germany with great alleged success in expelling tape-worm. The dose is half a pint night and morning. No reliance is placed on this remedy in England.

A great variety of medicines have been at different times in vogue as vermifuges, which have now lost all reputation. These are noticed under their respective heads.

INVE'RSIO. Inversion. The turning of any thing inside out, or the state of any thing turned inside out.

Inversion of the uterus. See *Uterus, inversion of*.

INVOLUCE'LLUM. A partial involucrum. See *Involucrum*.

INVOLU'CRUM. (*um*, *i*. n.; from *in*, and *volvo*, to wrap up: because parts are inclosed by it.) A wrapper. I. In *Anatomy*.

1. A name of the pericardium.

2. A membrane which covers any part.

II. In *Botany*, a leafy calyx, remote from the flower: applied particularly to umbelliferous plants. From the part of the umbel in which it is placed, the involucrum is called,

1. *Universal*, being at the base of the whole umbel; as in *Coriandrum sativum*, *Scandix cerefolium*, and *Cornus mascula*.

2. *Partial*, called *involucellum*, at the bottom of each umbellula, or partial stalk of the umbel; as in *Daucus carota*.

3. *Dimidiate*, surrounding the middle of the stalk at the base of the umbel; as in *Æthusa cynapium*.

From the number of the involucre leaves,

4. *Monophyllous*; as in *Coriander* and *Hermas*.

5. *Triphyllous*; as in *Bupleurum junceum*.

6. *Polyphyllous*; as in *Bunium bulbocastanum*, and *Sium*.

7. *Pinnatifid*; as in *Daucus carota*, and *Sium angustifolium*.

8. *Reflex*, turned back; as in *Selinum monnieri*.

Solitary flowers rarely have an involucrum; yet it is found in the anemones.

INVOLU'TUS. Involute: rolled inwards. Applied to leaves, petals, &c., when their margins are turned inward; as in the leaves of *Pinguicula*, and petals of *Anethum*, *Pastinaca*, and *Bupleurum*.

I'ODATE. (*Iodas*, *atis*. f.) A compound of the iodic acid with a base.

Io'DES. (Ιωδες; from ιος, verdigris.) Æruginous; of the colour of verdigris. Applied by Hippocrates to green bilious matters ejected by vomiting — εμετοι ιωδεες.

IO'DIC ACID. *Acidum iodicum*. Oxiodic acid. A compound of iodine and oxygen. When iodine is brought into contact with protoxide of chlorine, the chlorine of the protoxide combines with one portion of the iodine, and its oxygen with another, whence a chloride of iodine and iodic acid result. The chloride, which is volatile, is driven off by heat, and the iodic acid remains. It is white and semi-transparent, of a strong acid and astringent taste, and destitute of smell. It forms salts, called *iodates*.

I'ODIDE. *Iode*. *Iodure*. A compound of iodine with a simple body. Several of the iodides have been lately introduced into medicine.

Iodide of arsenic. This is strongly poisonous, and has only been used externally in some cases of herpes, in the form of a pomade, made with gr. iij. of the iodide to ʒj. of lard.

Iodide of barium. This has only been used externally to scrofulous swellings. An ointment may be made with gr. iv. of the iodide to ʒj. of lard.

Iodide of iron. See *Ferri iodidum*.

Iodide of sulphur. This has been employed by M. Biett in some tuberculous affections of the skin. An ointment is made, 5 parts of the iodide to 96 of lard, or 8 parts of iodide to 144 of lard.

Iodide of zinc. Dr. Ure recommends this

as a powerful external remedy for scrofulous tumours. The proportion for an ointment is a drachm of the iodide to an ounce of lard. Some prefer the iodide of zinc to the hydriodate of potash in such cases.

Iodi'na. See *Iodine.*

I'ODINE. (*Iodium, ii.* n.; from ιωδες, violet coloured.) *Iodinium.* A simple body, accidentally discovered, in 1812, by De Courtois, a manufacturer of saltpetre at Paris. In his processes for procuring soda from the ashes of sea-weeds he found the metallic vessels much corroded; and, in searching for the cause of the corrosion, he made this important discovery.

Iodine derived its first illustration from Clement and Desormes, in their memoir, read at a meeting of the Institute.

In 1813 Sir H. Davy happened to be on a visit to Paris, receiving, amid the political convulsions of France, the tranquil homage due to his genius. "When Clement showed iodine to me," says Sir H. Davy, "he believed that the hydriodic acid was muriatic acid; and Gay Lussac, after his early experiments, made originally with Clement, formed the same opinion, and *maintained* it, when I *first* stated to him my belief that it was a new and peculiar acid, and that iodine was a substance analogous, in its chemical relations, to chlorine."

Iodine has been found in various marine productions: as Fucus cartilagineus, membranaceous, filamentosus, rubens, nodosus, serratus, siliquosus, palmatus, filum, digitatus, saccharinus, vesiculosus: the Ulva umbilicalis, pavonia, and linza; Spongia, Gorgonia, Doris, Venus, Ostrea, &c.

Iodine has been lately ascertained to exist in the mineral kingdom by M. Vauquelin, who found it in a Mexican mineral labelled *virgin silver in serpentine.* It was contained in this mineral in the proportion of 18·5 parts in 100.

It is from the incinerated sea-weed, or kelp, that iodine in quantities is to be obtained. Dr. Wollaston first communicated a precise formula for extracting it. Dissolve the soluble part of kelp in water. Concentrate the liquid by evaporation, and separate all the crystals that can be obtained. Pour the remaining liquid into a clean vessel, and mix with it an excess of sulphuric acid. Boil this liquid for some time. Sulphur is precipitated, and muriatic acid driven off. Decant off the clear liquid, and strain it through wool. Put it into a small flask, and mix it with as much black oxide of manganese as we used before of sulphuric acid. Apply to the top of the flask a glass tube, shut at one end. Then heat the mixture in the flask. The iodine sublimes into the glass tube. None can be obtained from sea-water.

Iodine is a solid, of a greyish-black colour and metallic lustre. It is often in scales similar to those of micaceous iron ore, sometimes in rhomboidal plates, very large and very brilliant. Its fracture is lamellated, and it is soft and friable to the touch. Its taste is very acrid, though it be very sparingly soluble in water. It gives a deep brown stain to the skin, which soon vanishes by evaporation. In odour, and power of destroying vegetable colours, it resembles very dilute aqueous chlorine. It dissolves in 7000 parts of water. The solution is of an orange-yellow colour, and in small quantity tinges raw starch of a purple hue.

It melts at 227° F., and is volatilised, under the common pressure of the atmosphere, at the temperature of 350°. The vapour is of a rich violet colour. It evaporates pretty quickly at ordinary temperatures. Boiling water aids its sublimation, as is shown in the above process of extraction.

Iodine forms with sulphur a feeble compound, of a greyish-black colour, radiated like sulphuret of antimony. When it is distilled with water iodine separates.

Iodine and phosphorus combine with great rapidity at common temperatures, producing heat without light. From the presence of a little moisture small quantities of hydriodic acid gas are exhaled.

Oxygen expels iodine from both sulphur and phosphorus.

Oxygen unites with iodine, forming iodic acid. See *Iodic acid.*

Hydrogen, whether dry or moist, does not seem to have any action on iodine at ordinary temperatures; but, if we expose a mixture of hydrogen and iodine to a red heat in a tube, they unite together, and hydriodic acid is produced. See *Hydriodic acid.*

Charcoal has no action upon iodine, either at a high or low temperature. Several of the common metals, on the contrary, as zinc, iron, tin, mercury, attack it readily, even at a low temperature, provided they be in a divided state.

The compound of iodine and zinc, or iodide of zinc, is white.

Iron is acted on by iodine in the same way as zinc; and a brown iodide results, which is fusible at a red heat.

The iodide of tin is very fusible.

Antimony presents, with iodine, the same phenomena as tin.

The iodides of lead, copper, bismuth, silver, and mercury are insoluble in water, while the iodides of the very oxidisable metals are soluble in that liquid.

There are two iodides of mercury; the one yellow, the other red; both are fusible and volatile, the yellow or prot-iodide contains one half less iodine than the deut-iodide. The latter, when crystallised, is of a bright crimson colour. See *Hydrargyri iodidum.*

From all the above recited facts it is concluded that iodine is a simple body. In its specific gravity, lustre, and magnitude of its prime equivalent, it resembles the metals; but, in all its chemical agencies, it is analogous to oxygen and chlorine.

Iodine exerts a very powerful action on the animal economy. In an overdose it is a violent poison. Orfila swallowed 6 grains, and was immediately affected with heat, constriction of the throat, nausea, eructation, salivation, and cardialgia. In ten minutes he had copious bilious vomitings, and slight colic pains. Hi

pulse rose from 70 to about 90 beats in the minute. By swallowing large quantities of mucilage, and by emollient clysters, he recovered, and felt nothing next day but slight fatigue. About 70 or 80 grains proved a fatal dose to dogs. They usually died on the fourth or fifth day.

Iodine, properly administered, is a medicine of great efficacy. Its most obvious action is that of stimulating the capillary circulation throughout the system, and increasing the activity of the absorbents. Hence it is particularly adapted to scrofulous and other chronic enlargements of the glands, and to enlargements of the abdominal viscera. It has been regarded as a specific in scrofula, but on very insufficient grounds, since its general action above alluded to is quite sufficient to explain its beneficial effects in many strumous affections. It has been found useful as an emmenagogue; and it frequently produces good effects in syphilis, acting apparently in a manner somewhat analogous to mercury. It has been used with various success in schirrus, chronic enlargements of the joints, periostitis, chronic hydrocephalus, and many other cases. It is used internally and externally in the form of tincture and ointment. See *Tinctura iodinii* and *Unguentum iodinii*. It is less frequently given alone, however, than in combination with the hydriodate of potash, which renders it more easily soluble in water. The common dose of iodine is from gr. $\frac{1}{4}$ to gr. i. twice or thrice a day.

Iodo-nitric acid. See *Iodo-sulphuric acid.*

Iodo-phosphoric acid. See *Iodo-sulphuric acid.*

I'ODOSULPHU'RIC ACID. *Acidum iodosulphuricum.* When sulphuric acid is poured, drop by drop, into a concentrated and hot aqueous solution of iodic acid, there immediately results a precipitate of iodosulphuric acid, possessed of peculiar properties. Analogous acids are produced by the action of the nitric and phosphoric acids on iodine. These acids act powerfully on the metals, and dissolve gold and platina.

I'ODOUS ACID. *Acidum iodosum.* The acid obtained by distilling equal parts of chlorate of potash and iodine.

IO'NTHUS. (*us, i.* m. Ιονθος.) 1. The down on the face which precedes the beard.

2. A small tubercle on the face; a variety of acne. See *Acne.* Various derivations have been given of this word, as from ανθος, a flower, in allusion to the age of the subject; from ονθος, dung, because the pimple defiles the face, — a very improbable derivation given by Blancard; others have derived it, as improbably, from ιον, a violet, and ανθος, a flower; the *Etymologicon Magnum* derives it απο τοῦ εις τα ανω ιεναι την τριχα ὡς ανθος βλαστανουσαν.

IO'TACI'SMUS. (*us, i.* m.; from ιωτα, the Greek letter *ι.*) A defect in the organs of speech, which renders a person incapable of pronouncing the letter *J* or *G* soft.

IPECACUA'NHA. (*a, æ.* f.) Ipecacuan. According to Decandolle, the term ipecacuanha, in South America, implies generally *vomiting root;* and, therefore, it is applied to the roots of very different species of plants. The plant, however, which we have described from Professor Brotero's description, published in the sixth volume of the Linnæan Transactions, and the Psycotria *emetica*, which Mutis says yields the Peruvian grey ipecacuan, are the plants that yield the varieties of the root brought to this country. The title of ipecacuan is generally given to the roots of the following plants, besides those mentioned in South America: Viola *parviflora*, V. *Ipecacuanha*, V. *Calceolaria*, Cynanchum *Ipecacuanha*, C. *tomentosum*, and Asclepias *currassavica;* and sometimes to Euphorbia *Ipecacuanha*, Dorstenia *Brasiliensis*, and D. *arifolia*. In St. Domingo several species of Ruellia, which provoke vomiting, are named false ipecacuan. *Nouveau Dictionnaire d' Histoire Naturelle*, art. *Ipecacuanha.* Dr. A. T. Thomson has found very little of the white ipecacuan in any of the specimens of the ipecacuan of the shops which he has examined. Both the grey and the brown varieties of the root are brought to this country, packed in bales, from Rio Janeiro. Both are in short, wrinkled, variously bent and contorted pieces, which break with a resinous fracture. The grey is about the thickness of a small quill, full of knots and deep circular fissures, that nearly reach down to a white woody vascular cord that runs through the heart of each piece; the external part is compact, brittle, and looks smooth; the brown is smaller, more wrinkled, of a blackish brown colour on the outside, and white within: the white is woody, and has no wrinkles.

In choosing ipecacuanha, the larger roots, which are compact, and break with a resinous fracture, having a whitish grey, somewhat semi-transparent appearance in the inside of the cortical part, with a pale straw-coloured medullary fibre, are to be preferred.

It is impossible to ascertain at what period the effects of this root were first known in America, where the Indians used it as an emetic before their connexion with Europeans: but although Piso described its uses fully, in his Natural History of Brazil, so early as 1618, and brought the root to Europe, yet it was scarcely used by Europeans before the year 1700. It was carried to France by a French physician, of the name of Le Gras, in 1672; but it did not attract general notice until it was, a third time, introduced by a French merchant, of the name of Grenier, who brought 150 lbs. of it from Spain in 1686, with which trials were made at the Hotel Dieu. Helvetius first made known its use in dysentery, and was rewarded by Louis XIV. with 1000*l.* sterling for the discovery.

The entire root is inodorous, but the powder has a faint disagreeable odour. The taste is bitter, subacrid, and extremely nauseous. Water at 212° takes up rather more than eight parts in twenty of ipecacuan, but decoction destroys the emetic power of the root: alkohol takes up four parts, and proof spirit six and a half; and the alkoholic is more emetic than the aqueous solution. Various analyses of ipecacuanha have been made in order to detect its emetic principle, but the most satisfactory is that of MM. Magendie and Pelletier. After digesting the powdered root in double its weight of ether, in

order to separate any fatty matter, the remainder was treated with four times its weight of highly rectified alkohol, until it ceased to become coloured even when aided by heat. These tinctures, after being allowed to cool, and to deposit some flakes of wax which were separated by filtration, were then evaporated to dryness, and the residue redissolved in water: acetate of lead being added to the watery infusion, a precipitate formed, which, when edulcorated and diffused through water, was exposed to a current of sulphuretted hydrogen gas to separate the lead; after which the liquid, being filtered and evaporated to dryness, afforded a substance of a peculiar nature, which they termed *Emetine*, and on which it was experimentally demonstrated that the emetic properties of the root depend. *Emetine*, when pure, is of a reddish brown colour, solid, and pulverulent, nearly inodorous, and has a slightly bitter, acrid, but not nauseous taste. When exposed to a heat stronger than that of boiling water, it is decomposed, furnishing water, carbonic acid, some oil, and acetic acid, charcoal being left. It is little soluble in water, and does not deliquesce in a moist atmosphere. It is soluble in alkohol, but not in ether. To detail the action of other chemical agents on this body it is here unnecessary; the results are sufficient to characterise it as a substance *sui generis*. Besides emetine, ipecacuanha has been found, by the experiments of the above chemists, to contain oil, wax, gum, starch, and lignin.

The medicinal value of ipecacuanha depends, undoubtedly, on the quantity of emetine it contains; and this varies in the three varieties of the root found in the shops. MM. Magendie and Pelletier obtained 16 parts of it in 100 of the cortical part of brown ipecacuanha, the root of the psycotria *emetica* of Mutis; 14 in 100 of the gray ipecacuanha, the root of the callicocca *ipecacuanha*; and 5 only in 100 of the white ipecacuanha, the root of the viola *emetica*. The woody pith even of the brown variety contains very little emetine, and hence it should be separated in reducing the root to the form of powder.

Experiments made with emetine on animals prove that it is emetic and purgative, in doses of half a grain, and exerts a specific action on the lungs and mucous membrane of the intestinal canal, and has also narcotic properties: that it may be employed instead of ipecacuanha in every case in which this medicine is useful, the dose being more easily regulated, and the effects more certain. When taken in an overdose its action can be instantly paralysed by decoction of galls. These experiments are at variance with those of Dr. Irvine, which led him to conclude that the watery solution of ipecacuan is more emetic than the alcoholic, the reverse being found to be the case.

The powder of ipecacuanha is apt to become inert by keeping; and therefore it should be preserved in small phials, well corked, and not exposed to the light. Long-continued boiling also renders it inert.

Ipecacuanha, when administered in large doses, is emetic; in smaller ones diaphoretic and expectorant; and in still smaller doses it acts as a stomachic, stimulating and giving energy to the digestive organs. As an emetic it is mild, safe, and certain in its operation; but it is a mistake that, when given in larger doses than are necessary, it does not operate more violently, but only in a shorter space of time. It does not act so quickly as many other emetic substances; but it evacuates, completely, the contents of the stomach, and does not so much weaken it as antimonial emetics. It is given at the commencement of continued fevers, the progress of which is sometimes cut short by its operation; and it is, also, frequently found to stop the paroxysm of an intermittent, when given immediately before the accession of the cold stage. At the commencement of inflammation of the pharynx, larynx, and trachea, when the inflammation does not run very high, in cynanche tonsillaris, purulent ophthalmy, abscess, and every case in which it is necessary to evacuate the stomach, or to increase the energy of the absorbent system by full vomiting, ipecacuan has been found useful. As an emetic, however, it is contraindicated when there is any reason for suspecting inflammation of the encephalon, passive hæmorrhage, or hernia; and in the advanced stage of typhus fevers, when the pulse is feeble, and the strength much diminished; but in these instances all emetics are hurtful. In doses sufficient to excite nausea, without producing vomiting, ipecacuan is given with excellent effects in dysentery and obstinate diarrhœa; in which cases its efficacy seems to arise in a great degree from the nausea, which is kept up by the repetition of the small doses, diminishing the arterial excitement, and determining to the surface; and partly, also, as Cullen supposed, from its producing a steady determination of the peristaltic motion of the intestines downwards. Perhaps, also, to these first-mentioned effects of the nausea may be attributed much of the benefit which results from the use of ipecacuan in spasmodic asthma, dyspnœa, pertussis, and epilepsy. In the first of these diseases its emetic power is taken advantage of to relieve the paroxysm, after which it is given in repeated small doses to prevent its return. In nauseating doses, also, owing to the nausea lessening the force of the circulation, it has been employed with the best success in uterine and pulmonary hæmorrhages. As a sudorific, it is used in acute rheumatism, arthritic affections, dropsy, and other diseases in which sweating is necessary. It is generally given, in these cases, in combination with opium and neutral salts, according to the mode introduced by Dover (see *Pulvis ipecacuanhæ compositus*). But we have found it in combination with opium alone, in a larger proportion, more efficacious, particularly in rheumatism. Its expectorant powers have been found exceedingly useful in catarrhal affections, pneumonia after bleeding, and in the early stage of phthisis, in which its diaphoretic effect is also beneficial.

The emetic operation of ipecacuan is quickened by combining it with tartarised antimony: and, on the contrary, it is counteracted by opium, by vegetable infusions containing tannin,

and by vegetable acids. Opium, however, is rendered less narcotic when combined with ipecacuan, although its power of allaying pain is not diminished, while the sudorific effect of the ipecacuan is much augmented by the combination. We do not, however, agree in opinion with those who think, that it is to be relied upon as an antidote against the deleterious effects of opium; its emetic effect being too slow, and checked by the opium. The infusion of nutgalls is the only certain and powerful antidote for an overdose of ipecacuan, instantly rendering it inert. Idiosyncracy occasions some persons to be affected with the most distressing sensation of suffocation, by the effluvia of this root.

Ipecacuan is exhibited in substance, and in aqueous and vinous infusions: and, on the continent, a syrup of it is used for children. The dose of the powder to produce full vomiting, is from grs. xv. to ℥ss.; and of the aqueous infusion, which is made by macerating for an hour ℥ij. of the powdered root in f℥vj. of boiling water, and filtering, f℥j. or f℥jss. may be given every half hour till it excite vomiting. The emetic effect is continued, and rendered easier to the patient, by drinking, in the intervals of vomiting, large draughts of tepid water. For producing the other effects of ipecacuan, it is given in doses of one, two, or three grains, generally in the form of pills, and repeated every four or five hours: but although its sudorific effect, when begun, is aided and kept up by the use of warms fluids, yet these must not be drank soon after the dose has been taken.

Officinal preparations. *Pulvis ipecacuanhæ compositus*, L. D. *Vinum ipecacuanhæ*, L. E. D. — *A. T. Thomson.*

IPOMŒ'A. (*a, æ.* f.; so called by Linnæus from ἰψ, which he unaccountably mistakes for the convolvulus plant, whereas it means a creeping sort of worm that infests and corrodes vines, and ὅμοιος, like. By this appellation he evidently intended to express the close resemblance of *Ipomœa* to the genus *convolvulus*, with which it agrees in habit altogether.) The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Monogynia.*

Ipomœa qua'moclit. *Batata peregrina.* The cathartic potatoe. If about two ounces of the root are eaten at bed-time, they gently open the bowels by morning.

Iqueta'ia. The inhabitants of the Brazils give this name to the *Scrofularia aquatica*, which is there celebrated as a corrector of the ill flavour of senna.

IRACU'NDUS. (From *ira*, anger: so called because it contributes to the expression of anger.) The abductor muscle of the eye.

IRI'DIUM. (*um, ii.* n.; so called from *iris*, the rainbow, on account of the variety of colours exhibited by its salts.) A metal found with another called osmium, in the black powder left after dissolving platinum. See *Platinum.*

I'RIS. (*is, idis.* f.; a rainbow: so called because of the variety of its colours.) I. In *Anatomy*, the septum between the anterior and posterior chambers of the eye, which is perforated in the middle by the pupil. See *Oculus.*

II. In *Botany.* 1. The *flower-de-luce*, from the resemblance of its flowers to the rainbow.

2. The name of a genus of plants in the Linnæan system. Class, *Triandria;* Order, *Monogynia.*

Iris florentina. Florentine iris, or orris. The root of this plant, *Iris — corollis barbatis, caule foliis altiore subbifloro, floribus sessilibus*, of Linnæus, which is indigenous to Italy, in its recent state is extremely acrid, and, when chewed, excites a pungent heat in the mouth, that continues several hours: on being dried, this acrimony is almost wholly dissipated; the taste is slightly bitter, and the smell agreeable, and approaching to that of violets. The fresh root is cathartic, and for this purpose has been employed in dropsies. It is now chiefly used in its dried state, and ranked as a pectoral and expectorant, and hence has a place in the *trochisci amyli* of the pharmacopœias.

Iris, florentine. See *Iris florentina.*

Iris germanica. The systematic name of the common iris, or orris, or flower-de-luce. *Iris nostra.* The fresh roots of this plant, *Iris — corollis barbatis, caule foliis altiori multifloro, floribus inferioribus pedunculatis*, of Linnæus, have a strong disagreeable smell, and an acrid, nauseous taste. They are powerfully cathartic, and are given in dropsical diseases, where such remedies are indicated.

Iris nostra. See *Iris germanica.*

Iris palustris. See *Iris pseudacorus.*

Iris pseuda'corus. The systematic name of the yellow water-flag: called also, *Iris palustris; Gladiolus luteus; Acorus adulterinus*, and *Acorus vulgaris.* This indigenous plant, *Iris — imberbis, foliis ensiformibus, petalis alternis, stigmatibus minoribus*, is common in marshes, and on the banks of rivers. It formerly had a place in the London pharmacopœia, under the name of *Gladiolus luteus.* The root is without smell, but has an acrid styptic taste, and its juice, on being snuffed up the nostrils, produces a burning heat in the nose and mouth, accompanied by a copious discharge from these organs: hence it is recommended both as an errhine and sialagogue. Given internally, when perfectly dry, it possesses considerable astringent power. The expressed juice is said to be an useful application to serpiginous eruptions and scrofulous tumours.

Irish slate. See *Lapis hybernicus.*

IRI'TIS. (*is, idis.* f.; from *iris*, the name of a membrane of the eye. The more proper term is *Iriditis.*) Inflammation of the iris: it produces the symptoms of deep-seated or internal inflammation of the eye. See *Ophthalmitis.*

IRON. *Ferrum.* Of all the metals, there is none which is so copiously and so variously dispersed through nature as iron. In animals, in vegetables, and in all parts of the mineral kingdom, we detect its presence. Mineralogists are not agreed with respect to the existence of native iron, though immense masses of it have been discovered, which could not have been the products of art; but there is much in favour of

the notion that these specimens have been extracted by subterraneous fire. A mass of native iron, of 1600 pounds weight, was found by Pallas, on the river Denisei, in Siberia; and another mass of 300 pounds was found in Paraguay, of which specimens have been distributed every where.

There are a vast variety of iron ores: they may, however, be all arranged under the following genera; namely, sulphurets, carburets, oxides, and salts of iron. The sulphurets of iron form the ores called *pyrites*, of which there are many varieties. Iron in a state of carburet forms *plumbago*. Its combination with oxygen is very abundant, and forms the loadstone, the specular ores, and bloodstones. It is found combined with the carbonic, arsenic, &c. &c.

Properties of iron. — Iron is distinguished from every other metal by its magnetical properties. It is attracted by the magnet, and acquires, under various conditions, the property of attracting other iron. Pure iron is of a whitish grey, or rather bluish colour, very slightly livid; but when polished, it has a great deal of brilliancy. Its texture is either fibrous, fine-grained, or in dense plates. Its specific gravity varies from 7·6 to 7·8. It is the hardest and most elastic of all the metals. It is extremely ductile, and may therefore be drawn into wire as fine as a human hair; it is also more tenacious than any other metal, and yields with facility to pressure. It is extremely infusible, and when not in contact with the fuel, it cannot be melted by the heat which any furnace can excite: it is, however, softened by heat, still preserving its ductility; and when thus softened, different pieces may be united: this constitutes the valuable property of *welding*. It is very dilatable by heat, It is the only metal which takes fire by the collision of flint. Heated in contact with air it becomes oxidised. If intensely and briskly heated, it takes fire with scintillation, and becomes a black oxide. It combines with carbon, and forms what is called *steel*. It combines with phosphorus in a direct and an indirect manner, and unites with sulphur readily by fusion. It decomposes water in the cold slowly, but rapidly when ignited. It decomposes most of the metallic oxides. All acids act upon iron. Very concentrated sulphuric acid has little or no effect upon it, but when diluted it oxidises it rapidly. The nitric acid oxidises it with great vehemence. Muriate of ammonia is decomposed by it. Nitrate of potass detonates very vigorously with it. Iron is likewise dissolved by alkaline sulphurets. It is capable of combining with a number of metals. It does not unite with lead or bismuth, and very feebly with mercury. It detonates by percussion with the oxygenated muriates.

Method of obtaining iron. — The general process by which iron is extracted from its ores, is first to roast them by a strong heat, to expel the sulphur, carbonic acid, and other mineralisers which can be separated by heat. The remaining ore, being reduced to small pieces, is mixed with charcoal, or coke; and is then exposed to an intense heat, in a close furnace, excited by bellows; the oxygen then combines with the carbon, forming carbonic acid gas during the process, and the oxide is reduced to its metallic state.

The metal thus obtained, and called smelted, pig, or cast iron, is far from being pure, always retaining a considerable quantity of carbon and oxygen, as well as several heterogeneous ingredients. According as one or other of these predominates, the property of the metal differs. Where the oxygen is present in a large proportion, the colour of the iron is whitish grey; it is extremely brittle, and its fracture exhibits an appearance of crystallisation: where the carbon exceeds, it is of a dark grey, inclining to blue, or black, and is less brittle. The former is the *white*, the latter the *black crude iron of commerce*. The *grey* is intermediate to both.

To obtain the iron *more pure*, or to free it from the carbon with which it is combined in this state, it must be refined by subjecting it to the operations of melting and forging By the former, in which the metal is kept in fusion for some time, and constantly kneaded and stirred, the carbon and oxygen it contains are partly combined, and the produced carbonic acid gas is expelled: the metal at length becomes viscid and stiff: it is then subjected to the action of a very large hammer, or to the more equal, but less forcible pressure of large rollers, by which the remaining oxide of iron, and other impurities, not consumed by the fusion, are pressed out. The iron is now no longer granular nor crystallised in its texture; it is fibrous, soft, ductile, malleable, and totally infusible. It is termed forged, wrought, or bar iron, and is the metal in a purer state, though far from being absolutely pure.

The compounds of iron are the following: —

I. *Oxides;* of which the existence of two only is well established.

1. *Protoxide.* — This is the base of the native carbonate of iron, and of the sulphate. Its existence was inferred some years ago by Gay Lussac; but it has not yet been obtained in an insulated form. Its salts, particularly when in solution, absorb oxygen from the atmosphere with great rapidity. This protoxide is always formed when metallic iron is put into diluted sulphuric or muriatic acid; and its composition may be determined by collecting and measuring the hydrogen gas which is simultaneously evolved. The composition of this oxide has not been precisely determined. It is composed of eight parts of oxygen united with 27·16 parts of iron according to Berzelius, with 27·8 according to Stromeyer, and with 28·3 according to Gay Lussac.

Protoxide of iron is precipitated from its salts as a white hydrate by pure alkalis, as a white carbonate by alkaline carbonates, and as a white ferrocyanate by ferrocyanate of potash. The two former precipitates when exposed to the air, become first green and then red, and the latter first green and then blue. Infusion of gall produces no change of colour. Sulphuretted hydrogen does not act if the protoxide is united with any of the stronger acids; but alkaline

hydrosulphurets cause a black precipitate of protosulphuret of iron.

2. *Peroxide.* — The peroxide or red oxide is a natural product, known to mineralogists under the name of *red hæmatite*. It may be artificially procured by dissolving iron in nitro-muriatic acid, and adding an alkali. The hydrate of the red oxide subsides, which is of a brownish red colour, and identical in composition with the mineral called *brown hæmatite*. It consists of 40 parts or one equivalent of the peroxide, and 9 parts or one equivalent of water.

Peroxide of iron combines with most of the acids, forming salts, the greater number of which are red. Its presence may be detected by very decisive tests. The pure alkalis precipitate it as a hydrate. Alkaline carbonates have a similar effect, peroxide of iron not forming a permanent salt with carbonic acid. With ferrocyanate of potash it forms Prussian blue. See *Prussian blue*. Sulphocyanate of potash forms with it a deep blood-red, and infusion of galls a black colour. Sulphuretted hydrogen converts the peroxide into protoxide of iron, with deposition of sulphur. Peroxide of iron is not magnetic.

The researches of several chemists, such as Gay Lussac, Berzelius, Bucholz, and Thomson, leave no doubt that the oxygen contained in the blue and red oxides of iron, is in the ratio of one to one and a half. Consequently, the peroxide consists of 28 parts or one equivalent of iron, and 12 parts or an equivalent and a half of oxygen; and its equivalent is 40: hence it is properly a *sesquioxide*.

The *black oxide*, which was long regarded as a protoxide, is now found to be a mixture in variable proportions of the two oxides above described.

II. *Chlorides* of iron; of which there are two.

1. The *protochloride* may be procured by heating to redness, in a glass tube with a very small orifice, the residue which is obtained by evaporating to dryness the green muriate of iron. It is a fixed substance, requiring a red heat for its fusion. It has a greyish variegated colour, a metallic splendour, and a lamellar texture.

2. The *deutochloride* may be formed by the combustion of iron wire in chlorine gas, or by gently heating the green muriate in a glass tube. It is of a light yellowish brown colour, and crystallises in small plates which have an irridescent appearance.

III. For the *iodide* of iron, see *Ferri iodure-tum*.

IV. *Sulphurets* of iron; of which, according to Porrett, there are four, though only two are usually described, his protosulphuret and persulphuret.

V. *Carburets* of iron. These compounds form steel, and probably cast iron, though the latter contains also some other ingredients. Black lead, at least when artificially prepared, is also a carburet of iron. See *Plumbago*.

VI. Iron unites also with *phosphorus* and with *bromine*.

VII. *Salts* of iron. These are noticed under their respective heads.

Medical virtues. — The general medicinal properties of iron, and the several preparations of it, are to constringe the fibres, to quicken the circulation, to promote the different secretions in the remoter parts, and at the same time to repress inordinate discharges into the intestinal tube. By the use of chalybeates, the pulse is very sensibly raised, the colour of the face, though before pale, changes to a florid red; the alvine, urinary, and cuticular excretions are increased.

When given improperly, or to excess, iron produces headach, anxiety, heats the body, and often causes hæmorrhages, or even vomiting, pains in the stomach, spasms, and pains of the bowels.

Iron is given in most cases of debility and relaxation; in passive hæmorrhages; in dyspepsia, hysteria, and chlorosis; in most of the cachexiæ; and it has been recommended by some as a specific in cancer. Where either a preternatural discharge, or suppression of natural secretions, proceeds from a languor or sluggishness of the fluids, and weakness of the solids, this metal, by increasing the motion of the former and the strength of the latter, will suppress the flux, or remove the suppression; but where the circulation is already too quick, the solids too tense and rigid, where there is any stricture, or spasmodic contraction of the vessels, iron, and all the preparations of it, will aggravate both diseases. Iron probably has no action on the body when taken into the stomach, unless it be oxidised; but during its oxidisement hydrogen gas is evolved, and accordingly we find that fœtid eructations and black fæces are considered as proofs of the medicines having taken effect. It can only be exhibited internally in the state of filings, which may be given in doses from five to twenty grains. Iron wire is to be preferred for pharmaceutical preparations, both because it is the most convenient form, and because it is the purest iron.

The medicinal preparations of iron now in use are. —

1. The sesquioxide. See *Ferri sesquioxidum*.
2. The sulphate. See *Ferri sulphas*.
3. Tartarised iron. See *Ferri potassio-tartras*.
4. The solution of alkaline iron. See *Ferri alkalini liquor*.
5. The tincture of the acetate of iron. See *Tinctura ferri acetatis*.
6. The tincture of the muriate of iron. See *Tinctura ferri sesquichloridi*.
7. The tincture of ammoniated iron. See *Tinctura ferri ammoniochloridi*.
8. Steel wine. See *Vinum ferri*.
9. Ammoniated iron. See *Ferri ammonio-chloridum*.
10. The red oxide. See *Oxidum ferri rubrum*.
11. The black oxide. See *Oxydum ferri nigrum*.

IRRITABI'LITY. (*Irritabilitas, atis.* f.; from *irrito*, to provoke.) *Vis insita*, of Haller. *Vis vitalis*, of Gærtner. *Oscillation*, of Boerhaave. *Tonic power*, of Stahl. *Muscular power*, of Bell. *Inherent power*, of Cullen.

The contractility of muscular fibres, or a property *peculiar* to muscles, by which they contract upon the application of certain stimuli, without a consciousness of action. This power may be seen in the tremulous contraction of muscles when lacerated, or when entirely separated from the body in operations. Even when the body is dead to all appearance, and the nervous power is gone, this contractile power remains till the organisation yields, and begins to be dissolved. It is by this inherent power that a cut muscle contracts and leaves a gap, that a cut artery shrinks and grows stiff after death. This irritability of muscles is so far independent of nerves, and so little connected with feeling, which is the province of the nerves, that upon stimulating any muscle by touching it with caustic, or irritating it with a sharp point, or driving the electric spark though it, or exciting with the metallic conductors, as those of silver or zinc, the muscle instantly contracts, although the nerve of that muscle be tied; although the nerve be cut so as to separate the muscle entirely from all connection with the system; although the muscle be separated from the body; although the creature upon which the experiment is performed may have lost all sense of feeling, and have been long apparently dead. Thus, a muscle cut from the limb, trembles and palpitates a long time after; the heart, separated from the body, contracts when irritated; the bowels, when torn from the body, continue their peristaltic motion, so as to roll upon the table, ceasing to answer to stimuli only when they become stiff and cold; and too often, in the human body, the vis insita loses the exciting power of the nerves, and then palsy ensues; or, losing all governance of the nerves, the vis insita, acting without the regulating power, causes partial or general convulsions. Even in vegetables, as in the sensitive plant, this contractile power lives. Thence comes the distinction between the irritability of muscles and the sensibility of nerves: for the *irritability* of muscles survives the animal, as when it is active after death; survives the life of the part, or the feelings of the whole system, as in universal palsy, where the vital motions continue entire and perfect, and where the muscles, though not obedient to the will, are subject to irregular and violent actions; and it survives the connection with the rest of the system, as when animals very tenacious of life are cut into parts: but *sensibility*, the property of the nerves, gives the various modifications of sense, as vision, hearing, and the rest; gives also the general sense of pleasure or pain, and makes the system, according to its various conditions, feel vigorous and healthy, or weary and low. And thus the eye feels, and the skin feels; but their appointed stimuli produce no emotions in these parts; they are sensible, but not irritable. The heart, the intestines, the urinary bladder, and all the muscles of voluntary motion, answer to stimuli with a quick and forcible contraction; and yet they hardly feel the stimuli by which these contractions are produced, or, at least, they do not convey that feeling to the brain. There is no consciousness of present stimulus in those parts which are called into action by the impulse of the nerves, and at the command of the will: so that muscular parts have all the irritability of the system, with but little feeling, and that little owing to the nerves which enter into their substance; while nerves have all the sensibility of the system, but no motion.

The discovery of this singular property belongs to our countryman Glisson; but Baron Haller must be considered as the first who clearly pointed out its existence, and proved it to be the cause of muscular motion.

The laws of irritability, according to Dr. Chrichton, are,—1. After every action in an irritable part, a state of rest, or cessation from motion, must take place before the irritable part can be again incited to action. If, by an act of volition, we throw any of our muscles into action, that action can only be continued for a certain space of time; the muscle becomes relaxed, notwithstanding all our endeavours to the contrary, and remains a certain time in that relaxed state, before it can be again thrown into action. 2. Each irritable part has a certain portion or quantity of the principle of irritability which is natural to it, part of which it loses by action, or from the application of stimuli. 3. By a a process wholly unknown to us, it regains this lost quantity, during its repose, or state of rest. In order to express the different quantities of irritability in any part, we say that it is either more or less redundant, or more or less defective. It becomes redundant in a part when the stimuli which are calculated to act on that part are withdrawn or withheld for a certain length of time, because then no action can take place; while, on the other hand, the application of stimuli causes it to be exhausted, or to be deficient, not only by exciting action, but by some secret influence, the nature of which has not yet been detected; for it is a circumstance extremely deserving of attention, that an irritable part, or body, may be suddenly deprived of its irritability by powerful stimuli, and yet no apparent muscular or vascular action takes place at the time. A certain quantity of spirits taken at once into the stomach, kills almost as instantaneously as lightning does; the same thing may be observed of some poisons, as opium, distilled laurel-water, the juice of the cerbera ahovai, &c. 4. Each irritable part has stimuli which are peculiar to it, and which are intended to support its natural action: thus, blood, which is the stimulus proper to the heart and arteries, if, by any accident, it gets into the stomach, produces sickness or vomiting. If the gall, which is the natural stimulus to the ducts of the liver, the gall-bladder, and the intestines, is by any accident effused into the cavity of the peritonæum, it excites too great action of the vessels of that part, and induces inflammation. The urine does not irritate the tender fabric of the kidneys, ureters, or bladder, except in such a degree as to preserve their healthy action; but if it be effused into the cellular membrane, it brings on such a violent action of the vessels of these parts as to produce gangrene. Such stimuli are called *habitual* stimuli of parts. 5. Each irritable part

differs from the rest in regard to the quantity of irritability which it possesses. This law explains to us the reason of the great diversity which we observe in the action of various irritable parts; thus the muscles of voluntary motion can remain a long time in a state of action, and if it be continued as long as possible, another considerable portion of time is required before they regain the irritability they lost; but the heart and arteries have a more short and sudden action, and their state of rest is equally so. The circular muscles of the intestines have also a quick action and short rest. The urinary bladder does not fully regain the irritability it loses during its contraction for a considerable space of time, the vessels which separate and throw out the menstral discharge, act, in general, for three or four days, and do not regain the irritability they lose for a lunar month. 6. All stimuli produce action in proportion to their irritating powers. As a person approaches his hand to the fire, the action of all the vessels in the skin is increased, and it glows with heat; if the hand be approached still nearer, the action is increased to such an unusual degree as to occasion redness and pain; and if it be continued too long, real inflammation takes place; but if this heat be continued, the part at last loses its irritability, and a sphacelus or gangrene ensues. 7. The action of every stimulus is an inverse ratio to the frequency of its application. A small quantity of spirits taken into the stomach, increases the action of its muscular coat, and also of its various vessels, so that digestion is thereby facilitated. If the same quantity, however, be taken frequently, it loses its effect. In order to produce the same effect as at first, a larger quantity is necessary; and hence the origin of dram-drinking. 8. The more the irritability of a part is accumulated, the more that part is disposed to be acted upon. It is on this account that the activity of all animals, while in perfect health, is much livelier in the morning than at any other part of the day; for, during the night, the irritability of the whole frame, and especially that of the muscles destined for labour, viz. the muscles for voluntary action, is re-accumulated. The same law explains why digestion goes on more rapidly the first hour after food is swallowed than at any other time; and it also accounts for the great danger that accrues to a famished person upon first taking in food. 9. If the stimuli which keep up the action of any irritable body be withdrawn for too great a length of time, that process on which the formation of the principle depends is gradually diminished, and at last entirely destroyed. When the irritability of the system is too quickly exhausted by heat, as happens in some warm climates, the application of cold invigorates the frame, because cold is a mere diminution of the overplus of that stimulus which was causing the rapid consumption of the principle. Under such, or similar circumstances, therefore, cold is a tonic remedy; but if, in a climate naturally cold, a person were to go into a cold bath, and not soon return into a warmer atmosphere, it would destroy life, just in the same manner as many poor people who have no comfortable dwellings, are often destroyed from being too long exposed to the cold in winter. Upon the first application of cold, the irritability is accumulated, and the vascular system therefore is exposed to great action; but, after a certain time, all action is so much diminished, that the process, whatever it be, on which the formation of the irritable principle depends, is entirely lost.

IRRITATION. *Irritatio.* The action of a stimulus on a part endowed with irritability, or the state of a part the irritability of which is excited by a stimulus. The term is applied to the action both of natural and morbid stimuli, but more frequently the latter. It is very often incorrectly used; thus physiologists speak of exciting irritation in a nerve, whereas irritability is conceived to reside only in the *muscular fibre.*

I'SATIS. (*is, is.* f. Ισατις of Dioscorides, and *Isatis*, of Pliny; the derivation of which is unknown.) The name of a genus of plants in the Linnæan system. Class, *Tetradynamia;* Order, *Siliquosa.*

Isatis tinctoria. *Glastum.* The systematic name of the plant used for dyeing, called woad. It is said to be astringent.

I'sca. Ισκα. A sort of fungous excrescence growing on the oak and hazel. The ancients used it as the moderns use the moxa. — *Paulus Ægineta.*

ISCHÆ'MON. (*on, onis.* m.; from ισχω, to restrain, and αἱμα, blood.) Any medicine which restrains bleeding.

ISCHIA'DIC. *Ischiatic.* Appertaining to the ischium.

Ischiadic artery. A branch of the internal iliac, which passes out at the ischiadic foramen, between the puriform and gemelli muscles, in company with the great sciatic nerve. It is distributed within the pelvis to the rectum and the internal obturator, puriform, coccygeal, and levator ani muscles; after its passage out of the pelvis, it is distributed chiefly to the rotator muscles of the thigh. It sends a twig down on the surface of the sciatic nerve.

Ischiadic foramen. See *Innominatum os.*

Ischiadic notch. See *Innominatum os.*

Ischiatic. See *Ischiadic.*

Ischiatic nerve. See *Sacro-sciatic nerve.*

ISCHI'AGRA. (*a, æ.* f.; from ισχιον, the haunch, and αγρα, a seizure.) This name has been given to hip gout, and also to neuralgia of the sacro-sciatic nerve. See *Sciatica.*

I'SCHIAS. (*as, adis.* f. Ισχιας; from ισχιον, the hip.) The hip gout. A rheumatic affection of the hip-joint. See *Rheumatismus.*

Ischiatoce'le. See *Ischiocele.*

I'schio-caverno'sus. Chaussier's name for the *Erector penis.*

ISCHIOCE'LE. (*e, es.* f.; from ισχιον, the hip, and κηλη, a tumour.) A hernia at the ischiadic foramen. See *Hernia.*

Ischio-clitoreana arteria. The branch of the internal pudic, which furnishes the two arteries of the clitoris.

Ischio-clitorianus. The nerve of the clitoris — a branch of the pudic.

Ischio-clitoride'us. The *Erector clitoridis.* — *Dumas.*

Ischio-coccyge'us. The muscle more generally called *coccygeus.*

Ischio-femoralis. Chaussier's name for the *Adductor magnus femoris.*

Ischio-femoro-peroneus. The *biceps femoris.* — *Chaussier.*

Ischio-perinea'lis. The *transversus perinei muscle.* — *Chaussier.*

Ischio-popliti-tibial. The *semi-membranosus* muscle. — *Chaussier.*

Ischio-prætibialis. The *semi-tendinous* muscle. — *Chaussier.*

Ischio-prosta'ticus. A name given by some anatomists to the muscular fibres, otherwise called *Transversus perinei alter.*

Ischio-pubi-femoralis. The *Adductor magnus femoris.* — *Dumas.*

Ischio-pubi-prostaticus. The *Transversus perinæi.* — *Dumas.*

Ischio-trochanteria'ni. The gemelli muscles. — *Chaussier.*

I'SCHIUM. (*um, i.* n.; from *ισχις*, the loin: so named because it is near the loin.) A bone of the pelvis of the fœtus, and a part of the os innominatum of the adult. See *Innominatum os.*

Ischnopho'nia. (*a, æ.* f.; from *ισχνος*, slender, and *φωνη*, the voice.) A tenuity or shrillness of the voice.

Ischure'ticus. (From *ισχουρια*, a suppression of the urine.) Having the power of relieving a suppression of the urine.

ISCHU'RIA. (*a, æ.* f.; from *ισχω*, to restrain, and *ουρον*, the urine.) A retention of urine. When there is a frequent desire of making water, attended with much difficulty in voiding it, the complaint is called a dysury; and when there is a total retention of urine, it is known by the name of an ischury. Both ischuria and dysuria are distinguished into acute, when arising in consequence of inflammation; and chronic, when proceeding from any other cause, such as calculus, &c.

The causes which give rise to these diseases, are an inflammation of the urethra, occasioned either by venereal sores, or by a use of acrid injections, tumour or ulcer of the prostate gland, inflammation of the bladder or kidneys, considerable enlargements of the hæmorrhoidal veins, a lodgment of indurated fæces in the rectum, spasm at the neck of the bladder, the absorption of cantharides applied externally, or taken internally, and excess in drinking either spirituous or vinous liquors; but particles of gravel sticking at the neck of the bladder, or lodging in the urethra, and thereby producing irritation, prove the most frequent cause. Gouty matter falling on the neck of the bladder, will sometimes occasion these complaints.

There are four species of ischuria: —

1. *Ischuria renalis,* coming after a disease of the kidneys, with a troublesome sense of weight or pain in that part.

2. *Ischuria ureterica,* after a disease of the kidneys, with a sense of pain or uneasiness in the course of the ureters.

3. *Ischuria vesicalis,* marked by a frequent desire to make water, with a swelling of the hypogastrium, and pain at the neck of the bladder.

4. *Ischuria urethralis,* marked by a frequent desire to make water, with a swelling of the hypogastrium, and pain of some part of the urethra.

In dysury there is a frequent inclination to make water, attended with a smarting pain, heat, and difficulty in voiding it, together with a sense of fulness in the region of the bladder. The symptoms often vary, however, according to the cause which has given rise to it. If it proceed from a calculus in the kidney or ureter, besides the affections mentioned, it will be accompanied with nausea, vomiting, and acute pains in the loins and regions of the ureter and kidney of the side affected. When a stone in the bladder, or gravel in the urethra, is the cause, an acute pain will be felt at the end of the penis, particularly on voiding the last drops of urine, and the stream of water will either be divided into two, or be discharged in a twisted manner, not unlike a corkscrew. If a scirrhus of the prostate gland has occasioned the suppression or difficulty of urine, a hard indolent tumour, unattended with any acute pain, may readily be felt in the perinæum, or by introducing the finger in ano.

Dysury is seldom attended with much danger, unless, by neglect, it should terminate in a total obstruction. Ischury may always be regarded as a dangerous complaint, when it continues for any length of time, from the great distension and often consequent inflammation which ensue. In those cases where neither a bougie nor a catheter can be introduced, the event, in all probability, will be fatal, as few patients will submit to the only other means of drawing off the urine before a considerable degree of inflammation and tendency to gangrene have taken place.

Isinglass. See *Ichthyocolla.*

ISO'CHRONOS. (From *ισος*, equal, and *χρονος*, time.) Isochronous. Applied to two or more actions which are performed in an equal length of time; thus the pulsations of the arteries throughout the body are isochronous, or very nearly so.

Iso'crates. (From *ισος*, equal, and *κερανυμι*, to mix.) Wine mixed with an equal quantity of water.

Iso'dromus. (From *ισος*, equal, and *δρομος*, a course.) The same as *Isochronos.*

ISOME'RIC. (From *ισος*, equal, and *μερος*, a part.) 1. In *Chemistry;* Berzelius applies this term to compounds which consist of the same components united in the same ratio, and yet differ in their chemical properties. Thus *olefiant gas* and *quadru-carburetted hydrogen gas,* are each composed of six parts by weight of *carbon,* and one of *hydrogen,* or one atom of carbon to one of hydrogen; they are, nevertheless, very distinct substances, and endowed with distinct properties. There is some reason to believe that there are two kinds of isomeric compounds — those in which the constituents are the same and combined in the same ratio, but the equivalents of the substances are different; and those in which the constituents are

the same, and the ratio of their combination the same, and the equivalents of the resulting substance the same. Thus, in the instance above cited, the olefiant gas and the quadru-carburetted hydrogen, each consist of carbon and hydrogen united in the same proportion; but their equivalents are different, for the density of a volume of the former is to that of a volume of the latter as 1 to 2, and their equivalent numbers are respectively 14 and 28. Again, the *cyanic* and *fulminic* acids are thought to consist of *cyanogen* and *oxygen* in the same proportions, and their equivalent numbers are considered the same. The composition of the fulminic acid, however, is still somewhat doubtful; and, on the whole, the existence of the second kind of isomeric compound here mentioned, cannot be considered as fairly established. For the probable explanation of the nature of isomeric compounds, see art. *Carburetted hydrogen, sub fine.*

2. In *Botany;* regular flowers have been called *Isomeric.*

ISO'MERISM. (From ισος, equal, and μερισμος, a portioning out.) The state of an isomeric compound. See *Isomeric.*

Isosta'thmos. Ισοσταθμος. A medicine for a cough used by the Greeks.

Issue. See *Fonticulus.*

I'STHMION. (From ισθμος, a narrow piece of land between two seas.) The fauces, or passage between the mouth and gullet.

Isthmus vieussenii. The ridge surrounding the remains of the foramen ovale, in the right auricle of the human heart.

Itch. See *Scabies.*

Itch, baker's. See *Psoriasis.*

Itch, grocer's. See *Psoriasis.*

Itch, bricklayer's. See *Psoriasis.*

Itinera'rium. (From *iter*, a way.) The catheter; also a staff used in cutting for the stone.

I'va frute'scens. A corymbiferous plant, which produces the Mexican quinquina, celebrated in its native country as a febrifuge.

Iva pecanga. See *Smilax sarsaparilla.*

IVORY. The tusk of the elephant. It is an intermediate substance between bone and horn. The dust is occasionally boiled to form jelly, instead of isinglass, for which it is a bad substitute. In 100 parts there are 24 gelatine, 64 phosphate of lime, and 0·1 carbonate of lime.

Ivy. See *Hedera.*

Ivy, ground. See *Glecoma hederacea.*

Ivy-gum. See *Hedera helix.*

I'XIA. (*a*, *æ.* f.; from ιξος, glue.) 1. A name of the *Carlina gummifera*, from its viscous juice.

2. The name of a genus of plants. Class, *Triandria;* Order, *Monogynia.*

Ixia. Ιξια. A varix.

Ixine. See *Atractylis gummifera.*

J.

JACE'A. (*a*, *æ.* f.) 1. A name given to several herbs, among others to the pansy.

2. The name of a genus of plants in the Linnæan system. Class, *Syngenesia;* Order, *Polygamia frustranea.*

Jaceranta tinga. See *Acorus calamus.*

Jacinthus. See *Hyacinthus.*

Jack-by-the hedge. See *Erysimum alliaria.*

JACOBÆ'A. (*a*, *æ.* f.; named because it was dedicated to St. James, or because it was directed to be gathered about the feast of that saint.) See *Senecio Jacobæa.*

JACTITATION. *Jactitatio.* The constant tossing arising from restlessness in acute diseases.

Jalap. See *Jalapa.*

JALA'PA. (*a*, *æ.* f.; from *Chalapa*, or *Xalapa*, in New Spain, whence it is brought.) Jalap. See *Convolvulus jalapa.*

Jalapium. See *Convolvulus jalapa.*

Jalapa alba. White jalap. See *Convolvulus mecoacan.*

Jaleyrac. A village of Auvergne, where there is a mineral spring containing carbonates of soda and lime.

Jamaica bark. See *Cinchona caribæa.*

Jamaica pepper. See *Myrtus pimenta.*

Ja'mblichi sales. A preparation with sal-ammoniac, some aromatic ingredients, &c., so called from Jamblichus, the inventor.

James's analeptic pills. These are made of equal parts of James's powder, ammoniacum, and the aloes and myrrh pill beat up with tincture of castor.

James's powder. An antimonial medicine, much used in this country. The inventor, a man of great skill, and a regularly bred physician, the author of a Medical Dictionary, called it his *fever powder*, and was so successful in his practice with it, that it obtained very great reputation, which it still in some measure retains. Probably, the success of Dr. James was in great measure owing to his free use of the bark, which he always gave as largely as the stomach would bear, as soon as he had completely evacuated the primæ viæ by the use of his antimonial preparation, with which at first he used to combine some mercurial. His specification, lodged in Chancery, is as follows: "Take antimony, calcine it with a continued

protracted heat, in a flat, unglazed earthen vessel, adding to it from time to time a sufficient quantity of any animal oil and salt, well dephlegmated; then boil it in melted nitre for a considerable time, and separate the powder from the nitre by dissolving it in water." The real recipe has been concealed, and a false one published in its stead. See also *Antimonialis pulvis.*

JA'NITOR. (*or, oris.* m. A door keeper; from *janua*, a gate.) The pylorus, from its being at the entrance of the intestine.

JANUA EMPLASTRUM. A plaster described by Lemery. Betony was a principal ingredient in it.

JANUARII CATAPLASMA. A cataplasm invented by Januarius, and described by Marcellus Empiricus. It was used in diseases of the spleen.

JANITRIX. (Fem. of *Janitor*, a door keeper.) The *vena portæ.*

Japan earth. See *Acacia catechu.*

JAPO'NICA TERRA. (So called from Japan, the place it came from.) See *Acacia catechu.*

JASMINEÆ. A natural family of plants, of which the genus jasminum is the type.

JA'SMINUM. (*um, i.* n.; from the Arabic *jasmen.*) 1. The name of a genus of plants in the Linnæan system. Class, *Diandria;* Order, *Monogynia.*

2. The pharmacopœial name of the jessamine. See *Jasminum officinale.*

JASMINUM OFFICINALE. The systematic name of the jessamine-tree. The flowers of this beautiful plant have a very fragrant smell, and a bitter taste. They afford, by distillation, an essential oil, which has been used as a liniment in paralysis and rheumatism.

JASPACHA'TES. An ancient name of Jaspar agate, which was anciently used in hepatic diseases, dropsies, &c.

JASPER. *Jaspis.* A sub-species of rhomboidal quartz. It was formerly used as an amulet against hæmorrhage, &c.

JA'TROPHA. (*a, æ.* f.; from ιαομαι, to heal, and τρεφω, to nourish.) The name of a genus of plants in the Linnæan system. Class, *Monœcia;* Order, *Monadelphia.* The purging nut or physic nut. The plants of this genus grow in South America and the West Indies.

JATROPHA CURCAS. The systematic name of a plant, the seeds of which resemble the castor-oil seeds, and which is also called, *Aipima coxera, Aipicoca, Ricinus major, Ricinoides, Pineus purgans, Pinhones indici, Faba cathartica, Nux cathartica, Nux Americana,* and *Nux barbadensis.* The seed or nut is oblong and black, the produce of the *Jatropha — foliis cordatis angulatis,* of Linnæus. It affords a quantity of oil, which is given, in many places, as the castor-oil is in this country, to which it is very nearly allied. The seeds of the *Jatropha multifida* are of an oval and triangular shape, of a pale brown colour, are called purging-nuts, and give out a similar oil.

JATROPHA ELASTICA. The juice of this plant affords an elastic gum. See *Caoutchouc.*

JATROPHA MANIHOT. This is the plant which affords the Cassada root; called also, *Cassada, Cacavi, Cassave, Cassava, Pain de Madagascar, Ricinus minor, Maniot, Yucca, Manibar, Aipi, Aipima coxera, Aipipoca,* and *Janipha.* The leaves are boiled, and eaten as we do spinach. The root abounds with a milky juice, and every part, when raw, is a strong poison. It is remarkable that the poisonous quality is destroyed by heat: hence the juice is boiled with meat, pepper, &c., into a wholesome soup, and what remains after expressing the juice, is formed into cakes or meal.

Cassada roots yield a great quantity of starch, called tapioca, exported in little lumps by the Brazilians, and now well-known to us as a diet for sick and weakly persons.

Jaundice. See *Icterus.*

JECORA'RIA. (From *jecur*, the liver: so named from its supposed efficacy in diseases of the liver.) 1. The name of a plant. See *Marchantia polymorpha.*

2. An epithet of the basilic vein, because it was usually opened in diseases of the liver.

JECTIGA'TIO. A name given by Van Helmont to a species of epilepsy.

JE'CUR. (*ur, oris,* or *jecinoris.* neut.) The liver. See *Liver.*

JECUR UTERINUM. The placenta has been thus called, from a supposed similitude of its office with that of the liver.

JEJU'NUM. (*um, i.* n.; from *jejunus*, hungry or empty.) *Jejunum intestinum.* The second portion of the small intestines, so called because it is generally found empty in the dead body. See *Intestine.*

Jelly. See *Gelatine.*

Jerusalem cowslips. See *Pulmonaria.*

Jerusalem oak. See *Chenopodium botrys.*

Jerusalem sage. See *Pulmonaria officinalis.*

Jessamine. See *Jasminum.*

JESUITA'NUS CORTEX. (From *jesuita*, a jesuit.) A name of the Peruvian bark, because it was first introduced into Europe by Cardinal de Lugo, a jesuit. See *Cinchona.*

Jesuiticus cortex. See *Cinchona.*

Jesuit's bark. See *Cinchona.*

JESUIT'S DROPS. *Balsamum polychrestum. Elixir venereum.* Composed of guiac, peruvian balsam, and sarsaparilla.

Jew's ears. See *Peziza auricula.*

Jew's pitch. See *Bitumen judaicum.*

Joint. See *Articulus,*

Jointed. See *Articulatus.*

Jointed leaf. See *Articulatus.*

JUDÆI COMPOSITIO. An application consisting of lime, nitre, and urine, recommended by Celsus against gangrene.

JUDÆI EMPLASTRUM. The name of two plasters, one recommended by Celsus for a broken head, and the other by Aëtius as a detergent and incarnative.

Judaicus lapis. See *Lapis judaicus.*

JUDICATO'RII DIES. Critical days. See *Critical days.*

JUGA'LIS. (From *jugum*, a yoke.) Jugal: appertaining to the cheek or os jugale.

JUGALE OS. (So called from its resemblance; or because it is articulated to the bone of the upper jaw, like a yoke.) *Os male. Os zygomaticum.* The cheek-bone. The ossa malarum

are the prominent square bones which form the upper part of the cheeks. They are situated close under the eyes, and make part of the orbit. Each of these bones has three surfaces to be considered. One of these is exterior and somewhat convex. The second is superior and concave, serving to form the lower and lateral parts of the orbit. The third, which is posterior, is very unequal and concave, for the lodgment of the lower part of the temporal muscle. Each of these bones may be described as having four processes, formed by their four angles. Two of these may be called *orbitar* processes. The superior one is connected with the orbitar process of the os frontis; and the inferior one with the malar process of the maxillary bone. The third is connected with the temporal process of the sphenoid bone; and the fourth forms a bony arch, by its connection with the zygomatic process of the temporal bone. In infants, these bones are entire and completely ossified.

Jugalis sutura. The *sagittal* suture, and also the *zygomatic* suture, has been so called.

Jugame'ntum. The cheek-bone.

JU'GLANS. (*ans, andis.* f.; *quasi Jovis glans*, Jupiter's nut, from its excellence.) 1. The name of a genus of plants in the Linnæan system. Class, *Monœcia;* Order, *Polyandria.* The walnut tree.

2. The pharmacopœial name of the walnut. See *Juglans regia.*

Juglans regia. The systematic name of the walnut tree. The tree which bears the walnut is the *Juglans —foliolis ovalibus glabris subserratis subæqualibus,* of Linnæus. It is a native of Persia, but cultivated in this country. The unripe fruit, which has an astringent bitterish taste, and has been long employed as a pickle, is the part which was directed for medicinal use by the London College, on acconut of its anthelmintic virtues. An extract of the green fruit is the most convenient preparation, as it may be kept for a sufficient length of time, and made agreeable to the stomach of the patient, by mixing it with cinnamon-water.

The *putamen,* or green rind of the walnut, has been celebrated as a powerful anti-venereal remedy, for more than a century and a half; and Petrus Borellus has given directions for a decoction not unlike that which is commonly called the Lisbon diet-drink, in which the walnut, with its green bark, forms a principal ingredient. Ramazzini, whose works were published early in the present century, has likewise informed us that, in his time, the green rind of the walnut was esteemed a good anti-venereal remedy in England. This part of the walnut has been much used in decoctions during the last fifty years, both in the green and dried state: it has been greatly recommended by writers on the Continent, as well as by those of our own country; and is, without doubt, a very useful addition to the decoction of the woods. Pearson has employed it during many years, in those cases where pains in the limbs and indurations of the membranes have remained after the venereal disease has been cured by mercury; and he informs us, that he has seldom directed it without manifest advantage.

Brambilla and Girtanner also contend for the anti-venereal virtues of the green bark of the walnut: but the result of Pearson's experience will not permit him to add his testimony to theirs. "I have given it," says he, "in as large doses as the stomach could retain, and for as long a time as the strength of the patients, and the nature of their complaints, would permit; but I have uniformly observed, that if they who take it be not previously cured of *lues venerea,* the peculiar symptoms will appear, and proceed in their usual course, in defiance of the powers of this medicine. The *Decoctum Lusitanicum* may be given with great advantage in many of those cutaneous diseases which are attended with aridity of the skin; and I have had some opportunities of observing, that when the putamen of the walnut has been omitted, either intentionally or by accident, the same good effects have not followed the taking of the decoction, as when it contained this ingredient."

JU'GULAR. (*Jugularis;* from *jugulum,* the throat.) Belonging to the throat.

Jugular veins. The veins so called run from the head down the sides of the neck, and are divided, from their situation, into external and internal. The *external,* or *superficial jugular vein,* receives the blood from the frontal, angular, temporal, auricular, sublingual, or ranine, and occipital veins. The *internal,* or *deep-seated jugular vein,* receives the blood from the lateral sinuses of the dura mater, the laryngeal and pharyngeal veins. Both jugulars unite, and form, with the subclavian vein, the superior vena cava, which terminates in the superior part of the right auricle of the heart.

JU'GULUM. (*um, i.* n.; from *jugum,* a yoke: because the yoke is fastened to this part.) The throat, or anterior part of the neck.

JUJUBA. (An Arabic word.) Jujube. See *Rhamnus zizyphus.*

Jujube. See *Rhamnus zizyphus.*

JU'LEP. (*Julapium. Julepus;* from *julab,* Arabic.) Those forms of medicine which are now called mixtures, were formerly called juleps, as *camphor julep,* the *mistura camphoræ.*

July-flower. See *Dianthus.*

Jumnisum. Yeast. — *Ruland.*

Jumble beads. The seeds of the *Abrus precatorius.*

JU'NCUS. (*us, i.* m. An old Latin word, *à jungendo,* say the etymologists, from the use of the plants which bear this name in joining or binding things together.) The name of a genus of plants in the Linnæan system. Class, *Hexandria;* Order, *Monogynia.*

Jungus odoratus. See *Andropogon.*

Juniper. See *Juniperus communis.*

Juniper gum. See *Juniperus communis.*

Juniperum vinum. Wine impregnated with the flavour of juniper berries.

JUNI'PERUS. (*us, i.* f.; from *juvenis,* young, and *pario,* to bring forth: so called because it produces its young berries while the old ones are ripening.) 1. The name of a genus of plants. Class, *Diœcia;* Order, *Monodelphia.*

2. The pharmacopœial name of the common juniper. See *Juniperus communis.*

Juniperus communis. The systematic name of the juniper-tree. *Juniperus — foliis ternis patentibus mucronatis, baccis longioribus*, of Linnæus. Both the tops and berries of this indigenous plant have entered our pharmacopœias; the latter are usually preferred, and are brought chiefly from Holland and Italy. Of their efficacy as a stomachic, carminative, diaphoretic, and diuretic, there are several relations by physicians of great authority; and medical writers have also spoken of the utility of the juniper in nephritic cases, uterine obstructions, scorbutic affections, and some cutaneous diseases. Our pharmacopœias direct the essential oil, and a spirituous distillation of the berries, to be kept in the shops. From this tree is also obtained a concrete resin, which has been called sandarach, or gum-juniper. It exudes in white tears, more transparent than mastich. It is almost totally soluble in alkohol, with which it forms a white varnish that dries speedily. Reduced to powder it is called *pounce*, which prevents ink from sinking into paper from which the exterior coating of size has been scraped away.

Juniperus lycia. This, according to some, is the plant which yields the *olibanum* or frankincense, but the true plant is now generally believed to be the *Boswellia serrata.* Frankincense has received different appellations, according to its different appearances: the single tears are called simply *Olibanum*, or *thus;* when two are joined together, *thus masculum;* and when two are very large, *thus femininum;* if several adhere to the bark, *thus corticosum;* the fine powder which rubs off from the tears, *mica thuris;* and the coarser, *manna thuris.* The gum-resin that is so called, is the juice of the *Juniperus — foliis ternis undique imbricatis ovatis obtusis*, and is brought from Turkey and the East Indies; but that which comes from India is less esteemed. It is said to ooze spontaneously from the bark of the tree, appearing in drops, or tears, of a pale yellowish, and sometimes of a reddish colour. Olibanum has a moderately strong and not very agreeable smell, and a bitterish, somewhat pungent taste: in chewing, it sticks to the teeth, becomes white, and renders the saliva milky. Laid on a red-hot iron, it readily catches flame, and burns with a strong diffusive and not unpleasant smell. On trituration with water, the greatest part dissolves into a milky liquor, which, on standing, deposits a portion of resinous matter. The gummy and resinous parts are nearly in equal proportions; and though rectified spirit dissolves less of the olibanum than water, it extracts nearly all its active matter. In ancient times, olibanum seems to have been in great repute in affections of the head and breast, coughs, hæmoptysis, and in various fluxes, both uterine and intestinal; it was also much employed externally. Recourse is now seldom had to this medicine, which is superseded by myrrh, and other articles of the resinous kind. It is, however, esteemed by many as an astringent; and, though not in general use, is considered as a valuable medicine in fluor albus, and debilities of the stomach and intestines: applied externally in the form of plaster, it is said to be corroborant, &c., and with this intention it forms the basis of the *emplastrum thuris.*

Juniperus sabina. The systematic name of the common or barren savin-tree; called also, *Sabina, Savina, Sabina sterilis*, and *Brathu. Juniperus — foliis oppositis erectis decurrentibus, oppositionibus pyridatis*, of Linnæus. Savin is a native of the south of Europe and the Levant; it has long been cultivated in our gardens, and from producing male and female flowers on separate plants, it was formerly distinguished into the barren and berry-bearing savin. The leaves and tops of this plant have a moderately strong smell of the disagreeable kind, and a hot, bitterish, acrid taste. They give out great part of their active matter to watery liquors, and the whole to rectified spirit. Distilled with water, they yield a large quantity of essential oil. Decoctions of the leaves, freed from the volatile principle by inspissation to the consistence of an extract, retain a considerable share of their pungency and warmth along with their bitterness, and have some degree of smell, but not resembling that of the plant itself. On inspissating the spirituous tincture, there remains an extract consisting of two distinct substances, of which one is yellow, unctuous, or oily, bitterish, and very pungent; the other black, resinous, less pungent, and subastringent. Savin is a powerful and active medicine, and has been long reputed one of the most efficacious in the materia medica, for producing a determination to the uterus, and thereby proving emmenagogue; it heats and stimulates the whole system very considerably, and is said to promote the fluid secretions. The power which this plant possesses (observes Dr. Woodville) in opening uterine obstructions, is considered to be so great, that we are told it has been frequently employed, and with too much success, for purposes the most infamous and unnatural. It seems probable, however, that its effects in this way have been somewhat overrated, as it is found very frequently to fail as an emmenagogue, though this, in some measure, may be ascribed to the smallness of the dose in which it has been usually prescribed by physicians; for Dr. Cullen observes, "savin is a very acrid and heating substance, and I have been often, on account of these qualities, prevented from employing it in the quantity necessary to render it emmenagogue. I must own, however, that it shows a more powerful determination to the uterus than any other plant I have employed; but I have been frequently disappointed in this, and its heating qualities always require a great deal of caution." Dr. Home appears to have had very great success with this medicine, for in five cases of amenorrhœa, which occurred at the Royal Infirmary at Edinburgh, four were cured by the sabina, which he gave in powder from a scruple to a drachm twice a day. He says it is well suited to the debile, but improper in plethoric habits, and therefore orders repeated bleedings before its exhibition. Country people give the juice from the leaves and young tops of savin mixed with milk to their children, in

order to destroy the worms: it generally operates by stool, and brings them away with it. The leaves, cut small, and given to horses, mixed with their corn, destroy the bots. Externally, savin is recommended as an escharotic to foul ulcers, syphilitic warts, &c. A strong decoction of the plant in lard and wax forms an useful ointment to keep up a constant discharge from blisters, &c. See *Ceratum sabinæ.*

JUNO. An alchemical name of atmospheric air.

JU'PITER. The ancient chemical name of tin, because supposed to be under the government of that planet.

JURISPRUDENCE, MEDICAL. Synonymous with *forensic medicine.*

JUS. (*s, uris.* n.) The Latin for broth or potage.

JU'SCULUM. (*um, i.* n.) The same.

JUSQUIA'MUS. Corrupted from *hyoscyamus.*

JUSSA. Gypsum. — *Ruland.*

JUSTI'CIA. (*a, æ.* f.; so named in honour of Mr. Justice, who published the British Gardener's Director.) The name of a genus of plants. Class, *Diandria;* Order, *Monogynia.*

JUSTICIA ADHATODA. A plant of Ceylon, supposed by the natives to have the power of expelling the dead fœtus.

JUVA'NTIA. Those means, whether dietetic, regiminal, or medicinal, which do good to sick people, as opposed to *Lædentia,* or those things which do them harm.

Juventus. See *Age.*

JUXTANGI'NA. (From *juxta,* near, and *angina,* a quinsy.) Inflammation of the muscles of the pharynx.

JUZAM. The Arabic name of the tubercular elephantiasis, or *Elephantiasis Græcorum.* See *Elephantiasis.*

K.

KAATH. See *Acacia catechu.*

KÆMPFE'RIA. (*a, æ.* f.; named after Kæmpfer, the Westphalian naturalist.) The name of a genus of plants. Class, *Monandria;* Order, *Monogynia.*

KÆMPFERIA GALA'NGA. The plant which affords the greater galangal root. It is aromatic, and has the mixed flavour of pepper and ginger.

KÆMPFERIA ROTUNDA. The systematic name of the plant which affords the officinal zedoary. *Zedoaria. Kæmpferia — foliis lanceolatis petiolatis,* of Linnæus. The roots of this plant are brought to us in long pieces, *zedoaria longa,* about the thickness of the little finger, two or three inches in length, bent, rough, and angular; or in roundish pieces, *zedoaria rotunda,* about an inch in diameter, of an ash colour on the outside, and white within. They have an agreeable camphoraceous smell, and a bitterish aromatic taste. Though formerly much esteemed against rheumatic affections, they are at present thought to possess little medicinal power, and are very seldom used.

Kajeputi oleum. See *Melaleuca.*

KA'LI. (An Arabian word: indeclinable.) The vegetable alkali. See *Potash.*

Kali acetatum. See *Potassæ acetas.*

Kali aeratum. See *Potassæ carbonas.*

Kali arsenicatum. See *Potassæ arsenias,* and *Arsenic.*

Kali citratum. See *Potassæ citras.*

Kali præparatum. See *Potassæ subcarbonas.*

Kali purum. See *Potassæ fusa.*

Kali sulphuratum. See *Sulphuretum potassæ.*

Kali tartarizatum. See *Potassæ tartras.*

Kali vitriolatum. See *Potassæ sulphas.*

Keel. See *Carina.*

Keeled. See *Carinatus.*

Keiri. See *Cheiranthus cheiri.*

KELP. Incinerated sea-weed. See *Barilla.*

KENOSPU'DIA. (Κενοσπουδια; from κενος, empty, and σπουδη, a study.) A Greek word for what is commonly called *a brown study.* Swediaur uses it to express *somnambulism.* When Latinised it should be written *Cenospudia.*

KERATONY'XIS. (From κερας, a horn, and νυσσω, to puncture.) A term used in Germany to designate an operation for cataract, in which the needle is passed through the cornea. (See *Cataract.*) The word should be written *ceratonyxis;* but the term is a bad one, and does not express the meaning intended, as it really signifies nothing but the puncturing of a horn.

KE'RMES. (*Kermes. Kermer,* Arabian.) *Granum tinctorium. Coccus baphica.* Round reddish grains, about the size of peas, found in Spain, Italy, and the south of France, adhering to the branches of the scarlet oak. They are the nidus of a minute red animalcule, called *Coccus quercus illicis.* The *Confectio alkermes,* now obsolete, was prepared with these, which were supposed to possess corroborant and astringent virtues.

KERMES MINERAL. *Kermes mineralis.* A hydro-sulphuretted oxide of antimony, so termed from its resemblance in colour to the insect of that name. See *Antimonii sulphuretum.* It was formerly much esteemed as a deobstruent and alterative. The dose is from 1 to 4 grains. It is now fallen out of use.

Kernel wort. See *Scrofularia.*

Kerva. See *Ricinus communis.*

KETCHUP. The prepared liquor of the mushroom, made by sprinkling salt on that vegetable, and collecting the fluid which escapes.

KEYSER'S PILLS. A once celebrated mercurial medicine, the method of preparing which

was purchased by the French government, and has since been published by Richard. The hydrargyrus acetatus is considered as an adequate substitute for the more elaborate form of Keyser. Richard concludes his account of Keyser's pills with observing, that he considers it to be, without exception, the most effectual remedy for the venereal disease hitherto discovered. But further trials of this remedy do not justify the sanguine accounts of its properties; though it may sometimes succeed when some of the other mercurial preparations have failed.

Kibes. A name for chilblains.

Kid. See *Capra hircus.*

KIDNEY. (*Ren, enis.* m.) An abdominal viscus, shaped like a kidney-bean, that secretes the urine. There are two kidneys, which are glandular bodies of a pale red colour, situated in the upper and back part of the abdomen, in the lumbar region. They are placed one on each side of the spine, extending from the eleventh pair of ribs to near the crista of the ossa ilia, and rest upon the diaphragm, large psoæ, quadrati lumborum, and transversales abdominis. The right kidney is situated at the under and back part of the large lobe of the liver, behind the colon, and is commonly a very little lower than the left, being supposed to be affected by the great lobe of the liver. The left kidney is placed at the under and back part of the spleen, and behind the left portions of the stomach, pancreas, and colon. The kidney is between four and five inches in length, but considerably less from the outer to the inner side, and less still from before backwards. It is rounded anteriorly, flattened posteriorly, convex and uniform at its outer margin, and has a deep depression or sinus towards the vertebræ, surrounded with unequal edges, where the renal vessels and nerves enter. It is a little broader behind than before, and a little broader and more curved above than below; from which circumstances, but more particularly from the disposition of the vessels, to be afterwards mentioned, it is easy to distinguish the right from the left kidney when taken out of the body. The right kidney is connected to the liver and duodenum, the left to the spleen, and both to the muscles on which they are placed, and to the renal glands and colon, by cellular substance, and by the peritoneum; which last, reflected from the liver and spleen to the kidneys, have by some been called the *ligaments* of the *kidneys.* They are also connected to the aorta and vena cava by their blood-vessels, and to the bladder of urine by the ureters. — They accompany the motions of the liver and spleen in the different states of respiration. Each kidney is surrounded by loose cellular substance, which commonly contains a considerable quantity of fat, from which it is termed *tunica adiposa.* The *tunica adiposa* covers not only the kidney, but the large vessels, and defends them from the pressure of the surrounding viscera. Under the tunica adiposa, there is a *membrane* composed of the original proper coat and cellular substance incorporated, which adheres closely to the kidney, and is reflected over the edges of the sinus, to be joined to the pelvis and large vessels. The surface of the kidney is commonly smooth and uniform, though sometimes it is irregular, in consequence of the lobes which originally form it not being completely incorporated. It consists of an outer part called *cortical,* and an inner termed *medullary.* The *cortical substance,* termed also *secerning,* surrounds the kidney, and is about a fourth or third part of an inch in thickness: it likewise sends in partitions, which separate the medullary parts from each other. The *medullary,* termed also *tubular* or *uriniferous substance,* is more compact and of a paler colour than the former, and is divided into a number of distinct columns, each of which terminates in a projection called *papilla,* vel *processus mammillaris.* The *papillæ* are merely the continuation of the uriniferous part, though frequently considered as a third division of the substance of the kidney. Each kidney has one, and sometimes more *arteries,* of great proportional size, which run transversely from the aorta, and a *vein* still larger than the artery, which terminates in the cava: they enter at the sinus of the kidney, and are included in cellular substance, which accompanies them throughout their course. The right renal artery is longer than the left, in consequence of the vena cava, behind which it passes, being placed upon the right side of the aorta. The artery, as it approaches the kidney, is divided into branches, which are afterwards minutely distributed through the cortical substance, forming arches and anastomoses; but these are found to be much less frequent than are commonly described; for a fine injection thrown into a branch of the artery, fills only the ramifications belonging to that branch. The small branches, after turning and winding in various directions, pass partly towards the surface of the kidney, where they form irregular *stars,* some of which supply the proper membrane. Others turn inwards in a waving direction, and form *corpuscles,* or *acini,* disposed after the manner of *clusters of small berries,* which can only be seen distinctly by the assistance of glasses, after a minute injection. The *corpuscles* were considered by Dr. Nichols as the globular terminations of blood-vessels, and termed by him *Globuli arteriarum termini;* but these globuli were afterwards observed by Mr. Hewson, and others, to consist of small vessels intimately intermixed. A fine injection thrown into the artery sometimes appears to fill the uriniferous tubes, and thereby to imitate the secretion of urine; but this experiment is more readily performed on some of the brute creation, as the horse, where the structure of the kidney seems to be more simple than in man. The *veins* returning from the extremities of the arteries, unite in the cortical substance of the kidney. The branches of the renal vein are much larger than those of the artery; they communicate freely, especially on the surface of the kidney, but correspond with them in their course. They form a large trunk on each side, which lies anterior to the corresponding artery, and runs transversely to the cava; the left, which is the longer of the two, passing across the fore part of the aorta. The *lymphatics* of the kidney run from without

inwards, and terminate in the lumbar glands, and afterwards in the thoracic duct. The superficial lymphatics are so small as seldom to be seen, excepting in the diseased state of this organ. The *nerves* are from the semilunar ganglion, formed by the great sympathetic and eighth pair. They compose a plexus which surrounds the blood-vessels, and accompanies them in the kidney. From the minute extremities of the renal artery, in the corpuscles situated in the cortical substance, the *uriniferous tubes* arise. They are mixed with some extremely small blood-vessels, and constitute the medullary substance of the kidney. By degrees they unite into larger tubes, which run in a radiated manner, the direction being from the outer edge or circumference, towards the sinus or inner part of the kidney. The radiated tubes, becoming still larger in their passage, terminate in the *papillæ*, which are of a compressed conical form, and at a little distance from each other. The *papillæ* are twelve or more in each kidney, the number varying according to that of the original lobes of which the kidney is composed, and likewise from some of the papillæ being occasionally incorporated with each other. Upon the points of the papillæ are the terminations of the uriniferous tubes — large enough to be distinguished by the naked eye —through which the urine distils from the substance of the kidney. Round the root of each papilla, a membranous tube arises, termed *infundibulum* or *calix*, which receives the urine from the papilla. The *infundibula* are commonly the same in number with the papillæ; the number, however, varying in different subjects, two or more of the papillæ sometimes opening into the same infundibulum. The infundibula join into two or three large trunks, at the sinus of the kidney, which afterwards form a dilatation of considerable size, of the shape of an inverted cone, and termed *pelvis* of the kidney. The *pelvis* is placed between the principal branches of the renal artery and vein, partly within, but the greater part of it without the body of the kidney, and contracts into a long tube, about the size of a goose-quill, called *ureter*.

Kidney, inflammation of. See *Nephritis.*

Kidney-shaped. See *Reniformis.*

Ki'dria terrestris. Barbadoes tar.

Kikekunemalo. A pure resin, very similar to copal, but of a more beautiful whiteness and transparency. It is brought from America, where it is said to be used medicinally, in the cure of hysteria, tetanus, &c. It forms the most beautiful of all varnishes.

Ki'ki. (*Kike*, Arabic.) See *Ricinus.*

Kina kina. See *Cinchona.*

KINATE. *Kinas.* A compound of the kinic acid, with a salifiable base.

Kincough. See *Pertussis.*

King's evil. See *Scrofula.*

King's yellow. See *Arsenic.*

KINIC ACID. (*Acidum kinicum*; from *kina*, a name of cinchona.) A peculiar acid found in all the species of the genus cinchona, and therefore called also cinchonic acid. Let a watery extract from hot infusions of the bark powder be made. Alkohol removes the resinous bark of this extract, and leaves a viscid residue, of a brown colour, which has hardly any bitter taste, and which consists of kinate of lime and a mucilaginous matter. This residue is dissolved in water, the liquor is filtered, and left to spontaneous evaporation in a warm place. It becomes thick like syrup, and then deposits by degrees crystalline plates, sometimes hexaedral, sometimes rhomboidal, sometimes square, and always coloured slightly of a reddish brown. These plates of kinate of lime must be purified by a second crystallisation. They are then dissolved in ten or twelve times their weight of water, and very dilute aqueous oxalic acid is poured into the solution, till no more precipitate is formed. By filtration, the oxalate of lime is separated, and the kinic acid, being concentrated by spontaneous evaporation, yields regular crystals. It is decomposed by heat. While it forms a soluble salt with lime, it does not precipitate lead or silver from their solutions. These are characters sufficiently distinctive. The kinates are scarcely known; that of lime constitutes seven per cent. of *cinchona.*

Kinki'na. See *Cinchona.*

KI'NO. (An Indian word.) *Gummi gambiense. Gummi rubrum adstringens gambiense.* A medicinal substance of which there are several varieties, supposed to be the produce of different trees. The *African kino*, which is the best, but seldom to be found genuine in the shops, is thought to be the produce of the *Pterocarpus erinaceus*; the *Botany Bay kino* of the *Eucalyptus resinifera*; the *East India* or *Amboyna kino* of the *Nauclea Gambir.* Besides these, there is said to be a *Jamaica kino*, the produce of the *Cocoloba uvivera*; but there is no such substance now to be found in our shops. The greater part of the kino at present used, is brought from the East Indies. The chemical composition of kino varies considerably in the different kinds; but the predominant principles in all are tannin and extractive matter. According to Vauquelin, it contains no gallic acid. Solution of pure potash or ammonia dissolves it, and there is no precipitate on the addition of water. It is stated, however, by Dr. A. T. Thomson, that these alkalis completely destroy the astringency of the kino. The best menstruum for kino is dilated alkohol. The medicinal virtues of kino are very similar, though inferior in power to those of catechu; and hence it is generally supplanted by the latter medicine. The dose of kino in substance is from ten grains to half a drachm. The officinal preparations are *Pulvis kino compositus*, L. D. *Tinctura kino*, L. E. D. *Electuarium catechu compositum*, E. D.

Ki'otome. *Kio'tomus.* (From κιων, a column, and τεμνω, to cut.) The name of an instrument devised by Desault, for dividing pseudo-membranous bands in the rectum and bladder. This, like all other similar words, should be spelled with *c* instead of *k*.

Kirchwasser. A liqueur distilled in Switzerland from the Machaleb cherry.

Kirkland's neutral cerate. This is prepared by melting ℥viij. of lead plaster, with

℥iv. of olive oil, stirring in ℥iv. of prepared chalk; adding to the mixture, when sufficiently cooled, ℥iv. of acetic acid, and ʒiij. of sugar of lead in powder; and lastly, stirring the whole till it is nearly cold.

Knee-holly, See *Ruscus.*

Knee-jointed. See *Geniculatus.*

Knee-pan. See *Patella.*

Knox's powder. This consists of eight parts of common salt, and three of chloride of lime. By dissolving an ounce of it in a tumbler of water, a solution is obtained similar to Labarraque's disinfecting fluid.

Kolto. (A Polonese word.) The plica polonica, or plaited hair.

KOUMIS. A vinous liquid which the Tartars make by fermenting mares' milk. Something similar is prepared in the Orkneys and Shetland.

Krameria. See *Crameria.*

Kramé'ric acid. An acid found by Peschier in the rhatany root. See *Crameria triandra.*

Kymia. A cucurbit — *Ruland.*

Kymit. Sublimed cinnabar. — *Ruland.*

Kynanche. See *Cynanche.*

L.

Labarraque's disinfecting *fluid.* See *Calcis chloridum.*

Labdanum factitium. A mixture of yellow wax, hog's lard, and ivory black.

La'bdanum. See *Ladanum.*

LABE'LLUM. (*um, i,* n.; a diminutive of *labrum.*) A little lip. Applied, in *Botany*, to the barba, or inferior lip of ringent and personate plants. See *Corolla.*

LABIA'TÆ. A natural family of plants which have labiate corollæ See *Labiatus.* They are all more or less aromatic.

LABIA'TUS. Labiate: lipped; having lips. Applied in Botany to corollæ, as those of mint, sage, rosemary, &c.

LA'BIUM. (*um, i.* n.; απο του λαβειν.) 1. In *Anatomy*, the lip of animals.

2. In *Botany*, applied to corols of plants, which are termed *unilabiate, bilabiate*, &c.; and from their position in certain flowers, *superior, inferior*, &c.

Labium leporinum. See *Hare-lip.*

Labium pudendi. The parts forming the orifice of the female vagina exterior to the nymphæ, are called *labia pudendi.*

LABORATO'RIUM. (*um, i,* n.; from *laboro*, to labour.) A laboratory. A place properly fitted up for the performance of chemical operations.

Labour. See *Parturitio.*

Labour, premature. See *Abortion.*

LA'BYRINTH. (*Labyrinthus, i,* m. Λάβυρινθος.) In *Anatomy*, that part of the internal ear which is behind the cavity of the tympanum; it is constituted by the cochlea vestibulum, and semicircular canals. See *Auris.*

LAC. (*Lac, tis.* n.) 1. Milk. See *Milk.*

2. The name of a peculiar substance deposited by an insect on certain trees. See *Coccus.*

Lac ammoniaci. See *Mistura ammoniaci.*

Lac amygdalæ. See *Mistura amygdalæ.*

Lac asininum. See *Milk, asses.*

Lac assafœtidæ. See *Mistura assafœtidæ.*

Lac bubulum. See *Milk, cows.*

Lac capræ. See *Milk, goats.*

Lac caprinum. See *Milk, goats.*

Lac equinum. See *Milk, mares.*

Lac humanum. See *Milk, human.*

Lac pressum. The curd of milk.

Lac sulphuris. See *Sulphur præcipitatum.*

Lac vaccinum. See *Milk, cows.*

Lac villum. See *Milk, ewes.*

Lacca. See *Coccus lacca.*

La'ccic acid. *Acidum laccicum.* A peculiar acid, of a wine yellow colour, obtained from stick-lac.

La'cerus. Rugged.

LA'CHRYMA. (*a, æ.* f. Δάκρυμα, a tear.) A tear. See *Tear.*

Lachryma abiegna. See *Terebinthina argentoratensis.*

LA'CHRYMAL. *Lachrymalis.* Of or belonging to the tears, or parts near where they are secreted; as lachrymal bone, duct, gland, &c.

Lachrymal apparatus. The parts which secrete and conduct the tears. These consist of the lachrymal gland which secretes the tears; of the puncta lachrymalia, and ducts, into which the tears pass from the eye and the eye-lids; of the lachrymal sac, which receives the tears from the lachrymal ducts; of the nasal duct, which conveys the tears from the sac downwards into the nose.

The lachrymal gland is situated within the orbit, at its upper and outer part, beneath the fossa in the orbitar plate of the frontal bone. It is about the size of a small almond, and it will be readily discovered, either by dividing the integuments of the upper eyelid, and then dissecting towards the cavity of the orbit, between the upper tarsus and the supra-orbitary ridge, or by dividing the conjunctiva uniting the upper tarsus to the eye, and then drawing the eye a little forwards. The gland is of a yellowish white colour, of an oval and flattened figure, and is connected with the surrounding parts by loose cellular tissue. It is composed of numerous small portions united by cellular tissue. Its excretory ducts are so small in the human subject that they are not easily discovered. Their

number is from six to eight. They leave the gland along its front edge, and descending between the tarsal ligament and the conjunctiva, perforate the latter towards the temporal side of the eye, and near the ciliary edge of the upper lid.

The *puncta lacrymalia* are two small orifices situated at the edges of the eye-lids, just within their ciliary margins, and towards the inner side of the eye. Each punctum is situated in the centre of a small eminence, and the two openings are opposite to each other, so that they meet when the eye is shut.

From the puncta lacrymalia, two small ducts are continued through the eye-lids to the lacrymal sac. The superior duct proceeds from the punctum, first a little upwards, and then turning inwards at an acute angle, is continued obliquely downwards and inwards close to the ciliary border of the upper lid, and immediately beneath the conjunctiva lining it. The inferior duct first descends, and then turning inwards at an acute angle, is continued obliquely upwards and inwards, and close to the ciliary border of the lower lid. In the latter part of their course, the two ducts following the direction of the edges of the lids, gradually approach each other, and then proceeding transversely behind the tendon of the orbicularis palpebrarum, terminate in the external part of the lacrymal sac. The two ducts may terminate in the sac by distinct orifices, or they may unite into a common duct just before they reach the sac.

The *lachrymal sac* is lodged in the groove formed by the os unguis, and by the nasal process of the superior maxillary bone. Above, it is closed and has a rounded form. Below it contracts, and is here continued into the nasal duct. The tendon of the orbicularis palpebrarum crosses the front of the sac transversely, at about one-fourth from the upper end. The sac is formed by the union of a fibrous with a mucous membrane. The fibrous membrane is expanded over the external side of the sac, and adheres to the margins of the groove in the bones lodging it.

The *nasal duct*, continued from the lower end of the lacrymal sac, descends obliquely backwards through the canal formed by the os unguis, by the superior maxillary and inferior spongy bones. It terminates in the nose on the outside of the inferior spongy bone, and at about one-third from its front extremity, by a small slit-like opening. The orifice is overhung by the spongy bone, so as to be concealed from view, until a part of the bone has been taken away. The nasal duct is formed only by the mucous membrane, which is continuous above, with the lining of the sac; below, with the pituitary membrane of the nose; and externally, is adherent to the periosteum of the bone surrounding it. The nasal sac and lacrymal sac are together about an inch and a quarter in length. — *Stanley.*

Lachrymal bone. See *Unguis os.*

Lachrymal duct. *Ductus lachrymalis.* The excretory duct of the lachrymal gland. See *Lachrymal apparatus.*

Lachrymal gland. *Glandula lachrymalis.* A glomerate gland situated above the external angle of the orbit in a depression of the frontal bone. Its use is to secrete the tears. See *Lachrymal apparatus.*

Lachrymal nerve. (*Nervus lachrymalis.*) A branch of the ophthalmic nerve. See *Nervus system* and *Lachrymal apparatus.*

LACI'NIA. The segment of a fringed leaf or petal.

LACINIA'TUS. (From *Lacinia*, a fringe.) Laciniate: jagged, fringe like; cut into numerous irregular portions: applied to leaves, petals, &c.; as the leaves of the *Ranunculus parviflorus*, and *Geranium columbinum*, the petals of the *Reseda.* See *Erosus*

Laco'nicum. (Because they were much used by the people of Laconia.) A stove or sweating-room.

Lacquer. A solution of lac in alkohol.

LA'CTATE. (*Lactas, atis.* f.; so named from its acid base.) A compound, formed by the union of the lactic acid with a base.

LACTA'TION. (*Lactatio, onis.* f.; from *lacteo*, to suckle.) The suckling of a child or other young animal.

LA'CTEAL. (*Lacteus*; from *lac*, milk: because the fluid they absorb looks like milk.)

1. In *Anatomy*, this term is applied to the absorbents of the mesentery, *vasa lactea*, which originate in the small intestines, and convey the chyle from thence to the thoracic duct. They are very tender and transparent vessels, possessed of an infinite number of valves, which, when distended with chyle, a milky or lacteal fluid, give them a knotty appearance. They arise from the internal surface of the villous coat of the small intestine, perforate the other coats, and form a kind of network, whilst the greater number unite one with another between the muscular and external coats. Thence they proceed between the laminæ of the mesentery to the conglobate glands. In their course they constitute the greater part of the glands through which they pass, being distributed through them several times, and curled in various directions. The lacteals having passed these glands, go to others, and at length seek those nearest the mesentery. From these glands, which are only four or five, or perhaps more, the lacteals pass out and ascend with the mesenteric artery, and unite with the lymphatics of the lower extremities, and those of the abdominal viscera, and then form a common trunk, the *thoracic duct*, which, in some subjects, is dilated at its origin, forming the *receptaculum chyli.* See *Nutrition.*

2. Milky.

3. Applied to designate a milk-white colour. See *Colour.*

Lacte'scens. (From *lac*, milk.) Lactescent: milky; abounding with milk, or a milk-like fluid. Applied to plants which have the sap of a white colour.

Lactic acid. Acid of milk. By evaporating sour whey to one eighth, filtering, precipitating with lime-water, and separating the lime by oxalic acid, Scheele obtained an aqueous solution of what he supposed to be a peculiar acid, which has accordingly been termed the *lactic.* Purified, it has a brown-yellow colour, and a sharp sour taste, which is much weakened by

diluting it with water. It is without smell in the cold, but emits, when heated, a sharp sour odour.

Lactica. The name given by the Arabic writers to typhous fever.

LACTU'CA. (*a*, *æ*. f.; from *lac*, milk: named from the milky juice which exudes upon its being wounded.) 1. The name of a genus of plants in the Linnæan system. Class, *Syngenesia*; Order, *Polygamia æqualis*. The lettuce.

2. The pharmacopœial name of the garden-lettuce, the *Lactuca sativa*.

Lactuca graveolens. See *Lactuca virosa*.

Lactuca sativa. The systematic name of the lettuce. *Eunuchium*. It is esteemed as a wholesome aperient bitter anodyne, easy of digestion, but affording no nutriment. Lettuces appear to agree better with hot, bilious, melancholic temperaments, than the phlegmatic. The seeds possess a quantity of oily substance, which, triturated with water, forms an emulsion esteemed by some in ardor urinæ, and some diseases of the urinary passages. Lettuce was famous for the cure of the Emperor Augustus, and formed the opiate of Galen in his old age; a proof that, in the warmer climates, it must acquire an exaltation of its virtues above what is met with in this country.

Lactuca scari'ola. *Lactuca sylvestris. Scariola. Scariola gallorum*. This species possesses a stronger degree of bitterness than the *Lactua sativa*, and is said to be more aperient and laxative. It is nearly similar, in virtue as in taste, to endive unblanched.

Lactuca sylvestris. See *Lactuca scariola*.

Lactuca virosa. The systematic name of the opium, or strong-scented lettuce. *Lactuca graveolens. Lactuca — foliis horizontalibus carino aculeatis dentatis*, of Linnæus. A common plant in our hedges and ditches. It has a strong ungrateful smell, resembling that of opium, and a bitterish acrid taste: it abounds with a milky juice, in which its sensible qualities seem to reside, and which appears to have been noticed by Dioscorides, who describes the odour and taste of the juice as nearly agreeing with that of the white poppy. Its effects are also said, according to Haller, to be powerfully narcotic. Dr. Collin, at Vienna, first brought the lactuca virosa into medical repute; and its character has induced the Edinburgh College of Physicians to insert it in their catalogue of the materia medica. More than twenty-four cases of dropsy are said, by Collin, to have been successfully treated by employing an extract prepared from the expressed juice of this plant, which is stated not only to be powerfully diuretic, but, by attenuating the viscid humours, to promote all the secretions, and to remove visceral obstructions. In the more simple cases, proceeding from debility, the extract, in doses of eighteen to thirty grains a day, proved sufficient to accomplish a cure; but when the disease was inveterate, and accompanied with visceral obstructions, the quantity of extract was increased to three drachms; nor did larger doses, though they excited nausea, ever produce any other bad effect; and the patients continued so strong under the use of this remedy, that it was seldom necessary to employ any tonic medicines. Though Dr. Collin began his experiments with the lactuca at the Paziman hospital, at the time he was trying the arnica, 1771, yet very few physicians, even at Vienna, have since adopted the use of this plant. Plenciz, indeed, has published a solitary instance of its efficacy, while Quarin informs us that he never experienced any good effect from its use; alleging, that those who were desirous of supporting its character, mixed it with a quantity of extractum scillæ. It is hardly ever used in this country.

Lactuce'lla. (*a*, *æ*. f.; a diminutive of *lactuca*, the lettuce: so named from its milky juice.) The sow-thistle. The *Sonchus arvensis*.

Lactuci'mina. The thrush.

LACTU'MEN. (From *lac*, milk: so named from the white colour of the pustules.) *Crusta lactea*. Milk-scab. See *Porrigo larvalis*.

LACU'NA. (*a*, *æ*. f.; from *lacus*, a channel.) 1. In *Anatomy*, the mouth or opening of the excretory duct of a muciparous gland, as those of the urethra, and other parts.

2. In *Botany*, the opening of a glandiform body; a puncture like an opening on surfaces of stems or leaves.

LACUNOSUS. Dotted; pitted. Applied to a leaf when the surface lies in hollows between the veins.

La'danum. (*um*, *i*, n.; from *ladon*, Arab.) See *Cistus creticus*.

Ladies' bedstraw. See *Galium*.

Ladies' mantle. See *Alchemilla*.

Ladies' smock. See *Cardamine*.

Lætifica'ntia. (From *lætifico*, to make glad.) Medicines intended to dispel melancholy and raise the spirits, were formerly so called.

LÆ'VIS. Smooth and even; level. Applied, in *Anatomy*, *Pathology*, and *Natural History*, to membranes, bones, &c.; and is opposed to all roughness and inequality whatever. See *Even*.

Lævitas intestinorum. An old name of the lientery. See *Diarrhœa*.

Lagochei'lus. (*us*, *i*. m.; from λαγως, a hare, and χειλος, a lip.) Hare-lip.

LAGOPHTHA'LMIA. (*a*, *æ*. f.; from λαγως, a hare, and οφθαλμος, an eye: because it is believed that hares sleep with their eyes open.) *Lagophthalmos*. The hare's eye. A disease in which the eye cannot be shut. It is either connate or symptomatic of paralysis, or some disease causing a protrusion or enlargement of the eye.

Lagoro'dium. (*um*, *ii*. n.; from λαγως, a hare, and πους, a foot: so called because it has narrow hairy leaves, like the foot of a hare.) The herb hare's-foot trefoil; the *Plantago media* of Linnæus.

LAGO'PUS. (*us*, *i*. m.; from λαγως, a hare, and πους, a foot.) Hare's foot. Applied, in *Botany*, to several plants, from the resemblance of the flower or leaves; in *Zoology*, to the fox and some species of dog; and, in *Ornithology*, to the grouse genus.

Lagopus alpinus. The ptarmigan. This is more rare than the grouse, and esteemed as a great delicacy.

Lagopus scoticus. The grouse. The flesh of this bird, when in season and tender, is much esteemed, and is easy of digestion.

Lago'stoma. (*a, atis.* n.; from λαγωος, a hare, and στομα, the mouth: so called because the upper lip is divided in the middle like that of a hare.) See *Hare-lip.*

Lakeweed. See *Polygonum.*

Lalla'tio. That species of vicious pronunciation in which the letter *l* is rendered unduly liquid, or substituted for an *r*. The Greeks denominated it *lambdacismus*, from the letter λ, *lambda*. See *Psellismus.*

Lalo. See *Adansonia digitata.*

Lamac. Gum-arabic.

Lamb. See *Ovis aries.*

Lambdaci'smus. A defect in speech, which consists in an inability to pronounce certain consonants; or that stammering or difficulty of speech when the letter *l* is pronounced too liquid, and often in the place of *r*. See *Psellismus lallans.*

Lambdoidal suture. *Sutura lambdoidalis.* The suture that unites the occipital bone to the two parietal bones. So called because it has somewhat the shape of the Greek letter Λ.

Lambiti'vum. (*um, i.* n.; from *lambo*, to lick up.) A linctus or medicine to be licked up.

LAME'LLA. (*a, æ.* f.; diminutive of *lamina*, a plate of metal.) 1. A thin plate of any substance.

2. The parallel gill or plate in the inferior surface of the agaric family of plants.

LA'MINA. (*a, æ.* f.; from ελαω, to beat off.) A layer or plate. 1. In *Anatomy*, a thin plate or layer of any organic substance, as a *lamina of bone*, &c.

2. In *Surgery*, a name formerly given to several instruments, on account of their shape.

3. In *Botany*, the border of the corol of a polypetalous flower, which is distinguished into, *unguis*, the claw, and *lamina*, the border.

Lamina spiralis. The plate of bone which winds spirally round the modiolus of the cochlea. See *Auris.*

LAMINABI'LITY. *Laminabilitas.* A property possessed by some bodies of being extended in dimensions by a gradually applied pressure. See *Ductility.*

LAMINATED. Composed of thin laminæ that lie close and flat one upon an other. Applied in *Natural History*, *Anatomy*, &c.

LA'MIUM. (*um, ii.* n.; from the name of a mountain of Ionia, where it grew; or from λαμα, a ditch, because it usually grows about ditches and neglected places.) The name of a genus of plants in the Linnæan system. Class, *Didynamia*; Order, *Gymnospermia*. The nettle.

Lamium album. *Urtica mortica. Archangelica. Galeobdolon. Stachys fœtida. Urtica mers magna fœtidissima.* Dead nettle. White archangel nettle. Uterine hæmorrhages and fluor albus are said to have been relieved by infusions of this plant, from the sensible qualities of which very little medicinal efficacy can be expected.

Lamp-black. See *Charcoal.*

Lampern. See *Petromyzon branchialis.*

Lampic acid. *Acidum lampicum.* A compound obtained by Mr. Daniel by placing a lamp filled with ether, and trimmed with a coil of red-hot platina wire, under the head of an alembic. The vapour which rose was condensed in the alembic, and received in a phial applied to its beak. Mr. Daniel at first thought this to be a peculiar acid, to which he gave the singular name of *lampic*, from the lamp concerned in the experiment; but he afterwards found that this substance consists of acetic acid, combined with a compound of carbon and hydrogen, differing both from alkohol and from ether.

Lamprey. See *Petromyzon marinus.*

Lampsana. See *Lapsana.*

LA'NA. (*a, æ.* f.) Wool. In *Botany*, a species of hairy pubescence, consisting of white, long, somewhat crisp hair, like wool. It is applied to stems, leaves, seeds, &c.

Lana philosophica. The snowy flakes of white oxide of zinc, which rise and float in the air from the combustion of that metal.

LANA'TUS. Woolly: applied to the stems, leaves, seed, &c. of plants. The *Verbascum thapsus*, is a good example of the *caulis lanatus*; the *Stachys lanata* of the woolly leaf; and the *Gossypium* of the seed.

LANCEOLA'TUS. Lanceolate: lance or spear-shaped. Applied to leaves, petals, seeds, &c., of a narrow oblong form, tapering towards each end; as the *leaves* in *Plantago lanceolata*, and *petals* of *Narcissus minor*, and *seeds* of the *Fraxinus.*

LANCE'TTA. (*a, æ.* f.; diminutive of *lancea*, a spear.) A lancet. An instrument used for bleeding and other purposes.

LANU'GO. (*o, inis.* f.) Soft wool or down.

Lao'nica cura'tio. An old method of curing the gout, by evacuating the morbid matter by topical applications.

Lapa'ticus. (Λαπακτικος; from λαπαζω, to evacuate.) Purgative. — *Galen.*

La'para. (*a, æ.* f.; Λαπαρα; from λαπαζω, to empty: so named from its concave and empty appearance.) The flank.

Laparoce'le. (*e, es.* f.; from λαπαρα, the flank, and κηλη, a rupture.) A rupture through the side of the belly.

La'pathum. (*um, i.* n.; from λαπαζω, to evacuate: so named because it purges gently.) The dock. See *Rumex.*

Lapathum acetosum. See *Rumex.*

Lapathum acutum. See *Rumex acutus.*

Lapathum aquaticum. See *Rumex.*

LAPIDEUS. Stony: applied very generally in all departments of science.

Lapides cancrorum. See *Cancer.*

Lapidi'llum. *Lapidillus.* A scoop for removing fragments of stone from the bladder.

Lapilli cancrorum. See *Cancer.*

Lapillous. Stony.

Lapis ageratus. See *Ageratus.*

Lapis bezoar. See *Bezoar.*

Lapis cæruleus. See *Lapis lazuli.*

Lapis calaminaris. See *Calamine.*

Lapis calcareus. Carbonate of lime.

Lapis cyanus. See *Lapis lazuli.*

Lapis divinus. *Lapis ophthalmicus.* The preparation originally known under this name, was a compound of vitriol, nitre, alum, and camphor, and was recommended by Woolhus. It has since been modified. Beer's lapis ophthalmicus consists of equal parts of subacetate of copper, nitre, and alum, melted together. It is used to form collyria.

Lapis hæmatites. See *Hæmatites.*

Lapis hibernicus. Irish slate; called also, *Tegula hibernica, Ardesia hibernica,* and *Hardesia.* A kind of slate, or very hard stone, found in different parts of Ireland, in a mass of a bluish black colour, which stains the hands. When dried and powdered, it is pale, or of a whitish blue, and, by keeping, grows black. In the fire it yields a sulphureous gas, and acquires a pale red colour, with additional hardness. It is occasionally powdered by the common people, and taken in spruce beer, against inward bruises.

Lapis hystricis. See *Bezoar hystricis.*

Lapis infernalis. See *Potassa fusa.*

Lapis la'zuli. *Lapis cyanus. Lapis cæruleus.* Azure stone. According to the analysis of Klaproth, it consists of silica, alumina, carbonate, and sulphate of lime, oxide of iron, and water. Guyton Morveau, however, regards it as a blue sulphuret of iron, mechanically blended with pyrites, potash, baryta, and other substances. It was formerly exhibited as a purgative and emetic, and given in epilepsy.

Lapis lydius. Lydian stone. A variety of flinty slate, sometimes used as a touchstone to try the purity of gold and silver.

Lapis malacensis. See *Bezoar.*

Lapis medicamentosus. This name has been given to two compounds, the one consisting of white vitriol, sal ammoniac, cerusse, Armenian bole, and vinegar; the latter of iron filings, mastiche, saffron, aloes, myrrh, &c. The former is the one most commonly known by the name, and was used as an application to ulcers.

Lapis ophthalmicus. See *Lapis divinus.*

Lapis philosophorum. The philosopher's stone. A wonderful substance, the discovery of which was the chief object of the alchemists. It was imagined to have the power of transforming all the baser metals into gold, and of curing all diseases. The appellation of *stone* is a fanciful one, as it does not appear from the writings of the alchemists, that the great arcanum was of a lapideous nature. The greater part of the processes given by the adepts for its preparation, are utterly unintelligible. All the instances on record of the apparent transmutation of metals by this mysterious agent, savour strongly of imposture, and the existence of any such substance as the philosopher's stone, is now generally disbelieved.

Lapis porcinus. See *Bezoar hystricis.*

Lapis simiæ. See *Bezoar simiæ.*

LA'PPA. (*a, æ.* f.; απο του λαβειν, from its seizing the garments of passengers.) A bur or clit-bur. See *Arctium lappa.*

Lappa major. See *Arctium lappa.*

LA'PSANA. (*a, æ.* f. Λαψανη; from *Lampsacus,* the town near which it flourished: or from λαπαζω, to evacuate; because it was said to relax the bowels.) The name of a genus of plants. Class, *Syngenesia;* Order, *Polygamia æqualis.*

Lapsana communis. *Lampsana. Napium. Papillaris herba.* Dock-cresses. Nipple-wort. This plant is a lactescent bitter, and nearly similar in virtues to the chicory, dandelion, and endive. It has been employed chiefly for external purposes, against wounds, and excoriations of the nipple, whence the name of nipple-wort and papillaris.

La'queus gu'tturis. A malignant inflammation of the tonsils, in which the patient appears as if he were suffocated with a noose.

La'rbason. Antimony. — *Pliny.*

Larch. See *Pinus larix.*

LARD. Hog's fat melted down. See *Adeps suilla.*

Lark. See *Alauda.*

LARVA'LIS. (From *larva,* a particular state of insects.) Larval: pertaining to a larva, and applied also to a disease of the skin. See *Porrigo larvalis.*

LARYNGEAL. *Laryngæ'us.* Appertaining to the larynx.

Laryngeal arteries. Branches of the thyroid arteries distributed to the larynx. The superior thyroid artery is called laryngeal by some anatomists.

Laryngeal nerves. These are the *superior laryngeal nerve,* given off from the pneumogastric in the upper part of the neck, and the *inferior laryngeal,* more frequently called the recurrent of the par vagum, which is given off from the pneumogastric within the thorax. See *Nervous system.*

LARYNGI'SMUS. (*us, i.* m.; from *larynx,* the windpipe.) A genus of disease formed by Dr. Mason Good, to include the affection commonly called spasmodic croup, which he, in common with many other writers, regards as depending essentially on spasm of the muscles, which close the larynx, and consequently as entirely distinct from the inflammatory croup. This learned writer observes, that while the general symptoms of the *Laryngismus stridulus* make a near approach to those of croup, the suddenness of its attack, and the absence of inflammation, and the peculiar secretion, form strong pathognomic distinctions between them.

There are instances, indeed, in which genuine croup has also commenced abruptly, but these are very rare; for it has usually the precursive symptoms of a slight cough and hoarseness for a day, and sometimes two days, as though the patient were labouring under a catarrh. In croup also, the inflammation, when it has once taken effect, becomes a permanent cause of excitement, and the anxiety and struggle for breath continue with little if any abatement till the inflammation is subdued. In the disease before us, the spasm suddenly subsides in a short time, though it may perhaps return in an hour, or half an hour, or even a few minutes; and in the interval the patient enjoys perfect ease, though the voice is rendered hoarse from the previous straining. Croup is, moreover, an exclusive disease of children; stridulous spasm of the larynx is sometimes found in adults.

Those who have been dissatisfied with the name of spasmodic asthma, have, however, treated of it under the name of spasmodic croup, but merely because they have not known how else to distinguish it: for almost every one who has thus noticed it, has acknowledged that it is a different disease, and demands a different plan of cure.

The exciting causes are not always clear: cold and teething are the most common. It appears most frequently in relaxed and irritable habits, where, in truth, we should soonest expect a display of spasmodic action. As there is mostly some degree of cough, and always a secretion of a small portion of viscid mucus, and a croaking voice, there is indeed great reason for supposing some degree of local irritation; and on this account Dr. Good has placed it among the diseases of the respiratory function, in preference to arranging among purely nervous affections. It is possible, however, that some of these symptoms may be the result of the spasmodic struggle itself.

An active and speedy plan of treatment is imperiously demanded. Yet an antimonial emetic generally effects a cure as soon as it begins to operate, if employed early: but the diaphoresis which it excites should be maintained for some hours, by keeping the child in bed, and the use of diluents; which will be the most effectual means of preventing a return of the spasm. The bowels should always be excited by a purgative of calomel. And if the emetic do not prove sufficient, or the stricture should be renewed, laudanum should be exhibited according to the age of the patient, and a blister be applied to the throat. But bleeding, which is indispensable in croup, should here be avoided, as it will only add to the irritability. Millar, Parr, and various other writers, have regarded this affection as a form of asthma, and have strongly recommended the fetid antispasmodics, as assafœtida, both by the mouth and injections; but Dr. Good did not find them successful.

Generally speaking, after the action of the emetic, the child falls into a deep and quiet sleep, and awakes with few remains of the complaint. Yet if the spasm be not attacked at once, suffocation may soon follow. Those who have once laboured under it are more susceptible of it than before; and the younger branches of some families seem much more predisposed to it than those of others.

It is right to state, that several practical writers of high authority, deny the existence of *laryngismus stridulus* as being distinct from croup.

The late Dr. Hugh Ley, in an able monograph on *Laryngismus stridulus*, has introduced an entirely new pathology of this disease. He regards it as arising from pressure on the nerves of respiration, in consequence of enlargement of the thoracic or cervical absorbent glands; and instead of referring the constriction of the glottis to spasm of the muscles which close that orifice, he refers it to loss of power in the muscles which open it. The tendency of dentition and inflamed and ulcerated states of the scalp, producing *laryngismus stridulus*, is explained by Dr. Ley, from their well known influence in causing enlargement of the lymphatic glands. This view of the subject throws no light on the exciting cause of any individual paroxysm; but those which have preceded it, are not more satisfactory in this respect. Dr. Ley has argued the point with much ingenuity, supported by great knowledge of the subject; but it does not seem likely that his pathology of this disease will be generally adopted.

LARYNGI'TIS. (*is, idis.* f.; from *larynx*, the part affected.) An inflammation of the larynx; that is, of the membrane which lines the larynx, or the cellular tissue connecting it to the parts beneath. It mostly forms a part of croup, or more extended inflammation of the air passages, having all its characters; but occasionally the inflammation is confined to the larynx. The disease makes its approach with the common symptoms of inflammatory fever; the voice immediately becomes hoarse and indistinct, the breathing laborious, with a painful sense of constriction in the throat. The fauces are red and inflamed, swollen and turgid; the face and eyes partake of the swelling, as in cases of threatened strangulation. The symptomatic fever is strong; the heat great; the pulse frequent and hard; there is great difficulty in swallowing, and great distress is caused by it. An examination of the throat, externally, makes us acquainted with its seat: the larynx is very painful to the touch; and a little pressure here, like an attempt to swallow, is productive of spasms, threatening the patient with instant death from suffocation, and causing him to pant for air. This disease attacks adults. It is distinguished from croup by a perpetual and voluntary hawking, rather than a forcible and involuntary cough, as though to clear the passage by expectoration. It is also distinguished from it by the nature of the expuition, which is a viscid mucus rather than a coagulable and membrane-like exudation. The two diseases differ also in their proximate causes. Laryngitis consists in a suppurative inflammation of the membrane of the larynx, and the cellular tissue which connects it to the parts beneath; while croup or bronchitis is a peculiar inflammation of the trachea, and perhaps larynx, extending through the bronchia, and exciting on their internal surface a concrete membrane-like material. Laryngitis, as now described, is an extremely acute disease, and destroys by suffocation in a few hours, or a day or two, unless promptly and actively opposed, and even when the attempt to cure is so conducted under the most experienced practitioners. It killed the celebrated Dr. Pitcairn in a short time. In Dr. Hooper's museum was the larynx of a soldier; under the membrane which covers the thyroid cartilage, and lines the larynx, is an abscess the size of a hazel-nut, which closed the passage. He was under arms at six of the evening, and dead the following night.

In the treatment of this disease, the most active remedies are to be promptly used; — blood-letting, generally and locally, and blistering, are to be immediately flown to; and

blood must be taken from the arm, *usque ad deliquium*, and repeated as the judgment and experience of the practitioner may justify and direct. The submuriate of mercury, in full doses, should be followed by strong infusions of senna with salts whilst the patient can swallow.

If, notwithstanding the judicious enforcement of these means, the symptoms are still urgent, tracheotomy must be performed, and iced lotions kept about the larynx.

Laryngitis often exists in a chronic form. This is a disease that affords a very different state of things: the voice is hoarse, the swallowing always a little painful, and pressure on the larynx gives pain. It is common to coachmen, and those who drink drams. It requires demulcent gargles, mercurial alteratives, leeches, and blistering, with great attention to diet and the interdiction of spirits.

LARYNGO'PHONY. (*Laryngophonia*; from λαρυγξ, the larynx, and φωνη, the voice.) The sound of the voice as heard through the stethoscope applied over the larynx.

LARYNGO'TOMY. (*Laryngotomia*, *æ*. f.; from λαρυγξ, the larynx, and τεμνω, to cut.) See *Bronchotomy*.

LA'RYNX. (*x*, *gis*. f.; Λαρυγξ.) A cartilaginous cavity, situated behind the tongue, in the anterior part of the fauces, and lined with an exquisitely sensible mucous membrane. It is composed of the *annular* or *cricoid* cartilage, the *scutiform* or *thyroid*, the *epiglottis*, and two *arytænoid* cartilages. The superior opening of the larynx is called the *glottis*. The *laryngeal arteries* are branches of the external carotids. The *laryngeal veins* evacuate their blood into the external jugulars. The nerves of the larynx are from the eighth pair. The use of the larynx is to constitute the organ of voice, and to serve also for respiration.

LA'SER. (*er*, *eris*. n.; said to be a Cyrenian word.) The herb laser-wort, or assafœtida.

LASERPI'TIUM. (*um*, *ii*. n.) The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Digynia*.

Laserpitium chironium. *Panax*. Hercules' all-heal, or wound-wort. The seeds and roots of this plant are warm, and similar in flavour and quality to those of the parsnip. The roots and stalks have a much stronger smell, which resembles that of opoponax; and Boerhaave relates that, on wounding the plant in the summer, he obtained a yellow juice, which, being inspissated a little in the sun, agreed perfectly in both respects with that exotic gum resin.

Laserpitium latifolium. The systematic name of the white gentian. *Gentiana alba*. The root of this plant, *Laserpitium — foliis cordatis, inciso-serratis*, of Linnæus, possesses stomachic, corroborant, and deobstruent virtues. It is seldom used.

Laserpitium siler. The systematic name of the heart-wort, or sermountain. *Seseli. Siler montanum*. The seeds and roots of this plant, which grows in the southern parts of Europe, are directed as officinals. They have an agreeable smell, and a warm, glowing, aromatic taste; and though neglected in this country, do not appear to be deservedly so.

LASSITU'DO. (*o*, *onis*. f.) Lassitude. A feeling of weakness and debility, independent of fatigue.

Latent heat. See *Heat, latent*.

Latent period. Certain diseases lurk in the system for a longer or shorter period, before their presence is manifested by any symptoms; this period is called their *latent period*. Thus we speak of the latent period of small-pox, of measles, &c., meaning thereby the time that elapses from the moment of infection, to the accession of the symptoms.

LA'TERAL. (*Lateralis*; from *latus*, the side.) Situated on the side of anything.

Lateral flower. That which grows on the side of the stem; as in *Erica vagans*.

Lateral operation. The name given to one mode of cutting for the stone, because the prostate gland and neck of the bladder are divided laterally. See *Lithotomy*.

Lateral sinus. See *Sinus*.

Lateralis morbus. Pleurisy.

LATERI'TIOUS. (*Lateritius*, made of brick; from *later*, a brick.) A term applied to a sediment resembling brickdust occasionally deposited in the urine.

La'thyris. (From λαθω, to forget; because it was thought to affect the memory.) A name given by some authors to a species of tithymal or spurge, commonly known by the name of *Tithymalus latifolius*, the broad-leaved spurge, and called by some also *Cataputia*.

LA'THYRUS. (*us*, *i*. m.; a name adopted from Theophrastus, whose λαθυρος appears evidently to be like ours, something of the pea or vetch kind, though it is impossible precisely to determine what.) The name of a genus of plants in the Linnæan system. Class, *Diadelphia*; Order, *Decandria*. The vetch.

LATI'BULUM. (From *lateo*, to lie hid.) The fomes, or hidden matter of infectious diseases.

La'tica. The epithet given by some writers to a quotidian fever, in which the paroxysms are very long, and the febrile symptoms but slightly developed. It is the *Amphemerina latica* of Sauvages. Some say it is called *latica* from *latens*. (!)

Latissimus colli. See *Platysma myoides*.

Latissimus dorsi. *Anisalptor*, of Cowper. A muscle of the humerus, situated on the posterior part of the trunk. It is a very broad, thin, and, for the most part, fleshy muscle, which is placed immediately under the skin, except where it is covered by the lower extremity of the trapezius. It arises tendinous from the posterior half of the upper edge of the spine of the os ilium, from the spinous processes of the os sacrum and lumbar vertebræ, and from five or six, and sometimes from seven, and even eight, of the lowermost ones of the back; also tendinous and fleshy from the upper edges and external surface of the four inferior false ribs, near their cartilages, by as many distinct slips. From these different origins the fibres of the muscle run in different directions: those

from the ilium and false ribs run almost perpendicularly upwards; those from the sacrum and lumbar vertebræ, obliquely upwards and forwards; and those from the vertebræ of the back, transversely outwards and forwards, over the inferior angle of the scapula, where they receive a small thin bundle of fleshy fibres, which arise tendinous from that angle, and are inserted with the rest of the muscle, by a strong, flat, and thin tendon, of about two inches in length, into the fore part of the posterior edge of the groove observed between the two tuberosities of the os humeri, for lodging the tendon of the long head of the biceps. In dissection, therefore, this muscle ought not to be followed to its insertion, till some of the other muscles of the os humeri have been first raised. Its use is to pull the os humeri downwards and backwards, and to turn it upon its axis. Riolanus, from its use on certain occasions, gave it the name of *ani tersor*. When we raise ourselves upon our hands, as in rising from off an armchair, we may easily perceive the contraction of this muscle. A *bursa mucosa* is found between the tendon of this muscle and the os humeri, into which it is inserted.

Lattice-leaf. See *Canaliculatus.*

Lattice-work. See *Cancellatus.*

LAU'DANUM. (*um*, *i.* n.; said to be from *laus*, praise, on account of its valuable properties.) See *Tinctura opii.*

Laudanum abbatis Rousseau. See *Rousseau's drops.*

Laurel. See *Laurus.*

Laurel, cherry. See *Prunus laurocerasus.*

Laurel, spurge. See *Daphne laureola.*

LAURENT, SAINT. A place five leagues from Joyeuse in France, where there is a thermal spring of the temperature of 127° Fahr.

LAURE'OLA. (*a*, *æ.* f.; diminutive of *laurus*, the laurel: named from its resemblance to the laurel.) See *Daphne laureola.*

LAU'ROCE'RASUS. (From *laurus*, the laurel, and *cerasus*, the cherry-tree: so called because it has leaves like the laurel.) See *Prunus laurocerasus.*

LAURO'SIS. (So called from Mount Laurus, where there were silver mines.) The spodium of silver.

LAU'RUS. (*us*, *i.* and *ûs.* f.; from *laus*, praise: because it was usual to crown the heads of eminent men with branches of it.) 1. The name of a genus of plants in the Linnæan system. Class, *Enneandria*; Order, *Monogynia*. The laurel.

2. The pharmacopœial name of the sweet-bay. See *Laurus nobilis.*

LAURUS CAMPHORA. This is one of the trees which produce camphor. See *Camphora.*

LAURUS CASSIA. Wild cinnamon-tree; Malabar cinnamon-tree, or cassia lignea tree. Cassia lignea is the bark of this tree, *Laurus — foliis triplinerviis lanceolatis*, of Linnæus. The leaves are called *folia malabathri*, in the shops. The bark, called also, *Cassia lignea*, *Canella malabarica*, *Cassia lignea malabarica*, *Xylocassia*, *Canella malabarica et javensis*, *Karva*, *Canella cubana*, *Arbor judaica*, *Cassia canella*, *Canellifera malabarica*, *Cinnamomum malabaricum*, *Calihacha canella*, abounds with the flavour of cinnamon, for which it may be substituted, but in much larger doses, as it is considerably weaker.

LAURUS CINNAMO'MUM. The systematic name of the cinnamon tree. This tree affords the true cinnamon, *cinnamomum*, which is its inner bark. Jacquin describes the tree thus: *Laurus cinnamomum — foliis trinerviis ovato-oblongis; nervis versus apicem evanescentibus.* Cinnamon bark is one of the most grateful of the aromatics; of a fragrant smell, and a moderately pungent, glowing, but not fiery taste, accompanied with considerable sweetness, and some degree of astringency. It is one of the best cordial, carminative, and restorative spices we are in possession of, and is generally mixed with the diet of the sick. The essential oil, on account of its high price, is seldom used: a tincture, and a simple and spirituous water, are kept in the shops. The watery infusion of cinnamon is given with advantage to relieve nausea and check vomiting. The cassia flowers of the shops are the flowers of this tree.

LAURUS CULILA'WAN. The systematic name of the plant, the bark of which is called *cortex culilawan* in the shops. *Cortex caryophylloides. Laurus — foliis triplinerviis oppositis*, of Linnæus. This bark very much resembles cinnamon in appearance and properties.

LAURUS NOBILIS. The systematic name of the sweet bay tree. *Laurus — foliis venosis lanceolatis perennantibus, floribus quadrifidis*, of Linnæus. This tree is a native of Italy, but cultivated in our gardens and shrubberies as a handsome evergreen. The leaves and berries possess the same medicinal qualities, both having a sweet fragrant smell, and an aromatic astringent taste. The laurus of honorary memory, the distinguished favourite of Apollo, may be naturally supposed to have had no inconsiderable fame as a medicine; but its pharmaceutical uses are so limited in the practice of the present day, that this dignified plant is now rarely employed, except in the way of enema, or as an external application: thus the leaves are directed in the *decoctum pro fomento*, and the berries in the *emplastrum cumini.*

LAURUS PERSEA. This species of laurel affords the *Avigato pear*, which, when ripe, melts in the mouth like marrow, which it greatly resembles in flavour. It is supposed to be the most nutritious of all the tropical fruits, and grows in vast abundance in the West Indies and New Spain. The unripe fruit have but little taste; yet, being very salubrious, are often eaten with salt and pepper. The sailors, when they arrive at the Havannah, and those parts, purchase them in great quantities; and, chopping them into small pieces, with green capsicums, and a little salt, regale themselves heartily with them. They are esteemed, also, for their antidysenteric qualities, and are prepared in a variety of ways for the tables of the rich.

LAURUS PICHU'RIM. This is one of the plants which produce the Pechurim bean, called also Brazilian, and Carthagena bean. The bean is of an oblong-oval shape, heavy, of a brown

colour, and a musky odour. It is aromatic and carminative, but is now little used.

Laurus sa'ssafras. The systematic name of the sassafras tree. *Sassafras. Cornus mas odorata. Lignum pavanum. Anhuiba.* The wood of this tree, *Laurus — foliis trilobis integrisque*, of Linnæus, is imported from North America, in long straight pieces, very light, and of a spongy texture, and covered with a rough, fungous bark. It has a fragrant smell, and a sweetish, aromatic sub-acrid taste; the root, wood, and bark, agree in their medicinal qualities, and are all mentioned in the pharmacopœias; but the bark is the most fragrant, and thought to be more efficacious than the woody part; and the branches are preferred to the large pieces. The medical character of this drug was formerly held in great estimation, and publications were professedly written on the subject. It is now, however, thought to be of little importance, and seldom used but in conjunction with other medicines, as a corrector of the fluids. It is an ingredient in the *decoctum sarsaparillæ compositum*, or *decoctum lignorum*; but the only officinal preparation of it is the essential oil, which is carminative and stimulant, and which may be given in the dose of two drops to ten.

Lautissima vina. Wines strongly impregnated with myrrh, were formerly so called.

Lavandula. See *Lavendula.*

Lavender. See *Lavendula.*

Lavender, French. See *Lavendula stœchas.*

LAVE'NDULA. (*a, æ.* f.; from *lavo*, to wash: so called, because, on account of its fragrancy, it was used in baths.) 1. The name of a genus of plants in the Linnæan system. Class, *Didynamia*; Order, *Gymnospermia.* Lavender.

2. The pharmacopœial name of the common lavender. See *Lavendula spica.*

Lavendula spica. The systematic name of the common lavender. *Nardus italica. Lavendula — foliis sessilibus lanceolata-linearibus margine revolutis, spica interrupta nuda*, of Linnæus. A native of the southern parts of Europe, but cultivated in our gardens on account of the fragrance of its flowers. Their taste is bitter, warm, and somewhat pungent; the leaves are weaker and less grateful. The essential oil, obtained by distillation, is of a bright yellow colour, of a very pungent taste, and possesses, if carefully distilled, the fragrance of the lavender in perfection. Lavender has been long recommended in nervous debilities, and various affections proceeding from a want of energy in the animal functions. An essential oil, a simple spirit, and a compound tincture, are officinal.

Lavendula stœchas. The systematic name of the French lavender. *Stœchas. Stœchas arabica. Spica hortulana. Stœcadore.* This plant is much less grateful in smell and flavour than the common lavender, to which it is allied in its properties.

La'ver. (From *lava*, to wash: so named because it is found in brooks, where it is constantly washed by the stream.) 1. The brook-lime.

2. The English name of a species of ulva, which is eaten as a delicacy.

Laver, shield. See *Ulva lactuca.*

LAVIPE'DIUM. (*um, ii.* n.; from *lavo*, to wash, and *pes*, the foot.) A bath for the feet.

LAWSO'NIA. (*a, æ.* f.; named after Mr. Lawson, who published an excellent account of his voyage to Carolina, containing much information concerning the plants of that country.) The name of a genus of plants in the Linnæan system. Class, *Octandria*; Order, *Monogynia.*

Lawsonia inermis. The systematic name of the true alkanna: called also, *Alkanna vera*, and *Alkanna orientalis.* An oriental plant; the *Lawsonia — ramis inermibus*, of Linnæus; principally employed, in its native place, as a dye. The root is the officinal part, which, however, is rarely met with in the shops. It possesses astringent properties, and may be used as a substitute for the *anchusa.*

LA'XATIVE. (*Laxativus*; from *laxo*, to loosen.) Gently purgative. See *Cathartic.*

LAXA'TOR. (*or, oris.* m.; from *laxo*, to loosen: so called from its office to relax.) A name applied to muscles, &c., the office of which is to relax parts into which they are inserted.

Laxator tympani. *Externus mallei*, of Albinus. *Anterior mallei*, of Winslow. *Obliquus auris*, of Douglas. *Externus auris vel laxator internus*, of Cowper. A muscle of the internal ear, that draws the malleus obliquely forwards towards its origin; consequently, the membrana tympani is made less concave, or is relaxed.

Laxator tympani minor. A very small muscle of the ear, described as rising from the upper part of the meatus auditorius externus, and inserted into the inferior part of the handle of the malleus. Most anatomists deny its existence.

LA'XUS. Lax: loose. 1. In *Physiology* and *Pathology*, applied to the state of the animal fibre.

2. In *Botany*, diffused: in opposition to crowded or compact; as in the stem of the *Bunias cakile*, or sea-rocket, the stem of which is described as *caulis laxus.*

LAZZARETTO. (Italian.) A solitary building attached to most foreign sea-ports, for the performance of quarantine.

LEAD. *Plumbum.* A metal found in considerable quantity in many parts of the earth, in different states, seldom, if at all, in the metallic state. It is found in that of oxide, *red lead ore*, mixed with a portion of iron, clay, and other earths. The colour of this ore is aurora red, resembling red arsenic. It is found in small lumps, of an indeterminate figure, and also crystallised in four-sided rhomboidal prisms.

Combined with carbonic acid, it forms the *sparry lead ore*, so called because it has the texture and crystallisation of certain spars. There are a great many varieties of this kind. It is found also united with sulphuric, phosphoric, arsenic, molybdic, and chromic acids. Lastly, lead is found mineralised by sulphur,

forming what is called *galena* (*sulphuret of lead*), which is by far its most abundant ore. This ore, which is very common, is found both in masses and crystals. The primitive form of its crystals is a cube. Its colour is of a bluish-lead grey. It has a considerable metallic lustre; its texture is foliated; it stains the fingers, and often feels greasy. It contains, in general, a minute quantity of silver.

Properties. — Lead is of a bluish white colour, and very brilliant when fresh cut. It is malleable. It soon tarnishes with the atmosphere. It may easily be cut with a knife, and stains the fingers bluish grey when rubbed. It fuses at 612° Fahr., and renders other more refractory metals fusible. It becomes vitrified in a strong and continued heat, and vitrifies various other metals. It is the least elastic of all the metals. It is very laminable, but it possesses very little ductility. Its specific gravity is about 11·4. It crystallises by cooling in small octahedra. When fused in contact with air, its surface first becomes yellow, and then red. It unites by fusion with phosphorus and sulphur. The greater part of the acids act upon it. The sulphuric acid requires the assistance of a boiling heat. Nitric acid is decomposed by it. Muriatic acid acts very weakly on it. Acetic acid dissolves it. Fluoric acid attacks it by heat, and slightly in the cold. It combines with other metals, but few of its alloys are applied to any use. When combined with mercury, it forms a crystallisable alloy which becomes fluid when triturated with that of bismuth.

Method of obtaining Lead. — In order to obtain lead in a great way, the ore is picked from among the extraneous matter with which it was naturally mixed. It is then pulverised and washed. It is next roasted in a reverberatory furnace, in which it is to be agitated, in order to bring the whole in contact with the air. When the external parts begin to soften, or assume the form of a paste, it is covered with charcoal, the mixture is stirred, and the heat increased gradually: the lead then runs on all sides, and is collected at the bottom of the furnace, which is perforated so as to permit the metal to flow into a receptacle defended by a lining of charcoal.

There are three, and probably four oxides of lead, of which the protoxide only is a salifiable base: —

1. The powder precipitated by potash from the solution of the nitrate of lead, being dried, forms the yellow *protoxide*, commonly called *massicot*. When somewhat vitrified, it constitutes *litharge*, and combined with carbonic acid, *white lead*, or *cerusse*. The protoxide of lead consists of one equivalent of the metal, and one of oxygen.

2. When massicot has been exposed for about 48 hours to the flame of a reverberatory furnace, it becomes red lead, or *minium*. This is generally regarded as a sesquioxide; but according to M. Dumas, it varies in its composition.

3. If upon 100 parts of red lead we digest nitric acid of the sp. gr. 1·26, 92·5 parts will be dissolved, but 7·5 of a dark brown powder will remain insoluble. This is the *peroxide* of lead, consisting of one equivalent of lead, and two of oxygen.

4. If oxalate of lead be subjected to a dull red heat in a retort, carbonic oxide and carbonic acid are evolved, and a dark grey powder remains. This, according to Dulong and Boussingault, is a definite suboxide consisting of two equivalents of lead, and one of oxygen. According to Berzelius, the grey powder that forms on lead after long exposure to the air, is of the same nature. This suboxide of lead is resolved by acids into the protoxide and metallic lead.

Lead combined with chlorine forms a semi-transparent greyish white mass, somewhat like horn, whence the old name of *plumbum corneum*, or horn lead. A formula for its preparation is now given in the London pharmacopœias.

The *iodide* is easily formed by heating the two constituents. It is now introduced into the London pharmacopœia. See *Plumbi iodidum*.

Lead combines also with *bromine* and with *fluorine*.

The salts of lead have the protoxide for their base, and are distinguishable by the following general characters: —

1. The salts, which dissolve in water, usually give colourless solutions, which have an astringent sweetish taste.

2. Placed on charcoal they all yield, by the blow-pipe, a button of lead.

3. Ferroprussiate of potash occasions in their solutions a white precipitate.

4. Hydrosulphuret of potash, a black precipitate.

5. Sulphuretted hydrogen a black precipitate.

6. Gallic acid, and infusion of galls, a white precipitate.

7. A plate of zinc a white precipitate, or metallic lead.

Most of the acids act upon lead.

The sulphuret, sulphate, carbonate, phosphate, arseniate, and chromate of lead are found native.

Oils dissolve the oxide of lead, and become thick and consistent; in which state they are used as the basis of plasters.

Sulphur readily dissolves lead.

The *phosphoric acid*, exposed to heat, combines with the metal.

Litharge, fused with common salt, decomposes it: the lead unites with the muriatic acid, and forms a yellow compound, used as a pigment.

Lead unites with most of the *metals*.

The oxides of lead are poisonous, and the salts have been till lately considered so; but the experiments of Dr. A. T. Thomson have rendered it probable that the carbonate is the only really poisonous salt of this metal. See *Plumbi acetas*. The symptoms of lead poison are those which constitute the disease called *Colica pictonum*. See *Colica* and *Poisons*.

The preparations of lead used in medicine are, —

1. The subcarbonate. See *Plumbi subcarbonas*.

2. The red oxide. See *Minium*.

3. The semivitreous oxide. See *Lithargyrum.*

4. The acetate. See *Plumbi acetas.*

5. The solution of the acetate. See *Plumbi diacetatis liquor.*

6. The dilute solution of the acetate. See *Plumbi diacetatis liquor dilutus.*

7. The *Iodide.* See *Plumbi iodidum.*

Lead, red. See *Minium.*

Lead, white. See *Plumbi subcarbonas.*

LEAF. *Folium.* A laminar expansion of a plant, generally of a green colour.

It is difficult, however, to define this universal and important organ of vegetables.

Leaves are, for the most part, remarkable for their expanded form; their colour is almost universally green, their internal substance pulpy and vascular, sometimes very succulent, and their upper and under surfaces differ commonly in hue, as well as in kind or degree of roughness. They are considered as the respiratory organs of plants.

In discriminating the species of plants, a knowledge of the various forms of leaves is of the utmost importance. Botanists, therefore, have paid particular attention to their names, which are derived either from their origin, distribution, situation, direction, insertion, form, base, point, margin, surface, distribution of its vessels, nerves, expansion, substance, duration, composition, &c.

A leaf consists of a thin and expanded part, which in common language is named the *leaf, folium,* and a stalk, called the *petiolus* or petiole. The surface of a leaf, *superficies* or *pagina,* is distinguished into the upper part, or face, and the under part, or back of the leaf. The *base,* or *origin* of a leaf, is that part next the stem or branch; the *apex* is the termination of the leaf; the *margin,* or edge, the circumference; the disk, *discum,* is the middle part of the surfaces within the margin.

From their *origin,* we have the following terms: —

1. *Seminal; folia seminalia,* which are the first leaves of the majority of plants, proceeding from seeds that have more than one seed-lobe: they are seen in *Raphanus sativus,* and *Cannabis sativa.*

2. *Radical,* which spring directly from the root; as in *Leontodon taraxacum,* and *Viola odorata.*

3. *Cauline,* or stem-leaf. The *Valeriana phu* has its radical leaves undivided, and the cauline leaves pinnate.

4. *Ramial,* or branch-leaf, which are only described when they differ from those of the stem. The *Sison ammi* has its radical leaves linear; its cauline, setous; and its branch leaves, tripinnate.

5. *Axillary,* when seated on joints or axillæ; as in *Parthenium integrifolium.*

6. *Floral,* when next the flower, and like the other leaves; as in *Lonicera caprifolium.*

From their *distribution* on the stem and branches, leaves are named, —

7. *Alternate,* when not in pairs, and are given off in various directions, one after another; as in *Malva rotundifolia.*

8. *Opposite,* when they appear directly on opposite sides of the stem, in pairs; as in *Lamium album,* and *Urtica dioica.*

9. *Two-ranked; folia disticha,* which implies that they spread in two directions, and yet are not regularly opposite at their insertion; as in *Cupressus disticha, Taxus baccata, Pinus picea,* and *Lonicera symphoricarpos.*

10. *Bifarial,* that is, two-ranked, but given off from the side only of the branch; as in *Carpinus betulus,* and *Fagus sylvatica.*

11. *Unilateral,* looking to one side only; as in *Convallaria multiflora.*

12. *Scattered,* irregular, or without any order; as in *Reseda luteola,* and *Sedum reflexum.*

13. *Decussate,* crossing each other in pairs, cross-like; as in *Euphorbia lathyris,* and *Crassula tetragona.*

14. *Imbricate,* like tiles upon a house; as in *Cupressus sempervirens,* and *Aloë spiralis.*

15. *Fasciculate,* or tufted, when several spring from the same point; as in *Pinus larix,* and *Berberis vulgaris.*

16. *Stellate,* star-like, whorled; several leaves growing in a circle round the stem, without any reference to the precise number; as in *Rubia tinctorum, Lilium martagon, Asperula odorata.* In large natural genera it is necessary to mention the number; as in *Galium.*

17. *Remote,* when at an unusual distance from each other.

18. *Clustered;* crowded together, as in *Antirrhinum linaria,* and *Trientalis europea.*

19. *Binal,* when there are only two on a plant; as in *Galanthus nivalis, Scilla bifolia,* and *Convallaria magalis.*

20. *Ternal,* three together; as in *Verbena triphylla.*

21. *Quaternal, Quinal,* &c., when four, five, or more are situated together; as in various species of *Erica.*

From their determinate *direction,* leaves are distinguished into, —

22. *Close-pressed; adpressa,* when their upper surface is close to the stem; as in *Thlaspi campestre,* and *Xeranthemum sesamoides.*

23. *Erect,* when nearly perpendicular, or forming a very acute angle with the stem; as in *Juncus articulatus,* and *Bryum ventricosum.*

24. *Spreading,* forming a moderately acute angle with the stem; as in *Atriplex portulacoides, Nerium oleander,* and *Veronica beccabunga.*

25. *Horizontal,* spreading in the greatest possible degree; as in *Gentiana campestris,* and *Pelargonium patulum.*

26. *Ascending,* rising gently, so as to be somewhat arched; as in *Geranium nitifolium.*

27. *Recurved,* reflected, curved backward; as in *Erica retorta,* and *Bryum pellucidum.*

28. *Reclined,* depending, hanging downward towards the earth; as in *Cichorium intybus,* and *Leonurus cardiaca.*

29. *Oliqae,* twisted, so that one part is vertical, the other horizontal; as *Allium obliquum,* and *Fritillaria obliqua.*

30. *Adverse*, the upper surface turned to the meridian, not the sky; as in *Lactuca scariola.*

31. *Resupinate*, or reversed, when the upper surface is turned downward; as in *Alstroemeria pelegrina*, and *Stache prostrata.*

32. *Revolute*, having a spiral apex; as *Dianthus carthusianorum*, and *barbatus.*

33. *Rooting*, sending rootlets into the earth; as *Asplenium rhizophylla.*

34. *Floating* on the surface of the water; as in *Potamogeton natans*, and *Nymphæa alba.*

35. *Submersed*, demersed, immersed under water; as *Hottonia palustris*, and *Ranunculus aquatilis.*

From their *insertion* into, —

36. *Petiolate*, leaves on footstalks; as *Prunus cerasus*, and *Verbascum nigrum.*

37. *Sessile*, without footstalk, lying immediately on the stem; as in *Saponaria officinalis*, and *Pinguicula vulgaris.*

38. *Adnate*, the upper surface adhering a little way to the branch; as in *Xeranthemum vestitum.*

39. *Decurrent*, when a lamellar part of the leaf runs down the stem, or branch; as in *Carduus spinosus*, and *Verbascum thapsus.*

40. *Connate*, when two opposite leaves embrace, and are united at their bases; as in *Cerastium perfoliatum*, and *Dipsacus laciniatum.*

41. *Connato-perfoliate*, when the union is in the whole, or nearly the whole breadth of the leaves, so as to give the two leaves the appearance of being united into but one leaf; as in *Eupatorium perfoliatum*, and *Lonicera dioica.* Connate leaves are, in some instances, united by a membrane, which, stretching from the margins of the opposed leaves, near the base, forms a kind of pitcher around the stem, in which the rain is retained; as in *Dipsacus fullonum.*

42. *Embracing*, clasping the stem with their bases; as in *Carduus marianus*, and *Papaver somniferum.*

43. *Vaginate*, sheathing the stem at their bases; as in *Canna indica*, and *Polygonum bistorta.*

44. *Peltate*, when the footstalk is inserted not into the basis, but into the disk of the leaf; as in *Drosera peltata*, and *Tropæolum majus.*

45. *Perfoliate*, when the stem runs through the leaf; as in *Bupleurum rotundifolium*, and *Uvularia perfoliata.*

46. *Articulate*, one leaf growing out of the apex of another; as *Cactus opuntia*, and *Cactus ficus indica.*

From the *base* of the leaf, it is called, —

47. *Cordate*, heart-shaped or ovate, hollowed out at the base; as in *Arctium lappa*, and *Tamus communis.*

48. *Arrow-shaped*, triangular, hollowed out very much at the base; as *Rumex acetosa*, and *Sagittaria sagittifolia.*

49. *Hastate*, halbert-shaped, triangular, hollowed out at the base and sides, but with spreading lobes; as in *Arum maculatum*, and *Rumex acetosella.*

50. *Reniform*, kidney-shaped, a short, broad, roundish leaf, the base of which is hollowed out; as *Asarum europeum*, and *Glecoma hederacea.*

51. *Auricled*, furnished at its base with a pair of leaflets, properly distinct, but occasionally joined with it; as in *Citrus aurantium.*

Linnæus uses the term *appendiculatum*, which is correct.

52. *Unequal*, the basis larger on one side than the other; as in *Tilia europea*, and *Piper tuberculatum.*

The form of the *apex* of a leaf gives rise to the following names: —

53. *Acute*, sharp, ending in an acute angle, which is common to a great number of plants; example in *Linum angustifolium*, and *Campanula trachelium.*

54. *Acuminate*, pointed, having a taper, or awl-shawled point; as *Arundo phragmitis*, and *Syringa vulgaris.*

55. *Cuspidate*, or *mucronate*, sharp-pointed, tipped with a rigid spine; as in the thistles, and *Ficus religiosa.*

56. *Obtuse*, blunt, terminating in a segment of a circle; as *Rumex obtusifolius*, and *Hypericum quadrangulum.*

57. *Retuse*, ending in a broad shallow notch; as in *Ervum ervilia*, and *Rumex digynus.*

58. *Præmorse*, jagged pointed, as if bitten off; very blunt, with various irregular notches; as in *Hibiscus præmorsus*, and Swartz's genus *Aëride.*

59. *Truncate*, an abrupt leaf, with the extremity cut off, as it were, by a transverse line; as in *Liriodendrum tulipifera.*

60. *Dedalous*, with a broad, incised, and crisp apex; as in *Asplenium scolopendrum.*

61. *Emarginate*, nicked, having a small notch at the summit; as *Hydrocotile vulgaris*, and *Euphorbia tuberosa.*

62. *Summit-cut*, — *folia apice incisa*; as in *Glinko biloba.*

63. *Cirrhose*, tipped with a tendril; as in *Lathyrus articulatus*, and *Gloriosa superba.*

64. *Tridentate*, three-toothed; an obtuse point, beset with three teeth; as in *Buchera æthiopica*, and *Genista tridentata.*

65. *Ascidiate*, or pitcher-leaf, a cylindrical tube, filled with water; as in *Nepenthes distillatoria*, and *Saracenia.*

The terms derived from the *margin* of the leaf, are, —

66. *Entire*, not divided; as in *Tragopogon pratense*, and *Porrifolium.*

67. *Very entire*, *integerrima*, the margin void of irregularity; as *Citrus aurantium.*

68. *Undulate*, when the disk near the margin is waved obtusely up and down; as in *Panicum hirtellum*, and *Reseda lutea.*

69. *Crenate*, notched, when the teeth are rounded, and not directed towards either end of the leaf; as in *Betonica officinalis*, and *Scutellaria galericulata.*

70. *Doubly crenate*, the greater teeth notched with smaller ones; as in *Salvia sclara*, and *Ranunculus auricomus.*

71. *Serrate*, when the teeth are sharp, and resemble those of a saw, pointing towards the extremity of the leaf; as in *Sedum telephium.*

72. *Acutely serrate;* as in *Thymus acinos.*

73. *Obtusely serrate;* as in *Ballota nigra.*

74. *Doubly serrate,* having a series of smaller serratures intermixed with the larger; as in *Rubus fruticosus,* and *Campanula trachelium.*

75. *Dentate,* toothed, beset with projecting, horizontal, rather distant teeth of its own substance; as the lower leaves of the *Centaurea cyanus,* and *Campanula trachelium.*

76. *Jagged,* irregularly cut or notched, especially when otherwise also divided; as in *Salvia ægyptica,* and *Senecio squalidus.*

77. *Cartilaginous-edged,* hard, and hoary; as in *Saxifraga callosa,* and *Yucca gloriosa.*

78. *Prickle-edged,* beset with prickles; as in *Carduus lanceolatus,* and *Ilex aquifolium.*

79. *Fringed,* bordered with soft parallel hairs; as in *Sempervivum tectorum,* and *Galium cruciatum.*

From the *openings* or *sinuses* in the margin,—

80. *Sinuated,* cut as it were into rounded or wide openings; as in *Quercus robur,* and *Alcea rosea.*

81. *Repand,* wavy, bordered with numerous angles and segments of circles, alternately; as in *Menyanthes nymphoides,* and *Erysimum alliaria.*

82. *Pinnatifid,* cut transversely into several oblong parallel segments; as in *Centaurea calcitrapa,* and *Scabiosa arvensis.*

83. *Bipinnatifid,* doubly pinnatifid; as in *Papaver argemone.*

84. *Lyrate,* lyre-shaped, cut into several transverse segments, gradually larger towards the extremity of the leaf, which is rounded; as in *Geum urbanum,* and *Erysimum barbarea.*

85. *Panduriform,* fiddle-shaped, oblong, broad at the two extremities, and contracted in the middle; as in *Rumex pulcher,* and *Convolvulus panduratus.*

86. *Runcinate,* lion-toothed, cut into several transverse, acute segments, pointing backwards; as in *Leontodon taraxacum,* and *Erysimum officinale.*

87. *Laciniate,* cut into numerous irregular portions; as in *Ranunculus parviflorus,* and *Geranium columbinum,* and *Cotyledon laciniata.*

88. *Squarrose,* the margin beset with a rough fringe; as in *Centaurea calcitrapa,* and *Carduus marianus*

89. *Partite,* deeply divided nearly to the basis; as in *Helleborus viridis.*

Bipartite, tripartite, and *multipartite,* according to the number of the divisions.

90. *Trifid,* divided into three; as in *Bidens tripartita.*

91. *Quinquifid,* divided into five; as in *Geranium maculatum.*

92. *Multifid,* the margin of round leaves cut from the apex almost to the base, without leaving any great intermediate sinuses; as in *Aconitum napellus,* and *Cucumis colocynthis.*

From the *angles* in the margin of the leaf,—

93. *Rounded,* the margin not having any angle.

94. *Angulate,* the margin having acute angles.

a. *Triangular;* as in *Chenopodium bonus henricus,* and *Atriplex hortensis.*

b. *Quinqueangular;* as in *Geranium peltatum.*

c. *Septangular;* as in *Hibiscus abelmoschus.*

95. *Rhomboid, trapeziform* or approaching to a square; as in *Chenopodium vulvaria,* and *Trapa natans.*

96. *Quadrangular,* with four angles; as in *Liriodendrum tulipifera.*

97. *Deltoid,* trowel-shaped, having three angles, of which the terminal one is much further from the base than the lateral ones; as in *Mesembryanthemum deltoideum,* and *Populus nigra.*

98. *Lobate,* when the margins of deep segments are rounded, hence:

a. *Two-lobed;* as in *Bauhinia porrecta.*

b. *Three-lobed;* as in *Anemone hepatica.*

c. *Five-lobed;* as in *Humulus lupulus,* and *Acer pseudo-platanus.*

99. *Palmate,* cut into several oblong nearly equal segments, about halfway, or rather more, towards the base, leaving an entire space, like the palm of the hand; as in *Passiflora cærulea,* and *Alcea ficifolia.*

From the *figure of the circumference,* are derived the following names:—

100. *Orbiculate,* circular, the length and breadth of which are equal, and the circumference in an even circular line; as in *Cotyledon orbiculata,* and *Hydrocotile vulgaris.*

101. *Subrotund,* roundish; as in *Pyrola,* and *Malva rotundifolia.*

102. *Oblong,* three or four times longer than broad; as in *Musa sapientum,* and *Elæagnus orientalis.*

103. *Ovate,* of the shape of an egg, cut lengthwise, the base being rounded, and broader than the extremity; as in *Origanum vulgare,* and *Inula helenium.*

104. *Obovate,* of the same figure, with the broader end uppermost; as in *Primula veris,* and *Samulus valerandi.*

104. *Oval,* ovate, but each end has the same roundness; as in *Rhus catinus,* and *Mammea americana.*

105. *Elliptical,* oval, the longitudinal diameter being greater than the transverse.

106. *Parabolic,* oblong, the summit narrow and round; as in *Marrubium pseudo-dictamnus.*

107. *Cuneiform,* wedge-shaped, broad and abrupt at the summit, and tapering down to the base; as *Saxifraga cuneifolia,* and *Iberis semperflorens.*

108. *Spatulate,* of a roundish figure, tapering to an oblong base; as in *Cotyledon spurea* and *Cucubalus otites.*

109. *Lanceolate,* of a narrow oblong form, tapering towards each end; as in *Plantago lanceolata.*

113. *Linear,* narrow, with parallel sides; as in *Senecio linifolius.*

111. *Capillary,* long, fine, and flexible, resembling a hair; as in *Anethum fœniculum,* and *Graveolens.*

112. *Setaceous,* bristly; as in *Asparagus officinalis,* and *Scirpus setaceus.*

113. *Acerose,* needle-shaped, linear and evergreen, generally acute and rigid; as in *Pinus sylvestris,* and *Juniperis communis.*

From the difference of the *surface* of leaves,—

114. *Glabrous*, smooth, without roughness; as the leaves of most plants.

115. *Nitid*, smooth and shining; as in *Laurus nobilis*, and *Canna indica*.

116. *Lucid*, as if covered with a varnish; as in *Angelica lucida*, and *Royena lucida*.

117. *Viscid*, covered with a clammy juice; as in *Senecio viscosus*, and *Erygeron viscosum*.

118. *Naked*, without bristles or hairs; as the leaves of many plants.

119. *Scabrous*, or *asperous*, with little roughness visible as well as tangible; as in *Morus nigra*, and *Humulus lupulus*.

120. *Punctate*, dotted, perforated with little holes; as in *Hypericum perforatum*.

121. *Pertuse*, bored, naturally having large perforations; as in *Dracontium pertusum*.

122. *Maculate*, spotted; as in *Orchis maculata*, and *Pulmonaria officinalis*.

123. *Coloured*, being of any other than a green colour; as in *Amaranthus tricolor*, and *Atriplex hortensis rubra*.

124. *Hoary*, having a whitish mealy surface; as in *Populus alba*.

125. *Lineate*, having superficial lines; as in *Scirpus maritimus*.

126. *Striate*, marked with coloured lines; as in *Phalaris arundinacea*.

127. *Sulcate*, furrowed, having broad and deep furrows; as in *Digitalis ferruginea*.

128. *Rugose*, rugged; as in *Salvia sclara*.

129. *Bullate*, blistered, a greater degree of the last; as in *Brassica oleracea*.

130. *Papulous*, or *vesiculous*, covered with hollow vesicles; as in *Mesembryanthemum crystallinum*.

131. *Papillose*, or *varicose*, covered with solid wart-like tubercles; as in *Aloë margaritifera*.

132. *Glandular*, covered with small glandiform bodies; as in *Salix alba*, and *Prunus padus*.

From the *distribution of the vessels on the surface* of the leaf.

Nerves are white elevated chords, which originate from the base of the leaf.

A *rib* is the middle nerve, thick, and extending from the basis to the apex of the leaf.

Veins are anastomosing vessels which are given off from the costa or rib.

The greater clusters of vessels are generally called *nervi* or *costæ*, nerves or ribs, and the smaller *venæ*, whether they are branched or reticulate, simple or otherwise.

133. A *nervous* or *ribbed* leaf is where they extend in simple lines from the base to the point; as in the *Convallariæ*, and *Helianthus annuus*. The *Laurus camphora* is an example of a trinerve; the *Smilax tetragona* has five nerves; the *Dioscorea septemloba*, seven.

134. When a pair of large ribs branch off from the main one above the base, and run in a straight line towards the apex, as in *Helianthus tuberosus*, the leaf is said to be *triple nerved*.

135. When two go from the base and four from the costa in a straight line, it is termed *folium quintuplinervum*.

136. *Venous*, veiny, when the vessels by which the leaf is nourished are branched, subdivided, and more or less prominent, forming a network over either or both its surfaces; as in *Clusia venosa*, and *Verbascum lychnitis*.

137. *Avenial*, or veinless, when without veins; as in *Clusia alba*, and *Rosea*.

138. *Enervous*, ribless, when no nerve is given off from the base; as in *Asperula levigata*.

The terms from the *expansion* of the leaves are, —

139. *Flat*, as most leaves are.

140. *Concave*, hollow, depressed in the middle; as in *Saxifraga stolonifera*.

141. *Convex*, the reverse of the former; as in *Ocymum basilicum majus*.

142. *Canaliculate*, channelled, having a longitudinal furrow; as in *Plantago maritima*.

143. *Cucullate*, hooded, when the edges meet in the lower parts, and expand in the upper; as in *Geranium cucullatum*, and that curious genus *Saracenia*.

144. *Plicate*, plaited, when the disk of the leaf, especially towards the margin, is acutely folded up and down; as in the *Malvus*, and *Alchemilla vulgaris*.

145. *Undulate*, waved, when the disk near the margin is waved obtusely up and down; as in *Reseda lutea*, and *Ixia undulata*.

146. *Crisp*, curled, when the border of the leaf becomes more expanded than the disk, so as to grow elegantly, curled, and twisted; as in *Malva crispa*.

From the *internal substance*, —

147. *Membranaceous*, when there is scarcely any pulp between the external membranes of the leaf; as in *Citrus aurantium*, and the leaves of many plants.

148. *Thick*, the membranes being rather more than usually firm; as in *Sedum telephium*.

149. *Carneous*, fleshy, of a thick substance, as in all those called succulent plants; as *Crassula lactea*, and *Sempervivum tectorum*.

150. *Pulpy*, very thick, and of the consistence of a plum; as in *Mesembryanthemum verruculatum*.

151. *Tubular*, hollow within; as in *Allium cepa*. The leaf of the *Lobelia dortmanna* is very peculiar, in consisting of a double tube.

152. *Compact*, not hollow.

153. *Rigid*, easily broken on being bent; as in *Stapelia*.

The thick leaves, *folia crassa*, afford the following distinctions: —

154. *Gibbous*, swelling on one side, or both, from excessive abundance of pulp; as in *Crassula cotyledon*, and *Aloë retusa*.

155. *Round*, cylindrical; as in *Allium schænoprasum*, and *Salsola sativa*.

156. *Subulate*, awl-shaped, tapering from a thickish base to a point; as in *Allium ascalonicum*, and *Narcissus jonquilla*.

157. *Compressed*, flattened laterally; as in *Cacalia ficoides*.

158. *Depressed*, flattened vertically; as in *Crassula tetragona*.

159. *Triquetral*, thick and triangular; as in *Butomus umbellatus*.

160. *Tetragonal*, quadrangular and awl-shaped; as in *Gladiolus tristis*.

161. *Lingulate*, tongue-shaped, a thick oblong blunt figure, and a little convex on its

inferior surface; as in *Mesembryanthemum linguiforme.*

162. *Ancipital*, two-edged; as in *Typha latifolia.*

163. *Ensiform*, sword-shaped, two edges tapering to a point, slightly convex on both surfaces, neither of which can properly be called upper or under, as in *Iris germanica*, and *Gladiolus communis.*

164. *Carinate*, keeled, when the bark is longitudinally prominent; as in *Allium carinatum*, and *Narcissus biflorus.*

165. *Acinaciform*, cimeter-shaped, compressed with one thick and straight edge, the other thin and curved; as in *Mesembryanthemum acinaciforme.*

166. *Dolabriform*, hatchet-shaped, compressed with a very prominent dilated keel, and a cylindrical base; as in *Mesembryanthemum dolabriforme.*

167. *Uncinate*, hooked, flat above, compressed at its sides, and turned back at the apex, forming a hook.

When the shape of membranaceous leaves is *imperfect*, the particle *sub* is attached, as *sub*-sessile, *sub*-ovate, *sub*-pilous, &c.

When the shape is *reversed*, by the prefixing the preposition *ob*, as *ob*-cordate, when the point is inserted into the petiole, *ob*-ovate, &c.

From the *coadunation*, leaves are designated by prefixing the prominent shape, as *lanceolato-ovate;* as in *Nicotiana tabacum:* and ovato-lanceolate, lanceolate, but swelling out in the middle; as in *Saponaria officinalis.*

From their *duration*, leaves are termed, —

168. *Deciduous*, falling off at the approach of winter, as in most European trees and shrubs.

169. *Caducous*, falling off in the middle of summer.

170. *Perennial*, green the whole year, and falling off as the new ones appear.

171. *Persistent*, lasting many years, and always green; as in *Pinus*, and *Taxus.*

All the foregoing terms belong to *simple leaves*, or those which have one leaf only on the petiole or footstalk.

The following regard *compound leaves*, or such as consist of two or any greater number of *foliola*, or leaflets, connected by a common footstalk: —

172. *Digitate*, fingered, when several leaflets proceed from the summit of a common footstalk; as in *Trifolium pratense.*

173. *Pinnate*, when several leaflets proceed laterally from one footstalk, instead of being supported at the top; as in *Acacia pseudacacia.*

A digitate leaf is called after its *mode of digitation*, —

174. *Conjugate*, or yoked, when there is one pair of leaflets, or *pinnæ;* as in *Zygophyllum fabago.*

175. *Binate*, when the pair of leaflets unite somewhat at their base; as in *Lathyrus sylvestris.*

176. *Ternate*, where there are three leaflets; as in *Trifolium pratensis*, and *Oxalis acetocella.*

177. *Quinate*, there being five leaflets; as in *Potentilla reptans*, and *Lupinus albus.*

178. *Septenate*, with seven; as in *Æsculus hippocastanum.*

179. *Novenate*, nine; as in *Sterculia fœtida.*

180. *Pedate*, a peculiar kind of leaf, being ternate, with its lateral leaflets compounded in their fore part; or a leaf with a bifid footstalk divided into two diverging branches, with an intermediate leaflet, and each supporting two or more lateral leaflets on their anterior edge; as in *Helleborus niger.*

181. *Articulate*, jointed, when one, or a pair of leaflets, grows out of the summit of another, with a sort of joint; as in *Cactus ficus indica*, and *Fagara tragodes.*

Pinnate leaves are called from their number of *pinnæ*, —

182. *Bipinnate*, or *duplicato-pinnate*, doubly pinnate; as in *Tanacetum vulgare.*

183. *Tripinnate*, or *triplicato-pinnate*, thrice pinnate; as in *Scandix odorata.*

From the *number of pairs*, pinnate leaves are termed, —

184. *Biguga;* as in *Mimosa nodosa.*

185. *Triguga;* as in *Cassia emarginata.*

186. *Quadriguga;* as in *Cassia longisiliqua.*

187. *Quinquiguga;* as in *Cassia occidentalis.*

188. *Multiguga;* as in *Cassia javanica.*

The difference in the *termination* of a pinnate leaf, —

189. *Impari-pinnate*, with an odd or terminal leaflet; as *Rosa centifolia.*

190. *Abrupti-pinnate*, with a terminal leaflet; as in *Orobus tuberosus.*

191. *Cirrhosi-pinnate*, when furnished with a tendril in place of an odd leaflet; as in the pea and vetch tribe.

From the mode of *adhesion of the leaflets* arise, —

192. *Oppositely-pinnate*, when the leaflets are opposite, or in pairs; as in *Sium angustifolium.*

193. *Alternately-pinnate*, when alternate; as in *Vicia sativa.*

194. *Interruptedly-pinnate*, when the principal leaflets are arranged alternately with an intermediate series of smaller ones; as in *Spiræa ulmaria.*

195. *Decurrently-pinnate*, when the leaflets are decurrent; as in *Eryngium campestre.*

196. *Jointedly-pinnate*, with apparent joints in the common footstalk; as in *Fagara tragodes.*

197. *Petiolato-pinnate*, the leaflets on footstalks; as in *Robinia pseudacacia.*

198. *Alate-pinnate*, when the footstalk has little wings between the leaflets.

199. *Sessile-pinnate*, with leaflets within any petiole.

200. *Conjugate-pinnate*, confluent; the leaflets growing somewhat together at their margins.

From their *bipinnation*, pinnate leaves are, —

201. *Bigeminate*, two-paired; as in *Mimosa unguis cati.*

202. *Trigeminate*, or *triplicato-geminate*, thrice-paired; as in *Mimosa tergemina.*

From the *tripinnation*, —

203. *Doubly-ternate*, or *duplicato-ternate*, when the common footstalk supports these secondary petioles on its apex, and each of these

support three leaflets; as in *Epimedium alpinum.*

204. *Triternate*, or *triplicato-ternate*, when the common petiole supports on its apex three secondary footstalks, each of which supports three ternary ones, and every one of these three leaflets; as in *Aquilegia vulgaris*, and *Fumaria enneaphylla.*

205. *Multiplicato-pinnate*, there being more than three orders; as in *Ruta hortensis.*

Pinnæ are the leaflets of pinnate leaves.

Pinnulæ, the leaflets of the double and triple range of pinnate leaves.

LEÆ'NA. (Λεαινα, a lioness.) The epithet of a plaster mentioned by Ætius.

Leaflet. See *Foliolum.*

Leafstalk. See *Petiolus.*

LEANNESS. *Extenuatio corporis.* This occurs in many individuals as a natural state compatible with the most perfect health: in other cases it is symptomatic of various diseases. In consumption and atrophy the frame gradually wastes away to an extreme degree of leanness, while, in acute fevers, an equal degree of attenuation is often produced in two or three weeks.

LE'DUM. (*um*, *i.* n.; a name adopted from the Greeks, whose ληδον is generally believed to be a species of *Cistus.*) The name of a genus of plants in the Linnæan system. Class, *Decandria*; Order, *Monogynia.*

LEDUM PALUSTRE. The systematic name of the *Rosmarinus sylvestris*, and *Cistus ledon* of the shops. This plant has a bitter sub-astringent taste, and was formerly used in Switzerland in the place of hops. Its medicinal use is confined to the Continent, where it is occasionally given in the cure of hooping-cough, sore throat, dysentery, and exanthematous diseases.

LEECH. *Hirudo. Bdella.* A genus of animals of the order *Annelides.* The body moves either forward or backward. There are several species, principally distinguished by their colour; but that most known to medical men is the *hirudo medicinalis*, or medicinal leech, which grows to the length of two or three inches. The body is of a blackish brown colour, marked on the back with six yellow spots, and edged with a yellow line on each side; but both the spots and lines grow faint, and almost disappear, at some seasons. The head is smaller than the tail, which fixes itself very firmly to any thing the creature pleases. It was till lately supposed to be viviparous, but is now ascertained to be oviparous. It inhabits fresh water marshes and pools throughout Europe. The *Hirudo provincialis*, or Lisbon leech, is now imported into this country in great numbers for medicinal purposes. The *hirudo sanguisuga*, or horse-leech, is larger than these; its skin is smooth and glossy; the body is depressed, the back is dusky; and the belly is of a yellowish green, having a yellow lateral margin. It inhabits stagnant waters. Its bite has been vulgarly believed to be poisonous; but it seems merely to excite more inflammation than that of the medicinal leech, on account of its greater size.

The leech's head is armed with a sharp instrument that makes three wounds at once. It consists of three sharp tubercles, strong enough to cut through the skin of a man, or even of an ox, or horse. The mouth is, as it were, the body of the pump, and the tongue, or fleshy nipple, the sucker. By the working of this piece of mechanism, the blood is made to rise up to the conduit which conveys it to the animal's stomach, which is a membranaceous skin, divided into twenty-four small cells. The blood which is sucked out is there preserved for several months, almost without coagulating, and proves a store of provision to the animal.

Leeches are employed to bleed young children, and for the purposes of topical bleeding, in cases of inflammation, fulness, or pain. They may be used in every case where topical bleeding is thought necessary, or where venesection cannot be performed. If the leech does not fasten, we are told to put a little sugared milk on the spot it is wished to fix on, or to draw a little blood by means of a slight puncture. Rolling the leech in porter will generally be found much more effectual than either. The leech, when used for the hæmorrhoids, should be watched, lest it should find its way into the anus; and when applied to the gums, some contrivance should be used to guard against its creeping down the patient's throat. The best way is to enclose the animal in a case, giving exit only to the head. More blood generally flows from the puncture of a leech after the animal falls off, than is drawn in the act of sucking; but it generally ceases spontaneously, or is easily stopped by the application of lint, &c. Sometimes, however, it is very obstinate, and will not stop till the bite has been cauterised with nitrate of silver. Sulphate of copper is recommended for this purpose, but it seldom answers. In some cases, especially of children, the only way is for a number of assistants to keep up a constant pressure for some hours with the point of the finger, on each orifice.

The introducing a hand, to which any ill-flavoured medicine adheres, into the water in which they are kept, is often sufficient to poison leeches; the application of a small quantity of any saline matter to their skin, immediately occasions the expulsion of the contents of their stomach; and the least flavour of any medicament that has been applied, remaining on the skin, or even the accumulation of the matter of perspiration, will prevent them from fastening. The skin should therefore, previous to their application, be very carefully cleansed from any foulness. They may be applied by taking them by the tail, and presenting their head to the part, or by confining them on the part under a wine-glass, when they generally fix in a short time. On their removal, the rejection of the blood they have drawn may be obtained by the application of salt externally: but it is to be remarked, that a few grains of salt are sufficient for this purpose; and that covering them with it, as is sometimes done, generally destroys them. Leeches should not be kept in spring water, as they very soon die: the vessel should be filled with water from

a pond, and the water changed sufficiently often.

Leek. See *Allium porrum.*

LE'GNA. (From λεγνον, a fringed edge.) The extremities of the pudenda muliebria.

LEGU'MEN. (*en, inis.* n.; from *lego*, to gather: so called because they are usually gathered by the hand.) A legume, or shell of a seed. A peculiar solitary kind of fructification, formed of two oblong valves, without any longitudinal partition, and bearing the seeds along one of its margins only.

From the figure it is called, —

1. *Teres*, round; as in *Phaseolus radiatus.*
2. *Lineare*; as in *Phaseolus vexillatus.*
3. *Compressum*; as in *Pisum sativum.*
4. *Capitatum*; as in *Phaseolus mungo.*
5. *Aciniforme*; as in *Phaseolus lunatus.*
6. *Ovatum*; as in *Lotus hirsutus*, and *Græcus.*
7. *Inflatum*, a cavity filled with air; as in *Astragalus vesicarius*, and *exscapus.*
8. *Cochleatum*, spiral; as in *Medicago polymorpha*, and *marina.*
9. *Lunatum*; as in *Medicago falcata.*
10. *Obcordatum*; as in *Polygala.*
11. *Contortum*; as in *Medicago sativa.*
12. *Quadrangulatum*; as in *Dolichos tetragonolobus.*
13. *Canaliculatum*, the upper suture deeply hollowed; as in *Lathyrus sativus.*
14. *Isthmis interceptum*; as in *Coronilla.*
15. *Echinatum*; as in *Glycyrrhiza echinata.*
16. *Rhombeum*; as in *Cicer aristinum.*

From its insertion, —

1. *Pendulum*; as in *Phaseolus vulgaris.*
2. *Pedicellatum*; as in *Vicia sæpium.*

From its substance, —

1. *Membranaceum*; as in *Phaseolus vulgaris.*
2. *Carnosum*; as in *Cynometra cauliflora.*
3. *Coriaceum*, dry and fleshy; as in *Ceratonia siliqua*, and *Lupinus.*

From the number of seeds, —

1. *Monospermum*; as in *Medicago lupulina.*
2. *Dispermum*; as in *Glycine tomentosa.*
3. *Trispermum*; as in *Trifolium reflexum.*
4. *Tetraspermum*; as in *Trifolium repens.*
5. *Polyspermum*; as in *Trifolium lupinaster.*

LEGU'MINOUS. (*Leguminosus*; from *legumen.*) Appertaining to a legume.

Leienteria. See *Lienteria.*

LEIPOPSY'CHIA. (*a, æ.* f.; from λειπω, to leave, and ψυχη, life.) A swoon. See *Syncope.*

LEIPOTHY'MIA. (*a, æ.* f.; from λειπω, to leave, and θυμος, the mind.) Fainting. See *Syncope.*

LEI'PYRIAS. (Λειπυριας; from λειπω, to leave, and πυρ, heat.) A very malignant continued fever, accompanied with erysipelatous affection of some of the internal viscera, and in which the internal parts are much heated, while the external parts are cold. — *Galen.*

Lemithochorton. See *Helminthocorton.*

Lemon. See *Citrus.*

Lemon, acid of. See *Citric* and *Oxalic acid.*

Lemon scurvy-grass. See *Cochlearia.*

LE'NITIVE. (*Lenitivus*; from *lenis*, gentle.) Applied to medicines which operate mildly.

LENITIVE ELECTUARY. The old name of the *Confectio sennæ composita.*

LENS. (*Lens, tis.* f.) 1. The lentil. See *Ervum lens.*

2. In *Natural Philosophy*, a piece of glass or other transparent material, so shaped as to be capable of refracting the rays of light.

3. In *Anatomy*, an important part of the eye. See *Oculus.*

Lens, crystalline. See *Oculus.*

LENTI'CULA. (*a, æ.* f.; dim. of *lens*, a lentil.) 1. A smaller sort of lentil.

2. A freckle, or a small pustule, resembling a lentil seed.

3. A surgical instrument employed for removing the jagged particles of bone from the edge of the perforation made in the cranium with the trephine.

Lenticula marina. See *Fucus natans.*

LENTI'CULAR. *Lenticularis.* Shaped like a lens. Applied in *Botany*, *Anatomy*, &c.

Lenticular cataract. See *Cataract.*

LENTICULAR GANGLION. The ophthalmic ganglion.

LENTICULARE OS. The os orbiculare of the ear. See *Auris.*

LENTICULAR PAPILLÆ. The papillæ situated at the posterior part of the tongue.

LENTIFORM. The same as *Lenticular.*

LENTI'GO. (*o, onis.* f.: from *lens*, a lentil.) A freckle.

Lentil. See *Ervum lens.*

Lentil, sea. See *Fucus natans.*

LENTI'SCUS. (*us, i.* f.; from *lentesco*, to become sticky: so called from the gumminess of its juice.) The mastich-tree. See *Pistachia.*

LE'NTOR. (*or, oris.* m.; from *lentus*, clammy.) A viscidity or siziness of any fluid.

Leonti'asis. See *Elephantiasis.*

LEO'NTODON. (*on, ontis.* m.; from λεων, the lion, and οδους, a tooth: so called from its supposed resemblance.) The name of a genus of plants in the Linnæan system. Class, *Syngenesia*; Order, *Polygamia æqualis.* The dandelion.

LEONTODON TARAXACUM. The dandelion or pissabed. Called also, *Dens leonis. Leontodon — caule equalis inferne reflexis, foliis runcinatis, denticulatis, lævibus*, of Linnæus. The young leaves of this plant, in a blanched state, have the taste of endive, and make an excellent addition to those plants eaten early in the spring as salads; and Murray informs us, at Goëttingen, the roots are roasted and substituted for coffee by the poorer inhabitants, who find that an infusion prepared in this way can hardly be distinguished from that of the coffee-berry. The expressed juice of dandelion is bitter and somewhat acrid; but that of the root is bitterer, and possesses more medicinal power than any other part of the plant. It has been long in repute as a detergent and aperient, and its diuretic effects may be inferred from the vulgar name it bears in most of the European languages. It has been employed with alleged advantage in hepatic obstructions, jaundice, dropsy, and some

cutaneous diseases. Dr. Pemberton found it of great service in chronic inflammation and incipient scirrhus of the liver, and in chronic affections of the stomach. The leaves, roots, flowers, stalks, and juice of dandelion, have all been separately employed for medical purposes, and seem to differ rather in degree of strength than in any essential property; therefore the expressed juice, or a strong decoction of the roots, have most commonly been prescribed, from one ounce to four, two or three times a day. The extract, when properly prepared and fresh, seems to have all the virtues of the plant. See *Extractum taraxaci.*

LEONTOPO'DIUM. (*um, ii.* n.; from λεων, a lion, and πους, a foot: so named from its supposed resemblance.) The herb lion's foot, or *Filago leontopodium.*

LEONU'RUS. (*us, i.* f.; from λεων, a lion, and ουρα, a tail: so named from its likeness.) 1. The name of a genus of plants in the Linnæan system. Class, *Didynamia;* Order, *Gymnospermia.* Lion's tail.

2. The name, in some pharmacopœias, for the lion's tail. See *Leonurus cardiaca.*

LEONURUS CARDIACA. The mother-wort: called also, *Agripalma gallis, Marrubium,* and *Cardiaca crispa.*

Leonurus — foliis caulinis lanceolatis, trilobis, of Linnæus. The leaves of this plant have a disagreeable smell and a bitter taste, and are said to be serviceable in disorders of the stomachs of children, to promote the uterine discharge, and to allay palpitation of the heart.

Leopard's bane. See *Arnica montana.*

LEPI'DIUM. (*um, ii.* n.; from λεπις, a scale: so named from its supposed usefulness in cleansing the skin from scales and impurities.) The name of a genus of plants in the Linnæan system. Class, *Tetradynamia;* Order, *Siliculosa.*

LEPIDIUM IBE'RIS. *Iberis. Cardamantica.* Sciatica cresses. This plant possesses a warm, penetrating, pungent taste, like unto other cresses, and is recommended as an antiscorbutic, antiseptic, and stomachic.

LEPIDIUM SATIVUM. *Nasturtium hortense.* Dittander. This plant possesses warm, nervine, and stimulating qualities, and is given as an antiscorbutic, antiseptic, and stomachic, especially by the lower orders.

LEPIDO'PTERA. (From λεπις, a scale, and πτερον, a wing.) The name of an order of insects which have scaly wings. See *Animal kingdom.*

LEPIDOSARCO'MA. (From λεπις, a scale, and σαρξ, flesh.) A scaly tumour. Severinus mentions such tumours as occurring in the cavity of the mouth.

LEPIDO'SIS. (*is, is.* m.; from λεπις, *squamma,* a scale.) Scale-skin. See *Ichthyosis.*

LEPORI'NUM LABIUM. (*Lepus,* a hare.) The hare-lip. See *Hare-lip.*

LEPORINUM ROSTRUM. The same.

LE'PRA. (*a, æ.* f.; from λεπρος, *scaber vel asper ex squamulis decedentibus.*) The leprosy. This name has been given to several diseases. See *Lepra arabum, Lepra judaicum,* and *Lepra græcorum;* but it is now restricted to a common form of cutaneous disease, which Dr. Willan describes as characterised by scaly patches, of different sizes, but having always nearly a circular form. In this country, three varieties of the disease are observed, which he has described under the names of *Lepra vulgaris, Lepra alphos,* and *Lepra nigricans.*

1. The *Lepra vulgaris* exhibits first small distinct elevations of the cuticle, which are reddish and shining, but never contain any fluid; these patches continue to enlarge gradually, till they nearly equal the dimensions of a crown piece. They have always an orbicular, or oval form; are covered with dry scales, and surrounded by a red border. The scales accumulate on them, so as to form a thick prominent crust, which is quickly reproduced, whether it fall off spontaneously, or may have been forcibly detached. This species of lepra sometimes appears first at the elbow, or on the fore-arm; but more generally about the knee. In the latter case, the primary patch forms immediately below the patella; within a few weeks, several other scaly circles appear along the fore part of the leg and thigh, increasing by degrees till they come nearly into contact. The disease is then often stationary for a considerable length of time. If it advance further, the progress is towards the hip and loins; afterwards to the sides, back, shoulders, and, about the same time, to the arms and hands. In the greater number of cases, the hairy scalp is the part last affected; although the circles formed on it remain for some time distinct, yet they finally unite, and cover the whole surface on which the hair grows with a white scaly incrustation. This appearance is attended, more especially in hot weather, with a troublesome itching, and with a watery discharge for several hours, when any portion of the crust is detached, which takes place from very slight impressions. The pubes in adults is sometimes affected in the same manner as the head: and if the subject be a female, there is usually an internal *pruritus pudendi.* In some cases of the disorder, the nails, both of the fingers and toes, are thickened, and deeply indented longitudinally. When the lepra extends universally, it becomes highly disgusting in its appearance, and inconvenient from the stiffness and torpor occasioned by it in the limbs. The disease, however, even in this advanced stage, is seldom supposed to terminate spontaneously. It continues nearly in the same state for several years, or sometimes during the whole life of the person affected, not being apparently connected with any disorder of the constitution.

2. *Lepra alphos.* The scaly patches in the alphos are smaller than those of the lepra vulgaris, and also differ from them in having their central parts depressed or indented. This disorder usually begins about the elbow, with distinct, eminent asperities, of a dull red colour, and not much longer than papillæ. These, in a short time, dilate to nearly the size of a silver penny. Two or three days afterwards, the central part of them suffers a depression, within which small white powdery scales may be observed. The surrounding border, however,

still continues to be raised, but retains the same size and the same red colour as at first. The whole of the fore-arm, and sometimes the back of the hand, is spotted with similar patches: they seldom become confluent, excepting round the elbow, which, in that case, is covered with an uniform crust. This affection appears in the same manner upon the joint of the knee, but without spreading far along the thigh or leg. Dr. Willan has seldom seen it on the trunk of the body, and never on the face. It is a disease of long duration, and not less difficult to cure than the foregoing species of lepra: even when the scaly patches have been removed by persevering in the use of suitable applications, the cuticle still remains red, tender, and brittle, very slowly recovering its usual texture. The alphos, as above described, frequently occurs in this country.

3. The *Lepra nigricans* differs little from the lepra vulgaris, as to its form and distribution. The most striking difference is in the colour of the patches, which are dark and livid. They appear first on the legs and fore-arms, extending afterwards to the thighs, loins, neck, and hands. Their central part is not depressed, as in the alphos. They are somewhat smaller in size than the patches of the lepra vulgaris, and not only is the border livid or purplish, but the livid colour of the base likewise appears through the scaly incrustation, which is seldom very thick. It is further to be observed, that the scales are more easily detached than in the other forms of lepra, and that the surface remains longer excoriated, discharging lymph, often with an intermixture of blood, till a new incrustation forms, which is usually hard, brittle, and irregular. The lepra nigricans affects persons whose occupation is attended with much fatigue, and exposes them to cold or damp, and to a precarious or improper mode of diet, as soldiers, brewers, labourers, butchers, stage-coachmen, scullermen, &c.; some women are also liable to it, who are habituated to poor living and constant hard labour.

It would be superfluous to enumerate the catalogue of useless medicines which have been recommended from ancient times for the cure of lepra. There is no one remedy, nor any invariable plan of treatment, which will succeed in lepra, under all the circumstances of its appearance in different instances; and great errors are committed by prescribing for the name of the disease.

In the less irritable conditions of the leprous eruption, such as the alphos usually exhibits, as well as a few cases of the vulgaris, a gently stimulant mode of treatment, at least externally, is requisite; though in all cases of lepra the diet should be light and moderate, and heating liquors should be avoided, especially malt liquors and spirits: for every indulgence in these points will be felt in the aggravation of the symptoms. A frequent use of the warm bath, with which a moderate degree of friction may be combined, contributes to removes the scales, and soften the skin; or, if the eruption be confined to the extremities, local ablution and friction may be sufficient. These cases are benefited by the use of the sulphur waters of Harrogate, Leamington, Crofton, and other well-known springs, both internally and externally, and by the warm sea-water bath. In fact, these gently stimulant ablutions are often sufficient, if persevered in during several weeks, to remove the complaint.

But if the scales adhere tenaciously, or are accumulated into thick crusts, then some more active lotion must be conjoined with the warm ablution, or with the application of steam, in order to clear the surface. Lotions of diluted alkohol, of sulphuretted potash, or the decoction of dulcamara, will aid the exfoliation; and the thick crusts may be softened and loosened by lotions containing a portion of the liquor potassæ, or of the muriatic acid. When these are removed, the cuticle may be restored gradually to its healthy condition by the unguentum picis, or the unguentum hydrargyri nitratis diluted with saturnine cerate, or simple ointment; or lotions containing a small proportion of the oxymuriate of mercury may be substituted. The ointments should be applied at night, and washed off in the morning with warm water, or a slight saponaceous lotion.

The same cases will be accelerated in their progress towards a cure, by the use of those internal remedies which tend to support the strength and to stimulate the cutaneous vessels. For this purpose the arsenical solution is often extremely beneficial, in doses of four or five drops, which may be slowly increased to eight, and persevered in for a month or more. Pitch, administered in the form of pills, is productive of a similar good effect, where the cutaneous circulation is very inert; but both these medicines are liable to aggravate the eruption, where it is connected with much irritability of the skin. The solution of oxymuriate of mercury has appeared to have some efficacy in these inert states; and in thin and delicate girls, of relaxed habits, affected with the lepra alphos, the vinum ferri, or the tartrate of iron, has been taken with much advantage.

One of the most effectual remedies for lepra, however, under all its varieties, is the decoction of the leaves and twigs of the solanum dulcamara, which was introduced to the notice of British practitioners by Sir Alexander Crichton. This medicine is at first administered in doses of two or three ounces thrice every day, which are gradually augmented until a pint is at length consumed daily. When there is a degree of torpor in the superficial vessels, the same decoction, made with a larger proportion of the shrub, is advantageously employed as a lotion; but if there is much inflammatory disposition, this and every other external stimulus must be prohibited.

Where this irritable state of the disease exists, indeed, and it is the most frequent, nothing more stimulating than tepid water, or thin gruel, can be used for the purposes of ablution; and the arseniates, pitch, &c. above mentioned, must be excluded. The disease, under this condition, will be certainly aggravated by sea-bathing, by the external use of the strong sulphureous waters, or of any irritant; but it will be alleviated by the internal employment of

sulphur, with soda or nitre, or the hydrarg. sulphuratus niger with an antimonial, especially when conjoined with the decoction of dulcamara. The caustic potash, or liquor potassæ, in the dose of twenty or thirty drops, alone, or in combination with the precipitated sulphur, is likewise beneficial; and the tinctura veratri, given in such doses as not to disorder the bowels, has occasionally removed this state of the disease.

When the skin is highly inflamed, thickened, and stiff, of a vivid red colour, intermixed with a yellowish hue, where the cuticle is separating in large flakes, the heat, pain, and itching are often extremely troublesome, and the motion of the limbs is almost impracticable. The most effectual relief is obtained, in these cases, by gently besmearing the parts with cream, or a little fresh and well-washed lard, or butter.

Lepra a'rabum. The tubercular elephantiasis, or *elephantiasis Græcorum*.

Lepra græcorum. The term *lepra* was applied by the Greeks to a scaly disease of the skin, which appears to correspond with the lepra vulgaris of Willan. The *alphos* was considered by them as a milder degree of lepra, and corresponds with the lepra alphoides of Willan. The *melas* was named from its colour, and corresponds with the lepra nigricans of Willan.

Lepra judaica. Leprosy of the Jews. A disease much spoken of in holy writ. Moses mentions three kinds of leprosy, namely, 1. the *baak*, called *baak* also by the Arabians, which appears to correspond with the *alphos* of the Greeks. 2. The *berat cecha* — *beras asved* of the Arabians, and *melas* of the Greeks. 3. The *berat lebena* — *beras bejas* of the Arabians, and *leuce* of the Greeks. The first kind was considered by the Jewish lawgiver as not contagious, the two latter as contagious. The reader will find the subject of leprosy learnedly discussed by Dr. Mason Good, in the fifth volume of his *Study of Medicine*.

Lepri'asis. (From λεπρος, *scaber*.) The specific name given by Dr. Mason Good to leprosy, which disease he calls *Lepidosis leproriasis*.

Leprosy. See *Lepra*.

LE'PROUS. (*Leprosus*; from *lepra*, the leprosy.) 1. Affected with leprosy, or appertaining to leprosy.

2. In *Botany*, applied to the leprous-like appearance on crustaceous lichens.

Lepty'ntica. (From λεπτιζω, to make thin.) Synonymous with *attenuantia*.

Lepty'smus. (Λεπτυσμος; from λεπτος, slender.) Emaciation.

LE'PUS. (*us, oris*. m.) A genus of mammiferous animals of the order *Rodentia*.

Lepus cuni'culus. The systematic name of the rabbit; the flesh of which, when young and tender, is easy of digestion.

Lepus timidus. The systematic name of the common hare; the flesh of which is considered as a delicacy, and easy of digestion.

Le'ros. (Ληρος; from ληρεω, to trifle.) Slight delirium.

LESION. (*Læsio, onis*. f.; from *lædo*, to hurt.) An injury. This word is now very generally used in pathology; thus we speak of *lesion of structure*, or *organic lesion*; *lesion of function*, &c.

Leta. An alchemical term for a red heat.

LETHA'RGIC. *Lethargicus*. Appertaining to lethargy.

LE'THARGY. (*Lethargus, i*. m.; from ληθη, forgetfulness: so called because with it the person is forgetful.) A heavy and constant sleep, with scarcely any intervals of waking: when awakened, the person answers, but, ignorant or forgetful of what he said, immediately sinks into the same state of sleep. Lethargy is very nearly allied to mild forms of apoplexy, and may arise from the same causes. Retrocedent gout has been known to produce lethargy. The common causes of sleep, whether natural or morbid, are in many cases causes of lethargy. The proximate cause of sleep is to be sought for in a torpitude or exhaustion of sensorial power, from the ordinary stimulants of the day: hence excessive exertion of body or mind may give rise to lethargy. The same effect may result from a defective supply of sensorial power, as well as from exhaustion; and, consequently, the torpitude of sleep may ensue whenever such deficient action or energy exists, even where there is no exposure to its ordinary exciting causes.

The cure of lethargy is to be attempted by a diligent search into the cause, the removal of which generally establishes health. If any suppressed discharge or eruption can be traced, we should endeavour to reproduce it by all possible means; and if any general or local plethora exist, bleeding, purgatives, and active exercise must be resorted to, with an abstemious plan of diet. Lethargy is frequently the result of a determination of blood to the head, but it is also, frequently, a purely nervous affection; and, in the latter case, a generous diet is proper, with blisters, and medicines which stimulate the nervous system, especially ammonia.

Lethe'a. (From ληθη, forgetfulness.) A name of the poppy.

Lettuce. See *Lactuca*.

Leucaca'ntha. (*a, æ*. f.; from λευκος, white, and ακανθα, a thorn: so named from its white blossom.) The cotton-thistle.

Leuca'nthemum. (*um, i*. n.; from λευκος, white, and ανθεμον, a flower: so called from its white floret.) See *Chrysanthemum leucanthemum*.

Leuca'smus. (*us, i*. m. Λευκασμον, whiteness: so named from its appearance.) Vealskin. See *Vitiligo*.

LEU'CE. (Λευκη; from λευκος, white.) A disease mentioned by the Greek writers, characterised by smooth shining patches on the skin, on which the hairs turned white and silky, and the skin itself, and the subjacent parts, lost their sensibility. It was not scaly like lepra. It is the *Vitiligo alba* of Celsus, and the *beras bejas* of the Arabians. This disease still exists in tropical climates, and has been described by Mr. Robinson as it occurs in India. See *Elephantiasis*. The leuce was regarded by the Greeks as incurable: Mr. Robinson, however, asserts that it is cured in the East Indies by the use of the *Asclepias gigantea*. The leuce appears to be the same with the *berat lebena*, one

of the forms of leprosy mentioned in Scripture. See *Lepra Judaica.*

LEUCELE'CTRUM. (*um, i.* n.; from λευκος, white, and ηλεκτρον, amber.) White amber.—*Blancard.*

LEU'CINE. (From λευκος, white: so named from its appearance.) A white pulverulent matter obtained by digesting equal parts of beef fibre and sulphuric acid together, and, after separating the fat, diluting the acid mixture, and saturating with chalk, filtering and evaporating. A substance tasting like ozmazome is thus procured, which is to be boiled in different portions of alkohol. The alkoholic solutions, on cooling, deposit the white pulverulent matter, or *leucine.*

LEUCOCHRUS. (Λευκοχρους; from λευκος, white, and χροη, a colour.) The Greek epithet of a factitious wine, made by macerating in white wine, raisins previously pounded and steeped in sea water.

LEUCOLA'CHANUM. (From λευκος, white, and λαχανον, a herb: so named from its colour.) The *Valeriana sylvestris.*

LEUCO'MA. (*a, atis.* n.; from λευκος, white.) Leucoma and albugo are often used synonymously, to denote a white opacity of the cornea of the eye. Both of them, according to Scarpa, are essentially different from the nebula, for they are not the consequence of chronic ophthalmy, attended with varicose veins, and an effusion of a milky serum into the texture of the delicate continuation of the conjunctiva over the cornea; but are the result of violent acute ophthalmy. In this state, a dense coagulating lymph is extravasated from the arteries; sometimes superficially, at other times deeply into the substance of the cornea. On other occasions, the disease consists of a firm callous cicatrix on this membrane, the effect of an ulcer, or wound, with loss of substance. The term *albugo* strictly belongs to the first form of the disease, *leucoma* to the last, more particularly when the opacity occupies the whole, or the chief part, of the cornea.

LEUCONYMPHÆ'A. (*a, æ.* f.; from λευκος, white, and νυμφαια, the water-lily.) See *Nymphæa alba.*

LEUCOPHA'GIUM. (*um, ii.* n.; from λευκος, white, and φαγω, to eat.) A name formerly given to a culinary preparation made with some animal jelly and emulsion of sweet almonds, sweetened and variously flavoured. The *blanc-manger* of the present day, made with milk, isinglass, &c., is the descendant of the old leucophagium. These preparations are very nutritious, and form a pleasant and excellent food for debilitated patients.

LEUCOPHLEGMA'SIA. (*a, æ.* f.; from λευκος, white, and φλεγμα, phlegm.) A tendency in the system to a dropsical state, known by a pale colour of the skin, a flabby condition of the solids, and a redundancy of serum in the blood.

LEUCOPHLEGMA'TIC. Affected with or appertaining to leucophlegmasia.

LEUCOPHY'LLON. Λευκοφυλλον. The Greek name of a composition of Samian earth, storax, malabathrum, opobalsamum, and the juice of roses. It was rubbed on the neck and axillæ as a perfume.

LEUCO'PIPER. (*er, eris.* n.; from λευκος, white, and πεπερι, pepper.) White pepper. See *Piper nigrum.*

LEUCORRHŒ'A. (*a, æ.* f.; from λευκος, white, and ῥεω, to flow.) *Fluor albus.* The whites. A secretion of whitish or milky mucus from the vagina of women, arising from debility, and not from the venereal virus. This disease is marked by the discharge of a thin white or yellow matter from the uterus and vagina, attended likewise with some degree of fœtor, smarting in making water, pains in the back and loins, anorexia and atrophy. In some cases the discharge is of so acrid a nature, as to produce effects on those who are connected with the woman somewhat similar to venereal matter, giving rise to excoriations about the glans penis and præputium, and occasioning a weeping from the urethra.

To distinguish leucorrhœa from gonorrhœa, it is necessary to attend to the following circumstances: — In the latter, the running is constant, but in small quantity; there is much ardor urinæ, itching of the pudenda, swelling of the labia, increased inclination to venery, and very frequently an enlargement of the glands in the groin: whereas in the former the discharge is irregular, and in considerable quantities, and is neither preceded by, nor accompanied with, any inflammatory affection of the pudenda.

Immoderate coition, injury done to the parts by difficult and tedious labours, frequent miscarriages, immoderate flowings of the menses, profuse evacuations, poor diet, an abuse of tea, and other causes, giving rise to general debility, or to a laxity of the parts more immediately concerned, are those which usually produce the whites, vulgarly so called from the discharge being commonly of a milky white colour.

Fluor albus, in some cases, indicates that there is a disposition to disease in the uterus or parts connected with it, especially where the quantity of the discharge is very copious, and its quality highly acrimonious. By some the disease has been considered as never arising from debility of the system, but as being always a primary affection of the uterus. Delicate women, with lax fibres, who remove from a cold climate to a warm one, are very apt to be attacked with it, without the parts having previously sustained any kind of injury.

The disease shows itself by an irregular discharge from the uterus and vagina of a fluor which, in different women, varies much in colour, being either of a white, green, yellow or brown hue. In the beginning it is, however, most usually white and pellucid, and in the progress of the complaint acquires the various discolourations, and different degrees of acrimony, from which proceeds a slight degree of smarting in making water. Besides the discharge, the patient is frequently afflicted with severe and constant pains in the back and loins, loss of strength, failure of appetite, dejection of spirits, paleness of the countenance, chilliness and languor. Where the disease has been of long continuance, and very severe, a slow fever

attended with difficult respiration, palpitations, faintings, and swellings of the lower extremities, often ensues.

A perfect removal of the disorder will at all times be a difficult matter to effect; but it will be much more so in cases of long standing, and where the discharge is accompanied with a high degree of acrimony. In these cases, many disorders, such as prolapsus uteri, ulcerations of the organ, atrophy, and dropsy, are apt to take place, which in the end prove fatal.

Where the disease terminates in death, the internal surface of the uterus appears, on dissection, to be pale, flabby, and relaxed; and where organic affections have arisen, much the same appearances are to be met with as have been noticed under the head of menorrhagia.

LEVA'TOR. (*or, oris.* m.; from *levo*, to lift up.) A muscle the office of which is to lift up the part to which it is attached.

Levator anguli oris. *Abducens labiorum*, of Spigelius. *Elevator labiorum communis*, of Douglas. *Caninus*, of Winslow. A muscle situated above the mouth, which draws the corner of the mouth upwards, and makes that part of the cheek opposite to the chin prominent, as in smiling. It arises thin and fleshy from the hollow of the superior maxillary bone, between the root of the socket of the first grinder and the foramen infra orbitarium, and is inserted into the angle of the mouth and under lip, where it joins with its antagonist.

Levator ani. *Levator magnus seu internus*, of Douglas. A muscle of the rectum. It arises from the os pubis, within the pelvis, as far up as the upper edge of the foramen thyroideum and joining of the os pubis with the os ischium, from the thin tendinous membrane that covers the obturator internus and coccygæus muscles, and from the spinous process of the ischium. From these origins, all round the inside of the pelvis, its fibres run down like rays from the circumference to a centre, to be inserted into the sphincter ani, acceleratores urinæ, and anterior part of the two last bones of the os coccygis, surrounding the extremity of the rectum, neck of the bladder, prostate gland, and part of the vesiculæ seminales. Its fibres, joining with those of its fellow, form a funnel-shaped hole, that draws the rectum upwards after the evacuation of the fæces, and assists in shutting it. The levatores ani also sustain the contents of the pelvis, and assist in ejecting the semen, urine, and contents of the rectum, and perhaps, by pressing upon the veins, contribute greatly to the erection of the penis.

Levator ani parvus. The transverse muscle of the perinæum is so called by Riolan.

Levator coccygis. Cowper's name for the *Coccygeus* muscle.

Levator labii inferioris. A muscle of the mouth situated below the lips. *Levator menti*, of Albinus. *Incisivus inferior*, of Winslow. *Elevator labii inferioris proprius*, of Douglas. It arises from the lower jaw, at the roots of the alveoli of two incisor teeth, and the cuspidatus, and is inserted into the under lip and skin of the chin.

Levator labii superioris alæque nasi. *Elevator labii superioris proprius*, of Douglas. *Incisivus lateralis et pyramidalis*, of Winslow. A muscle of the mouth and lips, that raises the upper lip towards the orbit, and a little outwards; it serves also to draw the skin of the nose upwards and outwards, by which the nostril is dilated. It arises by two distinct origins: the first, broad and fleshy, from the external part of the orbitar process of the superior maxillary bone, immediately above the foramen infra orbitarium; the second, from the nasal process of the superior maxillary bone, where it joins the os frontis. The first portion is inserted into the upper lip and orbicularis muscle; the second, into the upper lip and outer part of the ala nasi.

Levator labii superioris proprius. *Musculus incisivus.* A muscle of the upper lip. It arises under the edge of the orbit, and is inserted into the upper lip.

Levator oculi. See *Rectus superior oculi.*

Levator palati. A muscle situated between the lower jaw and the os hyoides, laterally. *Levator pallati mollis*, of Albinus. *Petrosalpingo-staphilinus, vel salpingo-staphilinus internus*, of Winslow. *Salpingo-staphilinus*, of Valsalva. *Pterigo-staphilinus externus vulgo*, of Douglas. *Spheno-staphilinus*, of Cowper. It arises tendinous and fleshy from the extremity of the petrous portion of the temporal bone, where it is perforated by the Eustachian tube, and also from the membraneous part of the same tube, and is inserted into the whole length of the velum pendulum palati, as far as the root of the uvula, and unites with its fellow. Its use is to draw the velum pendulum palati upwards and backwards, so as to shut the passage from the fauces into the mouth and nose.

Levator palati mollis. See *Levator palati.*

Levator palpebræ superioris. *Aperiens palpebrarum rectus. Apertor oculi.* A proper muscle of the upper eyelid, that opens the eyes by drawing the eyelid upwards. It arises from the upper part of the foramen opticum of the sphenoid bone, above the rectus superior oculi, near the trochlearis, and is inserted by a broad thin tendon into the cartilage that supports the upper eyelid.

Levator parvus. See *Transversus perinei.*

Levator proprius scapulæ. See *Levator scapulæ.*

Levator scapulæ. *Levator proprius scapulæ.* A muscle situated on the posterior part of the neck, that pulls the scapula upwards and a little forwards. This name, which was first given to it by Riolanus, has been adopted by Albinus. Douglas calls it *elevator, seu musculus patientiæ*; and Winslow, *angularis, vulgo levator proprius.* It is a long muscle, nearly two inches in breadth, and is situated obliquely under the anterior edge of the trapezius. It arises tendinous and fleshy from the transverse processes of the four, and sometimes five superior vertebræ colli, by so many distinct slips, which soon unite to form a muscle that runs obliquely downwards and outwards, and is inserted by a flat tendon into the upper angle of the scapula. Its use is to raise the scapula upwards and a little forwards.

Levatores costarum. See *Intercostal muscles.*

LEVER. *Vectis.* An obstetrical instrument for aiding the descent of the child's head through the pelvis. It is applicable to the same cases as the forceps, but the latter is a preferable instrument, and the lever is now hardly ever used. It is improperly called a lever, as it does not act on the principle of the lever; it resembles a single blade of the forceps.

Leviathan penis. *Priapus ceti.* The penis of the whale, which, when dried and powdered, was formerly used in leucorrhœa and dysentery.

LEVIGA'TION. (*Lævigatio, onis.* f.; from *lævigo*, to make smooth.) The reduction of a hard substance by trituration to an impalpable powder.

Levi'sticum. See *Ligusticum levisticum.*

Lexipha'rmacon. (From ληγω, to terminate, and φαρμακον, poison.) The same as alexipharmacon.

Lexipyre'ticus. (From ληγω, to make cease, and πυρετος, a fever.) Febrifuge.

Ley. See *Lixivium.*

Leyden jar. See *Electricity.*

Leyden phial. See *Electricity.*

Liba'dium. (From λιβαζω, to make moist: so called because it grows in watery places.) The lesser centaury. — *Turton.*

Libanion. Λιβανιον. The name of a collyrium described by Paul of Ægina.

Libano'tis. (*is, idis.* f.; from λιβανος, frankincense: so called from its resemblance in smell to frankincense.) Rosemary.

LI'BANUS. (*us, i.* m.; from *Libanon* a mountain in Syria, where it grows.) 1. The *Pinus cedrus*, or cedar of Lebanon.

2. The frankincense tree, or *Pinus abies.*

Liber. See *Bark.*

Libu'rnum. (*um, i.* n.; from *Liburnia*, the country where it flourished.) The mealy-tree. See *Viburnum lantana.*

Libyanon. Λιβυανον. The Greek name of several collyria.

LI'CHANUS. (Λιχανος; from λειχω, to lick: so called because it is used in tasting a small portion of any thing.) The fore-finger.

LI'CHEN. (Λειχην, or λιχην. *Lichen, enis.* or *enos.* m.; a term, Dr. Mason Good observes, common to the Greek physiologists, as well as the Greek pathologists. By the former it is applied to an extensive genus of the algæ, or rather to many of its species; and it is conjectured by Pliny that the physicians applied it to this disease from the resemblance it produces, on the surface of the body, to many of the spotty and minutely tuberculated lichens which are found upon stones, walls, barks of trees, &c. Gorræus, however, derives it from λειχω, to lick, because it was supposed to be cured by being licked, or from its lambent or tongue-like form over different parts of the body.) The lichen.

I. In *Pathology*, a disease, defined, by Dr. Willan, an extensive eruption of papulæ affecting adults, connected with internal disorder, usually terminating in scurf; recurrent, not contagious. The varieties of lichen he considers under the denominations of *simplex, agrius, pilaris, lividus, tropicus, circumscriptus*, and *urticatus.*

The *lichen simplex* usually commences with headach, flushing of the face, loss of appetite, general languor, and increased quickness of the pulse. Distinct red papulæ arise first about the cheeks and chin, or on the arms; and, in the course of three or four days, the same appearance takes place on the neck, body, and lower extremities, accompanied with an unpleasant sensation of tingling, which is somewhat aggravated during the night. In about a week, the colour of the eruption fades, and the cuticle begins to separate; the whole surface is at length covered with scurfy exfoliations, which are particularly large, and continue longest in the flexures of the joints. The duration of the complaint is seldom in any two cases alike; ten, fourteen, seventeen, or sometimes twenty days, intervene betwixt the eruption and the renovation of the cuticle. The febrile state, or rather the state of irritation at the beginning of this disorder, is seldom considerable enough to confine the patient to the house. After remaining five or six days, it is generally relieved on the appearance of the eruption. This, as well as some other species of the lichen, occurs about the beginning of summer, or in autumn, more especially affecting persons of a weak and irritable habit; hence women are more liable to it than men. Lichen simplex is also a frequent sequel of acute diseases, particularly fever and catarrhal inflammation, of which it seems to produce a crisis.

Lichen circumscriptus is characterised by clusters or patches of papulæ, which have a well defined margin, and are of an irregularly circular form. Some of them are stationary for a week or two, and disappear; but others extend gradually, by new papulated borders, into large figured forms, which coalesce. As the borders extend, the central areæ become even, but continue slightly red and scurfy. Sometimes, before the scurf is removed, a new crop of papulæ arises, terminating like the former in exfoliations; and by these new eruptions the complaint is prolonged for several weeks. It may be excited either by internal or external causes of irritation. In adults it is occasionally produced by vaccination, and may be deemed a proof of the full affection of the constitution by the virus.

Little medicinal treatment is necessary for these species of lichen. It is sufficient that patients avoid heating themselves by much exercise or by stimulants, and take a light diet with diluent drinks, and a gentle laxative occasionally. The diluted sulphuric acid is a grateful tonic to the stomach during the period of exfoliation; or a light chalybeate may be taken with advantage at the same period. All strong external applications are improper, especially preparations of mercury and of sulphur, which produce severe irritation. The ancients recommended that the parts should be besmeared every morning with saliva; and some demulcent lotion, as a substitute for this uncleanly expedient, prepared with the white of egg, or emulsion of almonds, will relieve the painful sensations of the patient.

The *Lichen agrius* is preceded by nausea

pain in the stomach, headach, loss of strength, and deep-seated pains in the limbs, with fits of coldness and shivering; which symptoms continue several days, and are sometimes relieved by the papulous eruption. The papulæ are distributed in clusters, or often in large patches, chiefly on the arms, the upper part of the breast, the neck, face, back, and sides of the abdomen; they are of a vivid red colour, and have a redness, or some degree of inflammation, diffused round them to a considerable extent, and attending with itching, heat, and a painful tingling. Dr. Willan has observed, in one or two cases where it was produced from imprudent exposure to cold, that an acute disease ensued, with great quickness of the pulse, heat, thirst, pains of the bowels, frequent vomiting, headach, and delirium. After these symptoms had continued ten days, or somewhat longer, the patient recovered, though the eruption did not return. The diffuse redness connecting the papulæ, and the tendency to become pustular, distinguish the lichen agrius from the lichen simplex, and the other varieties of this complaint, in which the inflammation does not extend beyond the basis of the papulæ, and terminates in scurf, or scales.

Lichen pilaris. This is merely a modification of the first species of lichen, and like it, often alternates with complaints of the head, or stomach, in irritable habits. The peculiarity of the eruption is, that the small tubercles or asperities appear only at the roots of the hairs of the skin, being probably occasioned by an enlargement of their bulbs, or an unusual fulness of the blood-vessels distributed to them. This affection is distinguishable from the cutis anserina, by its permanency, by its red papulæ, and by the troublesome itching or tingling which attends it. If a part thus affected be violently rubbed, some of the papulæ enlarge to the size of wheals, but the tumour soon subsides again. The eruption continues more or less vivid for about ten days, and terminates, as usual, in small exfoliations of the cuticle, one of which surrounds the base of each hair. This complaint, as likewise the lichen agrius, frequently occurs in persons accustomed to drink largely of spirituous liquors undiluted.

Lichen lividus. The papulæ characterising this eruption are of a dark red, or livid hue, and somewhat more permanent than in the foregoing species of lichen. They appear chiefly on the arms and legs, but sometimes extend to other parts of the body. They are finally succeeded, though at very uncertain periods, by slight exfoliations of the cuticle, after which a fresh eruption is not preceded nor attended by any febrile symptoms. It principally affects persons of weak constitution, who live on a poor diet, and are engaged in laborious occupations. Young persons, and often children living in confined situations, or using little exercise, are also subject to the lichen lividus; and, in them, the papulæ are generally intermixed with petechiæ, or larger purple spots, resembling vibices. This circumstance points out the affinity of the lichen lividus with the purpura, or land-scurvy, and the connection is further proved by the exciting causes, which are the same in both complaints. The same method of treatment is likewise successful in both cases. They are presently cured by nourishing food, moderate exercise in the open air, along with the use of Peruvian bark and vitriolic acid, or the tincture of muriated steel.

Lichen tropicus. By this term is expressed the *prickly heat*, a papulous eruption, almost universally affecting Europeans settled in tropical climates. The prickly heat appears without any preceding disorder of the constitution. It consists of numerous papulæ, about the size of a small pin's head, and elevated so as to produce a considerable roughness on the skin. The papulæ are of a vivid red colour, and often exhibit an irregular form, two or three of them being in many places united together; but no redness or inflammation extends to the skin in the interstices of the papulæ.

Dr. Bateman has introduced another species — *Lichen urticatus.* In its first appearance it is in irregular, inflamed wheals, so closely resembling the spots excited by the bites of bugs or gnats, as almost to deceive the observer. The inflammation, however, subsides in a day or two, leaving small, elevated, itching papulæ. While the first wheals are thus terminating, new ones continue to appear in succession, until the whole body and limbs are spotted with papulæ, which becomes here and there confluent, in small patches. This eruption is peculiar to children: it commences, in some cases, soon after birth, and sometimes later, and continues with great obstinacy for many months. Both the wheals and the papulæ are accompanied with intense itching, which is exceedingly severe in the night, occasioning an almost total interruption of sleep, and considerable loss of flesh.

Frequent tepid bathing, light covering, especially in bed, with the use of small doses of sulphur, or the hydrargyrus sulphuratus niger, internally, appear to relieve the symptoms. The skin will not bear stimulation, and is irritated even by a bath of too high temperature. When it has occurred in feeble and emaciated children, it is relieved by chalybeate medicines, as the vinum ferri, or the solution of the tartrate before mentioned. This combination of inflamed papulæ, with intense itching, unites the characters of the lichen and prurigo; a union which, it must be allowed, is likewise not unfrequent in young adult persons.

A species of lichen has lately been described by M. Biett under the name of *lichen gyratus*, in which the papulæ are arranged in a spiral form.

II. In *Botany*, the name of a genus of plants (applied by the Romans to a plant, which was supposed by them to cure the lichen or tetter,) in the Linnæan system. Class, *Cryptogamia*; Order, *Algæ*. There are several species, some of which are used in medicine.

Lichen apithosus. *Muscus camutalis.* This plant is said to have a good effect in some complaints of the intestines, but is not used in the practice of this country.

Lichen arboreus pullus. See *Lichen olivarius.*

Lichen caninus. The systematic name of

the ash-coloured ground liverwort. *Lichen terrestris. Lichen cinereus terrestris. Muscus caninus.* This cryptogamous plant has a weak, faint smell, and a sharpish taste. It was for a long time highly extolled as a medicine of singular virtue, in preventing and curing that dreadful disorder which is produced by the bite of rabid animals, but it is now deservedly forgotten.

Lichen cinereus terrestris. See *Lichen caninus.*

Lichen cocciferus. See *Lichen pyxidatus.*

Lichen coccineus. See *Lichen pyxidatus.*

Lichen islandicus. The former name of the Iceland moss, or liverwort. See *Cetraria islandica* in the Supplement.

Lichen marinus. See *Ulva lactuca.*

Lichen olivarius. Tree liverwort. *Lichen arboreus pullus.* An infusion of this is considered as strengthening to the lungs, and given in hæmorrhages, and against old coughs.

Lichen plicatus. The systematic name of the *muscus arboreus.* This plant, we are informed by Linnæus, is applied by the Laplanders to parts which are excoriated by a long journey. It is slightly astringent, and is applied with that intention to bleeding vessels.

Lichen prunastri. *Muscus arboreus.* This is astringent, and is used to strengthen the lungs.

Lichen pulmonarius. *Lichen arboreus.* Pectoral moss. Tree lungwort. Oak lungs. Hazel crottles. The systematic name of the officinal *muscus pulmonarius quercinus. Pulmonaria arborea.* This sub-astringent and rather acid plant was once in high estimation in the cure of diseases of the lungs, especially coughs, asthmas, and catarrhs. Its virtues are similar, and in no way inferior to those of the lichen islandicus.

Lichen pyxidatus. The systematic name of the cup-moss. *Muscus pyxidatus. Musculus pyxoides terrestris. Lichen pyxidatus major. Lichen coccineus.* The *Lichen cocciferus* and *pyxidatus*, very common little plants, are both used indifferently by the common people in this country in the cure of hooping-cough, in the form of decoction.

Lichen roccella. Canary archel. Herb archel. *Roccella. Rocella tinctorum.* The systematic name of the roccella of the shops. This plant has been employed medicinally with success in allaying the cough attendant on phthisis, and in hysterical coughs. The principal use is as a blue dye. It is imported to us as it is gathered: those who prepare it for the use of the dyer grind it betwixt stones, so as thoroughly to bruise, but not to reduce it into powder, and then moisten it occasionally with a strong spirit of urine, or urine itself mixed with quicklime: in a few days, it acquires a purplish red, and, at length, a blue colour; in the first state it is called archel, in the latter laemus or litmus.

Litmus is used in chemistry as a test, either staining paper with it, or by infusing it in water, when it is very commonly, but with great impropriety, called *tincture of turnsole.* The persons by whom this article was prepared formerly gave it the name of turnsole, pretending that it was extracted from the turnsole, *heliotropium tricoccum*, in order to keep its true source a secret. The tincture should not be too strong, otherwise it will have a violet tinge, which, however, may be removed by dilution. The light of the sun turns it red, even in close vessels. It may be made with spirit instead of water. This tincture, or paper stained with it, is presently turned red by acids; and if it be first reddened by a small quantity of vinegar, or some weak acid, its blue colour will be restored by an alkali.

Lichen saxatilis. The systematic name of the *muscus cranii humani. Usnea.* This moss, when growing on the human skull, was formerly in high estimation, but is now deservedly forgotten.

Lichen velleus. This has the same virtues as the lichen pulmonarius.

LI'EN. (*en, ēnis.* m.; from λειος, soft or smooth.) The spleen. See *Spleen.*

Lien sinarum. The faba Ægyptia. See *Nymphæa nelumbo.*

LIENTE'RIA. (*a, æ.* f.; from λειος, smooth, and εντερον, the intestine.) Lientery. See *Diarrhœa.*

LIFE. Βιος. *Vita.* The word *life* has been used in two acceptations: in the one it means the aggregate of the phenomena resulting from the activities of an organised body; in the other it means the cause of those activities.

The chief points of difference between organised and inorganic bodies, have been noticed in the article *Body.*

Organisation is necessary to the manifestation of life; but it does not seem to be alone sufficient for this end, since a dead animal before the commencement of putrefaction, may, under certain circumstances, retain its organisation unchanged, as far at least as it is cognisable by our senses. Hence the majority of physiologists have supposed the cause of life to reside in an unknown something superadded to the organisation; a few, however, have maintained that the cause of life does indeed consist in the mere organisation, although the mechanical or chemical arrangements from which the phenomena of life result, are so minute and so intricate as to elude our observation.

A great variety of opinions have been held by physiologists in different ages, as to the nature of life: of these we shall here give a very brief review.

Hippocrates recognised a power in the living body, which he calls φυσις, *nature;* and this he represents as acting instinctively, and doing what is needful for the preservation of the frame.

Aristotle divided the vital powers into the *nutritive*, θρεπτικον; *sensitive*, αισθητικον; *appetitive*, ορεκτικον; *locomotive*, κινητικον κατα τοπον and *cogitative*, διανοητικον.

He referred the first four of these to a kind of soul common to man, animals, and plants; but regarded the thinking faculty as appertaining to another kind of soul, capable of a separate and independent existence. The soul common to all organised beings appear

to be no other than a vital principle. This classification of the vital powers will be found to correspond nearly with Bichat's doctrine of the *animal* and *organic* life; the nutritive faculty of Aristotle corresponding with the organic life, and the combined, sensitive, appetitive, and motive faculties, with the animal life.

Galen, perceiving that Aristotle had committed an error in associating phenomena which involve consciousness and will, with those of mere automatic life, proposed a new classification of the vital powers or faculties. These he divided into the *natural*, which is centred in the liver, and presides over nutrition, growth, and generation; the *vital*, which resides in the heart, and communicates life and heat through the arteries to all parts of the frame; and the *animal*, which is seated in the brain, producing the phenomena of the mind, causing sensation and motion by means of the nerves, and presiding over all the other functions. Three kinds of *spirits*, the natural, animal, and vital, formed by a sort of exhalation from the blood, minister to the respective faculties, and convey their influence through the appropriate channels. Besides the three principal faculties, Galen admitted the existence of certain subordinate faculties which presided over particular organs. In this fanciful arrangement we may trace two correct physiological notions; the one of a distinction between those functions which are essential to the existence of a living being, and those which maintain its conscious relations to external things; the other of modifications of the vital force as exercised in different organs. Galen referred the organic faculties to *nature*, φυσις — the vital principle of Hippocrates; the voluntary faculties he ascribed to the *soul*.

The physiological opinions of the ancients remained paramount till the sixteenth century, when Paracelsus appeared as the head of a *chemical school* of physiology. The physiologists of this school, however, by no means excluded a vital principle from their speculations; for Paracelsus and Van Helmont, its two most distinguished teachers, not only admit the existence of a vital principle, but personify it under the name of *Archeus*, whom they seem to regard as a very clever operative chemist, working in the laboratory of the living body. See *Archæus* and *Paracelsists*.

In the seventeenth century, the chemical researches of Hooke and Boyle gave rise to more plausible applications of chemistry to the explanation of vital phenomena, and no less persons than Sylvius, Willis, Mayow, and Helvetius, with others of high reputation, were, to a greater or less extent, disciples of the chemical school. At the same period, the atomic theory of Descartes had given rise to the *mathematical school*, in which it was attempted to explain all the vital phenomena on mechanical principles. Borelli may be considered as the head of this school. See *Iatro-mathematici*.

When the chemical and mathematical doctrines had had their run, a general recognition of their absurdity gave rise to a new school, styled the *dynamic*, because the vital phenomena were attributed to a δυναμις or *power*, acting in a great measure independently of external causes. Stahl is generally considered as the father of this school; and, according to him, the rational soul is the prime agent in the formation of the body and the maintenance of all its functions. The *anima* of Stahl was a very near relation of the *Archeus* of Van Helmont, though its mode of operation was very different. Stahl regarded chemistry, mathematics, and anatomy, as equally inadequate to explain the causes of the vital phenomena. He believed his *anima* to have no particular seat, but to be diffused through the whole frame, endowing every organ and texture with its peculiar vital properties, perceiving in the organs of sense, and causing contraction in the muscles, independently of the influence of the brain. Stahl's system involves the absurdity of an *unconscious intelligence*; it supposes that the soul can contrive and operate without being aware of it.

The views of Stahl were however partially adopted by many distinguished writers, and the tenet that the soul is the cause of all the vital motions, was laboriously maintained by Whytt.

This ingenious physiologist distinguished the vital motions into the *natural*, *involuntary*, and *voluntary*. The natural motions are those which are sustained by the moderate and constant supply of nervous power, uninfluenced by the will or any other stimulus: such are the tension of the sphincters and the general tone of parts; — the involuntary are those excited by stimuli applied to the nerves, in all of which the soul acts automatically and of necessity, but without consciousness; — the voluntary motions are the same as those so designated by other authors. With respect to the first class, it may be observed that Whytt, in common with too many other physiologists, lost sight of the great principle that the state of the living body is one of constant relation to external nature; that numerous extraneous causes are continually operating upon it; and that, consequently, the class of vital motions independent of stimuli is, in all probability, purely imaginary. Again, with respect to the class of involuntary motions, or those in which the soul intervenes without consciousness, if Whytt meant that the soul, even at the moment of its intervention, is actually unconscious of its own operation, the idea is manifestly absurd; since it is impossible to conceive any operation of an intelligent being but as some *mode* of consciousness: but if he meant (as he probably did), that the action of the soul is so slight and transitory as to leave no trace in the memory even a moment after, what evidence can we have that it has taken place?

The chemical, mathematical, and dynamic theories, were tempered and combined by Hoffmann and Boerhaave, who were rather judicious critics than original thinkers on physiology. They insisted upon the controlling influence of the nervous system over all the organic functions, whether performed chemically or mechanically. They thus substituted the nervous energy for the anima of Stahl, forgetful of those lower animals in which the existence of nervous mat-

ter, though probable, is hypothetical; and of plants, in which it does not exist at all, but both of which are nevertheless endowed with life.

The illustrious Haller, turning from empty speculations to the observation of facts, established by experiment the existence of two great modifications of vital power, namely, *sensibility* and *irritability*. The former of these he believed to reside exclusively in the brain and nerves, the latter in the muscular fibre. He believed that the muscles have a nervous power, or *vis nervea*, distributed to them from the brain through the nerves, distinct from their proper irritability, or *vis insita*. During the controversies carried on with contemporary physiologists, it became evident that Haller had taken too limited a view of sensibility and irritability, since many parts unquestionably endowed with life do not possess either of these properties as defined by him. The researches of Haller, however, put physiologists in the right track — that of investigating the phenomena of life as modified by the tissue in which they are developed. Hence we now recognise an *animal* and an *organic sensibility*; an *animal* and an *organic contractility*, of which last *irritability* is one of the species. The study of general anatomy, first raised into importance by Bichat, has extended the field for such investigations, and shown that there are no two textures the vital endowments of which are precisely similar; and, consequently, that if we would attain to just views of the phenomena of life, it must be by tracing the modification of a few general powers in the various textures of which the living body is composed. After Haller's time, John Hunter advanced his great doctrine of the life of the blood, which had, indeed, been zealously maintained by Harvey, but with so much inconsistency and obscurity, that his opinions on this subject are not worthy of much attention. For some time the experiments and reasonings of Hunter did not produce very general conviction; but the doubts of physiologists have been dissipated by further research and reflection; and the blood is now almost universally regarded as endowed with life — perhaps indeed as the original source from which the vital power of the solid parts is derived.

The opinions on life which regard it as the result of mechanical and chemical arrangements, to the exclusion of a vital principle, need not be dilated upon, because they have never been embraced by any school of physiologists, nor defended with any show of reason; and are, in truth, repugnant to the common sense of mankind.

In asserting the existence of a vital principle, we by no means attempt to define its nature, but consider it simply as the *unknown cause of life*.

Several physiologists, particularly Buffon, Needham, and Treviranus, have been of opinion that there is a kind of matter peculiar to living bodies, and alone susceptible of organisation. This doctrine has been ably defended by Treviranus, who concludes, that there is in nature a matter which is ever moving, by which all living beings, animal and vegetable, possess life, and which, though immutable in its essence, is, notwithstanding, variable in its form, and is incessantly changing it.

That this matter is deprived of form itself, but nevertheless ready to take that of life; that it maintains a determinate form under the influence of external causes; that it only continues in that form so long as these causes are active, and that it takes another so soon as new causes influence it.

That the matter capable of life, and the living principle, exist reciprocally, and that death is only a passage of certain forms of this matter to certain others.

This, however, is a subject on which nothing is positively known, or probably ever will be.

There is one physiological error which appears to have been almost universal till of late years, namely, that of regarding the vital principle as self-acting, instead of regarding it as something capable of reacting on the application of extraneous stimuli. The researches of Tiedemann and De Blainville have perhaps gone further than those of any other physiologists to establish a just view of this subject, and to demonstrate that life, as far as we know of it, is a *power of reaction modified in every part according to its texture, and called into operation in each texture by appropriate stimuli.*

The term *vital principle* is to be received only as a general expression for the power by which the phenomena of life are produced: physiologists must not, at present, attempt to determine the nature of this power — whether it reside in one agent or in many — whether it be a property of some particular kind of matter, or something superadded to common matter. These questions, indeed, afford scope for philosophical speculations which may, at some future period, be useful, and are therefore not to be discouraged; but, in the present state of our knowledge, the moment we make a supposed solution of them the basis of any practical views in physiology, we are sure to be led astray.

LI'GAMENT. (*Ligamentum, i.* n.; from *ligo*, to bind.) An elastic and strong membrane, connecting the extremities of the moveable bones. Ligaments are divided into *capsular*, which surround joints like a bag, and *connecting* ligaments. The use of the capsular ligaments is to connect the extremities of the moveable bones, and prevent the efflux of synovia; the external and internal connecting ligaments strengthen the union of the extremities of the moveable bones.

Ligamenta ala'ria. Alar ligaments. Two ligaments of the knee-joint, a *major* and a *minor*, are named alar from their wing-like shape.

Ligamenta interspinalia. Interspinous ligaments. The ligaments which pass between the spinous processes of the vertebræ.

Ligamenta intertransversalia. Intertransverse ligaments. The ligaments which pass between the transverse processes of the vertebræ.

Ligamenta radiata. The ligaments passing between the inner end of the clavicle and the sternum: also those which pass from the

extremities of the cartilages of the ribs over the sternum.

Ligamenta subflava. See *Spinal cord.*

Ligaments, crucial. The ligaments which cross each other within the knee-joint.

Ligaments, lateral. Ligaments situated at the sides of a joint, as the lateral ligaments of the knee and wrist.

Ligaments, vaginal. The sheath-like ligaments of the flexor tendons of the fingers.

Ligamentum annulare. Annular or ring-like ligament: the name of a strong ligament on each ankle and each wrist.

Ligamentum arteriosum. The ductus arteriosus of the fœtus, which becomes a ligament after birth, is so called.

Ligamentum brachio-cubitale. The brachio-cubital ligament. The expansion of the lateral ligament, which is fixed in the inner condyle of the os humeri, runs over the capsular, to which it closely adheres, and is inserted like radii on the side of the great sigmoid cavity of the ulna; it is covered on the inside by several tendons, which adhere closely to it, and seem to strengthen it very considerably.

Ligamentum brachio-radiale. The brachio-radial ligament. The expansion of the lateral ligament which runs over the external condyle of the os humeri, is inserted round the coronary ligament, from thence all the way down to the neck of the radius, and also in the neighbouring parts of the ulna. Through all this passage it covers the capsular ligament, and is covered by several tendons adhering closely to both.

Ligamentum capsulare. See *Ligaments.*

Ligamentum ciliare. See *Ciliary ligament.*

Ligamentum conoides. A ligament which passes from the root of the coracoid process to the clavicle.

Ligamentum deltoides. The triangular ligament which passes from the malleolus internus of the tibia to the astragalus os calcis and os naviculare.

Ligamentum denticulatum. A ligament extending the whole length of the spinal marrow.

Ligamentum fallopii. The round ligament of the uterus, and also Poupart's ligament, has been so called.

Ligamentum infundibuliforme. The ligament which joins the atlas to the occipital bone.

Ligamentum interclaviculare. The ligament which joins the two clavicles behind the top of the sternum.

Ligamentum interosseum. The ligament uniting the radius and ulna, and also that between the tibia and fibula.

Ligamentum latum. The broad ligament of the liver, and that of the uterus. See *Liver*, and *Uterus.*

Ligamentum nuchæ. Cervical ligament. A strong ligament which arises from the perpendicular spine of the occipital bone, and descends on the back part of the neck, adhering to the spinous processes of the cervical vertebræ.

Ligamentum orbiculare. The ligament which binds the neck of the radius to the ulna.

Ligamentum ovarii. The thick round portion of the broad ligament of the uterus, by which the ovarium is connected with the uterus.

Ligamentum posticum winslovii. Posterior ligament of Winslow. This consists of irregular bands, passing obliquely over the back part of the capsular ligament of the knee-joint from the external condyle of the femur to the upper and inner part of the tibia.

Ligamentum poupartii. Fallopian ligament. Poupart's ligament. A ligament extending from the anterior superior spinous process of the ilium to the crista of the os pubis.

Ligamentum rhomboides. *Ligamentum rhomboideum.* The ligament which binds the clavicle to the first rib.

Ligamentum rotundum. The round ligament of the uterus. See *Uterus.*

Ligamentum teres. The round ligament of the hip-joint. See *Femoris, os.*

Ligamentum trapezoides. *Ligamentum trapezoideum.* A ligament which passes from the point of the coracoid process of the scapula to the under edge of the clavicle.

Ligamentum triangulare. A ligament extending from the coracacoid to the acromial process of the scapula.

LI'GATURE. (*Ligatura, æ.* f.; from *ligo*, to bind.) A thread, or silk, of various thickness, covered with white wax, for the purpose of tying arteries, or veins, or other parts. Ligatures should be round and very firm, so as to allow their being tied with some force, without risk of breaking. For the effect of ligatures on arteries, see *Aneurism.*

LIGHT. *Lux.* The nature of light has occupied much of the attention of philosophers, and numerous opinions have been entertained concerning it. It has been sometimes considered as a distinct substance, at other times as a quality; sometimes as a cause, frequently as an effect; by some it has been considered as a compound, by others as a simple substance. Philosophers of the present day are mostly agreed as to the independent existence of light, or the cause by which see.

Nature of Light. — Light is that which proceeds from any body producing the sensation of vision, or perception of other bodies, by depicting an image of external objects on the retina of the eye. Hence it announces to animals the presence of the bodies which surround them, and enables them to distinguish these bodies into transparent, opake, and coloured. See *Vision.* These properties are so essentially connected with the presence of light, that bodies lose them in the dark, and become undistinguishable.

Light is regarded by philosophers as a substance consisting of a vast number of exceedingly small particles, which are actually projected from luminous bodies, and which probably never return again to the body from which they were emitted.

It is universally expanded through space. It exerts peculiar actions, and is obedient to the laws of attraction, and other properties of matter.

Explanation of certain terms in optics. — In order to facilitate the doctrine of light, we shall

shortly explain a few terms made use of by philosophers when treating of it; namely, —

A *ray of light* is an exceedingly small portion of light as it comes from a luminous body.

A *medium* is a body which affords a passage for the rays of light.

A *beam of light* is a body of parallel rays.

A *pencil of rays* is a body of diverging or converging rays.

Converging rays are rays which tend to a common point.

Diverging rays are those which come from a point, and continually separate as they proceed.

The rays of light are *parallel* when the lines which they describe are so.

The *radiant point* is the point from which diverging rays proceed.

The *focus* is the point to which the converging rays are directed.

Sources of Light. — Light is emitted from the sun, the fixed stars, and other luminous bodies. It is produced by percussion, during electrisation, combustion, and in various other chemical processes.

Why the sun and stars are constantly emitting light, is a question which probably will for ever baffle human understanding.

The light emitted during combustion exists previously, either combined with the combustible body, or with the substance which supports the combustion. The light liberated during chemical action, formed a constituent part of the bodies which act on each other.

Chemical properties. — The chemical effects of light have much engaged the attention of philosophers. — Its influence upon animal, vegetable, and other substances, is as follows: —

1. *On vegetables.* — Every body knows that most of the discous flowers turn constantly towards the sun till he sets, and again present their faces to him when he appears above the horizon in the morning. It is also well known that the change of position in the leaves of plants, at different periods of the day, is entirely owing to the agency of light; and that plants which grow in windows, in the inside of houses, are, as it were, solicitous to turn their leaves towards the light. Natural philosophers have long been aware of the influence of light on vegetation. It was first observed that plants growing in the shade, or darkness, are pale and without colour. The term *etiolation* has been given to this phenomenon, and the plants in which it takes place are said to be *etiolated*, or *blanched*. Gardeners avail themselves of the knowledge of this fact, to furnish our tables with white and tender vegetables. When the plants have attained a certain height, they compress the leaves, by tying them together, and by this means (or by lying earth over them) deprive them of the contact of light; and thus it is that our white celery, lettuce, cabbages, endive, &c., are obtained. For the same reason, wood is white under the green bark; and roots are less coloured than plants: some of them alter their taste, &c.; they even acquire a deleterious quality when suffered to grow exposed to light. Potatoes are of this kind. Herbs that grow beneath stones, or in places utterly dark, are white, soft, aqueous, and of a mild and insipid taste. The more plants are exposed to the light, the *more colour* they acquire. Though plants are capable of being nourished exceedingly well in the dark, and in that state grow much more rapidly than in the sun (provided the air that surrounds them is fit for vegetation), they are colourless and unfit for use.

Professor Davy found, by experiment, that red rose-trees, carefully excluded from light, produce roses almost white. He likewise ascertained that this flower owes its colour to light entering into its composition; that pink, orange, and yellow flowers, imbibe a smaller portion of light than red ones; and that white flowers contain no light. But vegetables are not only indebted to the light for their colour: taste and odour are likewise derived from the same source.

Light contributes greatly to the maturity of fruits and seeds. This seems to be the cause why, under the burning sun of Africa, vegetables are in general more odoriferous, of a stronger taste, and more abounding with resin. From the same cause it happens, that hot climates seem to be the native countries of perfumes, odoriferous fruits, and aromatic resins.

The action of light is so powerful on the organs of vegetables, as to cause them to pour forth torrents of pure air from the surface of their leaves into the atmosphere, whilst exposed to the sun: whereas, on the contrary, when in the shade, they emit an air of a noxious quality. Take a few handsful of fresh-gathered leaves of mint, cabbage, or any other plant; place them in a bell-glass, filled with fresh water, and invert it into a basin with the same fluid. If the whole be then exposed to the direct rays of the sun, small air bubbles will appear on the surface of the leaves, which will gradually grow larger, and at last detach themselves and become collected at the surface of the water. This is oxygen gas, or vital air.

All plants do not emit this air with the same facility: there are some which yield it the moment the sun acts upon them; as the jacobœa or ragwort, lavender, peppermint, and some other aromatic plants. The leaves afford more air when attached to the plant than when gathered: the quantity is also greater, the fresher and sounder they are, and if full grown, and collected during dry weather. Green plants afford more air than those which are of a yellowish or white colour. Green fruits afford likewise oxygen gas; but it is not so plentifully furnished by those which are ripe. Flowers in general render the air noxious. The nasturtium indicum, in the space of a few hours, gives out more air than is equal to the bulk of all its leaves. On the contrary, if a like bell-glass prepared in the same manner, be kept in the dark, another kind of air will be disengaged, of an opposite quality.

There is not a substance which, in well-closed glass vessels, and exposed to the sun's light, does not experience some alteration.

Camphire kept in glass bottles, exposed to light, crystallises into the most beautiful syn

metrical figures, on that side of the glass which is exposed to the light.

Yellow wax, exposed to the light, loses its colour, and becomes bleached. Gum guaiacum, reduced to powder, becomes green on exposure to light. Vegetable colours, such as those of saffron, logwood, &c., become pale, or white, &c.

2. *On animals.* — The human being is equally dependent on the influence of light. Animals in general droop when deprived of light: they become unhealthy, and even sometimes die. When a man has been long confined in a dark dungeon (though well aired), his whole complexion becomes sallow; pustules, filled with aqueous humours, break out on his skin; and the person, who has been thus deprived of light, becomes languid, and frequently dropsical. Worms, grubs, and caterpillars, which live in the earth, or in wood, are of a whitish colour; moths, and other insects of the night, are likewise distinguishable from those which fly by day, by the want of brilliancy in their colour. The difference between those insects, in northern and southern parts, is still more obvious.

The parts of fish which are exposed to light, as the back, fins, &c., are uniformly coloured; but the belly, which is deprived of light, is white in all of them.

Birds which inhabit the tropical countries have much brighter plumage than those of the north. Those parts of the birds which are not exposed to the light, are uniformly pale. The feathers on the belly of a bird are generally pale, or white; the back, which is exposed to the light, is almost always coloured; the breast, which is particularly exposed to light in most birds, is brighter than the belly.

Butterflies, and various other animals of equatorial countries, are brighter coloured than those of the polar regions. Some of the northern animals are even darker in summer and paler in winter.

3. *On other substances.* — Certain metallic oxides become combustible when exposed to light; and acids, as the nitric, &c., are decomposed by its contact, and various other substances change their nature.

Light carbonated hydrogen. See *Carburetted hydrogen gas.*

LIGNEUS. Woody. Applied, in *Botany*, to pods, barks, &c., which are of a hard or woody texture; as the strobile of the *Pynus sylvestris.*

Lignin. See *the Supplement.*

Ligno'sus. See *Ligneus.*

LI'GNUM. (*um, i.* n.) Wood.

Lignum agallochi veri. See *Lignum aloes.*

LIGNUM ALOES. *Lignum agallochi veri. Agalluge. Agallugum. Lignum aquilæ. Lignum calambac. Lignum aspalathi. Xylo aloes. Agallochum. Calambac.* Aloes wood. The tree, the wood of which bears this name, is not yet scientifically known. It is by some supposed to be the *Excœaria agallocha*, the bark as well as the milk of which is purgative. It is imported from China in small, compact, ponderous pieces, of a yellow rusty brown colour, with black or purplish veins, and sometimes of a black colour. It has a bitterish resinous taste, and a slight aromatic smell. Hoffmann regarded the essential oil of this wood, when dissolved in spirit of wine, as one of the best cordials and invigorants that pharmacy has ever possessed, and especially in debilitated stomachs accompanied with general depression. It is used to fumigate rooms in eastern countries.

Lignum aquilæ. See *Lignum aloes.*

Lignum aspalathi. See *Lignum aloes.*

Lignum brariliense. See *Cæsalpina.*

Lignum calambac. See *Lignum aloes.*

Lignum campechense. See *Hæmatoxylon.*

Lignum colubrinum. See *Strychnos colubrina.*

Lignum indicum. See *Guaiacum.*

Lignum moluccense. See *Croton tiglium.*

Lignum nephriticum. See *Guilandina.*

Lignum pavanæ. See *Croton tiglium.*

Lignum rhodium. See *Aspalathus.*

Lignum sanctum. See *Guaiacum.*

Lignum santali rubri. See *Pterocarpus.*

Lignum sappan. See *Hæmatoxylon.*

Lignum serpentinum. See *Ophioxylum.*

Lignum vitæ. See *Guiacum officinale.*

LIGNUM'S ANTISCORBUTIC DROPS. A quack preparation of corrosive sublimate. The proprietor's name was Wood.

LI'GULA. (*a, æ.* f.; a strap.) 1. The clavicle.

2. The glottis.

3. A measure containing ten scruples.

4. The small transparent membrane on the margin of the sheath and base of the leaves of grasses.

LIGULA'TUS. Strap-shaped; shaped like a strap or riband: applied to a kind of floret of a compound flower, which is so shaped; as that of the *Tragopogon*, and *Taraxacum.*

LIGUSTICUM. (*um, i.* n. Λιγυστικον of Dioscorides; so called from *Liguria*, in Italy, its native country.) The name of a genus of plants. Class, *Pentandria*; Order, *Digynia.*

LIGUSTICUM LEVISTICUM. The systematic name of lovage. *Levisticum.* The odour of this plant, *Ligusticum — foliis multiplicibus foliolis superne incicis*, of Linnæus, is very strong, and particularly ungrateful; its taste is warm and aromatic. It abounds with a yellowish gummy resinous juice, very much resembling opoponax, and called English opoponax. Its virtues are supposed to be similar to those of angelica and masterwort; namely, carminative, diaphoretic, and deobstruent; therefore it is chiefly used in hysterical disorders and uterine obstructions. The leaves, eaten in salad, are accounted emmenagogue. The root, which is less ungrateful than the leaves, is said to possess similar virtues, and may be employed in powder.

LIGU'STRUM. (*um, i.* n.; from *ligo*, to bind: so named from its use in making bands.) 1. The name of a genus of plants in the Linnæan system. Class, *Diandria*; Order, *Monogynia.*

2. The pharmacopœial name of the herb privet, the *Ligustrum vulgare.*

LILIA'CEUS. (From *lilium*, a lily.) Liliaceous, or resembling the lily.

LILIACEÆ. The name of an order of plants

in Linnæus's Fragments of a Natural Method, consisting of such as have liliaceous corollæ, and a three-lobed stigma; as colchicum, lilium, crocus, &c.

Liliaci'nus. Liliacine: applied to colour like that of the lilac, or *Syringa vulgaris*. See *Colour*.

LILIA'GO. (*o, onis*, f.; diminutive of *lilium*, the lily: so named from the resemblance of its flower to that of a lily.) *Liliastrum*. Spider-wort. The *Anthericum liliastrum* of Linnæus, formerly said to be alexipharmic and carminative.

LI'LIUM. (*um, ii.* n.; the Latin name of the lily.) The name of a genus of plants in the Linnæan system. Class, *Hexandria*; Order, *Monogynia*. The lily.

Lilium album. See *Lilium candidum*.

Lilium candidum. The systematic name of the white lily. *Lilium album*. *Lilium — foliis sparsis, corollis campanulatis, intus glabris*, of Linnæus. The roots are directed by the Edinburgh Pharmacopœia: they are extremely mucilaginous, and chiefly used, boiled in milk and water, in emollient and suppurating cataplasms, to inflammatory tumours. These lily-roots afford a good substitute, in times of scarcity, for bread. The distilled water has been sometimes used as a cosmetic.

Lilium convallium. See *Convallaria*.

Lilium croceum. See *Hemerocallis*.

Lilium martagon. The martagon lily. Linnæus tells us that the root of this plant forms a part of the ordinary food of the Siberians.

Lilium purpureum. See *Hemerocallis*.

Lilium rubrum. See *Hemerocallis*.

Lily. See *Lilium*, and *Nymphæa*.

Lily, May. See *Convallaria majalis*.

Lily, water. See *Nymphæa*.

Lily, white. See *Lilium candidum*.

Lily of the valley. See *Convallaria*.

LIMATU'RA. (*a, æ.* f.; from *lima*, a file.) File dust. Filings.

Limatura ferri. Iron filings. These, when taken internally, become more or less oxidised in the stomach and intestines: they act, therefore, as a mild chalybeate. The dose is from gr. v. to ʒ ss.

Limatura stanni. Tin filings. See *Stannum*.

LI'MAX. (*ax, acis.* m.; from *limus*, slime: so named from its sliminess.) The slug. This animal abounds with gelatinous matter, and forms a nutritious decoction with milk or water. It was formerly much used in cases of consumption and atrophy. These decoctions are apparently very nutritious and demulcent, and are recommended in consumptive cases and emaciations.

LIMBUS. (*us, i.* m.) The limb, brim, or border. In *Botany*, applied to a part of the corolla. See *Corolla*.

LIME. *Calx*.

1. The oxide of calcium, one of the primitive earths. It is found in great abundance in nature, though never pure, or in an uncombined state. It is always united to an acid, and very frequently to the carbonic acid, as in chalk, common limestone, marble, calcareous spar, &c. It is contained in the waters of the ocean; it is found in vegetables; and is the basis of the bones, shells, and other hard parts of animals. Its combination with sulphuric acid is known by the name of sulphate of lime (*gypsum*, or plaster of Paris). Combined with fluoric acid it constitutes fluate of lime, or Derbyshire spar.

Properties. — Lime is in solid masses, of a white colour, moderately hard, but easily reducible to powder. Its taste is bitter, urinous, and burning. It changes blue cabbage-juice to a green. It is unalterable by the heat of our furnaces. It splits and falls into powder in the air, and loses its strong taste. It is augmented in weight and in size by slowly absorbing water and carbonic acid from the atmosphere. Its specific gravity is 2·3. It combines with phosphorus by heat, forming a compound which ignites on being thrown into water. It unites to sulphur both in the dry and humid way. It unites with chlorine to form a compound which some consider as a chloride of lime, but which Berzelius regards as a *chlorite*, and Balard as a *hypochlorite*. Mr. R. Phillips regards it as consisting of one equivalent of bi-hydrated chloride of lime, and one of lime. It absorbs sulphuretted hydrogen gas. It unites with some of the metallic oxides. Its slaking by water is attended with heat, hissing, splitting, and swelling up, while the water is partly consolidated and partly converted into vapour; and the lime is reduced into a very voluminous dry powder, when it has been sprinkled with only a small quantity of water. It is soluble, when well prepared, in about 450 parts of water. It unites to acids. It renders silex and alumine fusible, and more particularly these two earths together.

Method of obtaining Lime. — Since the carbonic acid may be separated from the native carbonate of lime, this becomes a means of exhibiting the lime in a state of tolerable purity. For this purpose introduce into a porcelain or earthern retort, or rather into a tube of green glass, well coated over with lute, and placed across a furnace, some powdered Carrara marble, or oyster-shell powder. Adapt to its lower extremity a bent tube of glass, conveyed under a bell. If we then heat the tube, we obtain carbonic acid gas, and lime will be found remaining in the tube or retort.

The burning of lime, in the large way, depends on the disengagement of the carbonic acid by heat; and, as lime is infusible in our furnaces, there would be no danger from too violent a heat, if the native carbonate of lime were perfectly pure; but as this is seldom the case, an extreme degree of heat produces a commencement of vitrification in the mixed stone, and enables it to preserve its solidity, and it no longer retains the qualities of lime, for it is covered with a sort of crust, which prevents the absorption of the water when it is attempted to be slaked. This is called over-burnt lime.

In order to obtain lime in a state of great purity, the following method may be had recourse to: —

Take Carrara marble, or oyster shells; reduce

them to powder, and dissolve the powder in pure acetic acid; precipitate the solution by carbonate of ammonia. Let the precipitate subside, wash it repeatedly in distilled water, let it dry, and then expose it to a white heat for some hours.

The acetic acid, in this operation, unites to the lime, and forms acetate of lime, disengaging at the same time the carbonic acid, which flies off in the gaseous state: on adding to the acetate of lime carbonate of ammonia, acetate of ammonia and an artificial carbonate of lime are formed; from the latter the carbonic acid is again expelled, by exposure to heat, and the lime is left behind in a state of perfect purity. Several preparations of lime are used medicinally. See *Calcis chloridum*, *Calcis liquor*, *Calcii chloridum*, *Calcii chloridi liquor creta præparata*, *Potassa cum calce*.

2. A fruit like a small lemon. See *Citrus limetta*, in the Supplement.

Lime-tree. See *Tilia europæa.*

Lime-water. See *Calcis liquor.*

LI'MON. (Hebrew.) A lemon. See *Citrus medica.*

LIMONADE MINERALE. Mineral lemonade. The French strangely enough give this name to water acidulated with a mineral acid, and sweetened. These preparations are used as cooling drinks in fevers and inflammations.

LIMONADE NITRIQUE. Water acidulated with nitric acid, and sweetened.

LIMONADE SULPHURIQUE. Water acidulated with sulphuric acid, and sweetened.

LIMONADE TARTARIQUE. Water acidulated with tartaric acid, and sweetened.

LIMONIA MALUS. The lemon.

LIMO'NIUM. (*um, ii.* n.; from λειμων, a green field: so called from its colour.) This name has been applied to, —

1. The lemon.
2. The *Valeriana rubra.*
3. The *Polygonum fagopyrum.*
4. The *Pyrola rotundifolia.*
5. To the sea-lavender, or *Statice limonium*, of Linnæus, which is said to possess astringent properties.

LIMO'SIS. (*is, is.* f.; from λιμος, hunger.) Morbid appetite. The name given by Dr. Good to a genus of diseases, characterised by depraved, excessive, or defective appetite.

LINAGRO'STIS. (*is, is.* f.; from λινον, cotton, and αγρωστις, grass: so called from the softness of its texture.) Cotton-grass. The *Eriophorum* of Linnæus.

LINANGI'NA. (*a, æ.* f.; from *linum*, flax, and *ango*, to strangle: so called, because it twines itself round flax and chokes it.) See *Cuscuta europæa.*

LINA'RIA. (*a, æ.* f.; from *linum*, flax: named from the resemblance of its leaves to those of flax.) See *Antirrhinum linaria.*

LI'NCTUS. (*us, ûs.* m.; from *lingo*, to lick.) *Lohoc. Eclegma. Elexis. Elegma. Eclectos. Ecleitos. Illinctus.* A loch, a lambative. A term in pharmacy, that is generally applied to a soft substance, of the consistence of honey, which is licked off the spoon.

LI'NEA. (*a, æ.* f.; from *linum*, a thread.) A line: applied to some parts which have a line-like appearance.

LINEA ALBA. *Linea centralis.* A tendinous line that extends from the scrobiculus cordis straight down to the navel, and from thence to the pubes. It is formed by the tendinous fibres of the internal oblique ascending, and the external oblique descending muscles, and the transversalis, interlaced with those of the opposite side.

LINEA ILIO-PECTINEA. The lateral margin of the brim of the pelvis.

Linea innominata. See *Linea ilio-pectinea.*

LINEA SEMILUNARIS. The white line on the outer margin of each rectus muscle of the belly, formed by the union of the abdominal tendons.

LINEÆ TRANSVERSÆ. The lines which cross the recti muscles of the abdomen.

LINEA'RIS. Linear: strap-shaped. Applied to leaves, petals, leafstalks, seeds, &c., of plants, which are narrow, with parallel sides; as the leaves of most grasses, those of the *Narcissus*, *Pseudo-narcissus*, and the petals of the *Tussilago farfara*, leafstalk of the *Citrus medica*, and seeds of the *Crucianella.*

LINEATUS. Lineate, or streaked.

Ling. See *Gadus molva.*

LI'NGUA. (*a, æ.* f.; from *lingo*, to lick up.) The tongue. See *Tongue.*

LINGUA AVIS. The seed-vessel of the *Fraxinus*, or ash, is so called, from its supposed resemblance to a bird's tongue. It is also called *lingua passerina*, sparrow's tongue.

LINGUA CANINA. So called from the resemblance of its leaves to a dog's tongue. See *Cynoglossum.*

LINGUA CERVINA. Hart's tongue. See *Scolopendrium vulgare.*

Lingua passerina. See *Lingua avis.*

LINGUA'LIS. (From *lingua*, the tongue.) *Basio-glossus*, of Cowper. A muscle of the tongue. It arises from the root of the tongue laterally, and runs forward between the hyo-glossus and genio-glossus, to be inserted into the tip of the tongue, along with part of the stylo-glossus. Its use is to contract the substance of the tongue, and to bring it backwards.

Linguifo'rmis. See *Lingulatus.*

LINGULA'TUS. (From *lingua*, a tongue.) *Linguiformis.* Tongue-shaped; applied to a leaf of a thick, oblong, blunt figure, generally cartilaginous at the edges; as in the *Mesembryanthemum linguiforme.*

Liniment. See *Linimentum.*

Liniment of ammonia. See *Linimentum ammoniæ.*

Liniment of camphire. See *Linimentum camphoræ.*

Liniment of mercury. See *Linimentum hydrargyri compositum.*

Liniment of turpentine. See *Linimentum terebinthinæ.*

Liniment of verdigris. See *Linimentum æruginis.*

Liniment, volatile. See *Linimentum ammoniæ.*

LINIME'NTUM. (*um, i.* n.; from *lino*,

to anoint.) A liniment. A medicament of a mediate consistence, between an ointment and oil, used to rub upon diseased parts. A medicine similarly applied, but of thinner consistence, is called an *embrocation*.

Linimentum æruginis. Liniment of verdigris, formerly called oxymel æruginis, mel Ægyptiacum, and unguentum Ægyptiacum. Take of verdigris, powdered, an ounce; vinegar, seven fluid ounces; clarified honey, fourteen ounces. Dissolve the verdigris in the vinegar, and strain it through a linen cloth; having added the honey gradually, boil it down to a proper consistence.

Linimentum album. Spermaceti ointment has been so called.

Linimentum ammoniæ. *Linimentum ammoniæ fortius. Oleum ammoniatum.* Volatile liniment. Strong liniment of ammonia. Take of solution of ammonia, a fluid ounce; olive oil, two fluid ounces. Shake them together until they unite. A more powerful stimulating application than the former, acting as a rubefacient. In pleurodynia, indolent tumours, stiffness of the joints, and arthritic pains, it is to be preferred to the milder one.

Linimentum ammoniæ sesquicarbonatis. *Linimentum ammoniæ subcarbonatis.* Liniment of subcarbonate of ammonia, formerly called linimentum ammoniæ and linimentum volatile. Take of solution of subcarbonate of ammonia, a fluid ounce; olive oil, three fluid ounces. Shake them together until they unite. A stimulating liniment, mostly used to relieve rheumatic pains, bruises, and paralytic numbness.

Linimentum aquæ calcis. Liniment of lime-water. This consists of equal parts of linseed oil and lime-water, and has long been known, under the name of *carron oil*, as an application to burns and scalds.

Linimentum arcei. Liniment of Arceus. The *Unguentum elemi compositum.*

Linimentum ca'mphoræ. Camphire liniment. Take of camphor, an ounce; olive oil, four fluid ounces. Dissolve the camphire in the oil. In retentions of urine, rheumatic pains, distensions of the abdomen from ascites, and tension of the skin from abscess, this is an excellent application.

Linimentum camphoræ compositum. Compound camphire liniment. Take of camphor, two ounces and a half; solution of ammonia, seven fluid ounces; spirit of lavender, a pint. Mix the solution of ammonia with the spirit in a glass retort; then, by the heat of a slow fire, distil a pint. Lastly, in this distilled liquor dissolve the camphire. An elegant and useful stimulant application in paralytic, spasmodic, and rheumatic diseases. Also for bruises, sprains, rigidities of the joints, incipient chilblains, &c.

Linimentum hydrargyri compositum. Mercurial liniment. Take of strong mercurial ointment, prepared lard, of each four ounces; camphor, an ounce; rectified spirit, a fluid drachm; solution of ammonia, four fluid ounces. First powder the camphor, with the addition of the spirit, then rub it with the mercurial ointment and the lard; lastly, add gradually the solution of ammonia, and mix the whole together. An excellent formula in all surgical cases in which the object is to quicken the action of the absorbents, and gently stimulate the surfaces of parts. It is a useful application for diminishing the indurated state of particular muscles, a peculiar affection every now and then met with in practice; and it is particularly well calculated for lessening the stiffness and chronic thickening often noticed in the joints. If it be frequently or largely applied, it affects the mouth more rapidly than the mercurial ointment.

Linimentum opii. *Linimentum opiatum.* This consists of six fluid ounces of soap liniment, and two of tincture of opium. It is a resolvent anodyne embrocation, adapted to remove indolent tumours of the joints, and those weaknesses which remain after strains, and chilblains before they break.

Linimentum saponis compositum. Compound soap liniment. *Linimentum saponis compositum.* Take of hard soap, three ounces; camphire, an ounce; spirit of rosemary, a pint. Dissolve the camphire in the spirit, then add the soap, and macerate in the heat of a sand-bath, until it be melted. The basis of this form was first proposed by Riverius, and it is now commonly used under the name of opodeldoc. This is a more pleasant preparation, to rub parts affected with rheumatic pains, swellings of the joints, &c. than any of the foregoing, and at the same time not inferior, except where a rubefacient is required.

Linimentum saponis cum opio. Soap liniment, with opium. Take of compound soap liniment, six ounces; tincture of opium, two ounces. Mix. For dispersing indurations and swellings, attended with pain, but no acute inflammation.

Linimentum terebinthinæ. Turpentine liniment. Take of soft soap, two ounces camphor, an ounce; oil of turpentine, half a pint. Shake them together until they are mixed. This liniment is very commonly applied to burns, and is a modification of that used by Mr. Kentish, of Newcastle.

Linimentum terebinthinæ vitriolicum. Vitriolic liniment of turpentine. Take of olive oil, ten ounces; oil of turpentine, four ounces; vitriolic acid, three drachms. Mix. This preparation is said to be efficacious in chronic affections of the joints, and in the removal of long existing effects of sprains and bruises.

Linnæ'a. (*a*, *æ*. f.; so named in honour of Linnæus.) The name of a genus of plants in the Linnæan system. Class, *Didynamia*. Order, *Angiospermia*.

Linnæa borealis. A plant inhabiting the northern countries of Europe, which has a bitter subastringent taste. It is used in some places in the form of fomentation, for rheumatic pains; and an infusion with milk is much esteemed in Switzerland in the cure of sciatica.

Linospe'rmum. (*um*, *i*. n.; from λινον flax, and σπερμα, seed.) Linseed. See *Linum usitatissimum*.

Linozo'stis. A name of the herb mercury. — *Dioscorides.* See *Mercurialis.*

Linseed. See *Linum usitatissimum.*

Lint. See *Linteum.*

LI'NTEUM. (*um, ei.* n.) Lint. Charpie. A soft woolly substance, made by scraping old linen cloth, and employed in surgery as the common dressing in all cases of wounds and ulcers, either simply or covered with different unctuous substances.

LI'NUM. (*um, i.* n. Λινον.) 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Pentagynia.*

2. The pharmacopœial name of the common flax. See *Linum usitatissimum.*

Linum catharticum. *Linum minimum. Chamælinum.* Purging flax, or mill-mountain. This small plant, *Linum — foliis oppositis ovato-lanceolatis, caule dichotomo, corollis acutis,* of Linnæus, is an effectual and safe cathartic. It has a bitterish and disagreeable taste. A handful infused in half a pint of boiling water is the dose for an adult.

Linum usitatissimum. The systematic name of the common flax. *Linum sylvestre. Linum — calycibus capsulisque mucronatis, petalis crenatis, foliis lanceolatis alternis, caule subsolitario,* of Linnæus. The seeds of this useful plant, called linseed, have an unctuous, mucilaginous, sweetish taste, but no remarkable smell; on expression they yield a large quantity of oil, which, when carefully drawn without the application of heat, has no particular taste or flavour: boiled in water, they yield a large proportion of a strong flavourless mucilage, which is in use as an emollient or demulcent in cough, hoarsenesses, and pleuritic symptoms, that frequently prevail in catarrhal affections; and it is likewise recommended in nephritic pains and stranguries. The meal of the seeds is also much used externally, in emollient and maturating cataplasms. The expressed oil is an officinal preparation, and is supposed to be of a more healing and balsamic nature than the other oils of this class: it has, therefore, been very generally employed in pulmonary complaints, and in colics and constipations of the bowels. The cake which remains after the expression of the oil contains the farinaceous part of the seed, and is used in fattening cattle, under the name of oil-cake.

Lip. See *Labium.*

LIPAROCE'LE. (From λιπαρος, fat, and κηλη, a tumour.) A fatty tumour. The name has been especially given to a fatty tumour in the scrotum.

Liparotri'chia. (From λιπαρος, smooth, and θριξ, a hair.) The name given by Frank to a diseased condition of the hair, in which it is more oily than natural.

Lipa'sma. (Λιπασμα; from λιπαινω, to grow fat.) The Greek name for any medicine used externally by inunction, for the purpose of fattening the body.

LIPO'MA. (*a, atis.* n.; from λιπος, fat.) An encysted fatty tumour.

LIPOPSY'CHIA. (*a, æ.* f.; from λειπω, to leave, and ψυχη, the soul, or life.) A swoon, or fainting. See *Syncope.*

LIPOTHY'MIA. (*a, æ.* f.; from λειπω, to leave, and θυμος, the mind.) Fainting. See *Syncope.*

LIPPITU'DO. (*o, inis.* f.; from *lippus,* blear-eyed.) Blear-eyedness. A chronic disease, the result often of acute tenacious ophthalmia. It consists in an exudation of a puriform matter from the margin of the eyelids. This matter glues the tarsi of the eyelids together during the night. The margins of the eyelids are red, and tumid, and painful. See *Ophthalmitis.*

Lipy'ria. See *Leipyria.*

Liqua mumia. Human fat. — *Ruland.*

LIQUIDA'MBAR. (From *liquidum,* fluid, and *ambar,* a fragrant substance, generally taken for ambergris; alluding to the aromatic liquid gum which distils from this tree.) The name of a genus of plants in the Linnæan system. Class, *Monœcia.* Order, *Polyandria.*

Liquidambar styraci'flua. The systematic name of the tree which affords both the liquid amber and liquid storax. The liquid amber is a resinous juice of a yellow colour, inclining to red, at first about the consistence of turpentine, by age hardened into a solid brittle mass. It is obtained by wounding the bark of this tree, which is described by Linnæus, the *Liquidambar — foliis palmato-angulatis; foliis indivisis, acutis.* The juice has a moderately pungent, warm, balsamic taste, and a very fragrant smell, not unlike that of the *Styrax calamita,* heightened by a little ambergris. It is seldom used medicinally. The *Styrax liquida* is also obtained from this plant by boiling. There are two sorts distinguished by authors: the one the purer part of the resinous matter, that rises to the surface in boiling, separated by a strainer, of the consistence of honey, tenacious like turpentine, of a reddish or ash-brown colour, moderately transparent, of an acrid unctuous taste, and a fragrant smell, faintly resembling that of the solid styrax, but somewhat disagreeable. The other, the more impure part which remains on the strainer, untransparent, and in smell and taste much weaker than the former. Their use is chiefly as stomachics, in the form of plaster.

LIQUEFACTION. *Liquatio. Liquefi-catio.* The conversion of a liquid. The word is, therefore, in some instances synonymous with *fusion,* in others with *deliquescence,* and in others with *solution.*

Liquiri'tia. (*a, æ.* f.; most likely of *glycyrrhiza.*) Liquorice. See *Glycyrrhiza.*

LI'QUOR. (*or, oris.* m.; from *liqueo,* to become liquid.) A liquor. This term is applied in the later editions of the London Pharmacopœia to some preparations, before improperly called waters; as the *aqua ammoniæ,* &c.

Liquor acetatis plumbi. See *Plumbi diacetatis liquor.*

Liquor acetatis plumbi dilutus. See *Plumbi diacetatis liquor dilutus.*

Liquor aethereus vitriolicus. See *Æther sulphuricus.*

Liquor aluminis compositus. Compound solution of alum. Take of alum, sulphate of zinc, of each an ounce; boiling water, three pints. Dissolve at the same time the alum and sul-

plate of zinc in the water, and then strain. This water was long known in our shops under the title of *aqua aluminosa Bateana*. It is used for cleansing and healing ulcers and wounds, and for removing cutaneous eruptions, the part being bathed with it hot three or four times a day. It is sometimes likewise employed as a collyrium; and as an injection in fluor albus and gleet.

Liquor ammoniæ. See *Ammonia.*

Liquor ammoniæ acetatis. See *Ammoniæ acetatis liquor.*

Liquor ammoniæ carbonatis. See *Ammoniæ subcarbonatis liquor.*

Liquor ammoniæ sesquicarbonatis. The name in the London Pharmacopœia of 1836, for the preparation before called *liquor ammoniæ subcarbonatis.*

Liquor ammoniæ subcarbonatis. See *Ammoniæ subcarbonatis liquor.*

Liquor of ammonia. See *Ammonia.*

Liquor amnii. See *Amnios.*

Liquor anodynus mineralis. See *Liquor mineralis anodynus Hoffmanni.*

Liquor antimonii tartarizati. See *Antimonii tartarizati liquor.*

Liquor argenti nitratis. Take of nitrate of silver a drachm, distilled water a fluid ounce. Dissolve the nitrate in the water and strain. Keep it in a well-closed bottle, preserved from the light. This formula is introduced into the London Pharmacopœia of 1836.

Liquor arsenicalis. See *Arsenicalis liquor.*

Liquor aquilegius. Spirit of wine. — *Ruland.*

Liquor barii chloridi. Solution of chloride of barium. Solution of muriate of baryta. Take of chloride of barium a drachm; distilled water a fluid ounce. Dissolve and strain. The dose of this solution is five drops, twice a day, gradually increased to twenty drops or more. For its virtues, see *Baryta.*

Liquor calcii chloridi. See *Calcii chloridi liquor.*

Liquor calcis. See *Calcis liquor.*

Liquor cupri ammoniati. See *Liquor cupri ammonio-sulphatis.*

Liquor cupri ammonio-sulphatis. Solution of ammonio-sulphate of copper. This is made, according to the formula of the present London Pharmacopœia, by dissolving a drachm of the ammonio-sulphate in a pint of distilled water. It is a mild escharotic and detergent wash for indolent ulcers, &c.

Liquor ferri alkalini. See *Ferri alkalini liquor.*

Liquor hydrargyri oxymuriatis. See *Hydrargyri bichloridum.*

Liquor mineralis anodynus hoffmanni. Hoffmann's anodyne liquor. See *Spiritus ætheris sulphurici compositus.*

Liquor potassæ. See *Potassæ liquor.*

Liquor subcarbonatis potassæ. See *Potassæ sesquicarbonatis liquor.*

Liquor volatilis cornu cervi. This preparation of the fluid volatile alkali, commonly termed spirits of hartshorn, is in common use to smell at in faintings, &c. See *Ammoniæ subcarbonas.*

Liquorice. See *Glycyrrhiza.*

Liquorice, Spanish. See *Glycyrrhiza.*

LIRE'LLA. (*a, æ.* f.; diminutive of *lira*, a ridge between two furrows.) In *Botany*, a sessile receptacle, containing polyspermous elytra; as in *opegrapha.*

Lisbon diet drink. See *Decoctum Lusitanicum.*

LITHAGO'GUS. (From λιθος, a stone, and αγω, to bring away.) Lithagogue: having the power of expelling the stone. Formerly applied to medicines supposed to expel small calculi from the kidneys or bladder.

Litharge. See *Lithargyrum.*

Litharge plaster. See *Emplastrum lithargyri.*

LITHA'RGYRUM. (*um, i.* n.; and *us, i.* m.; from λιθος, a stone, and αργυρος, silver.) *Lithargyrus.* Litharge. An oxide of lead, in an imperfect state of vitrification. When silver is refined by cupellation with lead, this latter metal, which is scorified, and causes the scorification of the imperfect metals alloyed with the silver, is transformed into a matter composed of small semitransparent shining plates, resembling mica; which is litharge. Litharge is more or less white or red, according to the metals with which the silver is alloyed. The white is called litharge of silver; and the red has been improperly called litharge of gold.

LITHI'A. (*a, æ.* f.; from λιθειος, stony.) The name of an alkali, discovered in the year 1818 by Arfwedson, at that time employed in the laboratory of Berzelius. It was found in a mineral, from the mine of Uten in Sweden called *petalite* by D'Andrada, who first distinguished it. Sir H. Davy demonstrated, by voltaic electricity, that the basis of this alkali is a metal, to which the name of *lithium* has been given.

Caustic lithia has a very sharp burning taste. It destroys the cuticle of the tongue like potash. It does not dissolve with great facility in water, and appears not to be much more soluble in hot than in cold water. In this respect it has an analogy with lime. Heat is evolved during its solution in water.

When exposed to the air it does not attract moisture, but absorbs carbonic acid, and becomes opake. When exposed for an hour to a white heat in a covered platinum crucible, its bulk does not appear to be diminished: but it has absorbed a quantity of carbonic acid.

LI'THIAS. (So called because it is formed of the lithic acid.) Lithiate. A salt, formed by the union of the lithic acid, with a salifiable base.

LITHI'ASIS. (*is, is.* f.; from λιθος, stone.) 1. The formation of stone, or gravel.

2. A disease of the eyelids, in which the margins are beset with small hard tumours.

Lithic acid. *Acidum lithicum. Acidum uricum.* This was discovered in analysing human calculi, of many of which it constitutes the greater part, and of some, particularly that which resembles wood in appearance, it forms almost the whole. It is likewise present in human urine, and in that of the camel. It is found in those arthritic concretions commonly called chalkstones. It is often called *uric* acid. See *Calculi, urinary.*

Lithic acid calculus. See *Calculi, urinary.*

LITHI'UM. (*um, i.* n.; from its being

the base of lithic acid.) The metallic basis of lithia. See *Lithia.*

Litholoi'des. (From λιθος, a stone, and ειδος, likeness: so called from its hardness.) Stone-like: applied to the petrous portion of the temporal bone.

Litho'labum. (From λιθος, a stone, and λαμβανω, to seize.) An instrument for extracting the stone from the bladder. Civiale thus names the forceps he uses in the operation of lithotrity.

LITHO'LOGY. (*Lithologia, æ.* f.; from λιθος, a stone, and λογος, a discourse.) A discourse or treatise on calculi.

LITHONTRI'PTIC. (*Lithontripticus;* from λιθος, a stone, and τριβω, to wear away.) In the strict sense of this term, a lithontriptic medicine should be one which has the power of breaking up and dissolving calculi. It is now generally disbelieved, however, that any medicine possesses such a power; hence the term is applied rather to such medicines as have a power of obviating the calculous diathesis. See *Calculi, urinary.*

Lithopæ'dium. (From λιθος, a stone, and παις, a child.) A fœtus petrified in the body of the mother. See *Abortion.*

LITHOSPE'RMUM. (*um, i.* n.; from λιθος, a stone, and σπερμα, seed: named from the hardness of its seed.) 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Monogynia.*

2. The pharmacopœial name of common gromwell. See *Lithospermum officinale.*

Lithospermum officinale. The systematic name of the officinal gromwell; called, also, *Etonychum.* The seeds of this plant — *Lithospermum — seminibus lævibus, corollis vix calycem superantibus, foliis lanceolatis,* of Linnæus, were formerly supposed, from their stony hardness, to be efficacious in calculous and gravelly disorders. Little credit is given to their lithontriptic character, yet they are occasionally used as diuretic for clearing the urinary passages, and for obviating strangury, in the form of emulsion.

LITHO'TOMY. (*Lithotomia, æ.* f.; from λιθος, a stone, and τεμνω, to cut.) The operation of cutting into the bladder, in order to extract a stone. Several methods have been recommended for performing this operation, but there are only two which can be practised with any propriety. One is, where the operation is to be performed immediately above the pubes, in that part of the bladder which is not covered with peritonæum, called the *high operation.* The other, where it is done in the perinæum, by laying open the neck and lateral part of the bladder, so as to allow of the extraction of the stone, called the *lateral operation,* from the prostate gland of the neck of the bladder being laterally cut. The lateral operation is the common one. The high operation is only used under some particular circumstances.

LITHO'TRITY. (*Lithotritia, æ.* f. An ill-constructed term; for if it be from λιθος and τριβω it is hybrid, and if from λιθος and τιτραω it should be *lithotresis.* Vide *Kühn, in Blancardi lexic.*) The operation of breaking and comminuting a vesical calculus, so that its fragments may be discharged with the urine. This operation has been practised with great success, in many instances, by Civiale, Heurteloup, Costello, and others. It appears to be applicable in a much larger number of cases than might at first have been supposed; but it is the opinion of the best surgeons that, although very extensively useful, it can never entirely supersede lithotomy, which will be required when the stone is above a certain size.

Litmus. See *Lichen roccella.*

Litra. Λιτρα. A pound weight.

Li'tron. See *Nitre.*

Li'tus. A liniment.

LI'VER. Ἡπαρ. *Hepar.* A large abdominal viscus, of a deep red colour, situated under the diaphragm, in the right hypochondrium, its smaller portion occupying part of the epigastric region. In the adult it generally weighs from three to four pounds. In the fœtus it is much larger proportionally than in the adult. The use of the liver is to secrete the bile. In the human body, the liver is divided into two principal lobes, the right of which is by far the largest. They are divided on the upper side by a broad ligament, and on the other side by a considerable depression or fossa. Between and below these two lobes is a smaller lobe, called *Lobulus spigelii.* This is situated betwixt the two greater lobes, but rather belonging to the right great lobe. From its situation deep behind, and from its having a perpendicular papillary projection, it is called also *lobulus posterior,* or *papillatus.* To the left side it has the fissure for the lodgment of the ductus venosus; on the right, the fissure for the vena cava; and above, it has the great transverse fissure of the liver, for the lodgment of the cylinder of the porta; obliquely to the right, and upwards, it has a connexion with the lower concave surface of the great lobe, by the lobulus caudatus, which Winslow calls one of the roots of the lobulus spigelii. It is received into the bosom of the lesser curve of the stomach. On the under surface of the liver there are two small lobes or processes; namely, the *lobulus anonymus* and *lobulus caudatus.* The lobulus anonymus is the anterior point of the right lobe of the liver. Others define it to be that space of the great lobe betwixt the fossa of the umbilical vein and gall-bladder, and extending forward, from the fossa, for the lodgment of the vena portæ, to the anterior margin of the liver. It is called also *lobulus quadratus* and *lobulus accessorius.*

The lobulus caudatus is a tail-like process of the liver, stretching downward from the middle of the great right lobe to the lobulus spigelii. It is behind the gall-bladder, and betwixt the fossa venæ portarum and the fissure for the lodgment of the vena cava.

The *ligaments* of the liver are five in number, and consist of duplicatures of the peritonæum. 1. *The right lateral ligament,* which connects the thick right lobe with the posterior part of the diaphragm. 2. *The left lateral ligament,* which connects the convex surface and margin of the left lobe with the diaphragm, and, in those of whom the liver is very large, with the œsopha-

gus and spleen. 3. *The broad or middle suspensory ligament*, which passes from the diaphragm into the convex surface, and separates the right lobe of the liver from the left. It descends from above through the large fissure to the concave surface, and is then distributed over the whole liver. 4. *The round ligament*, which in adults consists of the umbilical vein, indurated into a ligament. 5. *The coronary ligament*.

The liver has two *surfaces*, one superior, which is convex and smooth, and one inferior, which is concave, and has holes and depressions to receive, not only the contiguous viscera, but the vessels running into the liver.

The *margins* of the liver are also two in number: the one, which is posterior and superior, is obtuse; the other, situated anteriorly and inferiorly, is acute.

The small lobes on the under surface of the liver, which have just been described as the *lobulus anonymus* and *lobulus caudatus*, are called, by some anatomists, *tubercles* of the liver.

Upon looking on the concave surface of this viscus, a considerable fissure is obvious, known by the name of the *fissure of the liver*.

In order to expose the *sinus*, it is necessary to remove the gall-bladder, when a considerable sinus, before occupied by the gall-bladder, will be apparent.

The *blood-vessels* of the liver are the hepatic artery, the vena portæ, and the vena cavæ hepaticæ, which are described under their proper names. The *absorbents* of the liver are very numerous. The liver has *nerves*, from the great intercostal and eighth pair, which arise from the hepatic plexus, and proceed along with the hepatic artery and vena portæ into the substance of the liver. On tearing the substance of the liver, or pressing it between the fingers, it will be perceived to consist of a number of small, hard, glandular bodies, connected by cellular membrane. These are called *acini*, from their resemblance in shape to grape-stones. They are also called lobules; but this creates confusion, because larger masses of the liver are also called lobules. We shall, therefore, designate them as *acini*. The small vessels, which receive the bile secreted by the acini, are called *pori biliarii*: these converge together throughout the substance of the liver towards its under surface, and, at length, form one trunk, called *ductus hepaticus*, which conveys the bile into either the *ductus communis choledochus*, or *ductus cysticus*. See *Gall-bladder*.

The liver and its vessels are invested by a membrane called the capsule of Glisson, which will presently be described; and it is covered by the peritoneum, like the other abdominal viscera.

The well known use of the liver is to secrete the bile. (See *Bilis*.) Various opinions however have been entertained as to the intimate structure of the liver, and the parts immediately concerned in the secretion of the bile. The late researches of Mr. Kiernan have gone far to determine these points. The following is an abstract of his most important observations.

The vessels of the liver are —

I. The hepatic veins, which consist of

a. The *intra-lobular* hepatic veins, which are contained within the lobules: one of these occupies the centre of each lobule, and receives the blood from four or six smaller branches which terminate in it. The intra-lobular veins correspond in their ramifications with the form of the lobules, whose substance is placed around them; and, as will presently be shown, they receive the blood from a plexus formed in the lobule by the *portal vein*.

b. Hepatic veins, which are contained in *canals* formed by the lobules: these, for the sake of perspicuity, we shall call *canalicular* veins. The formation of the canals differs according to the relation of the contained vessel to the intra-lobular veins: where the intra-lobular terminate directly in the canalicular vein, the canal of the latter is necessarily formed by the bases of the lobules resting upon it, and the contained vein is termed *sublobular*; where the canalicular vein is not formed immediately by the intra-lobular, but by the junction of several other canalicular veins, the canal containing it is formed by a tubular inflection of the surface of the liver; so that, in the one case the canals are formed by the continuity of the *bases* of the lobules, and in the other, by the continuity of those surfaces which will be presently described as *capsular*.

II. The *portal veins*, *hepatic ducts*, and *hepatic arteries*, which must be described together because they accompany each other throughout their course, being all contained in the *portal canals*. These canals begin at the transverse fissure, where they are continuous with the concave surface of the liver; and, like those of the larger hepatic veins, they are formed by the *capsular* surfaces of a certain number of the lobules.

To understand the distribution of the vessels contained in these canals, we must trace the course of *Glisson's capsule*. The liver is invested by a membrane, which stands related to it much as the pia mater does to the brain: it is a cellulo-vascular membrane, which is reflected inwards at the transverse fissure, and incloses in a sheath the portal veins, the hepatic arteries, the ducts, the nerves, and the absorbents: it is here that it is called the capsule of Glisson, in the ordinary language of anatomists. A continuation of this membranous sheath accompanies the contained vessels to their minute ramifications; it enters the interlobular fissures, and, with the vessels, forms the *capsules* of the lobules; it finally enters the lobules, and, with the blood-vessels, expands itself over the secreting biliary ducts. Hence arises a natural division of the capsule into three portions — a *vaginal*, an *inter-lobular*, and a *lobular* portion.

At the transverse fissure, the duct, the vein and artery, divide into branches which enter the *portal canals*, invested with the above-described membrane; the membrane lining the canals and enclosing the vessels. These branches, again, divide and subdivide into smaller branches which enter smaller canals; and every canal, however small, contains one principal branch

each of these vessels; frequently, however, two ducts and two arteries are contained in the same canal.

To the larger vessels the terms *hepatic ducts*, *portal veins*, and *hepatic arteries* may be restricted, in order to distinguish them from the branches. The excreting ducts are composed of the hepatic ducts contained in the canals, of their vaginal branches, also contained in canals, and of the interlobular branches, which, arising from the vaginal branches, ramify in the interlobular fissures. The interlobular ducts enter the lobules, in which they form plexuses: these plexuses may be called the *lobular-biliary*, or secreting biliary plexuses, the ducts composing them being the secreting organs of the bile. The excreting ducts and their branches are invariably accompanied by the arteries and portal veins, and their branches, the former conveying blood to their coats, the latter conveying it from them. A duct is never unaccompanied by an artery and a vein; the vein being always a branch of the portal. The veins and arteries also enter the lobules: the veins form plexuses, the branches of which terminate in the intralobular hepatic veins; and, from the blood circulating through these plexuses, the bile is secreted. The lobular arteries are exceedingly minute, and few in number: they are the nutrient vessels of the lobules, and probably terminate in the plexuses formed by the portal vein. From the ducts, veins, and arteries, therefore, three sets of branches arise, namely, the *vaginal*, the *interlobular*, and the *lobular* branches.

It has then been shown that all the vasa vasorum of the liver are branches of the hepatic artery and portal vein; that branches of the portal vein arise in the coats of the hepatic veins themselves; and that the veins of the coats of the vessels constitute the hepatic origin of the portal vein. The arterial blood having circulated through the coats of the vessels, becomes venous, and is conveyed by the veins arising in the coats of the vessels into those branches of the portal vein which correspond to the vessels in the coats of which the veins arise: thus, from the coats of the vaginal ducts, veins, and arteries, they convey the blood into the vaginal veins; and from the coats of the interlobular ducts, veins, and arteries, into the interlobular veins. From the coats of the hepatic veins and inferior cava, the blood is conveyed into the interlobular portal veins. In the vaginal and interlobular veins, the blood conveyed from the coats of the vessels becomes mingled with the proper portal blood. This mixed blood is conveyed by the interlobular veins into the lobular venous plexuses, in which the lobular arteries probably terminate after having nourished the secreting ducts. From the mixed blood circulating through the plexuses, the bile is secreted by the lobular or secreting biliary plexuses.

The blood which enters the liver by the hepatic artery, fulfils three functions: it nourishes the liver; it supplies the excreting ducts with mucus; and, having performed these purposes, it becomes venous, enters the branches of the portal vein, and contributes to the secretion of the bile. The portal vein fulfils two functions; it conveys the blood from the artery, and the mixed blood to the coats of the excreting ducts. It has been called the vena arteriosa, because it ramifies like an artery, and conveys blood for secretion; but it is an arterial vein in another sense, being a vein to the hepatic artery, and an artery to the hepatic vein. The hepatic veins convey the blood from the lobular venous plexuses into the vena cava inferior.

Liver, inflammation of. See *Hepatitis.*

Liver of sulphur. See *Potassæ sulphuretum.*

Liverwort. See *Marchantia.*

Liverwort, ash-coloured. See *Lichen.*

Liverwort, ash-coloured ground. See *Lichen.*

Liverwort, ground. See *Lichen caninus.*

Liverwort, Iceland. See *Cetraria* in the Supplement.

Liverwort, noble. See *Marchantia.*

Liverwort tree. See *Lichen olivarius.*

LI'VOR. (*or, ōris.* m.; from *liveo*, to be black and blue.) Lividity. A dark colour of the skin of any part produced by a bruise or other cause. Certain states of the circulation occasion lividity; thus a part is livid when about to pass from the state of erysipelas into that of gangrene; and the complexion of the face is livid in diseases which obstruct the pulmonary circulation.

LIX. (*Lix, licis.* f.) Ashes, or water mixed with ashes. It is most frequently used to signify wood-ashes.

LIXI'VIAL. *Lixivialis;* from *lix*, wood-ash. Salts are so called which are extracted by lixiviation.

LIXIVIA'TION. *Lixiviatio.* The process employed by chemists of dissolving, by means of warm water, the saline and soluble particles of cinders, the residues of distillation and combustion, coals, and natural earths. Salts thus obtained are called *Lixivial salts.*

LIXI'VIUM. (*um, ii.* n.; from *lix*, wood-ash.) A ley. The liquor in which saline and soluble particles of the residues of distillation and combustion are dissolved.

Lixivium saponarium. See *Potassæ liquor.*

Lixivium tartari. See *Potassæ subcarbonatis liquor.*

LOBA'TUS. (From *lobus*, a lobe.) Lobate: lobes. Applied to leaves which have the margins of the segments lobed, as in *Anemone hepatica*, and to such as are lobed like the vine, thistle, and many geraniums.

Lobe. See *Lobus.*

Lobed leaf. See *Lobatus.*

LOBE'LIA. (*a, æ.* f.; named in honour of Lobel, a celebrated botanist.) The name of a genus of plants in the Linnæan system. Class, *Syngenesia;* Order, *Monogamia.*

LOBELIA CARDINALIS. Cardinal flower. The root of this is esteemed vermifuge.

LOBELIA INFLATA. Indian tobacco. This plant, which grows in the United States of America, is a narcotic poison, the operation of which is very similar to that of tobacco. It has been found very useful in some cases of asthma, and has also been employed in other diseases of the air passages. For the mode of administering it, see *Asthma.*

Lobelia syphilitica. The systematic name of the blue cardinal flower. The root is the part directed by the Edinburgh Pharmacopœia for medicinal use; in taste it resembles tobacco, and is apt to excite vomiting. It derived the name of *syphilitica* from its efficacy in the cure of syphilis, as experienced by the North American Indians, who considered it as a specific in that disease, and with whom it was long an important secret, which was purchased by Sir William Johnson, and since published by different authors. The method of employing this medicine is stated as follows: — A decoction is made of a handful of the roots in three measures of water. Of this half a measure is taken in the morning, fasting, and repeated in the evening; and the dose is gradually increased, till its purgative effects become too violent, when the decoction is to be intermitted for a day or two, and then renewed, until a perfect cure is effected. During the use of this medicine, a proper regimen is to be enjoined, and the ulcers are also to be frequently washed with the decoction; or, if deep and foul, to be sprinkled with the powder of the inner bark of the New Jersey tea-tree, *Ceanothus americanus*. Although the plant thus used is said to cure the disease in a very short time, yet it is not found that the antisyphilitic powers of the lobelia have been confirmed in any instance of European practice.

Lobelia tupa. This is a very violent acrid poison. Even the odour of the flowers is said to cause excessive vomiting.

Lobelia urens. This also is a very poisonous plant.

Lobster. See *Cancer gammarus.*

LO'BULUS. (*us*, *i.* m.; diminutive of *lobus*, a lobe.) A small lobe.

Lobulus accessorius. See *Liver.*

Lobulus anonymus. See *Liver.*

Lobulus caudatus. See *Liver.*

Lobulus spigelii. See *Liver.*

LO'BUS. (*us*, *i.* m.) A lobe. 1. In *Anatomy*, applied to the more or less separate parts of which some of the viscera are composed; as glands, the ear, the liver, &c.

2. In *Botany*, a principal division of a leaf, the margins of which are in some degree rounded: it is also applied to the divisions of the petals, or any other suitable part. A capsule is sometimes said to be lobed.

LOCAL. *Localis.* Belonging to a part and not the whole. A common division of diseases is into *general* and *local.*

Loca'les. (The plural of *localis.*) The name of the fourth class of Cullen's Nosology, which comprehends morbid affections that are partial, and includes eight orders; viz. *dysæsthesiæ*, *dysorexiæ*, *dyscinesiæ*, *apocenoses*, *epischeses*, *tumores*, *ectopia*, and *dialyses.*

Localis membrana. The pia mater.

LO'CHIA. (From λοχευω, to bring forth.) The cleansings. The serous, and for the most part green-coloured, discharge that takes place from the uterus and vagina of women, during the first four days after delivery.

LOCHIORRHŒ'A. (*a*, *æ.* f.; from λοχια, and ρεω, to flow.) An excessive discharge of the lochia. — *Sagar.*

Locked-jaw. See *Trismus.*

LOCULAME'NTUM. (*um*, *i.* n.) In *Botany*, means the space or cell between the valves and partitions of a capsule; distinguished, from their number, into unilocular, bilocular, &c. See *Capsula.*

LOCU'STA. A term sometimes applied to the spikelet of grasses. See *Spicula.* Also the specific name of the corn-salad. See *Valeriana locusta.*

Locustic acid. An acid obtained from the grasshopper (locusta). It differs little from the acetic.

Logwood. See *Hæmatoxylon.*

Lohoch. (Arabic.) *Looch. Loch.* A linctus.

LOIMIC. (*Loimicus*; from λοιμος, a pestilence.) Appertaining to a pestilence.

LOMENTA'CEUS. (From *lomentum*: in allusion to the pulse-like nature of the plants in question, so as to keep in view their analogy with the *papilionaceæ.*) Lomentaceous; of the nature of a lomentum.

Lomenta'ceæ. The name of an order of plants in Linnæus's Fragments of a Natural Method, consisting of such as have a bivalve pericarpium or legume, and not papilionaceous coorls; as cassia, fumaria, ceretonia, &c.

LOME'NTUM. 1. A Latin name for the meal of beans. 2. Bread made of such meal. 3. The name of a pigment used by the ancients.

4. In *Botany*, a bivalve pericarpium, divided into cells by very small partitions, never lateral like those of the legume.

From its figure is termed,

1. *Articulate*, when the partitions are visible externally; as in *Hedysarum argenteum.*

2. *Moniliform*, necklace-like, consisting of a number of little globules; as in *Hedysarum moliferum.*

3. *Aculeate*; as in *Hedysarum onobrychis.*

4. *Crystate*; as in *Hedysarum caput galli.*

5. *Isthmis interceptum*, when the cells are much narrower than the joints; as in *Hippocrepis.*

6. *Corticose*, the external bark being wood and the inside pulpy; as in *Cassia fistula.*

Lonchi'tis. (*is*, *idis.* f.; from λογχη, a lance so named because the leaves resemble the head of a lance.) See *Asplenium ceterach.*

Longaon. *Longanon.* A barbarous name given by Paracelsus to the rectum.

LONGI'SSIMUS. The longest. Parts are so named from their length, compared with that of others; as *longissimus dorsi*, &c.

Longissimus dorsi. This muscle, which is somewhat thicker than the sacrolumbalis, great resembles it, however, in its shape and extent and arises, in common with that muscle, between it and the spine. It ascends upwards along the spine, and is inserted by small double tendons into the posterior and inferior part of all the transverse processes of the vertebræ of the back and sometimes of the last vertebra of the neck. From its outside it sends off several bundles of fleshy fibres, interspersed with a few tendinous filaments, which are usually inserted into the lower edge of the ten uppermost ribs, not far from their tubercles. In some subjects, how

ever, they are found inserted into a less number, and in others, though more rarely, into every one of the ribs. Towards the upper part of this muscle is observed a broad and thin portion of fleshy fibres, which cross and intimately adhere to the fibres of the longissimus dorsi. This portion arises from the upper and posterior part of the transverse processes of the five or six uppermost vertebræ of the back, by as many tendinous origins, and is usually inserted, by six tendinous and fleshy slips, into the transverse processes of the six inferior vertebræ of the neck. This portion is described, by Winslow and Albinus, as a distinct muscle; by the former under the name of *transversalis major colli*, and by the latter under that of *transversalis cervicis*. But its fibres are so intimately connected with those of the longissimus dorsi, that it may very properly be considered as an appendage to the latter. The use of this muscle is to extend the vertebræ of the back, and to keep the trunk of the body erect; by means of its appendage it likewise serves to turn the neck obliquely backwards, and a little to one side.

Longissimus manus. See *Flexor tertii internodii pollicis.*

Longissimus oculi. See *Obliquus superior oculi.*

LONGITU'DINAL. *Longitudinalis.* Parts are so named from their direction.

Longitudinal sinus. Longitudinal sinus of the dura mater. A triangular canal, proceeding in the falciform process of the dura mater, immediately under the bones of the skull, from the crista galli to the tentorium, where it branches into the lateral sinuses. The longitudinal sinus has a number of fibres crossing it, which are called *Chordæ Willisii*. Its use is to receive the blood from the veins of the pia mater, and convey it into the lateral sinuses, to be carried through the internal jugulars to the heart.

Long-sightedness. See *Presbyopia.*

LO'NGUS. Long. 1. In *Anatomy*, some parts are so named from their comparative length; as *longus colli*, &c.

2. In *Botany*, a cup or calyx is said to be long when it is equal in length to the tube of the blossom.

Longus colli. A muscle, situated close to the anterior and lateral part of the vertebræ of the neck. Its outer edge is in part covered by the rectus internus major. It arises tendinous and fleshy within the thorax, from the bodies of the three superior vertebræ of the back, laterally; from the bottom and fore-part of the transverse processes of the first and second vertebræ of the back, and of the last vertebræ of the neck: and likewise from the upper and anterior points of the transverse processes of the sixth, fifth, fourth, and third vertebræ of the neck, by as many small distinct tendons; and is inserted tendinous into the fore-part of the second vertebra of the neck, near its fellow. This muscle, when it acts singly, moves the neck to one side; but, when both act, the neck is brought directly forwards.

LONICE'RA. (*a, æ.* f.) The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Monogynia.*

Lonicera diervilla. A species of honeysuckle. *Diervilla.* The young branches of this species, *Lonicera — racemis terminalibus, foliis serratis*, of Linnæus, are employed in North America as a remedy in gonorrhœa and suppression of urine. It has not yet been exhibited in Europe.

Lonicera periclí'menum. Common honeysuckle. *Caprifolium.* This beautiful and common plant was formerly used in the cure of asthma, for cleansing sordid ulcers, and removing diseases of the skin. It does not appear to possess any real virtue.

LO'PEZ. *Radix lopeziana. Radix indica lopeziana.* The name of the root of an unknown tree, growing, according to some, at Goa. It is met with in pieces of different thickness, some at least of two inches diameter. The woody part is whitish, and very light; softer, more spongy, and whiter next the bark, including a denser, somewhat reddish, medullary part. The bark is rough, wrinkled, brown, soft, and, as it were, woolly, pretty thick, covered with a thin paler cuticle. Neither the woody nor cortical part has any remarkable smell or taste, nor any appearance of resinous matter. It appears that this medicine has been remarkably effectual in stopping colliquative diarrhœas, which had resisted the usual remedies. Those attending the last stage of consumptions were particularly relieved by its use. It seemed to act, not by an astringent power, but by a faculty of restraining and appeasing spasmodic and inordinate motions of the intestines. Dr. Gaubius, who gives this account, compares its action to that of simarouba, but thinks it more efficacious.

Lopha'dia. (From λοφος, the hinder part of the neck.) *Lophia.* The first vertebra of the neck.

LORDO'SIS. (Λορδωσις; from λορδος, curved, bent.) A curvature. Applied by Hippocrates to a curvature of the spine forwards.

LORI'CA. (From *lorico*, to crust over.) A kind of lute, with which vessels are coated before they are put into the fire.

LORICA'TION. *Loricatio.* The application of a lute of clay, or other material, to chemical vessels.

LO'TION. (*Lotio, onis.* f.; from *lavo*, to wash.) An external fluid application, or wash. Lotions are usually applied by wetting linen with them, and keeping it on the part affected.

Lo'tium. A Latin name of urine.

LO'TUS. (*us, i.* f.; from the nymph *Lotis*, who was changed into this tree; or from λω, to desire.) 1. A tree the fruit of which was said to be so delicious as to make those who tasted it forsake all other desires: hence the proverb, Λωτον εφαγον, *lotum gustavi:* I have tasted lotus.

2. The name of a genus of plants in the Linnæan system. Class, *Diadelphia;* Order, *Decandria.*

Lovage. See *Ligusticum levisticum.*

Love-apple. See *Solanum.*

Loxa'rthros. (From λοξος, oblique, and

αρθρον, a joint.) *Loxarthrus.* An obliquity of the joint, or wrong position of the parts forming a joint, without dislocation or spasm, as in the case of a club-foot.

Lu'dus helmontii. *Ludus Paracelsi.* 1. A species of marle formerly believed to be efficacious in calculous disorders.

2. A calculus from the human bladder.

LU'ES. (*es, is.* f.; from λυω, to dissolve, because it produces dissolution.) A pestilence or poison.

Lues deifica. A name formerly given to epilepsy.

Lues neurodes. A typhus fever.

Lues venerea. The plague of Venus, or the venereal disease. See *Syphilis.*

Lu'jula. (*a, æ.* f.; corrupted or contracted from *Alleluiah, Praise the Lord:* so called from its many virtues.) See *Oxalis.*

LUMBA'GO. (*o, inis.* f.; from *lumbus,* the loin.) A rheumatic affection of the muscles about the loins. See *Rheumatism.*

LUMBAR. *Lumbalis.* Belonging to the loins; as lumbar region, &c.

Lumbar abscess. *Abscessus lumbalis.* Psoas abscess: so called from the situation in which the matter is found, namely, upon the side of the psoas muscle, or betwixt that and the iliacus internus. Between these muscles there lies a quantity of loose cellular membrane, in which an inflammation often takes place, either spontaneously or from mechanical injuries. This terminates in an abscess that can procure no outlet but by a circuitous course, in which it generally produces irreparable mischief, without any violent symptoms occurring to alarm the patient. The abscess sometimes forms a swelling about Poupart's ligament; sometimes below it; and frequently the matter glides under the fascia of the thigh. Occasionally, it makes its way through the sacro-ischiatic foramen, and assumes rather the appearance of a fistula in ano. The uneasiness in the loins, and the impulse communicated to the tumour by coughing, evince that the disease arises in the lumbar region; but it must be confessed, that we can hardly ever know the existence of the disorder, before the tumour, by presenting itself externally, leads us to such information. The lumbar abscess is sometimes connected with diseased vertebræ, which may either be a cause or effect of the collection of matter. The disease, however, is frequently unattended with this complication.

The situation of the symptoms of lumbar abscess, renders this affection liable to be mistaken for some other, viz. lumbago and nephritic pains, and, towards its termination, for crural or femoral hernia. The first, however, is not attended with the shivering that occurs here; and nephritic complaints are generally discoverable by attention to the state of the urine. The distinction from crural hernia is more difficult. In both, a soft inelastic swelling is felt in the same situation: but in hernia, it is attended with obstructed fæces, vomiting, &c., and its appearance is always sudden, while the lumbar tumour is preceded by various complaints before its appearance in the thigh. In a horizontal posture, the abscess, also, totally disappears, while the hernia does not.

Lumbar region. Regio lumbalis. The loins.

Lumbaris externus. See *Quadratus lumborum.*

Lumbarus internis. See *Psoas magnus.*

LUMBRICA'LIS. (From *lumbricus,* the earth-worm.) Resembling the earth-worm. An epithet of certain muscles.

Lumbricales manus. *Fidicinales. Flexor primi internodii digitorum manus, vel perforatus lumbricalis,* of Cowper. The small flexors of the fingers which assist the bending the fingers when the long flexors are in full action. They arise, thin and fleshy, from the outside of the tendons of the flexor profundus, a little above the lower edge of the carpal ligaments, and are inserted by long slender tendons into the outer sides of the broad tendons of the interosseal muscles, about the middle of the first joints of the fingers.

Lumbricales pedis. Four muscles like the former, that increase the flexion of the toes, and draw them inwards.

LUMBRICOI'DES. (From *lumbricus,* and ειδος, resemblance.) Like to the *lumbricus,* or earth-worm.

LUMBRI'CUS. (*us, i.* m.; *a lubricate:* from its slipperiness.) A name given to some worms, as the common earth-worm, and the long round worm which inhabits the intestines of man and other animals. See *Entozoa.*

Lumbricus terrestris. The earth-worm. Formerly given internally, when dried and pulverised, as a diuretic.

Lumbus veneris. See *Achillea millefolium.*

LUNA. (*a, æ.* f.; the moon.) The alchemical name of silver.

Luna cornea. Muriate of silver.

Luna fixata. An obsolete name of the oxide of zinc.

Luna plena. An alchemical term which seems to have been variously applied.

Lunar caustic. See *Argenti nitras.*

LUNA'RE OS. One of the bones of the carpus; so named from its shape.

Lunaria. See *Ophiaglossum lunaria.*

Lunaria rediviva. *Bulbonach,* of the Germans. Satin and honesty. The name of a plant formerly esteemed as a warm diuretic.

LU'NATIC. (*Lunaticus;* from *luna,* the moon.) Applied, 1. Adjectively to any disease supposed to be influenced by the changes of the moon.

2. Substantively to a maniac, because it is generally believed that maniacs are worst at the time of the full moon.

Lunatus. See *Lunulatus.*

LUNG. *Pulmo.* The lungs are two viscera situated in the chest, by means of which we breathe. The lung in the right cavity of the chest is divided into three lobes, that in the left cavity into two. They hang in the chest attached at their superior part to the neck by means of the trachea, and are separated by the mediastinum. They are also attached to the heart by means of the pulmonary vessels. The substance of the lungs is of four kinds, viz. vesicular, vascular, bronchial, and parenc-

matous. The vesicular substance is composed of the air-cells. The vascular invests those cells like a network. The bronchial is formed by the ramifications of the bronchia throughout the lungs, having the air-cells at their extremities: and the spongy substance that connects these parts is termed the *parenchyma*. The lungs are covered with a fine membrane, a reflection of the pleura, called *pleura-pulmonalis*. The internal surface of the air-cells is covered with a very fine, delicate, and sensible membrane, which is continued from the larynx through the trachea and bronchia. The arteries of the lungs are the bronchial, a branch of the aorta, which carries blood to the lungs for their nourishment; and the pulmonary, which circulates the blood through the air-cells to undergo a certain change. The pulmonary veins return the blood that has undergone this change, by four trunks, into the left auricle of the heart. The bronchial veins terminate in the vena azygos. The nerves of the lungs are from the eighth pair and great intercostal. The absorbents are of two orders; the superficial, and the deep-seated; the former are more readily detected than the latter. The glands of these viscera are called bronchial. They are muciparous, and situated about the bronchia. See *Respiration*.

Lung-wort. See *Pulmonaria*.

Lung-wort tree. See *Lichen pulmonarius*.

Lunularis. See *Lunulatus*.

LUNULA'TUS. *Lunatus. Lunularis.* Lunulate: crescent-shaped, or half-moonlike. A term applied to leaves, pods, &c. which are so shaped, whether the points are directed towards the stalk, or from it; as in the leaves of *Passiflora lunata*, and legumen of *Medicago falciata*.

LU'PIA. (From λυπεω, to molest.) 1. A genus of disease, including encysted tumours, the contents of which are of a pultaceous consistence; as *meliceris, atheroma, steatoma*, and *osteo-steatoma*.

LUPINO'SUS. (From *lupinus*, the lupin.) Lupin-like: applied to a disease of the skin, the *porrigo lupinosa*.

LUPI'NUS. (*us, i.* m.; so called by Pliny and other ancient writers. Professor Martin says the word owes its origin to *lupus*, a wolf, because plants of this genus ravage the ground by over-running it, after the manner of that animal. It is also derived from λυπη, grief: whence Virgil's epithet, *tristes lupini*; from the fanciful idea of its acrid juices, when tasted, producing a sorrowful appearance on the countenance.) The name of a genus of plants. Class, *Diadelphia*; Order, *Decandria*.

2. Under this term the white lupin is directed in some pharmacopœias.

LUPINUS ALBUS. The systematic name of the white lupin. The seed, used as ordinary food in the days of Galen and Pliny, is now forgotten. Its farinaceous and bitter meal is occasionally exhibited to remove worms from the intestines, and made into poultices to resolve indolent tumours.

LU'PULIN. Lupuline. The name given by Dr. Ives to an impalpable yellow powder, in which he believes the virtues of the hop to reside, and which may be obtained by beating and sifting the hops used in brewing. It appears to be peculiar to the female plant, and is probably secreted by the nectaria. In preserving beer from the acetous fermentation, and in communicating an agreeable flavour to it, lupulin was found to be equivalent to ten times its weight of hop-leaves.

LU'PULUS. (*us, i.* m.; from λυπη, sorrow: so named from its bitterness.) See *Humulus*.

LU'PUS. (*us, i.* m.; a wolf.) 1. A malignant disease of the face, otherwise called *noli me tangere*. See *Noli me tangere*.

2. The term was intended, by Dr. Willan, to comprise together with the "*noli me tangere*," affecting the nose and lips, other slow tubercular affections, especially about the face, commonly ending in ragged ulcerations of the cheeks, forehead, eyelids, and lips, and sometimes occurring in other parts of the body, where they gradually destroy the skin and muscular parts to a considerable depth. Sometimes the disease appears in the cheek circularly, or in the form of a sort of ringworm, destroying the substance, and leaving a deep and deformed cicatrix: other parts are occasionally the seat of this disease.

By the knife or the caustic, a separation has sometimes been made of the morbid from the sound parts, and the progress of the disease arrested. And in some cases, where the ulceration was very slow, and unaccompanied by much inflammation, the internal use of arsenic has been found beneficial; a circumstance which has probably given rise to the opinion that cancer has been cured by that mineral. In some less severe cases of lupous tubercles in the face, which had made no progress towards ulceration, the solution of muriate of barytes, taken internally, has materially amended the complaint.

LU'RIDÆ. (Lurid, ghastly.) The name of an order of plants in Linnæus's Fragments of a Natural Method, consisting of those which are highly poisonous; the corolla mostly monopetalous; as *Datura, Solanum, Nicotiana*.

LU'SCITAS. (From *luscus*, blind of one eye.) Beer gives this name to a distortion of the eyeball which resembles squinting, but differs from it in the inability to move the affected eye when the other is closed.

LUSTRA'GO. (From *lustro*, to expiate: so called because it was used in the ancient purifications.) Flat or base vervain.

LUSUS NATURÆ. A sport of nature; a monster. See *Monster*.

Lute. See *Lutum*.

Lutea corpora. See *Corpus luteum*.

LUTE'OLA. (*a, æ.* f.; from *luteolus*, yellowish, the flowers being of a yellowish colour.) See *Reseda luteola*.

LUTE'OLINE. The colouring matter of the *reseda luteola* is thus named by Chevreuil.

LU'TEUS. Yellow. See *Colour*.

LU'TRUM. Λουτρον. A bath. Also the epithet of an ophthalmic medicine.

LU'TUM. (*um, i.* n.; the Latin for clay or mud.) *Cæmentum*. Lute. A composition with

which chemical vessels are covered, to preserve them from the violence of the fire, and to close exactly their joinings to each other, to retain the substances which they contain when they are volatile and reduced to vapour.

LUXA'TION. (*Luxatio*; from *luxo*, to put out of joint.) A dislocation of a bone from its proper cavity. See *Dislocation*.

LYCA'NCHE. (From λυκος, a wolf, and αγχω, to strangle.) A quinsy, so called because wolves were said to be subject to it. Synonymous with *cynanche*.

LYCANTHRO'PIA. (Λυκανθρωπια; from λυκος, a wolf, and ανθρωπος, a man.) A species of melancholy described by the Greek writers, in which the patients leave their houses in the night, and wander about, like wolves, in unfrequented places.

LY'CHNIS. (*is, idis.* f.; said to be derived from λυχνος, a torch: because the ancients used its leaves, rolled up, for torches.) 1. A name of several vegetable productions.

2. The name of a genus of plants. Class, *Decandria*; Order, *Pentagynia*.

Lychnis segetum. See *Agrostemma*.

LYCHNOI'DES. (From *lychnis*, the name of a plant, and ειδος, resemblance.) Like the herb *lychnis*.

Lychnoides segetum. See *Agrostemma*.

LYCO'CTONUM. (*um, i.* n.; from λυκος, a wolf, and κτεινω, to slay: so called because it was the custom of hunters to secrete it in raw flesh, for the purpose of destroying wolves.) A Greek name of aconite; now employed as the specific name of a particular species.

LYCOPE'RDON. (From λυκος, a wolf, and περδω, pedo; so named because it was supposed to spring from the dung of wolves.) The name of a genus of plants in the Linnæan system. Class, *Cryptogamia*; Order, *Fungi*.

2. The pharmacopœial name of the puff-ball. See *Lycoperdon bovista*.

LYCOPERDON BOVISTA. The systematic name of the puff-ball. Mollipuf. Puff-fist. *Crepitus lupi*. A round or egg-shaped fungus: the *Lycoperdon — subrotundum, lacerato dehiscens*, of Linnæus; when fresh, of a white colour, with a very short, or scarcely any pedicle, growing in dry pasture-grounds. When young, it is sometimes covered with tubercles on the outside, and is pulpy within. By age it becomes smooth externally, and dries internally into a very fine, light, brownish dust, which is used by the common people to stop hæmorrhages.

LYCOPERDON CERVINUM. *Boletus*. Deer-ball. This has the character of being aphrodisiac, and increasing the quantity of milk.

LYCOPERDON TUBER. The systematic name of the truffle. *Tuber gulosorum*. *Tubera terræ*. Trubs. *Tuber cibarium*, of Dr. Withering. A solid fungus, of a globular figure, which grows under the surface of the ground, without any roots, or the access of light, and attains a size from a pea to the largest potatoe. It has a rough, blackish coat, and is destitute of fibres. There are several species used in the places in which they are found: as the *Tuber moschatum*; *Tuber albidum*, called *Bianchetti*; *Tuber rufum*, called *Rosetti*; the black truffle with white flesh; and also the *Tuber griseum*, or Piedmont truffle, which has a slight odour of garlick. None of these are poisonous, though so nearly allied to *Lycoperda*, differing only in being fleshy in the inside, instead of being powdery. Cooks are well acquainted with its use and qualities. They are all used to give delicate flavours to soups and sauces. The truffle is found in woods and pastures in some parts of Kent, but is not very common in England. In France and Spain, truffles are very frequent, and grow to a much larger size than they do here. In these places, the peasants find it worth their while to search for them, and they train up dogs and swine for this purpose, who, after they have been inured to their smell by their masters frequently placing them in their way, will readily scrape them up as they ramble the fields and woods.

LYCOPE'RSICUM. (*um, i.* n.; from λυκος, a wolf, and περσικον, a peach: wolf's peach. Why so called we know not.) *Lycopersicon*. The love-apple or tomata. See *Solanum lycopersicon*.

LYCOPO'DIUM. (*um, ii.* n.; from λυκος, a wolf, and πους, a foot: so called from its supposed resemblance.) 1. The name of a genus of plants in the Linnæan system. Class, *Cryptogamia*; Order, *Musci*.

2. The pharmacopœial name of the club-moss. See *Lycopodium clavatum*.

LYCOPODIUM CLAVATUM. The systematic name of the club-moss. Wolf's claw. *Muscus clavatus*. *Lycopodium*. This plant affords a great quantity of pollen, which is much esteemed in some places to sprinkle on young children, to prevent excoriation, and to cure parts that are so. A decoction of the herb is said to be a specific in the cure of the plica polonica.

LYCOPODIUM SELAGO. The systematic name of the upright club-moss. *Muscus erectus*. The decoction of this plant acts violently as a vomit and a purgative, and was formerly, on that account, employed to produce abortions.

LYCO'PSIS. (*is, idis.* f.; from λυκος, a wolf, and οψις, an aspect: so called from its being of the colour of a wolf, or from the circumstance of the flowers being ringent, and having the appearance of a grinning mouth. The herbage is also furnished, says Ambrosinus, with a sort of rigid hairiness, similar to the coat of a wolf.) 1. The name of a genus of plants. Class, *Pentandria*; Order, *Monogynia*.

2. The pharmacopœial name of the wall bugloss, *Echium ægyptiacum*, the *Asperago ægyptiaca* of Wildenow.

LY'COPUS. (*us, i.* m.; from λυκος, a wolf, and πους, a foot: so named from its likeness.) The name of a genus of plants in the Linnæan system. Class, *Diandria*; Order, *Monogynia*. Wolf's claw, or water horehound.

LYCOPUS EUROPÆUS. This plant is sometimes used as an astringent.

LYGMUS. Λυγμος. The hiccup.

LYMPH. *Lympha*. The liquid contained in the lymphatic vessels. Two processes may be employed to procure lymph. One is to lay bare a lymphatic vessel, divide it, and receive the liquid that flows from it; but this a method difficult to execute, and besides,

the lymphatic vessels are not always filled with lymph, it is uncertain: the other consists in letting an animal fast during four or five days, and then extracting the fluid contained in the thoracic duct.

The liquid obtained in either way has, at first, a slightly opaline rose colour. It has a strong spermatic odour; a salt taste; it sometimes presents a slight yellow tinge, and at other times a red madder colour.

But lymph does not long remain liquid: it congeals. Its rose colour becomes more deep, an immense number of reddish filaments are developed, irregularly arborescent, and very analogous in appearance to the vessels spread in the tissue of organs.

When we examine carefully the mass of lymph thus coagulated, we find it formed of two parts: the one solid, and forming a great many cells, in which the other remains in a liquid state. If the solid part be separated, the liquid congeals again.

The quantity of lymph procured from one animal is but small: a dog, of a large size, scarcely yields an ounce. Its quantity appears to increase according to the time of fasting.

The solid part of the lymph, which may be called *clot*, has much analogy with that of the blood. It becomes scarlet-red by the contact of oxygen gas, and purple when plunged in carbonic acid.

The specific gravity of lymph is to that of distilled water as 1022·28 to 1000·00.

Chevreuil analysed the lymph of the dog.

Water	926·4
Fibrin	004·2
Albumen	61·0
Muriate of soda	6·1
Carbonate of soda	1·8
Phosphate of lime, Phosphate of magnesia, Carbonate of lime	0·5
Total	1000·0

Its specific gravity is greater than that of water; in consistence, it is thin, and somewhat viscid. The quantity in the human body appears to be very great, as the system of the lymphatic vessels forms no small part it. Its constituent principles appear to be albuminous water and a little salt. The lymphatic vessels absorb this fluid from the tela cellulosa of the whole body, from all the viscera, and the cavities of the viscera; and convey it to the thoracic duct, to be mixed with the chyle.

The use of the lymph is to return the superfluous nutritious jelly from every part, and to mix it with the chyle in the thoracic duct, there to be further converted into the nature of the animal; and, lastly, it has mixed with it the superfluous aqueous fluid, which is effused into the cavities of the cranium, thorax, abdomen, &c.

LYMPHA'TIC. (*Lymphaticus*; from *lympha*, lymph.) 1. Of the nature of lymph.

2. The name of an absorbent vessel, that carries a transparent fluid or lymph. The lymphatic vessels of the human body are small and transparent, and originate in every part of the body. With the lacteal vessels of the intestines, they form what is termed the *absorbent system*. Their termination is in the thoracic duct. See *Absorbent*, *Lacteal*, and *Thoracic duct*.

Lymphatics of the head and neck. — Absorbents are found on the scalp and about the viscera of the neck, which unite into a considerable *branch*, that accompanies the jugular vein. Absorbents have not been detected in the human brain, yet there can be no doubt of there being such vessels: it is probable that they pass out of the cranium through the canalis caroticus and foramen lacerum in basi cranii, on each side, and join the above *jugular branch*, which passes through some glands as it proceeds into the chest to the angle of the subclavian and jugular veins.

The absorbents from the right side of the head and neck, and from the right arm, do not run across the neck, to unite with the great trunk of the system: they have an equal opportunity of dropping their contents into the angle betwixt the right subclavian and the jugular vein. These vessels, then uniting, form a trunk, which is little more than an inch, nay, sometimes not a quarter of an inch, in length, but which has nearly as great a diameter as the proper trunk of the left side.

This vessel lies upon the right subclavian vein, and receives a very considerable number of lymphatic vessels: not only does it receive the lymphatics from the right side of the head, thyroid gland, neck, &c., and the lymphatics of the arm, but it receives also those from the right side of the thorax and diaphragm, from the lungs of this side, and from the parts supplied by the mammary artery. Both in this and in the great trunk there are many valves.

Of the upper extremities. — The absorbents of the upper extremities are divided into superficial and deep-seated. The *superficial absorbents* ascend under the skin of the hand in every direction to the wrist, from whence a *branch* proceeds upon the posterior surface of the fore-arm to the head of the radius, over the internal condyle of the humerus, up to the axilla, receiving several branches as it proceeds. Another *branch* proceeds from the wrist along the anterior part of the fore-arm, and forms a *network*, with a *branch* coming over the ulna from the posterior part, and ascends on the inside of the humerus to the glands of the axilla. The *deep-seated absorbents* accompany the larger blood-vessels, and pass through two glands about the middle of the humerus, and ascend to the glands of the axilla. The superficial and deep-seated absorbents having passed through the axillary glands, form *two trunks*, which unite into *one*, to be inserted with the jugular absorbents into the thoracic duct, at the angle formed by the union of the subclavian with the jugular vein.

Lymphatics of the inferior extremities. — These are also superficial and deep-seated. The *superficial ones* lie between the skin and muscles. Those of the toes and foot form a *branch*, which ascends upon the back of the foot, over the tendon of the cruræus anticus, forms, with other branches, *a plexus* above the ankles, then proceeds along the tibia over the knee, sometimes passes through a gland, and proceeds up the

inside of the thigh, to the subinguinal glands. The *deep-seated* absorbents follow the course of the arteries, and accompany the femoral artery, in which course they pass through some glands in the leg and above the knee, and then proceed to some deep-seated subinguinal glands. The absorbents from about the external parts of the pubes, as the penis and perinæum, and from the external parts of the pelvis, in general, proceed to the inguinal glands. The subinguinal and inguinal glands send forth several branches, which pass through the abdominal ring into the cavity of the abdomen.

Of the abdominal and thoracic viscera. — The absorbents of the lower extremities accompany the external iliac artery, where they are joined by many branches from the *uterus*, *urinary bladder*, *spermatic chord*, and some branches accompanying the internal iliac artery; they then ascend to the sacrum, where they form a *plexus*, which proceeds over the psoas muscles, and, meeting with the lacteals of the mesentery, form the thoracic duct, or trunk of the absorbents, which is of a serpentine form, about the size of a crow-quill, and runs up the dorsal vertebræ, through the posterior opening of the diaphragm, between the aorta and vena azygos, to the angle formed by the union of the left subclavian and jugular veins. In this course it receives the *absorbents of the kidneys*, which are superficial and deep-seated, and unite as they proceed towards the thoracic duct; and *the absorbents of the spleen*, which are upon its peritonæal coat, and unite with those of the pancreas, — a *branch* from the plexus of the vessels passing above and below the duodenum, and formed by the absorbents of the *stomach*, which come from the lesser and greater curvature, and are united about the pylorus with those of the pancreas and liver, which converge from the external surface and internal parts towards the portæ of the liver, and also by several branches from the *gall-bladder*.

Use of Lymphatics. — The office of these vessels is to take up substances which are applied to their mouths: thus the vapour of circumscribed cavities, and of the cells of the cellular membrane, are removed by the lymphatics of those parts; and thus mercury and other substances are taken into the system when rubbed on the skin. See *Absorption*.

The principle by which this absorption takes place is a power inherent in the mouths of absorbing vessels, a vis insita, dependent on the high degree of irritability of their internal membrane, by which the vessels contract and propel the fluid forwards. Hence the use of this function appears to be of the utmost importance, viz. to supply the blood with chyle; to remove the superfluous vapour of circumscribed cavities, — otherwise dropsies, as hydrocephalus, hydrothorax, hydrocardia, ascites, hydrocele, &c., would constantly be taking place; to remove the superfluous vapour from the cells of the cellular membrane dispersed throughout every part of the body, that anasarca may not take place; to remove the hard and soft parts of the body, and to convey into the system medicines which are applied to the surface of the body.

Lymphatic gland. See *Gland*.

Lymphatic temperament. See *Temperament*.

Lymphatic veins. The absorbents have been so called.

Lynch's embrocation. This consists of olive oil, scented with some volatile oils, and coloured with alkanet root.

Lyngodes. (Λυγγωδες; from λυγξ, the hiccup.) The epithet of a fever, of which hiccup is a prominent symptom. —*Hippocrates*.

Lypo'ma. See *Lipoma*.

LY'RA. (*a*, *æ*. f.; from λυρα, a lyre, or musical instrument.) *Psalterium*. *Corpus psalloides*. The triangular medullary space between the posterior crura of the fornix of the cerebrum, which is marked with prominent medullary fibres that give the appearance of a lyre.

LYRATUS. (From *lyra*, a musical instrument.) Lyrate, or lyre-shaped. A leaf is so named which is cut into transverse segments generally longer towards the extremity of the leaf which is rounded; as in *Erysimum barbaria*.

Lyre-shaped. See *Lyratus*.

Ly'rus. (From *lyra*, the lyre: so called because its leaves are divided like the strings of a lyre.) See *Arnica montana*.

Lysigy'ia. (Λυσιγυια; from λυω, to loosen and γυιον, a member.) Relaxation of limbs.—*Hippocrates*.

LYSIMA'CHIA. (*a*, *æ*. f.; from *Lysimachus*, who first discovered it.) The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Monogynia*.

Lysimachia nummularia. The systematic name of the money-wort; called also, *Nummularia*, *Hirundinaria*, and *Centimorbia*. The plant is very common in our ditches. It was formerly accounted vulnerary; and was said to possess antiscorbutic and restringent qualities. Boerhaave looks upon it as similar to a mixture of scurvy-grass with sorrel.

Lysimachia purpurea. See *Lythrum salicaria*.

Lysimachiæ. A natural family of plants of which the genus *Lysimachia* is the type.

Lysiponion. See *Lysiponos*.

Lysiponos. Λυσιπονος. The epithet of an antidote, consisting of opium, henbane seed, mandrake, and other narcotics, &c.

LYSSA. (*a*, *æ*. f. Λυσσα, *rabies*.) Hydrophobia.

Lyssode'ctus. (Λυσσοδηκτος; from λυσσα canine madness, and δακνυμι, to bite.) One who labours under hydrophobia, in consequence of having been bitten by a rabid animal.

LY'THRUM. (*um*, *i*. n.; from λυθρον blood: so called from its resemblance in colour.) The name of a genus of plants in the Linnæan system. Class, *Dodecandria*; Order, *Digynia*.

Lythrum salicaria. *Lysimachia purpurea*. The systematic name of the common or purple willow-herb. The herb, root, and flowers possess a considerable degree of astringency, and are used medicinally in the cure of diarrhœas and dysenteries, fluor albus, and hæmoptysis.

LYTTA. (*a*, *æ*. f.) The name of a genus of insects. See *Cantharis*.

M.

M. In the language of medicine this letter has two significations. When herbs, flowers, chips, or the like substances, are ordered in a prescription, and M. follows them, it signifies *manipulus*, a handful; and when several ingredients have been directed, it is a contraction of *misce*: thus, *m. f. haust.* signifies mix, and let a draught be made.

MACANDOU. (Javanese.) A tree growing in Malacca, the fruit of which is roasted and eaten as a cure for dysenteries, cholera morbus, and other complaints. — *Bontius.*

MACAPATLI. Sarsaparilla.

Mace. See *Myristica moschata.*

Macedonian parsley. See *Bubon.*

Macedonisium semen. See *Smyrnium.*

MA'CER. The bark of the root of a tree growing in Malabar. It is astringent, and used against alvine fluxes. — *Piso.*

MACERA'TION. (*Maceratio, onis.* f.; from *macero*, to soften by water.) In a pharmaceutical sense, this term implies an infusion either with or without heat, wherein the ingredients are intended to be almost wholly dissolved in order to extract their virtues.

Macerona. See *Smyrnium olusatrum.*

MACHAO'NIA ARS. Medicine has been so called from *Machaon*, the son of Æsculapius.

MA'CIES. (*es. ei.* f.; from *maceo*, to grow lean.) Emaciation. See *Marasmus.*

MA'CIS. (*is, idis.* f.) Mace. See *Myristica.*

Mackarel. See *Scomber scomber.*

MACROCE'PHALUS. (*us, i.* m.; from μακρος, long, and κεφαλη, the head.) See *Physeter macrocephalus.*

MA'CROPHY'SOCE'PHALUS. (*us, i.* m.; from μακρος, long, φυσις, nature, and κεφαλη, the head: so called from the length of the head.) One who has a head unnaturally long and large. This word, according to Turton, is only used by Ambrose Pare.

MACRO'PIPER. (*er, eris.* n.; from μακρος, long, and πεπερι, pepper.) Long pepper. See *Piper longum.*

MACROPNŒ'A. (*a, æ.* f.; from μακρος, long, and πνεω, to breathe.) That state of the breathing in which the inspiration is long and deep.

MA'CULA. (*a, æ.* f.) A spot, a permanent discolouration of some portion of the skin, often with a change of its texture, but not connected with any disorder of the constitution.

MACULA MATRICIS. A mother's mark. See *Nævus maternus.*

MACULÆ. The name of an order of Dr. Willan's cutaneous diseases, which comprises those discolourations of the skin which are permanent, and most of which are the result of an alteration of the natural texture of the part. It comprehends *ephelis, nævus, opilus,* and moles.

MACULA'TUS. Spotted: applied, in *Botany*, to stems, petals, &c.; as the stem of the common hemlock, *Conium maculatum*; the *petales* of the *Digitalis purpurea.*

Mad apple. See *Solanum melongena.*

MADARO'SIS. (*is, eos.* f. Μαδαροσις; from μαδαρος, bald, or smooth.) Falling off of the hair, especially of the eye-lashes.

MADDEN'S VEGETABLE ESSENCE. This consists chiefly of the *infusum rosæ compositum*, with an increased proportion of acid.

Madder. See *Rubia.*

Madness. See *Insanity.*

Madness, canine. See *Hydrophobia.*

MA'DOR. Moisture. A sweating.

Madwort, Galen's. See *Marrubium.*

MAGDA'LEON. (From μασσω, to knead.) A mass of plaster, or other composition, reduced to a cylindrical form.

Magellanicus cortex. See *Wintera.*

MA'GISTERY. (*Magisterium, ii.* n.; from *magister*, a master.) Magistery. A term used by the old chemists to signify a peculiar and secret method of preparing any medicine, as it were, by a masterly process. The term was also long applied to all precipitates.

MAGISTERY OF BISMUTH. The subnitrate of bismuth. See *Bismuth.*

MAGISTRA'LIS. (From *magister*, a master.) Applied to such medicines as are prescribed extemporaneously, on the authority of the physician, as opposed to those which are officinal.

MAGISTRA'NTIA. (From *magistro*, to rule: so called by way of eminence, as exceeding all others in virtue.) See *Imperatoria.*

MA'GMA. (*a, atis.* n.; from μασσω, to blend together.) 1. A thick ointment. 2. The fæces of any thing after the thinner parts are strained off.

3. A confection.

MAGNES ARSENICALIS. Arsenical magnet. A composition of equal parts of antimony, sulphur, and arsenic, mixed and melted together so as to become a glassy body.

MAGNES EPILEPSIÆ. An old and obsolete name of native cinnabar.

MAGNE'SIA. (*a, æ.* f.) 1. The ancient chemists gave this name to such substances as they conceived to have the power of attracting any principle from the air. Thus an earth which, on being exposed to the air, increased in weight, and yielded vitriol, they called *magnesia vitriolata*: and later chemists, observing in their process for obtaining magnesia, that nitrous acid was separated, and an earth left behind, supposing it had attracted the acid, called it *magnesia nitri*, which, from its colour, soon obtained the name of *magnesia alba.*

2. The name of one of the primitive earths, having a metallic basis, called *magnesium.* It has been found native in the state of hydrate.

Magnesia may be obtained by pouring into a solution of its sulphate a solution of subcarbonate of soda, washing the precipitate, drying it, and exposing it to a red heat. It is usually procured in commerce, by acting on magnesian limestone with the impure muriate of magnesia, or bittern of the sea-salt manufactories. The muriatic acid goes to the lime, forming a soluble salt, and leaves behind the magnesia of both the bittern and limestone. Or the bittern is decomposed by a crude subcarbonate of ammonia, obtained from the distillation of bones in iron cylinders. Muriate of ammonia and subcarbonate of magnesia result. The former is evaporated to dryness, mixed with chalk, and sublimed. Subcarbonate of ammonia is thus recovered, with which a new quantity of bittern may be decomposed; and thus, in ceaseless repetition, forming an elegant and economical process. 100 parts of crystallised Epsom salt, require for complete decomposition 56 of subcarbonate of potash, or 44 dry subcarbonate of soda, and yield 16 of pure magnesia after calcination.

When magnesia is exposed to the air, it very slowly attracts carbonic acid. It combines with sulphur, forming a sulphuret.

The metallic basis, or *magnesium*, may be obtained in the state of amalgam with mercury, by electrisation.

When magnesia is strongly heated in contact with two volumes of chlorine, this gas is absorbed, and one volume of oxygen is disengaged. Hence it is evident that there exists a combination of magnesium and chlorine, or a true chloride. The salt called muriate of magnesia, is a compound of the chloride and water. When it is acted on by a strong heat, by far the greatest part of the chlorine unites to the hydrogen of the water, and rises in the form of muriatic acid gas; while the oxygen of the decomposed water combines with the magnesium to form magnesia.

Magnesia is often associated with lime in minerals, and their perfect separation becomes an interesting problem in analysis.

Properties. — Pure magnesia does not form with water an adhesive ductile mass. It is in the form of a very white spongy powder, soft to the touch, and perfectly tasteless. It is very slightly soluble in water. It absorbs carbonic acid gradually from the atmosphere. It changes very delicate blue vegetable colours to green. Its attraction to the acids is weaker than those of the alkalis. Its salts are partially decomposed by ammonia, one part of the magnesia being precipitated, and the other forming a triple compound. Its specific gravity is about 2·3. It is infusible even by the most intense heat; but when mixed with some of the other earths it becomes fusible. It combines with sulphur. It does not unite to phosphorus or carbon. It is not dissolved by alkalis in the humid way. When heated strongly, it becomes phosphorescent. With the dense acids it becomes ignited. With all the acids it forms salts of a bitter taste, mostly very soluble.

The magnesia of the present London Pharmacopœia was formerly called *Magnesia calcinata; usta; pura.* It is directed to be made thus: — Take of carbonate of magnesia, four ounces; burn it in a very strong fire, for two hours. It is given as an absorbent, antacid, and eccoprotic, in cardialgia, spasms, convulsions, and tormina of the bowels of infants, pyrosis, flatulencies, and other diseases of the prima viæ; obstipation, leucorrhœa, rickets, scrofula, crusta lactea, and podagra. The dose for an adult is from a scruple to a drachm.

An ingenious preparation of magnesia has been lately made, and is sold in the shops under the name of *ponderous magnesia.* A given weight of this occupies a much smaller space than the same weight of ordinary magnesia; hence it is much more convenient in prescription. There is a similar preparation of the carbonate. The process by which these preparations are made is kept secret.

Magnesia calcinata. See *Magnesia.*

Magnesia usta. See *Magnesia.*

Magnesia vitriolata. See *Magnesia sulphas.*

Magnesia water. *Aerated magnesian water.* This is made by mixing half an ounce of carbonate of magnesia with one gallon of water, and impregnating it with ten times its volume of carbonic acid gas, by means of a forcing pump. It is a good antacid, and the carbonic acid it contains renders it a salutary stimulant to the stomach.

Magnesiæ carbonas. *Magnesiæ subcarbonas. Magnesia alba.* Carbonate of magnesia. The London College direct it to be made as follows: — Take of sulphate of magnesia, four pounds; carbonate of soda, four pounds and eight ounces; distilled water, four gallons. Dissolve the carbonate of soda and the sulphate of magnesia separately in two gallons of the water, and strain; then mix, and boil the liquors, stirring constantly with a spatula for a quarter of an hour; lastly, pour off the liquor, and wash the precipitated powder with boiling distilled water, and dry it. It is in form of very fine powder, considerably resembling flour in its appearance and feel; it has no sensible taste on the tongue; it gives a faint greenish colour to the tincture of violets, and converts turnsole to a blue. It is employed medicinally as an absorbent, antacid, and purgative, in doses from half a drachm to two drachms.

Magnesiæ sulphas. *Sulphas magnesiæ purificata. Magnesia vitriolata. Sal catharticus amarus. Sal cathartieum amarum.* Sulphate of magnesia. Epsom salt. Bitter purging salt.

This salt exists in several mineral springs, as that of Epsom, from which it was formerly obtained: it is now afforded, however, in greater abundance and more pure from the bittern left after the extraction of salt from sea-water. It has likewise been found efflorescing on brick walls, both old and recently erected, and in small quantity in the ashes of coals. The capillary salt of Idria, found in silvery crystals mixed with the aluminous schist in the mines of that place, and hitherto considered as a feathery alum, has been ascertained by Klaproth to consist of sulphate of magnesia, mixed with a small portion of sulphate of iron. When pure,

t crystallites in small quadrangular prisms, terminated by quadrangular pyramids or dihedral ummits. Its taste is cool and bitter. It is ery soluble, requiring only an equal weight of old water, and three fourths its weight of hot. t effloresces in the air though but slowly. If t attracts moisture, it contains muriate of magesia or of lime. Exposed to heat, it dissolves n its own water of crystallisation, and dries, ut is not decomposed nor fused, but with xtreme difficulty. It consists, according to Bergman, of 33 acid, 19 magnesia, 48 water. A very pure sulphate is said to be prepared in he neighbourhood of Genoa, by roasting a yrites found there; exposing it to the air in a overed place for six months; watering it occaionally, and then lixiviating.

It is from these saline solutions that the salt s obtained: the method generally adopted for btaining it is evaporation, which causes the salt o crystallise in tetrahedral prisms. It has a ery bitter taste, and is soluble in its own weight f water at 60°, and in three fourths of its veight of boiling water. Sulphate of magesia, when perfectly pure, effloresces; but that f commerce generally contains foreign salts, uch as the muriate of magnesia, which renders t so deliquescent, that it must be kept in a close essel or bladder. By the action of heat it ndergoes the watery fusion, and loses its water f crystallisation, but does not part with its cid. One hundred parts of crystallised sulhate of magnesia consist of 29·35 parts of cid, 17 of earth, and 53·65 of water. The lkalies, strontian, barytes, and all the salts ormed by these salifiable bases, excepting the lkaline muriates, decompose sulphate of magesia. It is also decomposed by the nitrate, arbonate, and muriate of lime.

Epsom salt is a mild purgative, operating vith sufficient efficacy, and in general with ease nd safety, rarely occasioning any gripes, or the ther inconveniences of resinous purgatives. Six or eight drachms may be dissolved in a roper quantity of common water; or four, ve, or more, in a pint or quart of the purging nineral waters. These solutions may likewise e so managed, in small doses, as to produce vacuation from the other emunctories: if the atient be kept warm, they increase perspiration, nd, by moderate exercise in the cool air, the rinary discharge. Some allege that this salt as a peculiar effect in allaying pain, as in colic, ven independently of evacuation.

MAGNE'SIUM. The metallic base of nagnesia. See *Magnesia.*

MAGNET. (*Magnes*, etis. m.; Μαγνης. Μαγνητης. Said to be so called from the name f a shepherd, who first observed it.) The oadstone. See *Magnetism.*

MA'GNETISM. There are some native xides of iron which have the remarkable proerty of attracting iron. These are called oadstones, *magnetic iron ores*, or *natural magets.*

If a bar of tempered steel be rubbed in a ertain direction with a loadstone, it acquires a imilar property of attracting iron, and permanently retains this property. If a slender bar of iron be rendered magnetic and poised on a fulcrum, or suspended by a thread, so as to admit of its free horizontal motion, in a situation where it is not influenced by the contiguity of other magnets or pieces of iron, it will vibrate for some time, and ultimately settle in a position in which its extremities point nearly north and south; and if it be put out of this position, it will constantly return to it. The extremities of the magnetic needle are called its *north and south poles;* the direction which the needle assumes when pointing north and south, is termed the *magnetic meridian;* and the disposition to assume this position is termed *polarity.* This property of polarity in the magnetic needle, is the principle on which the mariner's compass is constructed, and the art of navigation founded. When the magnetic needle is so placed as to admit of its free motion in every direction, its north pole is drawn downwards towards the earth, and this phenomenon is called the *dip of the magnetic needle.*

On bringing either pole of a magnet near some iron filings, it will attract them, and the attraction is mutual, for a large mass of iron will draw towards it a small magnet.

If the similar poles of two magnets be presented to each other, they will repel each other; but if the different poles of two magnets be presented to each other, they will attract each other.

If a bar of iron be brought near a magnet, it acquires a temporary magnetism. The production of this temporary state is called *magnetic induction,* and is in many respects analogous to electric induction. For the phenomena of this state we must refer to the treatises on magnetism.

Some other metals besides iron may, under certain circumstances, be rendered magnetic for a time, and nickel may be made permanently so.

MAGNETISM, ANIMAL. In the year 1778, Anthony Mesmer promulgated a theory, according to which all the phenomena of life are referred to the motion of a certain universal magnetic fluid, which admits of being influenced by external agents, and especially by magnetic instruments. Ideas similar in some respects to those of Mesmer, had been entertained by Paracelsus, Van Helmont, Rudolph Goclen, Athanasius Kircher, Valentine Greatrakes, and others. The experiments exhibited by Mesmer, and the cures performed by him at Paris, caused so great a sensation, that a royal commission was appointed to examine into his claims. The commissioners, among whom were Franklin and Lavoisier, after mature investigation, came to the conclusion that the effects produced by Mesmer's operations were referable solely to the imagination of the patients; that they were devoid of all salutary influence, and calculated to do harm. Only one of the commissioners dissented from this opinion. Since that time animal magnetism, or *Mesmerism,* as it is also called, has been in various degrees of estimation, but has never been admitted by the scientific world at large to the rank of a true science. It is to be observed, also, that scarcely any two practitioners of the art have agreed in their

mode of proceeding, or in the results obtained, and that all sorts of effects have been produced in all sorts of ways. The use of magnetic instruments is now quite exploded, and every thing is done by certain *passes* or movements of the hands of the operator. The application of the mineral magnet, however, is alleged by some to produce particular effects on persons in the state induced by animal magnetism. In 1831 animal magnetism was again reported on by a committee of the Royal Academy of Medicine, which had been occupied for five years in experimenting on the subject. The report was favourable to the authenticity of the leading facts adduced by the magnetists; but the committee did not venture on any opinion as to the real cause of those phenomena.

According to Kluge, and other writers who have entered minutely into the subject, there appear to be six distinct stages or degrees of magnetic influence. These are as follows: —

1. The *Waking stage*, in which the patient experiences a powerful aura passing from the head to the extremities, followed by general increase of temperature, redness of the skin, perspiration, and a feeling of lightness and comfort.

2. The stage of *Half-sleep*. In this the phenomena above mentioned become more intense; the heat increases, and appears to radiate from the stomach over the whole body; the pulse becomes fuller, and the breathing slower and deeper; the patient is drowsy, his eyelids close, and he cannot open them, while the magnetizing process is continued; the other senses remain active, although the patient often cannot express himself; flashes of light are seen before the eyes; prickings are felt at the ends of the fingers; there are profuse sweats, rigours, and sometimes spasms of the muscles, and other nervous phenomena.

3. *Magnetic sleep or stupor*. — The patient is now buried in a profound sleep, from which he cannot be awakened even by the loudest cries. Syncope, cataleptic or apoplectic affections, and convulsive shudderings, sometimes occur during this stage. It terminates gradually, the patient sighs, and finally awakes, retaining no recollection of what has happened.

4. *Somnambulism*. — In this degree of the magnetic influence, the patient recovers his internal consciousness while his outward senses are still asleep. In the more perfect developments of this state, the general sense of feeling becomes exalted and modified, so as to supersede the particular senses, the patient sees and hears with the pit of his stomach, the ends of his fingers, &c. &c.

5. *Self-contemplation*, the *clair-voyance* of the French magnetists. When the patient has got this length, he becomes perfectly cognizant of his own anatomy, and if there be disease in any part, he immediately sees what is the matter, and knows what to prescribe. If he be unacquainted with the names of the drugs, he describes them so accurately that they can be recognised by his physician.

This state of *clair-voyance* obtains not only with respect to the patient's own body, but also with respect to the bodies of those with whom he is placed in magnetic relation, and the *clair-voyant* sees their internal economy as clearly as his own.

6. *Universal illumination*. — In this highest stage of magnetism, the patient, or rather prophet, is no longer confined within the limits of time, space, or sense; he enters into the penetralia of nature; he knows what is going on in distant regions, and all that has happened or will happen to those persons with whom he is brought into magnetic relation, and so forth.

It is to be observed, that the different stages of magnetism above alluded to can only be arrived at by degrees. Thus, at the first sitting, even the first degree may not be attained; and it may not be till after many successive and long continued operations that the higher states of magnetism are established. The magnetists admit that there is a great difference of susceptibility in different individuals; but most seem to be of opinion that some effect is produced upon all, if the process be continued long enough. This, however, does not appear to be borne out by experience, since it is pretty notorious that on persons endowed with good health and good sense animal magnetism generally produces no effect whatever. It has been frequently asserted, that all the effects of magnetism may be produced on susceptible individuals, without their being aware that any attempt is being made to magnetise them — as when the operator comes unobserved behind them. This, if established, would sufficiently prove that there must be some real agency in the case, independent of any impression on the mind of the patient. But this assertion requires much more substantial evidence than has yet been adduced, to obtain credence from cautious inquirers.

Such are the principal of the alleged effects of animal magnetism. Of these phenomena the artificial sleep and somnambulism are worthy the attention of sober-minded persons since they are not only in their nature possible but seem in many instances to have actually occurred, and to have been attested by competent witnesses. All that can be said upon the subject at present is, that some new facts in the physiology, or rather pathology, of the nervous system have been observed, and remain to be explained. Possibly a more extended range of observation may afford such explanation, and possibly also the facts may remain unexplained — which is hitherto the case with respect to very familiar though very wonderful state, namely, that of natural sleep. With respect to *clair-voyance* and *universal illumination*, those physiologists who have actually witnessed such phenomena may believe in them; but the greater part of physiologists never have witnessed them, and we may venture to predict never will.

MAGNETO-ELECTRICITY. M. Faraday observed certain phenomena, which he has described under the names of *volta-electric* and *magneto-electric induction*. In consequence of these phenomena, it occurred to him that magnetism in motion ought to produce a

ectric current, and he succeeded in verifying s important conclusion as follows: — a long iral coil of copper-wire, covered as in the mer experiments with silk, was connected by extremities with the galvanometer, the de- ction of which would of course announce a rrent of electricity in the spiral and wires nnected with it: he now found, that in the t of introducing the pole of a powerful bar- agnet within the coils of the spiral, a deflection the galvanometer took place in one direction, d in the act of withdrawing it took place in e opposite direction; so that each time the nducting-wire cut the magnetic curves, a rrent of electricity was, for the moment, oduced in it. He afterwards devised the llowing curious modification of this experi- ent: a copper plate was so mounted as to mit of revolving upon its axis; the poles of powerful horse-shoe magnet were so placed as admit of the revolution of the circumference the plate between them; and two conducting ires are so placed, that one is in perfect etallic contact with the axis, and the other ith the circumference of the plate at the point tween the two poles of the magnet, while th wires at their other extremity terminate in galvanometer. When the copper plate is ade to revolve from right to left, a current of ectricity is produced, in the direction of the rows, and deflects the galvanometer accord- gly. If the revolutions of the plate, or the les of the magnet be reversed, the electric rrent moves in the opposite direction. These servations have given rise to a new branch of ience, which is termed *magneto-electricity*.

Mr. Faraday not only succeeded in obtaining lvanometrical indications of an electric cur- nt, but, by another modification of the arrange- ent in which the electric current was induced an electro-magnet, he actually succeeded in taining the electric spark. The electric spark as afterwards obtained from a common mag- et, by Nobili and Antinori, and in this country Professor Forbes. For this purpose, a helix copper wire was formed round the middle of e soft iron holder of a powerful horse-shoe agnet; on making and breaking the contact tween the holder and the magnet, magnetism as alternately created and destroyed within it: these periods of transition, electric currents ere induced in the helix, and on so arranging ie conducting-wires as at these moments to ake and break contact with mercury, a brilliant ark was observed at each motion of the holder. y making the poles of a powerful horse-shoe agnet revolve rapidly before a soft iron arma- ure supplied as in the former case with a helix, r what is still better, causing the armature and elix to revolve before the poles, an electric rrent is obtained, which not only gives con- nuous sparks, but ignites wire, decomposes ater, and produces powerful shocks. These *agneto-electric machines* are now commonly onstructed with a powerful magnet, and whilst ey furnish a beautiful illustration of the pro- uction of electricity by moving magnetism, em also to promise some advantage in the edical applications of electricity, and have been elegantly applied to the purpose of obtaining instantaneous light, by causing the spark to inflame the wick of a small spirit-lamp.

From the manner in which a magnet in motion induces an electric current, it was presumed that the earth's magnetism might be rendered subservient to the same purpose, and Mr. Faraday found that a soft iron cylinder, introduced into the helix, as above described, and placed in the direction of the dipping needle, occasioned a deviation in the galvanometer; he even found that in a wire, or helix, moved at right angles to the dipping needle, so as to cut the magnetic curves of the earth, an electric current, sensible to the galvanometer, was induced; and that the rotation of a copper globe, or of a plate placed at right angles to the dip, produced the same effect; hence he concludes that the conducting matters of the earth's crust may be similarly affected by its diurnal revolutions, so as to induce electric currents flowing towards the poles, and suggests the possibility of the production of the Aurora, by returning electric currents from the poles into the atmosphere. — *Brande.*

Magnum dei donum. So Dr. Mead called the Peruvian bark. See *Cinchona.*

Magnum os. The third bone of the lower row of bones of the carpus, reckoning from the thumb towards the little finger.

Magy'daris. The root of the laserwort.

Mahagoni. See *Swietenia.*

Mahaleb. A species of cherry.

Mahmoudy. Scammony.

Maidenhair. See *Adianthum.*

Maidenhair, black. See *Asplenium.*

Maidenhair, Canada. See *Adianthum.*

Maidenhair, common. See *Asplenium.*

Maidenhair, English. See *Adianthum.*

Maidenhair, golden. See *Polytrichum.*

Maidenhair-tree. *Ginan itsio.* The *Gingko biloba.* In China and Japan, where this tree grows, the fruit acquires the size of a damask plum, and contains a kernel resembling that of our apricot. These kernels always make part of the dessert at all public feasts and entertainments. They are said to promote digestion, and to cleanse the stomach and bowels. The oil is used at the table.

Maize. Indian corn. See *Zea.*

Majanthemum. See *Convallaria majalis.*

Major helicus. See *Helicus major.*

Majora'na. (*a, æ.* f.; *quod mense Maio floreat*, because it flowers in May.) See *Origanum majorana.*

Majorana syriaca. See *Teucrium.*

Mal de la rosa. (So called from the red colour of the skin.) *Rosa Asturica. Lepra Asturica.* Asturian rose. A disease endemic in the Asturias. It appears to be a variety of Pellagra.

Mal des ardens. The name of a pestilential erysipelas or carbuncle, which was epidemic in France in the twelfth century.

Mal rouge de cayenne. Cayenne leprosy. A disease which commences with an eruption of red spots, and in the progress of which the body becomes covered with fungative ulcers of a red colour. It appears to be allied to elephantiasis.

MA'LA. (*a, æ.* f.) The cheek.

Malabar plum. See *Eujenia jambos.*

MALABATHRI OLEUM. Oil of cassia.

MALABA'THRINUM UNGUENTUM. Ointment of malabathrum. It is compounded of myrrh, spikenard, malabathrum, and many other aromatic ingredients.

MALABA'THRUM. (Μαλαβαθρον; from *Malabar,* in India, whence it was brought, and *betre,* a leaf, Ind.) Indian leaf. The leaf of the *laurus cassia.*

Malacca radix. See *Sagittaria.*

Malacca bean. See *Avicennia tomentosa.*

MA'LACHE. (*e, es.* f.; from μαλακος, soft: so called from the softness of its leaf.) The mallow. See *Malva.*

MALA'CIA. (*a, æ.* f.; from μαλακος, soft; effeminate.) Whimsical or depraved appetite, such as sometimes occurs in pregnant women, chlorotic girls, &c. See *Pica.*

MALACOSTEON. (*um, i.* n.; from μαλακος, soft, and οστεον, a bone.) A softness of the bones. *Mollities ossium.* A disease of the bones, wherein they can be bent without fracturing them, in consequence either of the inordinate absorption of the phosphate of lime, from which their natural solidity is derived, or else of this matter not being duly secreted and deposited in their fabric. In rickets, the bones only yield and become distorted by slow degrees; but in the present disease they may be at once bent in any direction. The mollities ossium is rare, and its causes not well understood. All the cases of this disease on record have proved fatal, no means of cure having yet been found. On dissection of those who have died, all the bones, except the teeth, have been found unusually soft, so that scarcely any of them could resist the knife; the periosteum has been found thicker than usual; and the bones have been found to contain a great quantity of oily matter and little earth.

MALA'CTICA. (Μαλακτικα; from μαλασσω, to soften.) Emollient remedies.

MALAGUETTA. Grains of paradise.

MALAGUETTA. Grains of paradise.

MALA'GMA. (*a, atis.* n.; Μαλαγμα; from μαλασσω, to soften.) A cataplasm or emollient application.

MALA'RIA. The Italian name for marsh miasma.

Malarum ossa. See *Jugale os.*

MA'LATE. *Malas.* A salt formed by the union of the malic acid, with a salifiable basis.

MA'LE. Μαλη. The arm-pit.

Male fern. See *Aspidium filix mas.*

Male impotency. See *Sterilitas.*

Male orchis. See *Orchis mascula.*

Male speedwell. See *Veronica officinalis.*

MALIC ACID. *Acidum malicum.* This acid is obtained by saturating the juice of apples with alkali, and pouring in the acetous solution of lead, until it occasions no more precipitate. The precipitate is then to be edulcorated, and sulphuric acid poured on it, until the liquor has acquired a fresh acid taste, without any mixture of sweetness. The whole is then to be filtered, to separate the sulphate of lead. The filtered liquor is the malic acid, which is very pure, remains always in a fluid state, and cannot be rendered concrete. See *Sorbic acid.*

MALI'GNANT. (*Malignus.*) A term applied to pestilential fevers, and to local diseases of an incurable nature, as cancer and fungus hæmatodes.

Malignant fever. See *Typhus.*

Malignant sore throat. See *Tonsillitis.*

MALLEABI'LITY. (*Malleabilitas;* from *malleus,* a hammer.) The property which several metals possess of being extended under the hammer into thin plates, without cracking. The thin leaves of silver and gold afford the best examples of malleability. See *Ductility.*

MALLEAMOTHE. *Pavette. Pavate. Erysipelas curans arbor.* A shrub which grows in Malabar. The leaves, boiled in palm oil, cure the impetigo; the root, powdered and mixed with ginger, is diuretic.

MALLEA'TIO. (From *malleus,* a hammer: because the person strikes the knees with his hands, as if with a hammer.) A form of chorea, in which the person has a convulsive action of one or both hands, which strike the knee like a hammer. If the motion be forcibly stopped, the convulsion becomes afterwards still more violent and general.

Mallei anterior. See *Laxator tympani.*

Mallei externus. See *Laxator tympani.*

Mallei internus. See *Tensor tympani.*

MALLE'OLUS. (*us, i.* m.; diminutive of *malleus,* a mallet: so called, from its supposed resemblance to a mallet.) The termination of the tibia at the ankle is called *malleolus internus,* and the corresponding part of the fibula *malleolus externus.*

MA'LLEUS. (*us, i.* m.; a hammer.) A bone of the internal ear is so termed from its shape. See *Auris.*

Mallow. See *Malva.*

Mallow, marsh. See *Althæa officinalis.*

Mallow, round-leaved. See *Malva.*

Mallow, vervain. See *Malva alcea.*

MALOGRANA'TUM. (From *malum,* an apple, and *granum,* a grain: so named from its grain-like seeds.) The pomegranate.

MALPI'GHIA. (*a, æ.* f.; so named in honour of Malpighi.) The name of a genus of plants in the Linnæan system. Class, *Decandria;* Order, *Trigynia.*

MALPIGHIA GLABRA. This affords the Barbadoes cherry.

MALPIGHIA MOURELLA. The bark is astringent, and is used in Cayenne as a febrifuge.

MALT. Grain which has become sweet, from the conversion of its starch into sugar, by an incipient growth or germination artificially induced, called malting.

MALTHA'CTICUS. (From μαλθακιζω, to soften. Emollient, softening.

MALTHEORUM. Common salt. — *Ruland.*

MA'LUM. (*um, i.* n.) 1. A disease.

2. An apple.

MALUM MORTUUM. A disease that appears in the form of a pustule, which soon forms a dry, brown, hard, and broad crust. It is seldom attended with pain, and remains fixed

or a long time before it can be detached. It is mostly observed on the tibia and os coccygis, and sometimes the face.

Malum insanum. See *Solanum melongena.*

Malum pilare. See *Plica.*

MA'LUS. (*us, i.* f.; an apple-tree.) See *Pyrus malus.*

MALUS INDICA. *Bilimbi billing-bing.* A tree carefully cultivated in the gardens of the East Indies, where it flowers throughout the year. The juice of the root is cooling, and drunk as a cure for fevers. The leaves boiled and made into a cataplasm with rice, are famed in all sorts of tumours, and the juice of the fruit is used in almost all external heats, dipping linen rags in it, and applying them to the parts. It is drunk, mixed with arrack, to cure diarrhœas; and the dried leaves, mixed with betel leaves, and given in arrack, are said to promote delivery. The ripe fruit is eaten as a delicacy, and the unripe made into a pickle for the use of the table.

MA'LVA. (*a, æ.* f.) 1. The name of a genus of plants in the Linnæan system. Class, *Monadelphia;* Order, *Polyandria.* The mallow.

2. The pharmacopœial name of the common mallow. See *Malva sylvestris.*

MALVA A'LCEA. *Malva verbenaca.* The vervain mallow. This plant is distinguished from the common mallow, by its leaves being jagged, or cut in about the edges. It agrees in virtues with the other mallows, but it is the least mucilaginous of any. This, like to the other mallows, abounds with a mucilage, and is good for pectoral drinks.

Malva arborea. See *Alcea rosea.*

MALVA ROTUNDIFOLIA. Round-leaved mallow. The whole herb and root possess similar virtues to the common mallow. See *Malva sylvestris.*

MALVA SYLVESTRIS. The common mallow. *Malva vulgaris. Malva — caule erecto herbaceo, foliis septemlobatis acutis, pedunculis petiolisque pilosis.* This indigenous plant has a strong affinity to the althæa, both in a botanical and a medical respect. See *Althæa.* The leaves and flowers are principally used in fomentations, cataplasms, and emollient enemas. The internal use of the leaves seems to be wholly superseded by the radix althæa.

Malva verbenaca. See *Malva alcea.*

Malva vulgaris. See *Malva sylvestris.*

MALVAVI'SCUS. (*us, i.* m.; from *malva*, the mallow, and *viscus*, glue: so named from its viscidity.) See *Althæa officinalis.*

MALVERN. The village of Great Malvern has, for many years, been celebrated for a spring of remarkable purity, which has acquired the name of the holy well, from the reputed sanctity of its waters, and the real and extensive benefit long derived in various cases from its use.

The holy well water, when first drawn, appears quite clear and pellucid, and does not become sensibly turbid on standing. It possesses somewhat of an agreeable pungency to the taste; but this is not considerable. In other respects it does not differ in taste from pure good water.

It appears to contain no mineral impregnation. It is difficult, therefore, to conceive in what its alleged medicinal efficacy consists. It has, nevertheless, been highly esteemed as an external application to scrofulous ulcerations and ophthalmia, and to many cutaneous affections. Internally it has been used in painful affections of the kidneys and bladder, attended with the discharge of bloody, purulent, or fœtid urine, the hectic fever produced by scrofulous ulceration of the lungs, or very extensive and irritating sores on the surface of the body, and also fistulas of long standing.

It is singular that, notwithstanding its apparent purity, this water is said not to keep well, and soon acquires a fœtid smell, by standing in open vessels.

The internal use of Malvern waters is sometimes attended at first with a slight nausea, and not unfrequently, for the first day or two, it occasions some degree of drowsiness, vertigo, or slight pain of the head, which comes on a few minutes after drinking it. These symptoms go off spontaneously, after a few days, or may readily be removed by a mild purgative. The effects of this water on the bowels are not at all constant; frequently it purges briskly for a few days, but it is not uncommon for the body to be rendered costive by its use; especially, as Dr. Wall observes, with those who are accustomed to malt liquors. In all cases, it is said to increase the flow of urine.

MAMI'LLA. (*a, æ.* f.; diminutive of *mamma*, the breast.) 1. The breast of man.

2. The nipple of the male and female breasts.

MAMI'RA. It is said, by Paulus Ægineta, to be the root of a plant which is of a detergent quality. Some think it is the root of the doronicum: but what it really is cannot be ascertained.

MA'MMA. (*a, æ.* f.) The organ which secretes the milk in mammiferous animals. The mammæ vary in number and position in different animals. In the human female, the mammæ are two globular bodies composed of common integuments, adipose substance, and lacteal glands and vessels, and adhering to the anterior and lateral regions of the thorax of females. On the middle of each breast is a projecting portion, termed the *papilla* or *nipple*, in which the excretory ducts of the glands terminate, and around which is a coloured disc, called the *areola.* The use of the breasts is to suckle the young.

MAMMA'LIA. (From *mamma*, a breast or teat.) A great division of the animal kingdom, comprising animals which suckle their young. See *Animal Kingdom.*

Mammary See *Mammillary.*

MAMMARY ABSCESS. A collection of matter in the breast, arising from previous inflammation of its substance. It is a frequent occurrence in the early period of lactation.

MAMMARY ARTERIES. *Arteriæ mammillares.* The internal mammary artery is a branch of the subclavian, and gives off the mediastinal, thymal, and pericardial arteries. The external mammary arteries are branches of the axillary.

MAMMARY VEINS. *Venæ mammillares.* These

vessels accompany the arteries, and evacuate their blood into the subclavian vein.

MAMMEA. (*a, æ.* f.; so called from its vernacular appellation in the West Indies, *mamei*, and allowed by Linnæus, because of its affinity to *mamma*, a breast, alluding to the shape of its fruit.) The name of a genus of plants. Class, *Polyandria*; Order, *Monogynia*.

Mammea americana. The tree which affords a delicious fruit called *mammea*. It has a very grateful flavour when ripe, and is much cultivated in Jamaica, where it is generally sold in the markets for one of the best fruits of the island. The kernels are mixed with baits, and thrown into the water to intoxicate fish.

Mammifera. The same as *mammalia*.

MAMMILLARY. (*Mammillaris*; from *mamma*, the breast.) Mammary: appertaining to the *mamma*, or breast.

Man. (*Homo, inis.* m.) See *Homo*.

Manchineal. See *Hippomane manicella, in the supplement.*

Mancura'na. See *Origanum vulgare*.

MANDI'BULA. (*a, æ.* f.; from *mando*, to chew.) The jaw. See *Maxilla inferior*.

Mandra'gora. See *Atropa mandragora*.

Mandragori'tes. (From μανδραγορα, the mandrake.) Wine, in which the roots of the mandrake are infused.

Mandrake. See *Atropa mandragora*.

Manduca'tion. *Manducatio.* Synonymous with *mastication*.

MANGANE'SE. (*Manganesium, ii.* n.) A metallic substance, which, after iron, seems to be the most frequently diffused metal through the earth: its ores are very common. As a peculiar metal, it was first noticed by Gahn and Scheele, in the year 1774. It is always found in the state of an oxide, varying in the degree of oxidisement. La Peyrouse affirmed, that he had found manganese in a metallic state; but there was probably some mistake in his observation. The ores are distinguished into *grey oxide of manganese*, *black oxide of manganese*, *reddish white oxide of manganese*, and *carbonate of manganese*. All these combinations have an earthy texture; they are very ponderous; they occur both amorphous and crystallised: and generally contain a large quantity of iron. Their colour is black, blackish brown, or grey, seldom white. They soil the fingers like soot. They are sometimes crystallised in prisms, tetrahedral, rhomboidal, or striated.

Properties — Manganese is of a whitish grey colour. Its fracture is granulated, irregular, and uneven. It is of a metallic brilliancy, which it, however, soon loses in the air. Its specific gravity is about 8. It is very hard, and extremely brittle. It is one of the most refractory metals, and most difficult to fuse, requiring at least 160° of Wedgwood's pyrometer. Its attraction of oxygen is so rapid, that exposure to the air is sufficient to render it red, brown, black, and friable in a very short time; it can, therefore, only be kept under water, oil, or ardent spirit. It is the most combustible of all the metals. It decomposes water, by means of heat, very rapidly, as well as the greater part of the metallic oxides. It decomposes sulphuric acid. It is soluble in nitric acid. It is fusible with earths, and colours them brown, violet, or red, according to its state of oxidisement. It frees from colour glasses tinged by iron. It does not readily unite with sulphur. It combines with phosphorus. It unites with gold, silver, and copper, and renders them brittle. It unites to arsenic in close vessels, but does not enter into union with mercury.

From the recent investigations of Berzelius, Thomson, and other distinguished chemists, it appears that there are three proper oxides of manganese, and two, which are probably mixtures of the others.

1. The *protoxide* consists of one equivalent of oxygen and one of the metal. It may be obtained by dissolving common black manganese in sulphuric or nitric acid, adding a little sugar, and precipitating by solution of potash. A white powder is obtained, which being heated to redness out of the contact of air, becomes yellow, puce-coloured, and, lastly, red brown. To be preserved, it should be washed in boiling water, previously freed from air, and then dried by distilling off the moisture in a retort filled with hydrogen. The dark olive oxide, when examined in large quantities, appears almost black; but when spread upon white paper, its olive tint is apparent. It takes fire when gently heated, increases in weight, and acquires a browner tint. It slowly absorbs oxygen from the air, even at common temperatures. It dissolves in acids without effervescence. The white powder obtained above, is the hydrated protoxide. The different tints which it assumes by exposure to air, are suposed by Sir H. Davy to depend on the formation of variable quantities of the black-brown oxide, which probably retains the water contained in the white hydrate, and is hence deep puce-coloured.

2. The *sesquioxide*. This occurs in nature nearly pure, and in the state of a hydrate is found abundantly at Ihlefeld in the Hartz. It may be artificially procured by applying heat to the peroxide, or hydrated sesquioxide, or nitrate of manganese. It consists of three equivalents of oxygen and two of manganese. The native sesquioxide is black, as also that prepared from the nitrate; but when obtained from the peroxide or hydrated sesquioxide, it is brownish.

3. The black *peroxide*. This is the common black ore of manganese which is very abundant. Its sp. gr. is 4. It does not combine with any of the acids. It yields oxygen when heated; and, by intense ignition, passes in a great measure into the protoxide. It consists of two equivalents of oxygen, and one of manganese.

4. The *red oxide*. This occurs in nature, and may also be obtained by exposing the sesquioxide or peroxide to a white heat. It is supposed to be a compound of the protoxide and sesquioxide.

5. *Varvicite*. This is a native oxide of manganese, and no similar substance has yet been obtained by art. It is supposed, like the red oxide, to be a compound of the sesquioxide and peroxide.

Method of obtaining manganese. — This metal is obtained by mixing the black oxide, finely powdered, with pitch; making it into a ball, and putting this into a crucible with powdered charcoal, one tenth of an inch thick at the sides, and one fourth of an inch deep at the bottom. The empty space is then to be filled with powdered charcoal; a cover is to be luted on; and the crucible exposed, for an hour, to the strongest heat that can be raised. Or, digest the black oxide of manganese repeatedly, with the addition of one sixteenth of sugar, in nitric acid; dilute the mixture with three times its bulk of water; filter it, and decompose it by the addition of potash; collect the precipitate, form it into a paste with oil, and put it into a crucible, well lined with charcoal. Expose the crucible for at least two hours to the strongest heat of a forge.

Manganeseous acid. See *Manganic acid.*

Manganesic acid. See *Manganic acid.*

Manganic acid. When peroxide of manganese is mixed with an equal weight of nitre or carbonate of potash, and the mixture is exposed to a red heat, a green coloured fused mass is formed, which has been long known under the name of *mineral chameleon.* On putting this substance into water, a green solution is obtained, the colour of which soon passes into blue, purple, and red; and ultimately, a brown flocculent matter, hydrated peroxide of manganese, subsides, and the liquid becomes colourless. These changes take place more rapidly by dilution, or by employing hot water. We are indebted to MM. Chevillot and Edwards for a consistent explanation of these phenomena. They demonstrated that peroxide of manganese, when fused with potash, absorbs oxygen from the atmosphere, and is thereby converted into an acid, which unites with the alkali. They attributed the different changes of colour above mentioned to the combination of this acid with different proportions of potash. Subsequently the subject engaged the attention of Dr. Forchhammer, who rendered it probable that the green and red tints are produced by two distinct acids, one of which forms red and the other green coloured salts; and very lately Mitscherlich has established the existence of these acids, and ascertained their composition.

The names at first applied to these compounds were *manganeseous* and *manganesic* acid, but Mitscherlich proposes to distinguish them by the terms *manganic* and *permanganic* acid. He was led to this suggestion by finding that the green coloured salts are isomorphous with the sulphates and seleniates, and that their acid has a composition similar to that of sulphuric and selenic acids, consisting of three equivalents of oxygen to one equivalent of the other element; whereas the red acid is isomorphous with perchloric acid, and is composed of two equivalents of manganese united with seven equivalents of oxygen; a constitution identical, according to the views of Berzelius, with that of perchloric acid. — *Turner.*

Mangel wursel. See *Beta hybrida.*

MANGI'FERA. (*a, æ.* f.; from *mango*, the name of the fruit which it bears.) The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Monogynia.* The mango tree.

Mangifera indica. The systematic name of the mango tree, which is cultivated all over Asia. Mangoes, when ripe, are juicy, of a good flavour, and so fragrant as to perfume the air to a considerable distance. They are eaten either raw or preserved with sugar. Their taste is so luscious, that they soon pall the appetite. The unripe fruits are pickled in the milk of the cocoa-nut, that has stood until sour, with salt, capsicum, and garlick. From the expressed juice is prepared a wine; and the remainder of the kernel can be reduced to an excellent flour for the making of bread.

Mango. See *Mangifera indica.*

Mangostana. See *Garcinia.*

Mangosteen. See *Garcinia mangostana.*

MA'NIA. (Μανια; from *μαινομαι*, to rage.) Furious madness. See *Insanity.*

Manica Hippo'cratis. Hippocrates' sleeve. A strainer of a conical shape, made of linen or flannel, and used for pharmaceutical purposes.

Maniguetta. The grains of paradise. See *Amomum granum paradisi.*

Ma'nihot. See *Jatropha manihot.*

MANI'PULUS. (*us, i.* m.) A handful.

MA'NNA. (*a, æ.* f.; a Hebrew word.) 1. The substance with which the children of Israel were fed in the wilderness, and which appears to have been a kind of honey-dew.

2. The name is now given to a peculiar saccharine matter which exudes from many plants. See *Fraxinus ornus.*

Manna brigantiaca. A species of manna, brought from the neighbourhood of Briançon, in Dauphiny.

Manna calabrina. Calabrian manna.

Manna canulata. Flaky manna, or manna concreted on straw, or chips.

Manna thuris. A coarse powder of olibanum was sold by this name.

Ma'nnite. The sweet principle of manna, which is found to be distinct from sugar.

Manso'rius. (From *mando*, to chew.) The masseter muscle. See *Masseter.*

Mantle, ladies'. See *Athamanta.*

Manubrium manus. Handle of the hand. The radius has been so called.

MA'NUS. (*us, ûs.* f.; the etymology of which is not known.) The hand. See *Hand.*

Manus christi perlatæ. Troches prepared with pearls, sugar, and rose water.

Manus christi simplices. Troches prepared with sugar and rose water. Rose lozenges.

Manus dei. The name of an old resolvent plaster. It consisted of wax, myrrh, olibanum, ammoniacum, mastic, galbanum, oil, &c.

Maple. See *Acer.*

Maple, sugar. See *Acer.*

Mara'nda. A species of myrtle, growing in the island of Ceylon, a decoction of the leaves of which is said to be excellent against the venereal disease.

MARA'NTA. (*a, æ.* f.) 1. The name of a genus of plants in the Linnæan system. Class, *Monandria;* Order, *Monogynia.*

Maranta arundinacea. The root of this

species, and that of the *comesa*, both of which are commonly called arrow-root, is used by the Indians to extract the virus communicated by their poisoned arrows, from whence it has obtained its name. It is cultivated in gardens and provision-grounds in the West Indies; and the starch is obtained from it by the following process: — The roots, when a year old, are dug up, well washed in water, and then beaten in a large deep wooden mortar, to a pulp; this is thrown into a large tub of clean water: the whole is then well stirred, and the fibrous part wrung out by the hands, and thrown away. The milky liquor being passed through a hair sieve, or coarse cloth, is suffered to settle, and the clear water drained off. At the bottom of the vessel is a white mass, which is again mixed with clean water, and drained: lastly, the mass is dried on sheets in the sun, and is pure starch.

Arrow-root contains, in small bulk, a greater proportion of nourishment than any other yet known. The powder, boiled in water, forms a very pleasant transparent jelly, very superior to that of sago or tapioca, and is much recommended as a nutritious diet for children and invalids. The jelly is made in the following manner: — To a dessert spoonful of powder, add as much cold water as will make it into a paste; then pour on half a pint of boiling water: stir it briskly, and boil it a few minutes, when it will become a clear smooth jelly; a little sugar and sherry wine may be added for debilitated patients, but for infants a drop or two of essence of caraway-seeds or cinnamon is preferable, wine being very liable to become acescent in the stomachs of infants, and thus disagree with the bowels. Fresh milk, either alone or diluted with water, may be substituted for the water. For very debilitated frames, and especially for ricketty children, this jelly, blended with an animal jelly, as that of hartshorn, affords a more nutritious diet than arrow-root alone, which may be done in the following manner: — Boil half an ounce of stag's horn shavings, in a pint of water, for fifteen minutes; then strain and add two dessert spoonsful of arrow-root powder, previously well mixed with a tea-cupful of water; stir them briskly together, and boil them for a few minutes. If the child should be much troubled with flatulency, two or three drops of essence of caraway-seeds, or a little grated nutmeg, may be added; but for adults, port wine, or brandy, will answer best.

Maranta galan'ga. *Galanga minor.* The smaller galangal. The roots of this plant are used medicinally. Two kinds of galangal are mentioned in the pharmacopœias: the greater galangal, obtained from the *Kæmpferia galanga* of Linnæus; and the smaller galangal, the root of the *Maranta galanga — caulino simplici foliis lanceolatis subsessilibus*, of Linnæus. The dried root is brought from China, in pieces from an inch to two in length, scarcely half so thick, branched, full of knots and joints, with several circular rings of a reddish-brown colour on the outside, and brownish within. It has an aromatic smell, not very grateful, and an unpleasant, bitterish, hot, biting taste. It was formerly much used as a warm stomachic bitter, and generally ordered in bitter infusions. It is now, however, seldom employed.

Maranta'ceæ. A natural family of plants, of which the genus maranta is the type.

MARA'SMUS. (*us, i.* m.; from *μαραινω*, to grow lean.) Emaciation. A wasting away of the flesh. The term marasmus was long ago used collectively to comprehend atrophy, tabes, and phthisis. Extenuation or leanness is not necessarily a disease; for many persons who are peculiarly lean are peculiarly healthy, while some there are who take pains to fall away in flesh, that they may increase in health, and become stronger. But, if an individual grow weaker as he grows leaner, it affords a full proof that he is under a morbid influence; and it is this influence, this conjunction of extenuation and debility, that is imported by the term marasmus, and its synonym emaciation. See *Atrophia*, *Tabes*, *Phthisis*, and *Climactericus*.

Marathri'tes. (From *μαραθρον*, fennel.) A vinous infusion of fennel; or wine impregnated with fennel.

Marathrophy'llum. (*um, i.* n.; from *μαραθρον*, fennel, and *φυλλον*, a leaf: so named because its leaves resemble those of the common fennel.) See *Peucedanum*.

Mara'thrum. (From *μαραινω*, to wither: so called because its stalk and flowers wither in the autumn.) See *Anethum fœniculum*.

Marathrum sylvestre. See *Peucedanum*.

MARCASI'TA. Marcasite. This name has been applied to all sorts of crude metallic substances, and has indeed no definite meaning. It is most frequently applied to *pyrites*.

Marcasita alba. Bismuth.

Marcasita plumbea. Antimony.

MARCE'SCENS. (From *marceo*, to wither, decay.) Withering, decaying, marcid: applied to the perianths of the *Pyrus communis*, and *Mespilus germanica*.

MARCHA'NTIA. (*a, æ.* f.; named after Marchant, who wrote several Essays in the Memoirs of the Academy of Science, 1713.) The name of a genus of plants. Class, *Cryptogamia*; Order, *Algæ*.

Marchantia polymorpha. Liverwort; star liverwort: called also, *Hepatica vulgaris, fontana, terrestris, stellata*, and *jecoraria*. A plant very common in this country. It has a slightly pungent and bitter taste. It is recommended as an aperient, resolvent, and anti-scorbutic, but is seldom used in this country.

MA'RCOR. (*or, oris.* m.; from *marceo*, to become lean.) Leanness. Emaciation. Wasting away of the body.

Marco'res. The first order in the class *Cachexiæ*, of Cullen's Nosology, which embraces those diseases that are characterised by universal emaciation. See *Nosology*.

Marestail. See *Hippuris vulgaris*.

Margaric acid. *Acidum margaricum.* So called on account of its pearly appearance. An acid obtained from fat. See *Adeps*.

MARGARI'TA. (*a, æ.* f.; from *μαργαρον*, a pearl.) 1. The pearl; called also, *Perla*, *Unio*. A small calcareous concretion, of a bright transparent whiteness, found on the inside of the shell of the *Avicula margaritifera*

and *Mya margaritifera*. Pearls consist of alternating concentric layers of membrane and carbonate of lime. They were formerly exhibited as antacids.

2. A tumour upon the eye resembling a pearl.

MARGINA'TUS. Bordered; having a border. A term used in *Botany*.

Marigold. See *Calendula*.

Marigold, marsh. See *Caltha palustris*.

Marine acid. See *Muriatic acid*.

Marine salt. See *Sodæ murias*.

MARI'SCA. (*a, æ.* f.) An hæmorrhoidal tumour.

Marjoram. See *Origanum*.

Marjora'na. See *Origanum*.

MA'RMALADE. (From *marmello*, a quince, Portuguese.) A conserve made of quinces and sugar. The same name is given to conserves of other fruits, as orange marmalade.

MARMA'RYGA. (*a, æ.* f.; μαρμαρυγη, from μαρμαιρω, to shine.) The appearance of sparks or corruscations before the eyes.

MARMOLA'RIA. (*a, æ.* f.; from *marmor*, marble: so named because it is spotted like marble.) See *Acanthus mollis*.

MARMOR METALLICUM. Native sulphate of baryta.

MARMOREUS TARTARUS. The hardest species of *human calculus*.

MARMORIGE. Corrupted from *marmaryga*.

MAROCO'STINUM. A purgative extract made of the marum and costus; originally prescribed by Mindererus.

MARROW. *Medulla*. The fat substance secreted by the small arteries of its proper membrane, and contained in the medullary cavities of the long cylindrical bones. It differs very little from the fat of the cellular membrane.

Marrow, spinal. See *Spinal cord*.

Marrubia'strum. See *Ballota nigra*.

MARRU'BIUM. (*um, ii.* n.; from *marrob*, a bitter juice, Heb.) 1. The name of a genus of plants in the Linnæan system. Class *Didynamia*; Order, *Gymnospermia*.

2. The pharmacopœial name of the common horehound. See *Marrubium vulgare*.

Marrubium album. See *Marrubium vulgare*.

MARRUBIUM ALYSSUM. Galen's madwort. This plant has an established reputation in America, as a specific against the bite of the rattle-snake. Its juice is generally given in combination with that of the common horehound. It has for ages been a popular remedy in canine madness, especially in the north of Europe; and, from an article published by Professor Brande, in the Journal of Sciences and the Arts, we find that it still retains its popular sway and reputation over a great part of the Russian empire; and that, in the government of Isola, it has never failed of effecting a cure in a single instance, for the last five and twenty years. The preparation is simple: the root is reduced to a powder, and the powder is to be eaten by being spread over bread and butter. Two or three doses are said to be sufficient in the worst cases, and will be found to cure mad dogs themselves.

MARRUBIUM AQUATICUM. Water horehound: opening, corroborant.

MARRUBIUM HISPANICUM. Spanish horehound. See *Sideritis syriaca*.

MARRUBIUM NIGRUM FŒTIDUM. The black, stinking horehound, or *Ballota nigra*.

Marrubium verticillatum. See *Sideritis syriaca*.

MARRUBIUM VULGARE. *Marrubium album. Marrubium — dentibus calycinis, setaceis uncinatis*, of Linnæus. Common horehound. The leaves of this indigenous plant have a moderately strong smell of the aromatic kind, but not agreeable; which, by drying, is improved, and in keeping for some months is, in great part, dissipated: their taste is very bitter, penetrating, diffusive, and durable in the mouth. That horehound possesses some share of medicinal power, may be inferred from its sensible qualities; but its virtues do not appear to be clearly ascertained. It is a favourite remedy with the common people in coughs and asthmas. The usual dose is from half an ounce to an ounce, in infusion, two or three times a day. The dose of the extract is from gr. x. to ʒ ss.

MARS. (*s, tis.* m.; the mythological god of war: and hence applied to iron, because war implements are made of it.) The alchemistical name of iron.

MARS ALKALIZATUS. A mixture of iron with an alkali.

MARS SACCHARATUS. Iron mixed with starch and melted sugar.

MARS SOLUBILIS. The ferrum tartarizatum was formerly so called.

MARS SULPHURATUS. Iron filings and sulphur deflagrated together.

Marseilles hart-wort. See *Seseli*.

MARSEILLES VINEGAR. Thieves' vinegar. See *Acetum prophylacticum*.

Marsh-mallow. See *Althæa officinalis*.

Marsh-trefoil. See *Menyanthes*.

MARSHALL'S CERATE. This consists of palm oil, ʒ v.; calomel, ℥ j.; sugar of lead, ℥ ss.; and citrine ointment, ℥ ij.

MARSU'PIAL. (*Marsupialis*; from *marsupium*, a purse.) Applied, 1. To the obturator internus muscle, from its shape.

2. To an animal which has a pouch formed by a reflexion of the skin of the abdomen, in which the young are nourished for some time after their exclusion from the uterus.

MARSUPIA'LIA. Marsupial animals. An order of mammiferous animals characterised by a pouch, formed by a reflexion of the abdominal integuments. The young of these animals are excluded from the uterus at a very early period of gestation, and being received into the marsupium or abdominal pouch, attach themselves to the teats of the mother, in which position they remain till they have attained the degree of development which other animals have at birth. The marsupium continues to afford the young animals a place of refuge, to which they immediately betake themselves in time of danger. The kangaroo and opossum are examples of marsupial animals.

Martagon lily. See *Lilium martagon*.

MARTIAL. (*Martialis*; from *Mars*, iron.)

Relating to iron, or such as are impregnated therewith; as the *Martial regulus of antimony*, &c.

MARTIAL ÆTHIOPS. The protoxide of iron.

Martial regulus of antimony. See *Regulus antimonii martialis.*

MARTIAL SALTS. Salts of iron.

Martiales flores. See *Ferri ammonio-chloridum.*

MARTIA'TUM UNGUENTUM. Soldier's ointment. Ointment of laurel, rue, marjoram, &c.

MA'RTIS LIMATURA PRÆPARATA. Purified filings of iron.

MA'RUM. (*um, i.* n.; from *mar*, Hebrew for bitter: so named from its taste.) Several species of *Teucrium* were so named. See *Teucrium marum.*

Marum creticum. See *Teucrium.*

Marum syriacum. See *Teucrium.*

Marum verum. See *Teucrium marum.*

Marum vulgare. See *Thymus.*

MARVI'SUM. Malmsey wine.

MAS. (*as, aris.* m.; etymology uncertain.) Male. There are two sexes of animals and vegetables, the male and the female. The male of animals is distinguished by his peculiar genital organs, and the analogy is carried to vegetables. A flower is called a male flower, which has stamina only, these being the male organs of fructification.

MA'SCHALE. Μασχαλη. The arm-pit.

MASCHALI'STER. (Μασχαλιστηρ.) The second vertebra of the back.

MASLACH. A medicine of the opiate kind, in use among the Turks.

MA'SPETUM. Μασπετον. The leaf of the assafœtida plant.

MA'SSA, (*a, æ.* f.; from μασσω, to blend together.) A mass. A term generally applied to the compound out of which pills are to be formed.

Massa carnea Jacobi Sylvii. See *Flexor longus digitorum pedis.*

MASSALIS. An alchemical name of mercury.

MASSE'TER. (*er, eris.* m.; from μασσαομαι, to chew: because it assists in chewing.) *Mansorius.* A muscle of the lower jaw, situated on the side of the face. It is a short, thick muscle, which arises, by fleshy and tendinous fibres, from the lower edge of the malar process of the maxillary bone, the lower horizontal edge of the os malæ, and the lower edge of the zygomatic process of the temporal bone, as far backwards as the eminence belonging to the articulation of the lower jaw. From some little interruption in the fibres of this muscle, at their origin, some writers describe it as arising by two, and others by three distinct portions or heads. The two layers of fibres, of which it seems to be composed, cross each other as they descend, the external layer extending backwards, and the internal one slanting forwards. It is inserted into the basis of the coronoid process, and into all that part of the lower jaw which supports the coronoid and condyloid processes. Its use is to raise the lower jaw, and, by means of the above-mentioned decussation, to move it a little forwards and backwards in the act of chewing.

MASSICOT. The yellow oxide of lead.

Massoy cortex. See *Cortex massoy.*

Masterwort. See *Imperatoria.*

Mastic. See *Pistachia lentiscus.*

MASTICA'TION. (*Masticatio*; from *mastico*, to chew.) Chewing. The function by which the food is comminuted, mixed with the saliva, and reduced to a form fit for deglutition, and a state fit for digestion.

MASTICATORY. (*Masticatorium, ii.* n.; from *mastico*, to chew.) A medicine intended for chewing.

MA'STICHE. (*e, es.* f.; μαστιχη.) *Mastix.* See *Pistacia lentiscus.*

Mastich-herb. See *Thymus mastichina.*

Mastich, Syrian. See *Teucrium.*

Mastich-tree. See *Pistacia lentiscus.*

Mastich wood. See *Pistacia lentiscus.*

MASTICHELÆ'UM. (From μαστιχη, mastich, and ελαιον, oil.) Oil of mastich.

MASTI'CHINA. (Diminutive of *mastiche.*) See *Thymus mastichina.*

MA'STICIN. When mastic is subjected to the action of alkohol, all of it is dissolved except about one fifth. This undissolved matter has, when moist, the character of caoutchouc, but becomes brittle when dry; it, therefore, appears to be a peculiar principle, and has been named masticin by Mr. Matthews, who first observed it.

Masticot. See *Massicot.*

MASTI'TIS. (*is, idis.* f.; from μαστος, the breast, and ιτις, which implies inflammation.) Phlegmonous inflammation of the breast of women. This disease may take place at any period of life, but it most commonly affects those who give suck. It is characterised by tumefaction, tension, heat, redness, and pain; and comes sometimes in both breasts, but most commonly in one. Fever generally attends the disease. It is sometimes very quickly formed, and, in general, without any thing preceding to show it; but now and then a slight shivering is the forerunner. This disease terminates either in resolution, in suppuration, or schirrus; if left to itself, it generally terminates in suppuration.

The causes which give rise to this disease are those which produce most of the phlegmasiæ, as cold, violent blows, &c. In women who are lying-in, or giving suck, it mostly arises either from a suppression of the lochia or a retention of milk. Mastitis is seldom of long continuance; it is a very painful disease, and generally proceeds to suppuration. It is no uncommon thing for the suppuration to take place in two or more points, so that several abscesses form close together, and run into one another: and hence it happens that when one points, and an opening is made into it, and its pus let out, the matter from all escapes through this one opening.

The issue of this disease is always favourable, unless there be a morbid taint in the constitution, in which case, especially if the treatment be injudicious, or disease neglected, scrofulous, scirrhous, and carcinomatous tumours result. The termination of the disease by gangrene is never to be apprehended; at least few, if any, have seen the disease terminate in this way.

Mastix. See *Mastiche.*

MASTODY'NIA. (*a*, *æ.* f.: from μαστος, a breast, and οδυνη, pain.) Pain in the mamma. This is not a very uncommon affection, and is generally of a neuralgic character.

MA'STOID. (*Mastoideus*; from μαστος, a breast, and ειδος, resemblance.) Nipple-like. 1. Those processes of bone are so termed that are shaped like the nipple of the breast; as the mastoid process of the temporal bone, &c.

2. The name of a muscle, from its being inserted into the mastoid process. See *Sterno-cleido-mastoideus.*

MASTOID FORAMEN. *Foramen mastoideum.* A hole in the temporal bone of the skull, by the side of the mastoid process. It transmits a vein to the lateral sinus.

Mastoideus lateralis. See *Trachelo-mastoideus.*

MATALI'STA RADIX. A root said to be imported from America, where it is given as a purgative, in the dose of ʒ ij., its action being rather milder than that of jalap. The plant is not known.

MA'TER. (*ter*, *tris.* f.; a mother.) Two membranes of the brain are thus called, from an old notion that all the other membranes of the body were derived from them, or from their protecting the brain.

MATER METALLORUM. Quicksilver.

Mater perlarum. See *Mother of pearl.*

MATE'RIA. (*a*, *æ.* f.) 1. Matter. 2. A term applied to those substances collectively which are adapted to some particular purpose, which is expressed by adding the name of that purpose; hence, *materia medica*, *materia chemica*, &c.

MATERIA ALIMENTARIA. The various substances which are used for food and drink constitute what is called the *materia alimentaria.* See *Aliment.*

MATERIA MEDICA. By this term is understood a general class of substances, both natural and artificial, which are used in the cure of diseases.

Cartheuser, Newman, Lewis, Gleditsch, Linnæus, Vogel, Alston, Bergius, Cullen, Murray, Paris, Thomson, and other writers on the Materia Medica, have adopted particular arrangements of these articles. Some have disposed them according to their natural resemblances; others according to their real or supposed virtues; others according to their active constituent principles. These arrangements have their peculiar advantages. The first may be preferred by the natural historian, the second by the physiologist, and the last by the chemist. The pharmacopœias published by the Colleges of Physicians of London, Dublin, and Edinburgh, have the articles of the Materia Medica arranged in alphabetical order: this plan is also adopted by almost all the continental pharmacopœias.

Dr. Cullen has arranged the Materia Medica as follows: —

- NUTRIMENTS, which are
  - Food,
  - Drinks,
  - Condiments;
- MEDICINES which act on the
  - Solids,
    - Simple, as
      - *Astringents*,
      - *Tonics*,
      - *Emollients*,
      - *Corrosives*;
    - Living, as
      - *Stimulants*,
      - *Sedatives*,
        - *Narcotics*,
        - *Refrigerants*,
      - *Antispasmodics.*
  - Fluids,
    - Producing a change of
      - Fluidity,
        - *Attenuants*,
        - *Inspissants.*
      - Mixture,
        - Correctors of Acrimony,
          - *Demulcents*,
          - *Antacids*,
          - *Antalkalines*,
          - *Antiseptics.*
    - Evacuants; viz.
      - *Errhines*,
      - *Sialagogues*,
      - *Expectorants*,
      - *Emetics*,
      - *Cathartics*,
      - *Diuretics*,
      - *Diaphoretics*,
      - *Emmenagogues.*

The following is the list of articles which come under the preceding classes: —

I. NUTRIMENTS.

A. Fruits.

a. *Fresh, sweet, acidulous.*
- Prunes
- Oranges
- Lemons
- Raspberries
- Red and black currants
- Mulberries
- Grapes, &c.

b. *Dried, sweet, acidulous.*
- Raisins
- Currants
- Figs.

B. Oleraceous Herbs.

- Water-cresses
- Dandelion
- Parsley
- Artichoke.

C. Roots.

- Carrot
- Garlick
- Satyrion.

D. Seeds and Nuts.

- Almonds, sweet and bitte
- Walnuts
- Olives.

II. MEDICINES.

1. Astringents.

- Red rose
- Cinquefoil
- Tormentil
- Madder
- Sorrel
- Water-dock
- Bistort
- Fern
- Pomegranate
- Oak-bark
- Galls
- Logwood
- Quince
- Mulberry
- Sloe
- Gum-arabic
- Catechu
- Dragon's blood
- Alkanet
- Balaustine flower
- St. John's wort
- Millefoil
- Plantain
- Convallaria
- Bear's berry.

2. Tonics.

- Gentian
- Lesser centaury
- Quassia
- Simarouba
- Marsh trefoil
- Fumitory
- Camomile
- Tansy
- Wormwood
- Southernwood
- Sea wormwood
- Water-germander
- Virginian snake-root
- Leopard's bane
- Peruvian bark.

3. Emollients.

Columniferous.
- Marsh mallow
- Mallow.

Farinaceous.
- Quince-seeds
- Fœnugreek-seed
- Linseed.

Various emollients.
- Pellitory
- Verbascum
- White lily.

4. Corrosives.

5. Stimulants

Verticillated.
- Lavender
- Balm
- Marjoram
- Sweet marjoram
- Syrian herb mastich
- Rosemary
- Hyssop
- Ivy
- Mint
- Peppermint
- Pennyroyal
- Thyme
- Mother of thyme
- Sage.

Umbellated.
- Fennel
- Archangel
- Anise
- Caraway
- Coriander
- Cumin
- Dill
- Saxifrage.

Siliquose.
- Horse-radish
- Water-cress
- Mustard
- Scurvy-grass.

Alliaceous.
- Garlick.

Coniferous.
- Fir
- Juniper.

Balsamics.
- Venice turpentine
- Common turpentine
- Canada balsam
- Copaiba balsam
- Tolu balsam
- Balm of Gilead.

Resinous.
- Guaiacum
- Ladanum
- Storax
- Benzoin.

Aromatics.
- Cinnamon
- Nutmeg
- Mace
- Clove
- Allspice
- Canella
- Cascarilla
- Black pepper
- Long pepper
- Indian pepper
- Ginger
- Lesser cardamom
- Zedoary
- Virginian snake-root
- Ginseng
- Aromatic reed.

Acrids.
- Wake-robin
- Pellitory
- Stavesacre.

6. Narcotics.

Rhœadaceous.
- White poppy
- Red poppy.

Umbellated.
- Hemlock
- Water hemlock.

Solanaceous.
- Belladonna
- Henbane
- Tobacco
- Bitter-sweet
- Stramonium.

Varia.
- Laurel
- Camphire
- Saffron
- Wine.

7. Refrigerants.

- Fruits of plants
- Acidulous herbs and roots.

8. Antispasmodics.

Fœtid herbs.
- Wormwood
- Fœtid goosefoot
- Cumin
- Pennyroyal
- Rue
- Savine.

Fœtid gums.
- Assafœtida
- Galbanum
- Opoponax
- Valerian.

9. Diluents.

- Water.

10. Attenuants.

- Alkalies
- Sugar
- Liquorice
- Dried fruits.

11. Inspissants.

- Acids
- Farinaceous and mucilaginous demulcents.

12. Demulcents.

Mucilaginous.
- Gum arabic
- —— tragacanth.

Farinaceous.
- Starch

Bland oils.

13. Antacids.
Alkalies and earths.

14. Antalkalines.
Acids.

15. Antiseptics.
Acid parts of plants
Acescent herbs
Sugar
Siliquose plants
Alliaceous plants
Astringents
Bitters
Aromatics
Essential oils
Camphire
Gum resins
Saffron
Contrayerva
Valerian
Opium
Wine.

16. Errhines.
Asarabacca
White hellebore
Water iris
Pellitory.

17. Sialagogues.
Archangel
Cloves
Masterwort
Tobacco
Pepper
Pellitory.

18. Expectorants.
Ivy
Horehound
Pennyroyal
Elecampane
Florentine orris-root
Tobacco
Squill
Coltsfoot
Benzoin
Storax
Canada balsam
Tolu balsam.

19. Emetics.
Asarabacca
Ipecacuan
Tobacco
Squill
Mustard
Horse-radish
Bitters.

20. Cathartics.
Milder.
Mild acid fruits
Cassia pulp
Tamarind
Sugar
Manna
Sweet roots
Bland oils
Damask rose
Violet
Polypody
Mustard
Bitters
Balsamics
Acrid.
Rhubarb
Seneka
Broom
Elder
Castor oil
Senna
Black hellebore
Jalap
Scammony
Buckthorn
Tobacco
White hellebore
Coloquintida
Elaterium.

21. Diuretics.
Parsley
Carrot
Fennel
Pimpinel
Eryngo
Madder
Burdock
Bitter-sweet
Wake-robin
Asarabacca
Foxglove
Tobacco
Rue
Savine
Snake-root
Squill
Bitters
Balsamics
Siliquosæ
Alliaceæ.

22. Diaphoretics.
Saffron
Bitter-sweet
Opium
Camphire
Contrayerva
Serpentaria
Sage
Water germander
Guaiacum
Sassafras
Seneka
Vegetable acids
Essential oil
Wine
Diluents.

23. Emmenagogues.
Aloes
Fœtid gums
Fœtid plants
Saffron.

The following is the arrangement of the Materia Medica, according to J. Murray, in his Elements of Materia Medica and Pharmacy: —

A. General stimulants.
  a. Diffusible { Narcotics, Antispasmodics.
  b. Permanent { Tonics, Astringents.

B. Local stimulants. { Emetics, Cathartics, Emmenagogues, Diuretics, Diaphoretics, Expectorants, Sialagogues, Errhines, Epispastics

C. Chemical remedies. { Refrigerants, Antacids, Lithontriptics, Escharotics.

D. Mechanical remedies. { Anthelmintics, Demulcents, Diluents, Emollients.

Under the head of Narcotics are included,— Alkohol. Ether. Camphire. Papaver somniferum. Hyoscyamus niger. Atropa belladonna. Aconitum napellus. Conium maculatum. Digitalis purpurea. Nicotiana tabacum. Lactuca virosa. Datura stramonium. Rhododendron chrysanthemum. Rhus toxicodendron. Arnica montana. Strychnos nux vomica. Prunus laurocerasus.

Under the second class, Antispasmodics, are included, — Moschus. Castoreum. Oleum animale empyreumaticum. Petroleum. Ammonia. Ferula assafœtida. Sagapenum. Bubon galbanum. Valeriana officinalis. Crocus sativus. Melaleuca leucadendron.

Narcotics used as Antispasmodics, —
Ether. Camphire. Opium.

Tonics used as Antispasmodics, —
Cuprum. Zincum. Hydrargyrus. Cinchona.

The head of Tonics embraces, —
1. From the *mineral* kingdom,
Hydrargyrum. Ferrum. Zincum. Cuprum. Arsenicum. Barytes. Calx. Acidum. Nitricum. Oxymurias potassæ.

2. From the *vegetable* kingdom,

Cinchona officinalis. Cinchona caribæa. Cinchona floribunda. Cusparia. Aristolochia serpentaria. Dorstenia contrayerva. Croton eleutheria. Calumba. Quassia excelsa. Quassia simarouba. Swietenia febrifuga. Swietenia mahagoni. Gentiana lutea. Anthemis nobilis. Artemisia absinthium. Chironia centaurium. Marrubium vulgare. Menyanthes trifoliata. Centaurea benedicta. Citrus aurantium. Citrus medica. Laurus cinnamomum. Laurus cassia. Canella alba. Acorus calamus. Ammomum zinziber. Kæmferia rotunda. Santalum album. Pterocarpus santalinus. Myristica moschata. Caryophyllus aromaticus. Capsicum annuum. Piper nigrum. Piper longum. Piper cubeba. Myrtus pimenta. Amomum repens. Carum carui. Coriandrum sativum. Pimpinella anisum. Anethum fœniculum. Anethum graveolens. Cuminum cyminum. Angelica archangelica. Mentha piperita. Mentha viridis. Mentha pulegium. Hyssopus officinalis.

The class of Astringents comprehends the following : —

1. From the *vegetable* kingdom,

Quercus robur. Quercus cerris. Tormentilla erecta. Polygonum bistorta. Anchusa tinctoria. Hæmatoxylon campechianum. Rosa gallica. Arbutus uva ursi. Mimosa catechu. Kino. Pterocarpus draco. Ficus indica. Pistachia lentiscus.

2. From the *mineral* kingdom,

Acidum sulphuricum. Argilla. Supersulphas argillæ et potassæ. Calx. Carbonas calcis. Plumbum. Zincum. Ferrum. Cuprum.

The articles which come under the head of Emetics are,

1. From the *vegetable* kingdom,

Callicocca ipecacuanha. Scilla maritima. Anthemis nobilis. Sinapis alba. Asarum europæum. Nicotiana tabacum.

2. From the *mineral* kingdom,

Antimonium. Sulphas zinci. Sulphas cupri. Subacetas cupri. Ammonia. Hydro-sulphuretum ammoniæ.

Cathartics include,

Laxatives : — Manna. Cassia fistula. Tamarindus Indica. Ricinus communis. Sulphur. Magnesia.

Purgatives : — Cassia senna. Rheum palmatum. Convolvulus jalapa. Helleborus niger. Bryonia alba. Cucumis colocynthis. Momordica elaterium. Rhamnus catharticus. Aloë perfoliata. Convolvulus scammonia. Gambojia gutta. Submurias hydrargyri. Sulphas magnesiæ. Sulphas sodæ. Sulphas potossæ. Supertartras potassæ. Tartras potassæ et sodæ. Murias sodæ. Terebinthina veneta. Nicotiana tabacum.

The medicines arranged under Emmenagogues, are —

1. From the class of Antispasmodics,

Castoreum. Ferula assafœtida. Bubon galbanum.

2. From the class of Tonics,

Ferrum. Hydrargyrus. Cinchona officinalis.

3. From the class of Cathartics,

Aloë. Helleborus niger. Sinapis alba. Rosmarinus officinalis. Rubia tinctorium. Ruta graveolens. Juniperus sabina.

The class of Diuretics includes,

1. Saline diuretics,

Supertartras potassæ. Nitras potassæ. Murias ammoniæ. Acetas potassæ. Potassa.

2. From the *vegetable* kingdom,

Scilla maritima. Digitalis purpurea. Nicotiana tabacum. Solanum dulcamara. Lactuca virosa. Colchicum autumnale. Gratiola officinalis. Spartium scoparium. Juniperus communis. Copaifera officinalis. Pinus balsamea. Pinus larix.

3. From the *animal* kingdom,

Meloe vesicatorius.

Under the class Diaphoretics, are —

Ammonia. Murias ammoniæ. Acetas ammoniæ. Citras ammoniæ. Submurias hydrargyri. Antimonium. Opium. Camphora. Guaiacum officinale. Daphne mezereum. Smilax sarsaparilla. Laurus sassafras. Cochlearia armoracia. Salvia officinalis.

The class Expectorants comprehends, —

Antimonium. Ipecacuanha. Nicotiana tabacum. Digitalis purpurea. Scilla maritima. Allium sativum. Polygala senega. Ammoniacum. Myrrha. Styrax benzoin. Styrax officinalis. Toluifera balsamum. Myrroxylon peruiferum. Amyris gileadensis.

The articles of the class Sialagogues are, — Hydrargyrum. Anthemis pyrethrum. Arum maculatum. Amomum zingiber. Daphne mezereum. Nicotiana tabacum.

The class of Errhines are, — Iris florentina. Æsculus hippocastanum. Origanum majorana. Lavandula spica. Asarum europæum. Veratrum album. Nicotiana tabacum. Euphorbia officinalis.

In the class Epispastics and Rubefacients are, — Meloe vesicatorius. Ammonia. Pix burgundica. Sinapis alba. Allium sativum.

Refrigerants are constituted by the following articles : — Citrus aurantium. Citrus medica. Tamarindus indica. Acidum acetosum. Supertartras potassæ. Nitras potassæ. Boras sodæ.

The list of articles that come under the class Antacids are, — Potassa. Soda. Ammonia. Calx. Carbonas calcis. Magnesia.

In the class Lithontriptics are, — Potassa. Carbonas potassæ. Soda. Carbonas sodæ. Sapo albus. Calx.

In the class Escharotics are, — Acida mineralia. Potassa. Nitras argenti. Murias antimonii. Sulphas cupri. Acetas cupri. Murias hydrargyri. Subnitras hydrargyri. Oxydum arsenici album. Juniperus sabina.

In the class Anthelmintics are, — Dolichos pruriens. Ferri limatura. Stannum pulveratum. Olea europæa. Artemisia santonica. Spigelia marilandica. Polypodium filix mas. Tanacetum vulgare. Geoffræa mermis. Gambojia gutta. Submurias hydrargyri.

Demulcents are, — Mimosa nilotica. Astragalus tragacantha. Linum usitatissimum. Althæa officinalis. Malva sylvestris. Glycyrrhiza glabra. Cycas circinalis. Orchis mascula.

Maranta arundinacea. Triticum hybernum. Ichthyocolla. Olea europæa. Amygdalus communis. Sevum ceti. Cera.

Water is the principal article of the class Diluents; and as for the last class, Emollients, heat, conjoined with moisture, is the principal, though all unctuous applications may be included.

The London Pharmacopœia of 1836 gives the following list of the Materia Medica: —

Abietis resina
Absinthium
Acacia
Acetosella
Acetum
Acidum arseniosum
Acidum sulphuricum
Aconiti folia
Aconiti radix
Acorus
Adeps
Ærugo
Allium
Alöe
Althææ folia
Althææ radix
Alumen
Ammoniacum
Ammoniæ hydrochloras
Ammoniæ liquor fortior
Amygdala amara
Amygdala dulcis
Amygdalæ oleum
Amylum
Anethum
Anisum
Anthemis
Antimonii sesqui-sulphuretum
Argentum
Armoracia
Asarum
Aspidium
Assafœtida
Avena
Aurantium
Aurantii cortex
Aurantii flores
Aurantii oleum
Balsamum peruvianum
Balsamum tolutanum
Barytæ carbonas
Belladonna
Benzöinum
Bergamii oleum
Bismuthum
Borax
Brominium
Cajuputi
Calamina
Calcis hydras
Calx
Calumba
Cambogia
Camphora
Canella
Cantharis
Capsicum
Carbo animalis
Carbo ligni
Cardamine
Cardamomum
Carui
Caryophyllus
Caryophyllioleum
Cascarilla
Cassia
Castoreum
Catechu
Centaurium
Cera
Cera alba
Cerevisiæ fermentum
Cetaceum
Cetraria
Chimaphila
Cinchona cordifolia
Cinchona lancifolia
Cinchona oblongifolia
Cinnamomi oleum
Cinnamomum
Cocci
Colchici cormus
Colchici semina
Colocynthis
Conii folia
Conii fructus
Contrajerva
Copaiba
Coriandrum
Cornu
Creasoton
Creta
Crocus
Cupri sulphas
Curcuma
Cusparia
Cydonia
Cyminum
Dauci fructus
Dauci radix
Digitalis folia
Digitalis semina
Diosma
Dulcamara
Elaterium
Elemi
Ergota
Euphorbium
Farina
Ferri percyanidum
Ferrum
Fici
Fœniculum
Galbanum
Gallæ
Gentiana
Glycyrrhiza
Granatum
Guaiaci lignum
Guaiaci resina
Hæmatoxylum
Helleborus
Hirudo
Hordeum
Hydrargyrum
Hyoscyami folia
Hyoscyami semina
Jalapa
Inula
Iodinium
Ipecacuanha
Juniperi cacumina
Juniperi fructus
Kino
Krameria
Lacmus
Lactucarium
Lavandula
Lauri baccæ
Lauri folia
Limones
Limonum cortex
Limonum oleum
Limonum succus
Lini oleum
Lini semina
Lobelia
Lupulus
Magnesiæ sulphas
Malva
Manganesii binoxydum
Manna
Maranta
Marmor
Marrubium
Mastiche
Mel
Mentha piperita
Mentha pulegium
Mentha viridis
Menyanthes
Mezereum
Mora
Moschus
Mucuna
Myristica
Myristicæ oleum
Myrrha
Nux vomica
Olibanum
Olivæ oleum
Opium
Opopanax
Origanum
Ovum
Papaver
Pareira
Petroleum
Phosphorus
Pimenta
Piper cubeba
Piper longum
Piper nigrum
Pix abietina
Pix liquida
Pix nigra
Plumbi carbonas
Plumbi oxydum
Porrum

Potassæ bitartras
Potassæ carbonas impura
Potassæ chloras
Potassæ nitras
Potassii ferrocyanidum
Pruna
Pterocarpus
Pyrethrum
Quassia
Quercus
Quina
Resina
Rhamnus
Rheum
Rhœas
Ricini oleum
Rosa canina
Rosa centifolia
Rosa gallica
Rosmarinus
Rumex
Ruta
Sabadilla
Sabina
Sacchari fæx
Saccharum
Sagapenum
Sago
Sambucus
Sapo
Sapo mollis
Sarza
Sassafras
Scammonium
Scilla
Scoparius
Senega
Senna
Serpentaria
Sevum
Simaruba
Sinapis
Sodæ acetas
Sodæ carbonas impura
Sodæ phosphas
Sodii chloridum
Spigelia
Spiritus rectificatus
Spiritus tenuior
Spiritus vini gallici
Stannum
Staphisagria
Stramonii folia
Stramonii semina
Styrax
Succinum
Sulphur
Tabacum
Tamarindus
Taraxacum
Terebinthina canadensis
Terebinthina chia
Terebinthina vulgaris
Terebinthinæ oleum
Testæ
Tiglii oleum
Tormentilla
Toxicodendron
Tragacantha
Tussilago
Valeriana
Veratrum
Vinum xericum
Ulmus
Uva
Uva ursi
Zincum
Zingiber

Materia perla'ta. If, instead of crystallising the salts contained in the liquor separated from diaphoretic antimony, an acid be poured into it, a white precipitate is formed, which is an oxide of antimony. This has been called materia perlata.

Materiatu'ra. A barbarous word. According to the editors of Castelli, Gardinius uses the phrase *morbi materiaturæ*, to designate diseases of intemperament, as opposed to *morbi structuræ*, diseases of structure.

Mathieu's vermifuge. This consisted of two electuaries, the one for killing the worms, and the other for expelling them. The first was composed of tin filings, ℥j.; fern root, ʒvj.; worm seed, ℥ss.; resinous extract of jalap, sulphate of potash, of each ʒj., with a sufficient quantity of honey.

The second electuary was composed of jalap and sulphate of potash, of each ʒij.; scammony, ʒj.; gamboge, x grs., with a sufficient quantity of honey.

The first electuary was given in the dose of a teaspoonful every three hours for two days, and then the second was used in the same way.

MATLOCK. A village in Derbyshire. It affords a mineral water of the acidulous class, which issues from a limestone rock, near the banks of the Derwent. Several of the springs possess a temperature of 66°. Matlock water scarcely differs from common good spring water, in sensible properties. It is extremely transparent, and exhales no vapour, excepting in cold weather. It holds little or no excess of aërial particles; it curdles soap, when first taken up, but it loses this effect upon long keeping, perhaps from the deposition of its calcareous salts; it appears to differ very little from good spring water when tasted; and its effects seem referable to its temperature. It is from this latter circumstance that it forms a proper tepid bath for the nervous and irritable, and those of a debilitated constitution; hence it is usually recommended after the use of Bath and Buxton waters, and as preparatory to sea-bathing.

MA'TRASS. *Matracium.* A chemical vessel of glass or other material, having a round or oval shaped body, and a long neck.

MATRICA'LIA. (From *matrix*, the womb.) Medicines appropriated to disorders of the uterus.

MATRICA'RIA. (*a*, *æ*. f.; from *matrix*, the womb: so called from its uses in disorders of the womb.) 1. The name of a genus of plants in the Linnæan system. Class, *Syngenesia*; Order, *Polygamia superflua*.

2. The pharmacopœial name of the Matricaria parthenium. See *Matricaria parthenium*.

Matricaria chamomilla. *Chamæmelum vulgare. Chamomilla nostras. Lucanthemum* of Dioscorides. Common wild corn, or dog's camomile. The plant directed under this name in the pharmacopœias, is the *Matricaria — receptaculis conicis radiis patentibus; squamis calycinis, margine æqualibus*, of Linnæus. Its virtues are similar to those of the *Matricaria parthenium*, but in a much inferior degree.

Matricaria parthenium. *Parthenium febrifuga.* Common fever-few, or febrifuge, and often, but very improperly, feather-few. Mother's wort. The leaves and flowers of this plant, *Matricaria — foliis compositis, planis; foliolis ovatis, incisis; pedunculis ramosis*, have a strong, not agreeable smell, and a moderately bitter taste, both which they communicate, by warm infusion, to water and rectified spirit. The watery infusions, inspissated, leave an extract of considerable bitterness, and which discovers also a saline matter, both to the taste, and in a more sensible manner, by throwing up to the surface small crystalline efflorescences in keeping. The peculiar flavour of the matricaria exhales in the evaporation, and impregnates the distilled water, on which also a quantity of

essential oil is found floating. The quantity of spirituous extract, according to Cartheuser's experiments, is only about one sixth the weight of the dry leaves, whereas the watery extract amounts to nearly one half. This plant is evidently the *Parthenium* of Dioscorides, since whose time it has been very generally employed for medical purposes. In natural affinity, it ranks with camomile and tansy, and its sensible qualities show it to be nearly allied to them in its medicinal character. Bergius states its virtues to be tonic, stomachic, resolvent, and emmenagogue. It has been given successfully as a vermifuge, and for the cure of intermittents; but its use is most celebrated in female disorders, especially in hysteria; and hence it is supposed to have derived the name matricaria. Its smell, taste, and analysis, prove it to be a medicine of considerable activity; we may therefore say, with Murray — *Rarius hodie præscribitur, quam debetur.*

MATRISY'LVA. (*a*, *æ*. f.; from *mater*, and *silva*, the mother of the wood.) See *Asperula.*

MA'TRIX. (*ix*, *icis*. f. Ματηρ.) 1. The womb. See *Uterus.*

2. The earthy or stony matter which accompanies ores, or envelopes them in the earth.

MATTHEW'S INJECTION. A diluted tincture of cantharides, once much in vogue for the cure of fistula in ano.

MATTHEW'S PILLS. These consist of opium, black hellebore, Starkey's soap, of each ℈iv.; saffron, ℈viij., made into a mass with a little oil of turpentine.

MATU'RANS. (From *maturo*, to ripen.) That which promotes the suppuration of tumours.

MATURATION. (*Maturatio*; from *maturo*, to make ripe.) That process which succeeds inflammation, by which pus is collected an abscess.

Maudlin. See *Achillea ageratum.*

Maudlin tansey. See *Achillea.*

Mauro-marson. See *Marrubium.*

MAW-WORM. The *Ascaris vermicularis.* See *Entozoa.*

MAXI'LLA. (*a*, *æ*. f.; from μασσαω, to chew.) The jaw, both upper and lower.

MAXILLA INFERIOR. The lower jaw.

MAXILLA SUPERIOR. The upper jaw.

MAXILLARE INFERIUS OS. *Maxilla inferior. Mandibula.* The maxilla inferior, or lower jaw, which, in its figure, may be compared to a horse-shoe, is at first composed of two distinct bones; but these, soon after birth, unite together at the middle of the chin, so as to form only one bone. The superior edge of this bone has, like the upper jaw, a process, called the *alveolar* process. This, as well as that of the upper jaw, to which it is in other respects a good deal similar, is likewise furnished with cavities for the reception of the teeth. The posterior part of the bone, on each side, rises perpendicularly into two processes, one of which is called the *coronoid*, and the other the *condyloid* process. The first of these is the highest: it is thin and pointed; and the temporal muscle, which is attached to it, serves to elevate the jaw. The condyloid process is narrower, thicker, and shorter than the other, terminating in an oblong, rounded head, which is formed for a moveable articulation with the cranium, and is received into the fore part of the fossa described in the temporal bone. In this joint there is a moveable cartilage, which, being more closely connected to the condyle than to the cavity, may be considered as belonging to the former. This moveable cartilage is connected with both the articulating surface of the temporal bone, and the condyle of the jaw, by distinct ligaments arising from its edges all round. These attachments of the cartilage are strengthened, and the whole articulation secured, by an external ligament, which is common to both, and which is fixed to the temporal bone, and to the neck of the condyle. On the inner surface of the ligament, which attaches the cartilage to the temporal bone, and backwards in the cavity, is placed what is commonly called the gland of the joint; at least the ligament is there found to be much more vascular than at any other part. At the bottom of each coronoid process, on its inner part, is a foramen, or canal, which extends under the roots of all the teeth, and terminates at the outer surface of the bone near the chin. Each of these foramina affords a passage to an artery, vein, and nerve, which sends off branches to the several teeth.

This bone is capable of a great many motions. The condyles, by sliding from the cavity towards the eminences on each side, bring the jaw horizontally forwards, as in the action of biting; or the condyles only may be brought forwards, while the rest of the jaw is tilted backwards, as is the case when the mouth is open. The condyles may also slide alternately backwards and forwards from the cavity to the eminence, and *vice versâ*; so that while one condyle advances, the other moves backwards, turning the body of the jaw from side to side, as in grinding the teeth. The great use of the cartilages seems to be that of securing the articulation, by adapting themselves to the different inequalities in these several motions of the jaw, and to prevent any injuries from friction. This last circumstance is of great importance where there is so much motion, and, accordingly, this cartilage is found in the different tribes of carnivorous animals, where there is no eminence and cavity, nor other apparatus for grinding.

The alveolar processes are formed of an external and internal plate, united together by thin bony partitions, which divide the processes at the fore part of the jaw, into as many sockets as there are teeth. But at the posterior part, where the teeth have more than one root, each root has a distinct cell. These processes, in both jaws, begin to be formed with the teeth, accompany them in their growth, and disappear when the teeth fall; so that the loss of the one seems constantly to be attended with the loss of the other.

MAXILLARE SUPERIUS OS. *Maxilla superior.* The superior maxillary bones constitute the most considerable portion of the upper jaw, are two in number, and generally remain distinct through life. Their figure is exceedingly irregular, and not easily to be described. On

each of these bones are observed several eminences. One of these is at the upper and fore part of the bone, and, from its making part of the nose, is called the *nasal* process. Internally, in the inferior portion of this process, is a fossa, which, with the os unguis, forms a passage for the lachrymal duct. Into this nasal process, likewise, is inserted the short round tendon of the *musculus orbicularis palpebrarum*. Backwards and outwards, from the root of the nasal process, the bone helps to form the lower side of the orbit, and this part is therefore called the *orbitar* process. Behind this orbitar process, the bone forms a considerable tuberosity; and at the upper part of this tuberosity is a channel, which is almost a complete hole. In this channel passes a branch of the fifth pair of nerves, which, together with a small artery, is transmitted to the face through the external orbiter foramen, which opens immediately under the orbit. Where the bone on each side is joined to the os malæ, and helps to form the cheeks, is observed what is called the *malar* process. The lower and anterior parts of the bone make a kind of circular sweep, in which are the *alveoli*, or sockets for the teeth: this is called the *alveolar* process. This alveolar process has, posteriorly, a considerable tuberosity on its internal surface. Above this alveolar process, and just behind the fore teeth, is an irregular hole, called the *foramen incisivum*, which, separating into two, and sometimes more holes, serves to transmit small arteries and veins, and a minute branch of the fifth pair of nerves to the nostrils. There are two horizontal lamellæ behind the alveolar process, which, uniting together, form part of the roof of the mouth, and divide it from the nose. This partition, being seated somewhat higher than the lower edge of the alveolar process, gives the roof of the mouth a considerable hollowness. Where the ossa maxillaria are united to each other, they project somewhat forwards, leaving between them a furrow, which receives the inferior portion of the septum nasi. Each of these bones is hollow, and forms a considerable sinus under its orbitar part. This sinus, which is usually, though improperly, called *antrum Highmorianum*, is lined with the pituitary membrane. It answers the same purposes as the other sinuses of the nose, and communicates with the nostrils by an opening, which appears to be a large one in the skeleton, but which in the recent subject is much smaller. In the fœtus, instead of these sinuses, an oblong depression only is observed at each side of the nostrils, nor is the tuberosity of the alveolar process then formed. On the side of the palate, in young subjects, a kind of fissure may be noticed, which seems to separate the portion of the bone which contains the dentes incisores from that which contains the dentes canini. This fissure is sometimes apparent till the sixth year, but after that period it in general wholly disappears.

The ossa maxillaria not only serve to form the cheeks, but likewise the palate, nose, and orbits: and, besides their union with each other, they are connected with the greatest part of the bones of the face and cranium, viz. with the ossa nasi, ossa malarum, ossa unguis, ossa palati, os frontis, os sphenoides, and os ethmoides.

MAXILLARY. (*Maxillaris*; from *maxilla*, the jaw.) Appertaining to the jaw.

Maxillary artery. *Arteria maxillaris.* A branch of the external carotid. The *external maxillary* is the fourth branch of the carotid; it proceeds anteriorly, and gives off the facial or mental, the coronary of the lips, and the angular artery. The *internal maxillary* is the next branch of the carotid; it gives off the sphenomaxillary, the inferior alveolar, and the spinous artery.

Maxillary bone, inferior. See *Maxillare inferius os.*

Maxillary bone, superior. See *Maxillare superius os.*

Maxillary gland. *Glandula maxillaris.* The gland so called is conglomerate, and situated under the angles of the lower jaw. The excretory ducts of these glands are called Warthonian, after their discoverer.

Maxillary nerve. *Nervus maxillaris.* The superior and inferior maxillary nerves are branches of the fifth pair, or trigemini. The former is divided into the spheno-palatine, posterior alveolar, and the infra-orbital nerve. The latter is divided into two branches, the internal lingual, and one more properly called the inferior maxillary.

May apple. See *Podophyllum peltatum.*

May-lily. See *Convallaria majalis.*

May-weed. See *Anthemis cotula.*

Mays, Indian. See *Zea mays.*

MEAD. An old English liquor made from the honeycombs from which honey has been drained out, by boiling in water, and then fermenting. This is often confounded with metheglin.

Meadow crowfoot. See *Ranunculus acris.*

Meadow, queen of the. See *Spiræa.*

Meadow saffron. See *Colchicum.*

Meadow saxifrage. See *Peucedanum.*

Meadow-sweet. See *Spiræa ulmaria.*

Meadow thistle, round leaved. See *Cnicus.*

Measles. See *Rubeola.*

Measures. See *Weights* and *Measures.*

MEA'TUS. (*us, ûs.* m.) A passage.

Meatus auditorius externus. The external passage of the ear. See *Auris.*

Meatus auditorius internus. The internal passage of the ear. See *Auris.*

Meatus cæcus. The Eustacian tube.

Meatus cuticularis. A pore of the skin.

Meatus cysticus. The gall-duct.

Meatus urinarius. The orifice of the urethra. In women, this is situated in the vagina, immediately below the symphysis of the pubes, and behind the nymphæ. In men, it is at the end of the glans penis.

Mecca balsam. See *Amyris gileadensis.*

Mechoaca'nna. (From *Mechoacan*, a province in Mexico, whence it is brought.) See *Convolvulus mechoacanna.*

Mechoacanna nigra. See *Convolvulus jalapa.*

Meckel's ganglion. See *Spheno-palatine ganglion.*

ME'CON. (From μηκος, bulk: so named

from the largeness of its head.) The poppy. See *Papaver somniferum.*

Meconic acid. *Acidum meconicum.* An acid so called from μηκων, a poppy, because it forms a constituent of opium. It was discovered by Sertuerner, who procured it in the following way: — After precipitating the *morphia*, from a solution of opium, by ammonia, he added to the residual fluid a solution of the muriate of barytes. A precipitate is in this way formed, which is supposed to be a quadruple compound of barytes, morphia, extract, and the meconic acid. The extract is removed by alkohol, and the barytes by sulphuric acid, when the meconic acid is left merely in combination with a portion of the morphia; and from this it is purified by successive solutions and evaporations. The acid, when sublimed, forms long colourless needles; it has a strong affinity for the oxide of iron, so as to take it from the muriatic solution, and form with it a cherry-red precipitate. It forms a crystallisable salt with lime, which is not decomposed by sulphuric acid; and, what is curious, it seems to possess no particular power over the human body, when received into the stomach. The essential salt of opium, obtained in Derosne's original experiments, was probably the meconiate of morphia.

Robiquet has made a useful modification of the process for extracting meconic acid. He treats the opium with magnesia, to separate the morphia, while meconiate of magnesia is also formed. The magnesia is removed by adding muriate of barytes, and the barytes is afterwards separated by dilute sulphuric acid. A larger proportion of meconic acid is thus obtained.

Meco'nis. Μηκωνις. 1. The poppy.

2. The strong scented lettuce, which is narcotic like the poppy.

MECO'NIUM. (*um, ii.* n.; from μηκων, the poppy.) 1. Opium. The inspissated juice of the poppy.

2. The green excrementitious substance that is found in the large intestines of the fœtus.

ME'DIAN. *Medianus.* This term is applied to vessels, &c. from their situation between others.

Median nerve. The second branch of the brachial plexus.

Median vein. The situation of the veins of the arms is extremely different in different individuals. When a branch proceeds near the bend of the arm, inwardly from the basilic vein, it is termed the *median basilic*, and when a vein is given off from the cephalic in the like manner, it is termed the *median cephalic.* When these two veins are present, they mostly unite just below the bend of the arm, and the common trunk proceeds to the cephalic vein.

Medianum. See *Mediastinum.*

MEDIASTI'NUM. (*um, i.* n.; *quasi in medio stans*, as being in the middle.) The membraneous septum, formed by the duplicature of the pleura, that divides the cavity of the chest into two parts. It is divided into an anterior and posterior portion.

Mediastinum cerebri. The falciform process of the dura mater.

ME'DIATE. *Mediatus.* A term of relation to two extremes, applied to that which is in the middle between them.

Mediate auscultation. See *Auscultation.*

Medica malus. The lemon.

MEDICAL. *Medicus.* Appertaining to medicine.

Medicamenta'ria ars. The art of making and preparing medicines.

MEDICAME'NTUM. (*um, i.* n.; from *medico*, to heal.) A medicine.

MEDICA'STER. (*er, ri.* m.) A pretender to the knowledge of medicine. A quack.

Medicated. *Medicatus.* Imbued with the properties of a medicine. Thus wine of aloes is a medicated wine.

Medicina dilete'tica. That department of medicine which regards the regulation of the non-naturals, especially diet.

Medicina diaso'stica. That part of medicine which preserves health.

Medicina gymna'stica. That part of medicine which relates to exercise.

Medicina hermē'tica. The application of chemical remedies to the cure of diseases.

Medicina prophyla'ctica. That part of medicine which relates to preservation of health, or prevention of diseases.

Medicina tristi'tiæ. Common saffron. So called because it is said to possess exhilarating qualities.

MEDI'CINAL. (*Medicinalis*; from *medicina*, medicine.) Having the power of restoring health, or removing disease. It has sometimes been incorrectly used synonymously with *medical.*

Medicinal days. Critical days. See *Critical days.*

Medicinal hours. Are those wherein it is supposed that medicines may be taken to the greatest advantage, commonly reckoned in the morning fasting, about an hour before dinner, about four hours after dinner, and at going to bed; but in acute cases, the times are to be governed by the symptoms and aggravation of the distemper.

MEDICINE. (*Medicina, æ.* f.; from *medico*, to heal.) 1. The science and art which relate to the preservation of health, and the alleviation or cure of disease.

Medicine admits of numerous divisions, of which the most general are into *Physiology*, which teaches the healthy functions of the body; *Pathology*, which teaches its morbid conditions; *Semeiotics*, which teach the symptoms of disease; *Hygiene*, which teaches how to preserve health; *Therapeutics*, which teach how to treat diseases, and include *physic*, *surgery*, and *obstetrics*; *Pharmacy*, which teaches the nature and virtues of drugs, and the mode of preparing and administering them.

The minor subdivisions of these subjects are noticed under their respective heads.

There are certain sciences which are called *accessory* to medicine. Some of these, although regarded as merely accessory in a logical view of the subject, are in reality the very foundations of medicine. Thus *Anatomy* is the basis

of physiology and pathology; *Botany*, *Chemistry*, and *Mineralogy* are the basis of pharmacy. Philosophically considered, medicine is the application of natural knowledge to the preservation of health, and the alleviation or cure of disease; hence all the natural sciences may be considered as more or less accessory to medicine; and hence the necessity that the practitioner of medicine should be a man of general science.

Opposed to this view of the subject, is the attempt to make medicine rest on experience alone, which gave rise in the days of the Greeks to the division of medicine into *rational* and *empirical*, as respectively practised by the Dogmatists and Empirics. The practice of medicine is, and most likely will always be, empirical to a certain extent; but, in a general way, the improvement of the art has always kept pace with the progress of the science, and an exclusively empirical system of medicine has now no advocates but among the ignorant.

2. Any substance used for the alleviation or cure of a disease.

Medi coctio. A kind of medicated apomel, named after Medus, and described by N. Myrepsus.

ME'DICUS. (From *medico*, to heal.) 1. Substantively, a physician, or one who treats diseases.

2. (Adjectively.) Belonging to medicine; as *materia medica*, &c.

Medi malagma. A digestive malagma named after its inventor, and described by Celsus.

Medina. A species of ulcer, mentioned by Paracelsus.

Medine'nsis vena. (*Medinensis*; so called because it is frequent at *Medina*, and improperly called *vena* for *vermis*; and sometimes *nervus medinensis*.) See *Gordius medinensis*.

MEDITU'LLIUM. (From *medius*, the middle.) The same as *Diploe*, which see.

Medius venter. The middle belly. The thorax. — *Blancard*.

Medlar. See *Mespilus*.

MEDU'LLA. (*a*, *æ*. f.; *quasi in medio ossis*.) 1. The marrow. See *Marrow*, and *Adeps*.

2. The pith or pulp of vegetables. The centre or heart of a vegetable within the wood. "This," says Sir J. Smith, "in parts most endowed with life, as roots and young growing stems or branches, is a tolerably firm juicy substance, of a uniform texture, and commonly a pale green or yellowish colour. In many annual stems the petal, abundant and very juicy while they are growing, becomes little more than a web, lining the hollow of the complete stem; as in some thistles. Concerning the nature and functions of this part various opinions have been held. Du Hamel considered it as merely cellular substance, connected with what is diffused through the whole plant, combining its various parts, but not performing any remarkable office in the vegetable economy. Linnæus, on the contrary, thought it the seat of life, and source of vegetation; that its vigour was the main cause of the propulsion of the branches, and that the seeds were more especially formed from it. This latter hypothesis is not better founded than his idea of the pith adding new layers to the wood. In fact, the pith is soon obliterated in the trunk of many trees, which, nevertheless, keep increasing for a long series of years, by layers of wood added every year from the bark, even after the heart of the tree is become hollow from decay.

Some considerations have led Sir James Smith to hold a medium opinion between these two extremes. There is in certain respects, he observes, an analogy between the medulla of plants and the nervous system of animals. It is no less assiduously protected than the spinal marrow or principal nerve. It is branched off and diffused through the plant, as nerves are through the animal: hence it is not absurd to presume that it may, in like manner, give life and vigour to the whole, though by no means, any more than nerves, the organ or source of nourishment. It is certainly most vigorous and abundant in young and growing branches, and must be supposed to be subservient, in some way or other, to their increase.

Mr. Lindsay, of Jamaica, thought he demonstrated the medulla in the leafstalk of the *Mimosa pudica*, or sensitive plant.

Knight supposes the medulla may be a reservoir of moisture, to supply the leaves whenever an excess of perspiration renders such assistance necessary: but it should be recollected that all the moisture in the medulla of a whole plant is, in some cases, too little to supply one hour's perspiration of a single leaf; and it is not found that the moisture of the medulla varies, let the leaves be ever so flaccid.

3. The white substance of the brain is called medulla, or the medullary part, to distinguish it from the cortical.

Medulla cassiæ. Cassia-pulp.

Medulla oblongata. *Cerebrum elongatum*. The commencement of the spinal cord which rests upon the basilary process of the occipital bone. See *Encephalos*.

Medulla spinalis. The spinal marrow or spinal cord. See *Spinal cord*.

MEDULLARY. (*Medullaris*; from *medulla*, marrow.) Like unto marrow.

Medullary sarcoma. See *Fungus hæmatodes*.

Medullary substance. *Substantia medullaris*. 1. The white or internal substance of the brain.

2. The internal substance of the kidney.

Medullin. The name given by Dr. John to the pith of the sun-flower.

Megalospla'nchnus. (Μεγαλοσπλαγχνος; from μεγας, great, and σπλαγχνον, a bowel.) Hippocrates applies this epithet to one who is pot-bellied.

ME'GRIM. Synonymous with *hemicrania*, from which it is probably derived through the medium of the French *migraine*.

Meibomius's glands. *Meibomii glandulæ*. The small glands which are situated between the conjunctive membrane of the eye, and the cartilage of the eyelid, first described by Meibomius.

MEL. (*Mel, mellis.* n.) Honey. A substance collected by bees from the nectary of flowers, resembling sugar in its elementary properties. See *Apis mellifica.* It has a white or yellowish colour, a soft and grained consistence, and a saccharine and aromatic smell. It is supposed to consist of sugar, mucilage, and an acid. Honey contains some nutriment, and is a softening and slightly aperient remedy: mixed with vinegar, it forms *oxymel,* and it is used in various forms in medicine and pharmacy. It has been particularly recommended to the asthmatic, and those subject to gravel, from its detergent nature. Honey, when mixed with water, is susceptible of the vinous fermentation without the addition of yeast.

Mel acetatum. See *Oxymel.*

Mel boracis. Honey of borax. Take of borax, powdered, a drachm; clarified honey, an ounce. Mix. This preparation is found very useful as a local application in aphthous affections of the mouth and fauces.

Mel despumatum. Clarified honey, which is directed to be made by melting honey in a water-bath, and then removing the scum.

Mel rosæ. Honey of roses. Take of red-rose petals, dried, four ounces; boiling water, two pints and a half; clarified honey, five pounds. Macerate the rose petals in the water for six hours, and strain; then add the honey to the strained liquor, and, by means of a water-bath, boil it down to a proper consistence. An admirable preparation for the base of various gargles and collutories. It may also be employed with advantage, mixed with extract of bark, or other medicines, for children who have a natural disgust to medicines.

Mel scillæ. See *Oxymel scillæ.*

Mela. (Μηλη; from μαω, to search.) A probe.

MELÆ'NA. (*a, æ.* f.; from μελας, black.) Μελαινα νουσος, of the Greeks. The disease so called by Hippocrates, consists in the vomiting of a concrete blood of a blackish red colour, and mixed with a large quantity of insipid, acid, or viscid phlegm. This evacuation is generally preceded by a pungent tensive pain, in both the hypochondria; and the appearance of the disease is attended with anxiety, a compressive pain in the præcordia, and fainting, which last is more frequent and violent when the blood which is evacuated is fœtid and corrupt. The term melæna is applied by modern writers to a discharge of dark coloured grumous pitchy looking stools, usually conjoined with vomiting of blood. It is caused by hæmorrhage from the gastro-enteric mucous membrane, or organic diseases of the abdominal viscera.

Melæna cholæa. The black jaundice.

Melæna cruenta. See *Melæna.*

MELALEU'CA. (*a, æ.* f.; from μελας, black, and λευκος, white: so named by Linnæus, because the principal, and indeed original, species, was called *leucadendron,* and *arbor alba;* words synonymous with its appellation in the Malay tongue, *Caju-puti,* or white tree: but it is not known why the idea of black was associated with white.) The name of a genus of plants in the Linnæan system. Class, *Polyandria;* Order, *Icosandria.*

Melaleuca cajeputi. *Melaleuca leucadendron.* The systematic name of the plant which is said to afford the cajeput oil, *oleum cajeputæ, oleum Wittnebianum, oleum volatile melaleucæ, oleum cajeput.* Cajeput oil is of a green colour, perfectly limpid, and so completely volatile, that it evaporates entirely, leaving no residuum; its odour, when first imported, resembles that of a mixture of turpentine and camphor. It soon, however, acquires a peculiar fragrance. It is a very powerful medicine, and in high esteem in India and Germany, in the character of a general remedy in chronic and painful diseases. Taken into the stomach, in the dose of five or six drops, it heats and stimulates the whole system, proving, at the same time, a very certain diaphoretic, by which, probably, the good effects it is said to have in dropsies and intermittent fevers, are to be explained. For its efficacy in various convulsive and spasmodic complaints, it is highly esteemed. It has also been used, both internally and externally, with much advantage in several other obstinate disorders; as palsies, hypochondriacal and hysterical affections, deafness, defective vision, toothach, gout, rheumatism, &c. The dose is from two to six, or even twelve drops. The tree which affords this oil, by distillation of its leaves, generally was supposed to be the *melaleuca leucadendron* of Linnæus, but it appears from the specimens of the tree producing the true oil, sent home from India, by Christopher Smith, that it is another species, which is therefore named *Melaleuca cajeputi.*

Melamphy'llum. (*um, i.* n.; from μελας, black, and φυλλον, a leaf: so named from the blackness of its leaf.) *Melamphyllon.* See *Acanthus mollis.*

Melampo'dium. (*um, ii.* n.; from *Melampus,* the shepherd who first used it.) See *Helleborus niger.*

MELANAGO'GUS. (From μελας, black, and αγω, to expel.) That which purges off black bile.

Melanchlo'rus. Μελαγχλωρος. The Greek epithet of a troch, and a plaster: so named from their greenish black colour.

MELANCHO'LIA. (*a, æ.* f.; from μελας, black, and χολη, bile: because the ancients supposed that it proceeded from a redundance of black bile.) Melancholy. A form of insanity. See *Insanity.*

Melanic acid. (Μελας, black.) An acid principle discovered by Dr. Marcet in black urine.

Melanoma. See *Melanosis.*

Melano'piper. (*er, eris.* n.; from μελας, black, and πεπερι, pepper.) See *Piper nigrum.*

Melanorrhi'zon. (*um, i.* n.; from μελας, black, and ριζα, a root.) Black hellebore. See *Helleborus niger.*

MELANO'SIS. (From μελανοω, to become black.) A species of morbid deposit first described by Laennec. It is of the same colour as the pigmentum nigrum of the choroid membrane of the eye; and, according to Vauquelin and Berzelius, is a similar substance. Melanotic matter is found encysted in irregular masses; infiltrated in the texture of organs; deposited

on the surface of organs, in which case the matter is liquid; lastly, associated with other morbid formations in malignant tumours, as with cancer, fungus hæmatodes, &c. No organ seems to be exempt from this disease; but the cellular and adipose textures are most frequently affected with it. It is not uncommon in the lungs, and gives rise to a form of phthisis. This disease is called *black cancer* by Dupuytren, and *Melanoma* by Dr. Carswell. Melanosis, like cancer and fungus hæmatodes, is a malignant and incurable disease. The only chance of saving the patient is by extirpation or amputation, where these are practicable. Melanosis is more common in the horse than in man, and it is observed that white and gray horses are more subject to it than those of any other colour.

Melante'ria. (From μελας, black: so called because it is used for blacking leather.) Copperas or vitriol.

MELANTHELÆ'UM. (From μελανθιον, the name of a plant, and ελαιον, oil.) Oil expressed from the seeds of the *Nigella sativa*.

Mela'nthium. (From μελας, black, and ανθος, a flower, so named from its black seed.) See *Nigella sativa*.

ME'LAS. (*as, anos.* n.; μελας, black: so called from the colour of the spots.) *Vitiligo nigra. Morphæa nigra. Lepra maculosa nigra.* A scaly disease of the skin, the same with the lepra nigricans of Willan. See *Lepra*.

MELA'SMA. (From μελας, black.) *Melasmus.* A disease that appears not unfrequently upon the tibia of aged persons, in form of a livid black spot, which, in a day or two, degenerates into a very foul ulcer.

Melaspe'rmum. (*um, i.* n.; from μελας, black, and σπερμα, seed.) See *Nigella sativa*.

Melasses. See *Molasses.*

Melassic acid. *Acidum melassicum.* The name of the acid that is present in melasses or treacle, which is by most believed to be the acetic.

Me'lca. (Μελκα; from αμελγω, to milk.) Milk. A food used by the ancients, which, according to Gorrhæus, consisted of milk curdled with boiling vinegar.

MELEA'GRIS. (*is, idis.* f.; from *Meleager*, whose sisters were fabled to have been turned into this bird.) A genus of gallinaceous birds.

2. A species of *fritillaria*: so called because its flowers are spotted like a guinea-fowl.

Meleagris gallipova. The turkey, the flesh of which is light and nutritious, and in general esteem.

Melege'ta. *Meleguetta.* Grains of paradise. See *Amomum granum paradisi.*

Melei'os. (Μελειος; from *Melos*, the island whence it was brought.) A species of alum.

Meli. Μελι. Honey. See *Mel.*

Meliceria. See *Meliceris.*

MELI'CERIS. (*is, idis.* f.; from μελι, honey, and κερος, wax.) *Meliceria.* An encysted tumour, the contents of which resemble honey in consistence and appearance.

Meli'craton. (*um, i.* n.; from μελι, honey, and κερανννμι, to mix.) Wine impregnated with honey.

Meligei'on. (From μελι, honey.) A fœtid humour, discharged from ulcers, attended with a caries of the bone, of the consistence of honey.

Melilot. See *Melilotus.*

Melilo'tus. (*us, i.* f.; from μελι, honey, and λωτος, the lotus; so called from its smell, being like that of honey.) *Melilot.* See *Trifolium melilotus officinalis.*

Melime'lum. (From μελι, honey, and μηλον, an apple.) 1. A liquor prepared with quinces and honey.

2. A particular kind of apple.

Me'linum. (From μηλον, an apple.) The Greek epithet of a plaster: so called from its colour resembling that of an apple or quince.

Meliphy'llum. (*um, i.* n.; from μελι, honey, and φυλλον, a leaf: so called from the sweet smell of its leaf, or because bees gather honey from it.) See *Melissa.*

MELI'SSA. (*a, æ.* f.; from μελισσα, a bee; because bees gather honey from it.) The name of a genus of plants in the Linnæan system. Class, *Didynamia*; Order, *Gymnospermia.* Balm.

Melissa calamintha. The systematic name of the common calamint. *Calamintha. Calamintha vulgaris, Calcimintha officinarum. Melissa — pedunculis axillaribus, dichotomis, longitudine foliorum*, of Linnæus. This plant smells strongly like wild mint, though more agreeable; and is often used by the common people, in form of tea, against weakness of the stomach, flatulent colic, uterine obstructions, hysteria, &c.

Melissa citrina. See *Melissa officinalis.*

Melissa grandiflora. The systematic name of the mountain calamint. *Calamintha magno flore. Calamintha montana.* This plant has a moderately pungent taste, and a more agreeable aromatic smell than the common calamint, and appears to be more eligible as a stomachic.

Melissa nepeta. Field calamint. Spotted calamint. *Calamintha anglica. Calamintha pulegii odore. Nepeta agrestis.* It was formerly used as an aromatic.

Melissa officinalis. The systematic name of balm. *Citrago. Citraria. Melissophyllum. Mellitis. Cedronella. Apiastrum. Melissa citrina. Erotion.* A native of the southern parts of Europe, but very common in our gardens. In its recent state, it has a roughish aromatic taste, and a pleasant smell of the lemon kind. It was formerly much esteemed in nervous diseases, and very generally recommended in melancholic and hypochondriacal affections; but, in modern practice, it is only employed when prepared as tea, as a grateful diluent drink in fevers, &c.

Melissa turcica. See *Dracocephalum.*

Melissophy'llum. (*um, i.* n.; from μελισσα, baum, and φυλλον, a leaf.) A species of melittis, with leaves resembling balm. See *Melittis melissophyllum.*

Meliti'smus. (Μελιτισμος; from μελι, honey. The name of a linctus, of which honey was a ingredient.

MELI'TTIS. (*is, is.* f.; from μελιττα which, in the Attic dialect, is the name of bee; so that this word is, in fact, equivalent t

Melissa, and was adopted by Linnæus, therefore, for the bastard balm.) The name of a genus of plants. Class, *Didynamia;* Order, *Gymnospermia.* Bastard balm.

MELITTIS MELISSOPHYLLUM. The systematic name of the mountain balm, or nettle. *Melissophyllum.* This elegant plant is seldom used in the present day: it is said to be of service in uterine obstructions and calculous diseases.

MELITTO'MA. (From μελι, honey.) A confection made with honey.

MELIZO'MUM. (*um, i.* n. from μελι, honey, and ζωμος, broth.) Honey-broth. A drink prepared with honey.

MELLA'GO. (*o, inis.* f.; from *mel*, honey.) An ancient name for any medicine which has the consistence of honey.

MELLATE. *Mellas.* A compound of mellitic acid with a salifiable base.

Melliceris. See *Meliceris.*

Mellilo'tus. See *Melilotus.*

MELLI'NA. (*a, æ.* f.; from *mel*, honey.) Mead. A sweet drink prepared with honey.

MELLITIC ACID. *Acidum mellitieum.* Klaproth discovered in the mellite, or honey-stone, what he conceives to be a peculiar acid of the vegetable kind, combined with alumina. This acid is easily obtained by reducing the stone to powder, and boiling it in about seventy times its weight of water, when the acid will dissolve, and may be separated from the alumina by filtration.

ME'LO. 1. The melon. See *Cucumis melo.*

2. A disease of the eye, commonly called *staphyloma.*

MELOCA'RPUS. (From μηλον, an apple, and καρπος, fruit; from its resemblance to an apple.) The fruit of the aristolochia.

ME'LOE. The name of a genus of coleopterous insects.

MELOE PROSCARABÆUS. This insect, when touched, exudes from each joint of its legs an acrid fluid of an oily consistence and deep yellow colour. This fluid has been used in embrocations for chronic rheumatism, with great alleged success. It has also been employed internally in dropsy, and as a specific for hydrophobia. Frederick the Great purchased at a high price a nostrum against hydrophobia, of which these insects were a principal ingredient. They are a strong poison, causing suffocation, vomiting, and death.

MELOE VARIABILIS. This is said to have the same acrid properties as the above.

Meloe vesicatorius. See *Cantharis.*

Melolontha vitis. See *Cantharis vesicatoria.*

Melon. See *Cucumis melo.*

Melon, musk. See *Cucumis melo.*

Melon, water. See *Cucurbita citrullus.*

Melo'ngena. See *Solanum melongena.*

MELO'SIS. (Μηλωσις; from μηλη, a probe.) Exploration by means of a probe; a term frequently used by Hippocrates.

MELO'TIS. Μηλωτις. A little probe: also that particular instrument contrived to search or cleanse the ear with, commonly called *Auriscalpium.*

MELO'THRIA. (*a, æ.* f.; borrowed by Linnæus, in his *Hortus Cliffortianus*, from the μηλωθρον, of Dioscorides.) The name of a genus of plants. Class, *Triandria;* Order, *Monogynia.*

MELOTHRIA PENDULA. The systematic name of the small creeping cucumber plant. The American bryony. The inhabitants of the West Indies pickle the berries of this plant, and use them as we do capers.

Membrana. See *Membrane.*

Membrana adiposa. See *Adipose membrane.*

Membrana arachnoidea. See *Arachnoid membrane.*

Membrana cellulosa. See *Feature.*

MEMBRANA HYALOIDEA. The transparent membrane which encloses the vitreous humour of the eye.

MEMBRANA JACOBI. Jacob's membrane. A delicate membrane which invests the external surface of the retina, first described by Dr. Jacob of Dublin. See *Oculus.*

MEMBRANA NICTITANS. *Palpebra tertia. Palpebra interna.* A sort of third eyelid, which exists in most quadrupeds, and in birds. It is placed at the inner corner of the eye, and varies in shape and extent in different animals according to circumstances.

Membrana pinguidinosa. See *Adipose membrane.*

MEMBRANA PUPILLARIS. *Velum pupillæ.* A very delicate membrane of a thin and vascular texture, and an ash colour, arising from the internal margin of the iris, and totally covering the pupil in the fœtus till the seventh month, when it gradually disappears.

MEMBRANA RETICULARIS. Cellular membrane.

MEMBRANA RUYSCHIA'NA. The celebrated anatomist Ruysch discovered that the choroid membrane of the eye was composed of two laminæ. He gave the name of Ruyschiana to the internal lamina, leaving the old name of choroides to the external.

MEMBRANA SCHNEIDERIA'NA. The vascular membrane which lines the nose and its cavities, secretes the mucus, and affords a surface for the expansion of the olfactory nerves.

MEMBRANA TYMPANI. The membrane covering the cavity of the drum of the ear, and separating it from the meatus auditorius externus. See *Auris.*

MEMBRANA'CEUS. (From *membrana*, a membrane.) Membranaceous. A term in very general use in *Anatomy* and *Botany;* applied to ligaments, tunics, &c. and to leaves, pods, &c. of a thin and pliable texture; as the leaf of the *Magnolia purpurea.*

MEMBRANE. (*Membrana, æ.* f.; *quod membra tegat:* because it covers the limbs.) In *Anatomy*, a thin expanded substance, composed of cellular texture, the elastic fibres of which are so arranged and woven together, as to allow of great pliability. For the varieties of membrane, see *Texture.*

ME'MBRANOUS. (*Membranosus;* from *membrana.*) Of the nature of membrane.

MEMBRANO'LOGY. (*Membranologia, æ.* f.; from *membrana*, a membrane, and λογος, a discourse.) A hybrid term, applied to that

part of anatomy which treats of membranes. *Hymenology* is the proper term.

Membranotsus. See *Tensor vaginæ femoris.*

MEMO'RIÆ OS. The occipital bone has been so called, from an old notion that memory was seated in the occipital region.

MEMORY. *Memoria.* See *Mens.*

Menagogue. See *Emmenagogue.*

MENDO'SUS. (From *mendax*, counterfeit.) This term is used, by some, in the same sense as spurious or illegitimate; *Mendosæ costæ*, false or spurious ribs; *Mendosa sutura*, the squamous or bastard suture of the skull.

MENINGE'AL. *Meningeus*, relating to the *meninges* or membranes of the brain.

MENINGEAL ARTERIES. The arteries which creep on the external surface of the dura mater, are so called. The principal is the middle meningeal, *meningea media*, or spinous artery of the dura mater, which is a branch of the internal maxillary, and enters the cranium through the spinous foramen of the sphenoid bone. There are also two small arteries, called *anterior* and *posterior meningeal*, the former a branch of the internal carotid, and the latter of the vertebral.

MENINGI'TIS. (From μηνιγξ, a membrane of the brain.) Inflammation of the membranes of the brain or spinal cord. See *Encephalitis*, and *Spinal cord, diseases of the.*

MENINGO'PHYLAX. (From μηνιγξ, a membrane, and φυλασσω, to guard.) An instrument to guard the membranes of the brain, while the bone is cut, or rasped, after the operation of the trepan.

ME'NINX. (*x, gis.* f. Μηνιγξ.) Before the time of Galen, meninx was the common term of all the membranes of the body; afterwards it was appropriated to those of the brain. See *Dura* and *Pia mater.*

MENISPE'RMIC ACID. *Acidum menispermicum.* The seeds of *Menispermum cocculus* being macerated for twenty-four hours in five times their weight of water, first cold, and then boiling hot, yield an infusion, from which solution of subacetate of lead throws down a menispermate of lead. This is to be washed and drained, diffused through water, and decomposed by a current of sulphuretted hydrogen gas. The liquid, thus freed from lead, is to be deprived of sulphuretted hydrogen by heat, and then forms solution of menispermic acid. By repeated evaporations and solutions in alkohol, it loses its bitter taste, and becomes a purer acid. It occasions no precipitate with lime-water; with nitrate of barytes it yields a grey precipitate; with nitrate of silver, a deep yellow; and with sulphate of magnesia, a copious precipitate.

MENISPE'RMUM. (*um, i.* n.; from μηνη, the moon, and σπερμα, seed, in allusion to the crescent-like form of the seed.) The name of a genus of plants. Class, *Diœcia*; Order, *Dodecandria.* Moon-seed.

MENISPERMUM COCCULUS. The name of the plant the berries of which are well known by the name of *Cocculus indicus.* Indian berries, or Indian cockles. *Coccus indicus. Cocculus officinarium. Cocci orientales. Bacca piscatoria.* The berry, the produce of the *Menispermum — foliis cordatis, retusis, mucronatis; caule lacero,* of Linnæus, is rugous and kidney-shaped, and contains a white nucleus. It is brought from Malabar and the East Indies. It is poisonous if swallowed, bringing on nausea, fainting, and convulsions. The berries possess an inebriating quality, and are supposed to impart that power to most of the London porter. Whilst green, they are used by the Indians to catch fish, which they have the power of intoxicating, and killing. In the same manner they catch birds, making the berry into a paste, forming it into small seeds, and putting these in places where they frequent. A peculiar acid, called *menispermic*, is obtained from these berries.

By recent chemical analysis, this seed is found to contain, 1st, about one half of its weight of a concrete fixed oil; 2d, an albuminous vegeto-animal substance; 3d, a peculiar colouring matter; 4th, one fiftieth of *picrotoxia*; 5th, one half of its weight of fibrous matter; 6th, bimalate of lime and potash; 7th, sulphate of potash; 8th, muriate of potash; 9th, phosphate of lime; 10th, a little iron and silica. It is poisonous, and is frequently employed to intoxicate or poison fishes. The deleterious ingredient is the picrotoxia. See *Picrotoxia.*

Menispermum palmatum. See *Cocculus palmatus.*

MENORRHA'GIA. (*a, æ.* f.; from μηνια, the menses, and ῥηγνυμι, to break out.) *Hæmorrhagia uterina.* Flooding. An immoderate flow of the menses or blood from the uterus, characterised by pains in the back, loins, and belly, similar to those of labour, attended with a preternatural flux of blood from the vagina, or a discharge of menses, more copious than natural. Dr. Cullen distinguishes six species: —

1. *Menorrhagia rubra*; bloody, from women neither with child nor in childbirth.

2. *Menorrhagia alba*, serous; usually called the fluor albus. See *Leucorrhœa.*

3. *Menorrhagia vitiorum*, from some local disease; as ulcer, cancer, &c.

4. *Menorrhagia lochialis*, from women after delivery. See *Lochia.*

5. *Menorrhagia abortus.* See *Abortion.*

6. *Menorrhagia Nabothi*, a serous discharge from the vagina in pregnant women.

This disease seldom occurs before the age of puberty, and is often an attendant on pregnancy. It is in general a very dangerous disease, more particularly if it occur at the latter period, as it is then often so rapid and violent as to destroy the female in a very short time, where proper means are not soon adopted. Abortions often give rise to floodings, and at any period of pregnancy, but more usually before the fifth month than at any other time. Moles, in consequence of an imperfect conception becoming detached, often give rise to a considerable degree of hæmorrhage.

The causes which most frequently give rise to floodings, are violent exertions of strength, sudden surprises and frights, violent fits of passion, great uneasiness of mind, uncommon longing during pregnancy, over-fullness of blood, profuse evacuations, general weakness of the system

external injuries, as blows and bruises, and the death of the child, in consequence of which the placenta becomes partially or wholly detached from the uterus, leaving the mouths of the vessels of the latter, which anastomosed with those of the former, perfectly open. It is necessary to distinguish between an approaching miscarriage and a common flooding, which may be readily done by enquiring whether or not the hæmorrhage has proceeded from any evident cause, and whether it flows gently, or is accompanied with unusual pains. The former usually arises from some fright, surprise, or accident, and does not flow gently and regularly; but bursts out of a sudden, and again stops all at once, and also is attended with severe pains in the back and the bottom of the belly; whereas the latter is marked with no such occurrence. The further a woman is advanced in pregnancy, the greater will be the danger if floodings take place, as the mouths of the vessels are much enlarged during the last stage of pregnancy, and of course a quantity will be discharged in a short time.

The treatment must differ according to the particular causes of the disease, and according to the different states of constitution under which it occurs. The hæmorrhage is more frequently of the active kind, and requires the antiphlogistic plan to be strictly enforced, especially obviating the accumulation of heat in every way, giving cold acidulated drink, and using cold local applications; the patient must remain quiet in the horizontal posture; the diet be of the lightest and least stimulant description; and the bowels kept freely open by cooling laxatives, as the neutral salts, &c. It may be sometimes advisable in robust, plethoric females, particularly in the pregnant state, to take blood at an early period, especially where there is much pain, with a hard pulse; digitalis and antimonials in nauseating doses would also be proper under such circumstances. But where the discharge is rather of a passive character, tonic and astringent medicines ought to be given: rest and the horizontal position are equally necessary, costiveness must be obviated, and cold astringent applications may be materially useful, or the escape of the blood may be prevented mechanically. In alarming cases, perhaps, the most powerful internal remedy is the superacetate of lead, combined with opium; which latter is often indicated by the irritable state of the patient. A nourishing diet, with gentle exercise in a carriage, and the prudent use of the cold bath, may contribute to restore the patient, when the discharge has subsided.

Meno'stasis. (From μην, a month, and στασις, a cessation.) *Menostasia.* A suppression or retention of the menses.

Mens. (*s, tis.* f.; from μενος, *vis animi.*) See *Mind.*

Me'nsa. A table. The second lobe of the liver is so called by some old writers.

Me'nses. (From *mensis,* a month.) See *Menstruation.*

Menses, immoderate flow of the. See *Menorrhagia.*

Menses, interruption of. See *Amenorrhœa.*

Menses, retention of. See *Amenorrhœa.*

Mensis philosophicus. A philosophical, or chemical month. According to some, it is three days and nights; others say it is ten; and there are those who reckon it to be thirty or forty days.

MENSTRUATION. (*Menstruatio, onis.* f.; from *menses.*) From the uterus of every healthy woman who is not pregnant, or who does not give suck, there is a discharge of a red fluid, at certain periods, from the time of puberty to the approach of old age; and from the periods or returns of this discharge being monthly, it is called *menstruation;* and the discharge is called *catamenia,* and *menses.* There are several exceptions to this definition. It is said that some women never menstruate; some menstruate while they continue to give suck; and others are said to menstruate during pregnancy; some are said to menstruate in early infancy, and others in old age; but such discharges, Dr. Denman is of opinion, may with more propriety be called morbid, or symptomatic; and certainly the definition is generally true.

At whatever time of life this discharge comes on, a woman is said to be at puberty, though of this state it is a consequence, and not a cause. The early or late appearance of the menses may depend upon the climate, the constitution, the delicacy or hardness of living, and upon the manners of those with whom young women converse. In Greece, and other hot countries, girls begin to menstruate at eight, nine, and ten years of age, but, advancing to the northern climates, there is a gradual protraction of the time till we come to Lapland, where women do not menstruate till they arrive at maturer age, and then in small quantities, at long intervals, and sometimes only in the summer. But, if they do not menstruate according to the genius of the country, it is said they suffer equal inconveniences as in warmer climates, where the quantity discharged is much greater, and the periods shorter. In this country, girls begin to menstruate from the fourteenth to the eighteenth year of their age, and sometimes at a later period, without any signs of disease; but if they are luxuriously educated, sleeping upon down beds, and sitting in hot rooms, menstruation usually commences at a more early period.

Many changes in the constitution and appearance of women are produced at the time of their first beginning to menstruate. Their complexion is improved, their countenance is more expressive and animated, their attitudes graceful, and their conversation more intelligent and agreeable; the tone of their voice becomes more harmonious, their whole frame, but particularly their breasts, are expanded and enlarged, and their minds are no longer engaged in childish pursuits and amusements.

Some girls begin to menstruate without any preceding indisposition; but there are generally appearances or symptoms which indicate the change which is about to take place. These are usually more severe at the first than in the succeeding periods; and they are similar to those produced by uterine irritation from other causes,

as pains in the back and inferior extremities, complaints of the viscera, with various hysteric and nervous affections. These commence with the first disposition to menstruate, and continue till the discharge comes on, when they abate, or disappear, returning, however, with considerable violence in some women, at every period during life. The quantity of fluid discharged at each evacuation, depends upon the climate, constitution, and manner of living; but it varies in different women in the same climate, or in the same women at different periods: in this country it amounts to about five or six ounces.

There is also a great difference in the time required for the completion of each period of menstruation. In some women the discharge returns precisely to a day, or an hour, and in others there is a variation of several days, without inconvenience. In some it is finished in a few hours, and in others it continues from one to ten days; but the intermediate time, from three to six days, is most usual. Many have questioned whether this discharge arose from a mere rupture of vessels, or whether it was owing to a secretory action. There can be little doubt of the truth of the latter. The secretory organ is composed of the arterial vessels situated in the fundus of the uterus. The dissection of women, who have died during the time of their menstruating, proves this. Sometimes, though very rarely, women, during pregnancy, menstruate, and when this happens, the discharge takes place from the arterial vessels of the vagina. During pregnancy and lactation, when the person is in good health, the catamenia, for the most part, cease to flow. The quantity a female menstruates at each time is very various, depending on climate, and a variety of other circumstances. It is commonly in England from five to six ounces; it rarely exceeds eight. Its duration is from three to four, and sometimes, though rarely, five days. With respect to the nature of the discharge, it differs very much from pure blood: it never coagulates; but is sometimes grumous, and membranes like the decidua are formed in difficult menstruations: in some women it always smells rank and peculiar; in others it is inodorous. The use of this monthly secretion is said to be, to render the uterus fit for the conception and nutrition of the fœtus; therefore girls rarely conceive before the catamenia appear, and women rarely after their entire cessation; but very easily soon after menstruation.

There has been an opinion, probably derived from the Jewish legislature, afterwards adopted by the Arabian physicians, and credited in other countries, that the menstruous blood possesses some peculiar malignant properties. The severe regulations which have been made in some countries for the conduct of women at the time of menstruation; — the expression used, Isaiah, chap. xxx., and in Ezekiel; — the disposal of the blood discharged, or of any thing contaminated with it; — the complaints of women attributed to its retention; — and the effects enumerated by grave writers, indicate the most dreadful apprehensions of its baneful influence. Under peculiar circumstances of health, or states of the uterus, or in hot climates, if the evacuation be slowly made, the menstruous blood may become more acrimonious or offensive than the common mass, or any other secretion from it; but in this country and age no malignity is suspected: the menstruous woman mixes in society as at all other times, and there is no reason for thinking otherwise than that this discharge is of the most inoffensive nature.

At the approach of old age, women cease to menstruate; but the time of cessation is commonly regulated by the original early or late appearance of the menses. With those who began to menstruate at ten or twelve years of age, the discharge will often cease before they arrive at forty; but if the first appearance was protracted to sixteen or eighteen years of age, independently of disease, such women may continue to menstruate till they have passed the fiftieth, or even approach the sixtieth year of their age. But the most frequent time of the cessation of the menses in this country, is between the forty-fourth and forty-eighth year; after which women never bear children. By this constitutional regulation of the menses, the propagation of the species is in every country confined to the most vigorous part of life; and, had it been otherwise, children might have become parents, and old women might have had children, when they were unable to supply them with proper or sufficient nourishment.

MEN'STRUUM. (*um*, *i.* n.) Solvent. All liquors are so called which are used as dissolvents, or to extract the virtues of ingredients by infusion, decoction, &c. The principal *menstrua* made use of in *Pharmacy*, are water, vinous spirits, oils, and acid and alkaline liquors.

Menta. See *Mentula.*

MEN'TAGRA. (*a*, *æ.* f.; from *mentum*, the chin, and αγρα, a prey.) An eruption about the chin, forming a tenacious crust, like that on a scald head. See *Sycosis.*

ME'NTHA. (*a*, *æ.* f.; from *Minthe*, the harlot, who was changed into this herb.) Ἡδυσμος of the Greeks. The name of a genus of plants in the Linnæan system. Class, *Didynamia*; Order, *Gymnospermia.* Mint.

Mentha aquatica. *Menthastrum. Sisymbrium menthrastrum. Mentha Rotundifolia palustris.* Water-mint. This plant is frequent in moist meadows, marshes, and on the banks of rivers. It is less agreeable than the spearmint, and in taste bitterer and more pungent. It may be used with the same intentions as the spearmint, to which, however, it is much inferior.

Mentha cataria. See *Nepeta cataria.*

Mentha cervi'na. The systematic name of the hart's penny-royal. *Pulegium cervinum.* This plant possesses the virtues of penny-royal in a very great degree, but is remarkably unpleasant. It is seldom employed but by the country people, who substitute it for penny royal.

Mentha crispa. Curled leaved mint. This species of mentha has a strong and fragrant smell; its taste is warm, aromatic, and slightly bitter. In flatulence of the primæ viæ, hypochondriacal and hysterical affections, it is given with advantage.

MENTHA PIPERITA. The systematic and pharmacopœial name of peppermint. *Mentha piperitis. Mentha — floribus capitatis, foliis ovatis petiolatis, staminibus corolla brevioribus,* of Linnæus. The spontaneous growth of this plant is said to be peculiar to Britain. It has a more penetrating smell than any of the other mints; a strong pungent taste, glowing like pepper, sinking, as it were, into the tongue, and followed by a sense of coolness. The stomachic, antispasmodic, and carminative properties of peppermint, render it useful in flatulent colics, hysterical affections, retchings, and other dyspeptic symptoms, acting as a cordial, and often producing an immediate relief. Its officinal preparations are an essential oil, a simple water, and a spirit.

MENTHA PULEGIUM. The systematic name of the penny-royal. *Pulegium. Pulegium regale. Pulegium latifolium. Glechon.* Pudding-grass. *Mentha — floribus verticillatis, foliis ovatis obtusis subcrenatis, caulibus subteretibus prostrato-repentibus,* of Linnæus. This plant is considered as a carminative, stomachic, and emmenagogue, and is in very common use in hysterical disorders. The officinal preparations of penny-royal are, a simple water, a spirit, and an essential oil.

Mentha saracenica. See *Tanacetum.*

Mentha sativa. See *Mentha viridis.*

Mentha spicata. See *Mentha viridis.*

MENTHA VIRIDIS. *Mentha vulgaris. Mentha spicata.* Spearmint. *Mentha spicis oblongis, foliis lanceolatis nudis serratis sessilibus, staminibus corolla longioribus,* of Linnæus. This plant grows wild in many parts of England. It is not so warm to the taste as peppermint, but has a more agreeable flavour, and is therefore preferred for culinary purposes. Its medicinal qualities are similar to those of peppermint; but the different preparations of the former, though more pleasant, are perhaps less efficacious. The officinal preparations of spearmint are, an essential oil, a conserve, a simple water, and a spirit.

MENTHA'STRUM. (Diminutive of *mentha.*) See *Mentha aquatica.*

ME'NTULA. (*a, æ.* f.) *Mentula.* The penis, or the clitoris.

MENTU'LAGRA. (*a, æ.* f.; from *mentula*, the penis, and *αγρα*, a prey.) A disorder of the penis, induced by a contraction of the erector muscles, and causing impotence.

ME'NTUM. (*um, i.* n.) The chin.

MENYA'NTHES. (*es, eos.* or *is.* f.; from *μην*, a month, and *ανθος*, a flower, and so called because it generally keeps in flower about a month.) The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Monogynia.*

MENYANTHES TRIFOLIATA. The systematic name of the buck-bean. *Trifolium paludosum. Trifolium aquaticum. Trifolium fibrinum. Menyanthes.* Water-trefoil, or buck-bean. *Menyanthes — foliis ternatis,* of Linnæus. The whole plant is so extremely bitter, that in some countries it is used as a substitute for hops, in the preparation of malt liquor. It is sometimes employed in country places as an active eccoprotic bitter in hydropic and rheumatic affections. Cases are related of its good effects in some cutaneous diseases of the herpatic and seemingly cancerous kind.

MEPHI'TIC. *Mephiticus.* Applied to that which emits a noxious smell or vapour.

MEPHITIC ACID. The carbonic acid.

Mephitic air. See *Nitrogen.*

MEPHI'TIS. (*is, is.* f.; from *mephuhith*, a blast, Syr.) A poisonous exhalation.

MERCURIA'LIS. (*is, is.* f.; from *Mercurius*, its discoverer.) 1. The name of a genus of plants in the Linnæan system. Class, *Dioecia;* Order, *Enneandria.*

2. The pharmacopœial name of the French mercury. See *Mercurialis annua.*

MERCURIALIS ANNUA. The systematic name of the French mercury. The leaves of this plant have no remarkable smell, and very little taste. It is ranked among the emollient olaraceous herbs, and is said to be gently aperient. Its principal use has been in clysters.

Mercurialis montana. See *Mercurialis perennis.*

MERCURIALIS PERENNIS. The systematic name of what is also called *Cynocrambe, Brassica canina, Mercurialis sylvestris,* and *Mercurialis montana sylvestris.* The dog's mercury. A poisonous plant, very common in our hedges. It produces vomiting and purging, and the person then goes to sleep, from which he does not often awake.

Mercurialis sylvestris. See *Mercurialis perennis.*

MERCU'RIUS. (*us, i.* m.; so called from some supposed relation it bears to the planet of that name.) Mercury. See *Mercury.*

Mercurius acetatus. See *Hydrargyri acetas.*

Mercurius alkalizatus. See *Hydrargyrum cum cretâ.*

Mercurius calcinatus. See *Hydrargyri binoxidum.*

MERCURIUS CHEMICORUM. Quicksilver.

Mercurius cinnabarinus. See *Hydrargyri sulphuretum rubrum.*

Mercurius corrosivus. See *Hydrargyri bichloridum.*

Mercurius corrosivus ruber. See *Hydrargyri nitrico-oxydum.*

Mercurius corrosivus sublimatus. See *Hydrargyri bichloridum.*

Mercurius dulcis sublimatus. See *Hydrargyri chloridum.*

Mercurius emeticus flavus. See *Subsulphas hydrargyri flavus.*

Mercurius mortis. See *Algaroth.*

Mercurius præcipitatus albus. See *Hydrargyri ammonio-chloridum.*

Mercurius præcipitatus dulcis. See *Hydrargyri chloridum.*

Mercurius præcipitatus ruber. See *Hydrargyri nitrico-oxydum.*

Mercurius vitæ. See *Algaroth.*

MERCURY. *Hydrargyrum. Hydrargyrus. Mercurius.* A metal found in five different states in nature.

1. Native, — *native mercury,* adhering in small globules to the surface of cinnabar ores,

or scattered through the crevices or over the surfaces of different kinds of stones.

2. It is found united to silver, in the ore called *amalgam of silver*, or *native amalgam of silver*. This ore exhibits thin places, or grains; it sometimes crystallises in cubes, parallelopipeda, or pyramids. Its colour is of a silver white, or grey; its lustre is considerably metallic.

3. Combined with sulphur, it constitutes *native cinnabar*, or sulphuret of mercury. This ore is the most common. It is frequently found in veins, and sometimes crystallised in tetrahedra, or three-sided pyramids. Its colour is red. Its streak metallic.

4. Mercury oxidised, and united either to muriatic or sulphuric acid, forms the ore called *horn quicksilver*, or corneous mercury. These ores are, in general, semi-transparent, of a grey or white colour, sometimes crystallised, but more frequently in grains.

5. United to oxygen, it constitutes the ore called *native oxide of mercury*. Mercurial ores particularly abound in Spain, Hungary, China, and South America.

Properties. — Mercury, or quicksilver, is the only one of the metals that remains fluid at the ordinary temperature of the atmosphere; but when its temperature is reduced to 40 degrees below 0 on Fahrenheit's thermometer, it assumes a solid form. This is a degree of cold, however, that only occurs in high northern latitudes; in our climate, mercury cannot be exhibited in a solid state, but by means of artificial cold. When rendered solid, it possesses both ductility and malleability. It crystallises in octahedra, and contracts strongly during congelation. It is divisible into very small globules. It presents a convex appearance in vessels to which it has little attraction, but is concave in those to which it more strongly adheres. It becomes electric and phosphorescent by rubbing upon glass and by agitation in a vacuum. It is a very good conductor of caloric, of electricity, and of galvanism. The specific gravity of mercury is 13·563. Although fluid, its opacity is equal to that of any other metal, and its surface, when clean, has considerable lustre. Its colour is white, similar to silver. Exposed to the temperature of somewhat above 600° Fahr., it is volatilised. When agitated in the air, especially in contact with viscous fluids, it becomes converted into a black oxide. At a temperature nearly the same as that at which it boils, it absorbs about 14 or 15 per cent. of oxygen, and then becomes changed into a red crystallisable oxide, which is spontaneously reducible by light and caloric at a higher temperature. The greater number of the acids act upon mercury, or are at least capable of combining with its oxides. It combines with sulphur by trituration, but more intimately by heat. It is acted on by the alkaline sulphurets. It combines with many of the metals: these compounds are brittle or soft when the mercury is in large proportion. There is a slight union between mercury and phosphorus. It does not unite with carbon or the earths.

Method of obtaining Mercury. — Mercury may be obtained pure by decomposing cinnabar, by means of iron filings. For that purpose, take two parts of red sulphuret of mercury; reduce it to powder, and mix it with one of iron filings; put the mixture into a stone retort; direct the neck of it into a bottle, or receiver, filled with water, and apply heat. The mercury will then be obtained in a state of purity.

In this process, the sulphuret of mercury, which consists of sulphur and mercury, is heated in contact with iron, the sulphur quits the mercury and unites to the iron, and the mercury becomes disengaged; the residue in the retort is a sulphuret of iron.

Medical use. — This metal and its combinations are very important articles in the materia medica. There is scarcely a disease against which some of its preparations are not exhibited; and over the venereal disease it is believed by many practitioners to possess a specific power. It is considered to have first gained repute in curing this disease from the good effects it produced in eruptive diseases. In the times immediately following its first appearance, practitioners only attempted to employ this remedy with timorous caution; so that, of several of their formulæ, mercury scarcely composed a fourth part, and few cures were effected. On the other hand, empirics, who noticed the little efficacy of these small doses, ran into the opposite extreme, and exhibited mercury in such large quantities, and with such little care, that most of their patients became suddenly attacked with the most violent salivations, attended with dangerous consequences. From these two very opposite modes of practice, there originated such uncertainty respecting what could be expected from mercury, and such fears of the consequences which might result from its employment, that every plan was eagerly adopted which offered the least chance of cure without having recourse to this mineral. A medicine, however, so powerful, and whose salutary effects were seen by attentive practitioners, amid all its inconveniences, could not sink into oblivion. After efforts had been made to discover a substitute for it, and it was seen how little confidence those means deserved on which the highest praises had been lavished, the attempts to discover its utility were renewed. A medium was pursued, between the too timid methods of those physicians who had first administered it, and the inconsiderate boldness of the empirics. Thus the causes from which both parties failed were avoided; the character of the medicine was revived in a more durable way, and from this period its reputation has always been maintained.

It was about this epoch that mercury began to be internally given: hitherto it had only been externally employed, which was done in three manners. The first was in form of liniment, or ointment; the second as a plaster; and the third as a fumigation. Of the three methods just described, only the first is at present much in use, and even this is very much altered. Mercurial plasters are now only used as topical discutient applications to tumours and indurations. Fumigations, as anciently managed

were liable to many objections, particularly from its not being possible to regulate the quantity of mercury to be used, and from the effect of the vapour on the organs of respiration, frequently occasioning trembling, palsies, &c. Frictions with ointment have always been regarded as the most efficacious mode of administering mercury externally.'

Mercury is carried into the constitution in the same way as other substances, either by being absorbed from the surface of the body, or that of the alimentary canal. It cannot, however, in all cases be taken into the constitution in both ways, for sometimes the absorbents of the skin will not readily receive it; at least no effect is produced, either on the disease or constitution, from this mode of application. On the other hand, the internal absorbents will sometimes not take up the medicine, or, at least, no effect is produced either on the disease or constitution. In many persons the bowels can hardly bear mercury at all; and it should then be given in the mildest form possible, conjoined with such medicines as will lessen or correct its violent effects, although not its specific ones, on the constitution. When mercury can be introduced into the constitution by the external method, it is preferable to the internal plan; because the skin is not nearly so essential to life as the stomach, and is, therefore, in itself capable of bearing much more than the stomach. The constitution is also less injured. Many courses of mercury would kill the patient if the medicine were only given internally, because it proves hurtful to the stomach and intestines when given in any form, or joined with the greatest correctors.

Mercury has two effects: one as a stimulus on the constitution and particular parts, the other as a specific on a diseased action of the whole body, or of parts. The latter action can only be computed by the disease disappearing.

In giving mercury in the venereal disease, the first attention should be to the quantity, and its visible effects in a given time; which, when brought to a proper pitch, are only to be kept up, and the decline of the disease to be watched; for by this we judge of the invisible or specific effects of the medicine, and know what variation in the quantity may be necessary. The visible effects of mercury affect either the whole constitution, or some parts capable of secretion. In the first, it produces universal irritability, making it more susceptible of all impressions. It quickens the pulse, increases its hardness, and occasions a kind of temporary fever. In some constitutions it operates like a poison. In some it produces a hectic fever; but such effects commonly diminish on the patient becoming accustomed to the medicine.

Mercury often produces pains like those of rheumatism, and nodes of a scrofulous nature. The quantity of mercury necessary for the cure of any venereal complaint, must be proportioned to the violence of the disease. A small quantity used quickly, will have equal effects to those of a large one employed slowly; but if these effects are merely local, that is, upon the glands of the mouth, the constitution at large not being equally stimulated, the effects upon the diseased parts must be less, which may be known by the local disease not giving way in proportion to the effects of mercury on some particular part. If it be given in very small quantities, and increased gradually, so as to steal insensibly on the constitution, a vast quantity at a time may at length be thrown in, without any visible effects at all.

The constitution, or parts, are more susceptible of mercury at first than afterwards.

Mercury occasionally attacks the bowels, and causes violent purging, even of blood. This effect is remedied by intermitting the use of the medicine, and exhibiting opium. At other times, it is suddenly determined to the mouth, and produces inflammation, ulceration, and an excessive flow of saliva. To obtain relief in this circumstance, purgatives, nitre, sulphur, gum-arabic, lime-water, camphire, bark, sulphuret of potash, blisters, &c. have been advised. Pearson, however, does not place much confidence in the efficacy of such means; and the mercury being discontinued for a time, he recommends the patient to be freely exposed to cold air, with the occasional use of cathartics, mineral acids, Peruvian bark, and the assiduous application of astringent gargles. The most material objection (says Mr. Pearson) which I foresee against the method of treatment I have recommended, is the hazard to which the patient will be exposed of having the saliva suddenly checked, and of suffering some other disease in consequence of it.

The hasty suppression of a ptyalism may be followed by serious inconveniences, as violent pains, vomiting, and general convulsions.

Cold liquids taken into the stomach, or exposure of the body to the cold air, must be guarded against during a course of mercury. Should a suppression of the ptyalism take place, from any act of indiscretion, a quick introduction of mercury should be had recourse to, with the occasional use of the warm bath.

Mercury, when it falls on the mouth, sometimes produces inflammation, which now and then terminates in mortification. The ordinary operation of mercury does not permanently injure the constitution; but, occasionally, the impairment is very material; mercury may even produce local diseases, and retard the cure of chancres, buboes, and certain effects of the lues venerea, after the poison has been destroyed. Occasionally mercury acts on the system as a poison, quite unconnected with its agency as a remedy, and neither proportionate to the inflammation of the mouth, nor actual quantity of the mineral absorbed. Pearson has termed this morbid state of the system erethismus: it is characterised by great depression of strength, a sense of anxiety about the præcordia, irregular action of the heart, frequent sighing, trembling, a small, quick, and sometimes intermitting pulse, occasional vomiting, a pale contracted countenance, a sense of coldness; but the tongue is seldom furred, and neither the natural or vital functions are much disturbed. When this effect of mercury takes place, its use should be dis-

continued, whatever may be the stage, extent, or violence of the venereal disease. The patient should be exposed to a dry and cool air, in such a way as not to give fatigue; in this way, the patient will often recover in ten or fourteen days. In the early stage, the erethismus may often be averted by leaving off the mercury and giving camphire mixture with volatile alkali. Occasionally, the use of mercury brings on a peculiar eruption, which has received the names of mercurial rash, eczema mercuriale, lepra mercurialis, mercurial disease, and erythema mercuriale.

In order that mercury should act on the human body, it is necessary that it should be oxidised, or combined with an acid. The mercury contained in the unguentum hydrargyri, is an oxide. This, however, is the most simple and least combined form of all its preparations, and hence (says Mr. S. Cooper) it not only operates with more mildness on the system, but with more specific effect on the disease. Various salts of mercury operate more quickly, when given internally, than mercurial frictions; but few practitioners of the present day confide in the internal use of mercury alone, particularly when the venereal virus has produced effects in consequence of absorption. Rubbing in mercurial ointment is the mode of affecting the system with mercury in the present day; and, as a substitute for this mode of applying mercury, Mr. Abernethy recommends the mercurial fumigation, where the patient has not strength to rub in the ointment, and whose bowels will not bear the internal exhibition of it.

The preparations of mercury now in use are, —

1. *Hydrargyrum cum cretâ.*
2. *Hydrargyrum cum magnesiâ.*
3. *Hydrargyri oxydum.*
4. *Hydrargyri oxydum cinereum.*
5. *Hydrargyri binoxidum.*
6. *Hydrargyri persulphas.*
7. *Acetas hydrargyri.*
8. *Hydrargyri ammonio-chloridum.*
9. *Hydrargyrus purificatus.*
10. *Hydrargyri chloridum.*
11. *Hydrargyri bichloridum.*
12. *Liquor hydrargyri bichloridi.*
13. *Hydrargyri bicyanidum.*
14. *Hydrargyri iodidum.*
15. *Hydrargyri biniodidum.*
16. *Hydrargyri sulphuretum cum sulphure.*
17. *Hydrargyri bisulphuretum.*
18. *Subsulphas hydrargyri flavus.*
19. *Pilula hydrargyri.*
20. *Unguentum hydrargyri.*
21. *Unguentum hydrargyri nitratis.*

Mercury, dog's. See *Mercurialis.*

Mercury, English. See *Chenopodium.*

Mercury, French. See *Mercurialis.*

MEROBALNE'UM. (From μερος, a part, and βαλανειον, a bath.) A partial bath, as a hip-bath, bath for the feet, &c.

MEROCE'LE. (*e, es.* f.; from μερος, the thigh, and κηλη, a tumour.) A femoral hernia. See *Hernia.*

ME'ROS. (*Meros, i.* m.; pl. *mera.*) The thigh.

ME'RUS. Applied to several things in the same sense as genuine, or unadulterated; as *merum vinum*, undiluted wine.

MESARÆ'UM. (From μεσος, the middle, and αραια, the belly.) The mesentery.

MESEMBRYA'NTHEMUM. (*um, i.* n.; so called from the circumstance of its flowers expanding at mid-day.) The name of a large genus of plants. Class, *Icosandria;* Order, *Pentagynia.*

MESEMBRYANTHEMUM CRYSTA'LLINUM. The juice of this plant, in a dose of four spoonfuls every two hours, it is asserted, has removed an obstinate spasmodic affection of the neck of the bladder, which would not yield to other remedies.

MESENTERIC. *Mesentericus.* Belonging to the mesentery. See *Mesentery.*

MESENTERIC ARTERY. *Arteria mesenterica.* Two branches of the aorta in the abdomen are so called. The superior mesenteric is the second branch of the abdominal aorta; it is distributed upon the mesentery, and gives off the *ileo-colica, colica dextra,* and *colica media.* The inferior mesenteric is the fifth branch of the abdominal aorta; it sends off the *colica sinistra,* and its termination forms the *internal hæmorrhoidal.*

MESENTERIC GLANDS. *Glandulæ mesentericæ.* These are conglobate, and are situated here and there in the cellular membrane of the mesentery. The chyle from the intestines passes through these glands to the thoracic duct.

MESENTERIC NERVES. *Nervorum plexus mesentericus.* The superior, middle, and lower mesenteric plexuses of nerves are formed by the branches of the great intercostal nerves.

MESENTERIC VEINS. *Venæ mesentericæ.* They all run into one trunk, which evacuates its blood into the vena portæ. See *Vena portæ.*

MESENTERI'TIS. (*is, idis.* f.; from μεσεντεριον, the mesentery.) An inflammation of the mesentery. See *Peritonitis.*

ME'SENTERY. (*Mesenterium, ii.* n. from μεσος, the middle, and εντερον, an intestine.) A membrane in the cavity of the abdomen attached to the vertebræ of the loins and to which the intestines adhere. It is formed of a duplicature of the peritonæum, and contains within it adipose membrane, lacteals, lymphatics, lacteal glands, mesenteric arteries, veins, and nerves. Its use is to sustain the intestines in such a manner that they possess both mobility and firmness; to support and conduct with safety the blood-vessels, lacteals, and nerves; to fix the glands, and give an external coat to the intestines.

It consists of three parts: one uniting the small intestines, which is the proper mesentery; another connecting the colon, termed mesocolon; and a third, attached to the rectum, termed mesorectum. See *Mesocolon.*

MESERA'IC. *Meseraicus.* The same as mesenteric.

Mese'rion. See *Daphne mezereum.*

MESI'RE. A disorder of the liver, mentioned by Avicenna, accompanied with a sense of heaviness, tumour, inflammation, pungent pain, and blackness of the tongue.

Mesmerism. See *Magnetism, animal.*

Mesocæ'cum. The reflexion of the peritonæum which keeps the cæcum in its place.

MESOCO'LON. (*on, i.* m.; from *μεσος*, the middle, and *κωλον*, the colon.) The portion of the mesentery to which the colon is attached. The mesentery and mesocolon are the most important of all the productions of the peritonæum. In the pelvis, the peritonæum spreads itself shortly before the rectum. But where that intestine becomes loose, and forms the semilunar curve, the peritonæum there rises considerably from the middle iliac vessels, and region of the psoas muscle, double, and with a figure adapted for receiving the hollow colon. But above, on the left side, the colon is connected with almost no intermediate loose production to the peritonæum, spread upon the psoas muscle as high as the spleen, where this part of the peritonæum, which gave a coat to the colon, being extended under the spleen, receives and sustains that viscus in a hollow superior recess.

Afterwards the peritonæum, from the left kidney, from the interval between the kidneys, from the large vessels, and from the right kidney, emerges forwards under the pancreas, and forms a broad and sufficiently long continuous production, called the transverse mesocolon, which, like a partition, divides the upper part of the abdomen, containing the stomach, liver, spleen, and pancreas, from the lower part. The lower plate of this transverse production is continued singly from the right mesocolon to the left, and serves as an external coat to a pretty large portion of the liver, and descending part of the duodenum. But the upper plate, less simple in the course, departs from the lumbar peritonæum at the kidney, and region of the vena cava, farther to the right than the duodenum, to which it gives an external membrane, not quite to the valve of the pylorus; and beyond this intestine, and beyond the colon, it is joined with the lower plate, so that a large part of the duodenum lies within the cavity of the mesocolon. Afterwards, in the region of the liver, the mesocolon is inflected, and descending over the kidney of the same side much shorter, it includes the right of the colon, as far as the intestinum cæcum, which rests upon the iliac muscle and the appendix, which is provided with a peculiar long curved mesentery. There the mesocolon terminates, almost at the bifurcation of the aorta.

The whole of the mesocolon and of the mesentery is hollow, so that the air may be forced in between its two laminæ, in such a manner as to expand them into a bag. At the place where it sustains the colon, and also from part of the intestinum rectum, the mesocolon, continuous with the outer membrane of the intestine, forms itself into small slender bags, resembling the omentum, for the most part in pairs, with their loose extremities thicker and bifid, and capable of admitting air blown in between the plates of the mesocolon.

MESOCRA'NIUM. (*um, ii.* n.; from *μεσος*, the middle, and *κρανιον*, the skull.) The crown of the head, or vertex.

MESOGA'STRIUM. (*um, ii.* n.; from *μεσος*, the middle, and *γαστηρ*, the belly.) The umbilical region of the abdomen.

Mesoglo'ssus. (*us, i.* m.; from *μεσος*, the middle, and *γλωσσα*, the tongue.) The *genioglossus* muscle has been so called.

Mesome'ria. (From *μεσος*, the middle, and *μηρος*, the thigh.) The parts between the thighs. See *Meros.*

Mesompha'lium. (*um, ii.* n.; from *μεσος*, the middle, and *ομφαλος*, the navel.) The navel.

Meso'phryum. (*um, i.* n.; from *μεσος*, the middle, and *οφρυα*, the eyebrows.) The part between the eyebrows.

Mesopleu'rii. From *μεσος*, the middle, and *πλευρον*, a rib.) The intercostal muscles.

MESORE'CTUM. (*um, i.* n.; from *μεσος*, the middle, and *rectum*, the straight gut.) The portion of peritonæum which connects the rectum to the pelvis.

MESO'THENAR. (*ar, aris.* n.; from *μεσος*, the middle, and *θεναρ*, the palm of the hand.) The name given by Winslow to the muscular mass consisting of the abductor, and part of the short flexor of the thumb.

ME'SPILUS. (*us, i.* f. *Οτι εν τω μεσω πιλος*, because it has a cap or crown in the middle of it.) 1. The name of a genus of plants in the Linnæan system. Class, *Icosandria*; Order, *Pentagynia.*

2. The pharmacopœial name of the medlar. See *Mespilus germanica.*

Mespilus germanica. The medlar tree. The fruit, and also its seeds, have been used medicinally. The immature fruit is serviceable in checking diarrhœas; and the seeds were formerly esteemed in allaying the pain attendant on nephritic diseases.

META'BASIS. (From *μεταβαινω*, to digress.) *Metabole.* A change of remedy, of practice, or disease; or any change from one thing to another, either in the curative indications, or the symptoms of a distemper.

Meta'bole. See *Metabasis.*

METACARPAL. *Metacarpalis.* Belonging to the metacarpus.

Metacarpal bones. See *Metacarpus.*

METACA'RPUS. (From *μετα*, after, and *καρπος*, the wrist.) *Metacarpium.* That part of the hand which is between the wrist and the fingers. It has five longitudinal bones that are situated between the wrist and the fingers, which are distinguished into the metacarpal bone of the thumb, fore-finger, &c.

Metaco'ndylos. (From *μετα*, after, and *κονδυλος*, a knuckle.) The last joint of a finger, which contains the nail.

Metacore'sis. (*Μεταχωρησις*; from *μεταχωρεω*, to digress.) Synonymous with *metastasis.*

METALLU'RGIA. (*a, æ.* f.; from *μεταλλον*, a metal, and *εργον*, work.) *Metallurgy.* That part of chemistry which relates to the treatment of metals.

METAL. (*Metallum, i.* n. *Μεταλλον.*) Metals are the most numerous class of undecompounded chemical bodies, distinguished by the following general characters: —

1. They possess a peculiar lustre, which

continues in the streak, and in their smallest fragments.

2. They are fusible by heat; and in fusion retain their lustre and opacity.

3. They are all, except selenium, excellent conductors both of electricity and caloric.

4. Many of them may be extended under the hammer, and are called malleable; or under the rolling press, and are called laminable; or drawn into wire, and are called ductile. This capability of extension depends, in some measure, on a tenacity peculiar to the metals, and which exists in the different species with very different degrees of force.

5. When their saline combinations are electrised, the metals separate at the resino-electric or negative pole.

6. When exposed to the action of oxygen, chlorine, or iodine, at an elevated temperature, they generally take fire; and, combining with one or other of these three elementary dissolvents in definite proportions, are converted into earthy or saline-looking bodies, devoid of metallic lustre and ductility, called oxides, chlorides, or iodides.

7. They are capable of combining in their melted state with each other, in almost every proportion, constituting the important order of metallic alloys; in which the characteristic lustre and tenacity are preserved.

8. From this brilliancy and opacity conjointly, they reflect the greater part of the light which falls on their surface, and hence form excellent mirrors.

General Table of the Metals.

NAMES.	Sp. gr.	Precipitants.	Colour of Precipitates by			
			Ferroprussiate of potash.	Infusion of galls.	Hydrosulphurets.	Sulphuretted hydrogen.
1 Platinum	21·47	Mur. ammon.	0	0		Black met. powd.
2 Gold	19·30	Sulph. iron / Nitr. mer.	Yellowish-white	Green ; met.	Yellow	Yellow
3 Silver	10·45	Common salt	White	Yel.-brown	Black	Black
4 Palladium	11·8	Prus. Mercury	Deep orange		Blackish-brown	Black-brown
5 Mercury	13·6	Common salt / Heat	White passing to yellow	Orange-yellow	Brownish-black	Black
6 Copper	8·9	Iron	Red-brown	Brown	Black	Ditto
7 Iron	7·7	Succin. soda / with perox.	Blue or White passing to blue	Protox. 0. / Perox. black	Black	0
8 Tin	7·29	Cor. sublim.	White	0	Protox. black / Perox. yellow	Brown
9 Lead	11·35	Sulph. soda	Ditto	White	Black	Black
10 Nickel	8·4	Sulph. potash ?	Ditto	Grey-white	Ditto	0
11 Cadmium	8·6	Zinc	Ditto	0	Orange-yellow	Orange-yellow
12 Zinc	6·9	Alk. carbonates	Ditto	0	White	Yellowish-white
13 Bismuth	9·88	Water	Ditto	Yellow	Black-brown	Black-brown
14 Antimony	6·70	Water / Zinc	With dilute solutions white.	White from water	Orange	Orange
15 Manganese	8	Tartr. pot.	White	0	White	Milkiness
16 Cobalt	8·6	Alk. carbonates	Brown-yellow	Yellow-white	Black	0
17 Tellurium	6·115	Water / Antimony	0	Yellow	Blackish	
18 Arsenic	8·35 ? / 5·76 ?	Nitr. lead	White		Yellow	Yellow
19 Chromium	5·90	Ditto	Green	Brown	Green	
20 Molybdenum	8·6	Ditto ?	Brown	Deep brown		Brown
21 Tungsten	17·4	Mur. lime ?	Dilute acids			
22 Columbium	5·6 ?	Zinc or inf. galls	Olive	Orange	Chocolate	
23 Selenium	4·3 ?	Iron / Sulphite amm.				
24 Osmium	?	Mercury		Purple passing to deep blue		
25 Rhodium	10·65	Zinc ?	0		0	
26 Iridium	18·68	Do. ?	0	0		
27 Uranium	9·0	Ferropr. pot.	Brown-red	Chocolate	Brown-yellow	0
28 Titanium	?	Inf. galls.	Grass-green	Red-brown	Grass-green	0
29 Cerium	?	Oxal. amm.	Milk-white	0	White	0
30 Potassium	0·865	Mur. plat. / Tart. acid.	0	0	0	0
31 Sodium	0·972					
32 Lithium						
33 Calcium						
34 Barium						
35 Strontium						
36 Magnesium						
37 Yttrium						
38 Glucinum						
39 Aluminum						
40 Thorinum						
41 Zirconium						
42 Silicium						

The first 12 are malleable; and so are the 30th, 31st, and 32d, in their congealed state.

The first 16 yield oxides which are neutral salifiable bases.

The metals 17, 18, 19, 20, 21, 22, and 23, are acidifiable by combination with oxygen. Of the oxides of the rest, up to the 30th, little is known. The remaining metals form, with oxygen, the alkaline and earthy bases.

9. Most of them combine in definite proportions with sulphur and phosphorus, forming bodies frequently of a semi-metallic aspect; and others unite with hydrogen, carbon, and boron, giving rise to peculiar gaseous or solid compounds.

10. Many of the metals are capable of assuming, by particular management, crystalline forms; which are, for the most part, either cubes or octohedrons.

All the metals are found in the bowels of the earth, though sometimes they are on the surface. They are met with in different combinations with other matters, such as sulphur, oxygen, and acids; particularly with the carbonic, muriatic, sulphuric, and phosphoric acids. They are also found combined with each other, and sometimes, though rarely, in a pure metallic state, distinguishable by the naked eye.

In their different states of combination, they are said to be mineralised, and are called *ores*. The ores of metals are, for the most part, found in nature in mountainous districts; and always in such as form a continued chain. There are mountains which consist entirely of iron ore, but, in general, the metallic part of the mountain bears a very inconsiderable proportion to its bulk. Ores are also met with in the cavities or crevices of rocks, forming what are termed *veins*, which are more easily discovered in these situations than when they lie level in plains.

The metallic matter of ores is very generally incrusted, and intermingled with some earthy substance, different from the rock in which the vein is situated; which is termed its *matrix*. This, however, must not be confounded with the mineralising substance with which the metal is combined, such as sulphur, &c.

The relations of the metals to the various objects of chemistry, are so complex and diversified, as to render their classification a task of peculiar difficulty. — *Ure*.

METALLIC. Of the nature of a metal, or consisting of metal.

Metallic brush. An instrument recommended by Westring for the purpose of conveying galvanism to a part. It consists of a plate of ebony fitted to another of gold, in which are fixed threads of the same metal. The brush is connected with the voltaic pile.

Metallic tractors. Towards the close of the last century, Dr. Elisha Perkins, of Norwich in Connecticut, introduced a method of treating diseases by drawing over the affected part two small metallic rods, made not of the same, but of different metals. These rods were called *metallic tractors*, and the operation was called *tractoration*. The use of tractors has been called *Perkinism*, as that of animal magnetism has been called *Mesmerism*. It is almost needless to say, that metallic tractors have no operation but on the fancy of the patient.

METALLOID. (From μεταλλον, a metal, and ειδος, resemblance.) The metallic bases of the alkalis and earths were at first called *metalloids*, but they are now classed with the metals.

METAPE'DIUM. (*um*, *ii*. n.; from μετα, after, and πους, the foot.) See *Metatarsus*.

METAPHRENUM. (*um*, *i*. n.; from μετα, after, and φρενες, the diaphragm.) That part of the back which is behind the diaphragm.

Metaporopoie'sis. (From μετα, πορος, a duct, and ποιεω, to make.) A morbid change in the extremities of the capillary vessels.—*Galen*.

METAPTO'SIS. (From μεταπιπτω, to digress.) A change or transition of one disease into another.

META'STASIS. (From μεθιστημι, to change, to translate.) The translation of a disease from one part to another: as that of gout to the stomach, or of rheumatism to the heart.

Metasy'ncrisis. (From μετασυγκρινω, to transmute.) Synonymous with *metaporopoiesis*.

Metasyncri'tica. Medicines calculated to remove a *metasyncrisis*.

METATARSAL. *Metatarsalis*. Belonging to the metatarsus.

METATA'RSUS. (From μετα, after, and ταρσος, the tarsus.) That part of the foot between the tarsus and toes. It consists of five longitudinal bones, which are distinguished into the metatarsal bone of the great toe, fore-toe, &c.

Mete'lla nux. See *Strychnos nux vomica*.

METEORI'SMUS. (*us*, *i*. m.; μετεωρισμος; from μετεωριζω, to raise on high.) A distension of the abdomen, or any part of it, with wind.

ME'TEOROLITE. A meteoric stone. A peculiar solid compound of earthy and metallic matters, of singular aspect and composition, which occasionally descends from the atmosphere, usually from the bosom of a luminous meteor. Meteoric stones are of various sizes, weighing from a few ounces to several hundred weights. Their composition appears to be very uniform, consisting in oxide of iron, metallic iron, pyrites, chromium, nickel, and earthy matters. The nickel has sometimes, though rarely, been absent; but the chromium seems to be a constant component. It has been supposed, by some philosophers, that meteorolites are discharged from volcanoes in the moon; but their frequent connexion with the appearance of meteors, renders it much more probable that they are of atmospheric origin, although the process by which they may be formed is entirely unknown.

METHE'GLIN. A drink prepared from honey by fermentation. It is often confounded with mead. It is made in the following way: Honey, one hundred weight; boiling water, enough to fill a thirty-two gallon cask, or half a hogshead: stir it well for a day or two, then add yeast and ferment. Some boil the honey in water with one ounce of hops to each gallon, for an hour or two; but this boiling hinders its fermentation.

Methemeri'nus. (Μεθημερινος; from μετα, and ημερα, a day.) Synonymous with quotidian.

METHODIC MEDICINE. Medicine as practised by the methodic sect. See *Methodici*.

METHO'DICI. A sect of ancient physicians, of which Themison was the head. They

endeavoured to reduce medicine to exact rules, and supposed that all diseases arose from constriction or rigidity of the fibres.

Methodus medendi. See *Therapia.*

METO'PION. Μετωπιον. An ointment used by the ancients, which was thus called because it had galbanum in it, which was called *Metopium* by the Egyptians. — *Dioscorides.*

METOPO'SCOPY. (*Metoposcopia*; from μετωπον, the forehead, and σκοπεω, to explore.) Synonymous with physiognomy.

METO'PUM. (*um, i.* n. Μετωπον; from μετα, after, and ωψ, the eye.) The forehead.

ME'TRA. (*a, æ.* f.; from μητηρ, a mother.) The womb. See *Uterus.*

METRE'NCHYTA. (From μητρα, the womb, and εγχυω, to pour into.) Injections for the womb.

METRE'NCHYTES. (From μητρα, the womb, and εγχυω, to pour in.) A syringe to inject fluids into the womb.

METRI'TIS. (*is, idis.* f.; from μητρα, the womb.) Inflammation of the womb. See *Hysteritis.*

METROCE'LE. (*is, idis.* f.; from μητρα, the womb, and κηλη, a tumour.) A vaginal hernia. See *Hernia vaginalis.*

METROMA'NIA. (*a, æ.* f.) This term has been used in two acceptations. 1. Synonymously with nymphomania, in which case it is derived from μητρα, the womb, and μανια, madness. 2. Synonymously with *musomania*, a strange form of disease, in which the patient recites verses extempore. In the latter case it is derived from μουσα, a song, and μανια, madness. See *Musomania*, in the Supplement.

METROPTO'SIS. (*is, is.* f.; from μητρα, the uterus, and πιπτω, to fall down.) *Prolapsus uteri.* The descent of the uterus through the vagina.

METRORRHA'GIA. (*a, æ.* f.; from μητρα, the womb, and ῥηγνυμι, to break out.) This term has been applied to hæmorrhage from the womb; but improperly, as it would signify rupture of the womb itself, not the bursting of blood from it.

Meʹu. See *Æthusa meum.*

ME'UM. (*um, i.* n.; from μειον, μηον.) *Meu.* See *Æthusa meum.*

Meum athamanticum. See *Æthusa.*

Mexican seed. See *Ricinus.*

Mexican tea. See *Chenopodium ambrosioides.*

Mezereon. See *Mezereum.*

MEZE'REUM. (*um, ii.* n.; a word of some barbarous dialect.) *Mezereon.* See *Daphne.*

MEZEREUM ACETATUM. Thin slices of the bark of fresh mezereon root are to be steeped for twenty-four hours in common vinegar. Some practitioners direct this application to issues, when a discharge from them cannot be encouraged by the common means. It generally answers this purpose very effectually in the course of one night, the pea being removed, and a small portion of the bark applied over the opening. See *Daphne guidium.*

MIA'SMA. (*a, atis.* n. Μιασμα; from μιαινω, to infect.) Miasma is a Greek word, importing pollution, corruption, or defilement generally; and contagion a Latin word, importing the application of such miasm or corruption to the body by the medium of touch. There is hence, therefore, says Dr. Good, neither parallelism nor antagonism, in their respective significations; there is nothing that necessarily connects them, either disjunctively or conjunctively. Both equally apply to the animal and vegetable worlds, or to any source whatever of defilement or touch, and either may be predicated of the other; for we may speak correctly of the miasm of contagion, or of contagion produced by miasm.

MICROCOSMIC SALT. A triple salt of soda, ammonia, and phosphoric acid, obtained from urine, and much used in assays with the blowpipe.

MICROGLO'SSIA. (From μικρος, small, and γλωσσα, the tongue.) Congenital smallness of the tongue, which, according to Andral, is owing to an arrest of development, so that only the hyoid portion of the organ exists.

MICROLEUCONYMPHÆA. (*a, æ.* f.; from μικρος, small, λευκος, white, and νυμφαια, the water-lily.) The small white water-lily.

MICRONYMPHÆ'A. (*a, æ.* f.; from μικρος, small, and νυμφαια, the water-lily.) The small water-lily.

MICRO'RCHIS. (*is, idis.* m.; from μικρος, small and ορχις, a testicle.) One whose testicles are unusually small.

MICROSPHY'XIA. (*a, æ.* f.; from μικρος, small, and σφυξις, the pulse.) A debility and smallness of the pulse.

Midriff. See *Diaphragma.*

MIDWIFE. A woman who assists other women in child-birth.

MIDWIFERY. That branch of medicine which relates to the management of parturition, and the treatment of women after delivery. The term is a barbarous one, and should be banished from scientific language. See *Obstetrics.*

MIGRA'NA. A corruption of *hemicrania.*

Milfoil. See *Achillea millefolium.*

MILIA'RIA. (*a, æ.* f.; from *milium*, millet: so called because the small vesicles upon the skin resemble millet-seed.) Miliary fever. A disease characterised by fever; cold stage considerable; hot stage attended with anxiety and frequent sighing; perspiration of a strong and peculiar smell; eruption, preceded by a sense of pricking, first on the neck and breast, of small red pimples, which in two days become white vesicles, desquamate, and are succeeded by fresh pimples. Miliary fever has been observed to affect both sexes, and persons of all ages and constitutions: but females of a delicate habit are most liable to it, particularly in child-bed. Moist variable weather is most favourable to its appearance, and it occurs most usually in the spring and autumn. It is by some said to be a contagious disease, and has been known to prevail epidemically.

Very violent symptoms, such as coma, delirium, and convulsive fits, now and then attend miliary fever, in which case it is apt to prove fatal. A numerous eruption indicates more danger than a scanty one. The eruption being steady is to be considered as more favourable

than its frequently disappearing and coming out again, and it is more favourable when the places covered with the eruption appear swelled and stretched than when they remain flaccid. According to the severity of the symptoms, and depression of the system, is the danger greater. The fever, and other symptoms of miliaria, point out the necessity of supporting the patient through the disease: but every thing that heats and stimulates the skin should be avoided. The bowels are to be kept open, by cooling laxatives of sulphate of magnesia in infusion of roses, cascarilla, colomba, and the like, which, with cooling drinks, light bed-clothes, and a cool atmosphere, will, in most instances, effect a cure.

When miliary eruptions come out in other diseases, it is generally from continued sweating, and requires bark, wine, and acids.

MILI'OLUM. (Diminutive of *milium*, millet.) A small tumour on the eye-lids, resembling in size a millet-seed.

Militaris herba. The *Achillea millefolium* was so called on account of its supposed virtues as a vulnerary.

MI'LIUM. (*um*, *ii.* n.; from *mille*, a thousand. So named from the great number of the seeds.) 1. Millet. See *Panicum miliaceum*.

2. A very white and hard tubercle, in size and colour resembling a millet-seed. Its seat is immediately under the cuticle, so that, when pressed, the contents escape, appearing of an atheromatous nature.

Milium solis. See *Lithospermum*.

MILK. *Lac*. A fluid secreted by peculiar glands, in the breasts of the class of animals called *Mammalia*, for the nourishment of their young. It is of an opake white colour, a mild saccharine taste, and a slightly aromatic smell. It is separated immediately from the blood, in the breasts or udders of female animals. Mammiferous animals alone secrete milk. All other animals are destitute of the organs which secrete this fluid. Milk differs greatly in the several animals.

The following are the general *Properties* of animal milk: —

Milk separates spontaneously into *cream*, *cheese*, and *serum of milk*; and that sooner in a warm situation than in a cold one. In a greater temperature than that of the air, it acesces, and coagulates, but more easily and quicker by the addition of acid salts, or coagulating plants. *Lime-water* coagulates milk imperfectly. It is not coagulated by pure *alkali*; which indeed dissolves its caseous part. With carbonated *alkali* the caseous and cremoraceous parts of milk are changed into a liquid soap, which separates in the form of white flakes; such milk, by boiling, is changed to a yellow and then to a brown colour. Milk, distilled to dryness, gives out an insipid water, and leaves a whitish brown extract, called the *extract of milk*, which, dissolved in water, makes a milk of less value. Milk fresh drawn, and often agitated in a warm place, by degrees goes into the vinous fermentation, so that alkohol may be drawn over by distillation, which is called *spirit of milk*. It succeeds quicker if yeast be added to the milk. Mares' milk, as it contains the greatest quantity of the sugar of milk, is best calculated for vinous fermentation.

The *Principles* of milk are,

1. The *aroma*, or odorous volatile principle, which flies off from fresh-drawn milk in the form of visible vapour.

2. *Water*, which constitutes the greatest part of milk. From one pound to eleven ounces of water may be extracted by distillation. This water, with the sugar of milk, and some salts, forms the *serum of the milk*.

3. *Bland oil*, which, from its lightness, swims on the surface of milk after standing, and forms the *cream of milk*. See *Cream*.

4. *Cheese*, separated by coagulating milk, falls to the bottom of the vessel, and is the animal gluten.

5. *Sugar*, obtained from the serum of milk by evaporation. It unites the caseous and butyraceous part with the water of the milk.

6. Some *neutral salts*, as the muriate of potash and muriate of lime, which are accidental, not being found at all times, nor in every milk. These principles of milk differ widely in respect to quantity and quality, according to the diversity of the animals.

The *aroma* of the milk is of so different an odour, that persons accustomed to the smell, and those whose olfactory nerves are very sensible, can easily distinguish whether milk be that of the cow, goat, mare, ass, or human. The same may be said of the serum of the milk, which is properly the seat of the aroma. The *serum* of milk is thicker and more copious in the milk of the sheep and goat, than in that of the ass, mare, or human milk. The *butter* of goats' and cows' milk is easily separated, and will not again unite itself with the butter-milk. Sheep's butter is soft, and not of the consistence of that obtained from the cow and goat. Ass's, mare's, and human butter can only be separated in the form of cream; which cream, by the assistance of heat, is with ease again united to the milk from which it is separated. The *cheese* of cows' and goats' milk is solid and elastic, that from asses and mares soft, and that from sheep's milk almost as soft as gluten. It is never separated spontaneously from the milk of a woman, but only by art, and is wholly fluid. The *serum* abounds most in human, ass's, and mare's milk. The milk of the cow and goat contain less, and that of the sheep least of all. The *sugar* of milk is in the greatest quantity in the mare's and ass's, and somewhat less in the human milk.

When milk is left to spontaneous decomposition, at a due temperature, it is found to be capable of passing through the vinous, acetous, and putrefactive fermentations. It appears, however, probably on account of the small quantity of alkohol it affords, that the vinous fermentation lasts a very short time, and can scarcely be made to take place in every part of the fluid at once by the addition of any ferment. This seems to be the reason why the Tartars, who make a fermented liquor, or wine, from mare's milk, called *koumiss*, succeed by using large quantities at a time, and agitating it very frequently. They add as a ferment a sixth part

of water, and an eighth part of the sourest cow's milk they can get, or a smaller portion of koumiss already prepared: cover the vessel with a thick cloth, and let it stand in a moderate warmth for 24 hours; then beat it with a stick, to mix the thicker and thinner parts, which have separated: let it stand again 24 hours in a high narrow vessel, and repeat the beating, till the liquor is perfectly homogenous. This liquor will keep some months, in close vessels, and a cold place; but must be well mixed by beating or shaking every time it is used. They sometimes extract a spirit from it by distillation. The Arabs prepare a similar liquor by the name of *leban*, and the Turks by that of *yaourt*. Eton informs us, that, when properly prepared, it may be left to stand till it becomes quite dry; and in this state it is kept in bags, and mixed with water when wanted for use.

The saccharine substance, upon which the fermenting property of milk depends, is held in solution by the whey, which remains after the separation of the curd in making cheese. This is separated by evaporation in the large way, for pharmaceutical purposes, in various parts of Switzerland. When the whey has been evaporated by heat, to the consistence of honey, it is poured into proper moulds, and exposed to dry in the sun. If this crude sugar of milk be dissolved in water, clarified with whites of eggs, and evaporated to the consistence of syrup, white crystals, in the form of rhomboidal parallelopipedons, are obtained.

Sugar of milk has a faint saccharine taste, and is soluble in three or four parts of water. It yields by distillation the same products that other sugars do, only in somewhat different proportions. It is remarkable, however, that the empyreumatic oil has a smell resembling flowers of benzoin. It contains an acid frequently called the *saccholactic*; but, as it is common to all mucilaginous substances, it is more generally termed mucic. See *Mucic acid*.

Milk, according to Berzelius, consists of,

Water,	928·75
Curd, with a little cream,	28·00
Sugar of milk,	35·00
Muriate of potash,	1·70
Phosphate of potash,	0·25
Lactic acid, acetate of potash, with a trace of lactate of iron,	6·00
Earthy phosphates,	0·30
	1000·00

Milk, ass's. *Lac asininum.* Ass's milk has a very strong resemblance to human milk in colour, smell, and consistence. When left at rest for a sufficient time, a cream forms upon its surface, but by no means in such abundance as on women's milk. Ass's milk differs from cow's milk, in its cream being less abundant and more insipid; in its containing less curd; and in its possessing a greater proportion of sugar.

Milk, cow's. *Lac vaccinum. Lac bubulum.* The milk of women, mares, and asses, nearly agree in their qualities; that of cows, goats, and sheep, possess properties rather different. Of these, cow's milk approaches nearest to that yielded by the female breast, but differs very much in respect to the aroma; it contains a larger proportion of cream and cheese, and less serum, than human milk; also less sugar than mare's or ass's milk.

Cow's milk forms a very essential part of human sustenance, being adapted to every state and age of the body; but particularly to infants, after being weaned.

Milk, ewe's. *Lac ovillum.* This resembles almost precisely that of the cow; its cream, however, is more abundant, and yields a butter, not so consistent as cow's milk butter. It makes excellent cheese.

Milk, goat's. *Lac caprinum. Lac capræ.* It resembles cow's, except in its greater consistence; like that milk, it throws up abundance of cream, from which butter is easily obtained.

Milk, human. *Lac humanum.* The white, sweetish fluid secreted by the glandular structure of the breasts of women. The *secretory organ* is constituted by the great conglomerate glands situated in the fat of both breasts, above the musculus pectoralis major. From each acinus composing a mammary gland, there arises a radicle of a *lactiferous* or *galactiferous* duct. All these canals, gradually converging, are terminated, without anastomosis, in the papillæ of the breasts, by many orifices, which, upon pressure, pour forth milk. The smell of fresh-drawn milk is peculiar, animal, oleaginous, and not disagreeable; its taste sweetish, soft, bland, agreeable. Its specific gravity is greater than that of water, but it is lighter than blood; hence it swims on it. Its colour is white and opake. In consistence it is oily and aqueous. A drop put on the nail flows slowly down, if the milk be good.

Time of secretion. — The milk most frequently begins to be secreted in the last months of pregnancy: but on the third day after delivery, a serous milk, called *colostrum*, is separated; and at length pure milk is secreted so copiously in the breasts, that from its abundance it often spontaneously drops from the nipples.

If the secretion of milk be daily promoted by suckling an infant, it often continues many years, unless a fresh pregnancy supervene. The quantity usually secreted within twenty-four hours, by nurses, is various, according as the nourishment may be more or less chylous. It appears that not more than two pounds of milk are obtained from five or six pounds of meat. But there have been known nurses who have given from their breasts two, or even more than three pounds, in addition to that which their child has sucked. That the origin of the milk is derived from chyle carried with the blood of the mammary arteries into the glandular fabric of the breasts, is evident from its more copious secretion a little after meals; its diminished secretion from fasting; from the smell and taste of food or medicines in the secreted milk; and, lastly, from its occasional spontaneous *acescence*; for humours perfectly animal become putrid.

The *milk of a woman* varies, — 1. In respect

to *food*. The milk of a woman who suckles, living upon vegeto-animal food, never acesces nor coagulates spontaneously, although exposed for many weeks to the heat of a furnace. But it evaporates gradually in an open vessel, and the last drop continues thin, sweet, and bland. The reason appears to be that the caseous and cremoraceous parts cohere together by means of the sugar, more intimately than in the milk of animals, and do not so easily separate: hence its acescence is prevented. It does *acesce*, if mixed or boiled with vinegar, juice of lemons, supertartrate of potash, dilute sulphuric acid, or with the human stomach. It is *coagulated* by the acid of salt, or nitre, and by an acid gastric juice of the infant; for infants often vomit up the coagulated milk of the nurse. The milk of a suckling woman, who lives upon vegetable food only, like cow's milk, easily and of its own accord acesces, and is acted upon by all coagulated substances, like the milk of animals. 2. In respect *of the time of digestion*. During the first hours of digestion the chyle is crude, and the milk less subacted; but towards the twelfth hour after eating, the chyle is changed into blood, and then the milk becomes yellowish and nauseous, and is spit out by the infant. Hence the best time for giving suck is about the fourth or fifth hour after meals. 3. In respect *of the time after delivery*. The milk secreted immediately after delivery, which is called *colostrum*, is very thin and serous. In the course of a few days, however, it becomes thicker and more pure, and the longer a nurse suckles, the thicker the milk is secreted; thus new-born infants cannot retain the milk of a nurse who has given suck for a twelvemonth, on account of its spissitude. 4. In respect *of food and medicines*. Thus, if a nurse eat garlic, the milk becomes highly impregnated with its odour, and is disagreeable. If she indulge too freely in the use of wine or beer, the infant becomes ill. From giving a purging medicine to a nurse, the child also is purged; and, lastly, children affected with tormina of the bowels, arising from acids, are often cured by giving the nurse animal food. 5. In respect *of the affections of the mind*. Much less is believed on this subject now than formerly; but we are told of infants being seized with convulsions from sucking mothers irritated by anger; and also that infants at the breast in a short time pine away, if the nurse be afflicted with grievous care. 6. In respect of *certain functions of the mother*: thus we are told that coition and menstruation sometimes affect the health of the child.

The uses of the mother's milk are, — 1. It affords the natural *aliment* to the new-born infant. Those children are the strongest who are nourished the longest by the mother's milk. 2. The *colostrum* is said to have a laxative power, and to purge off the meconium; for which opinion, however, there seems to be no sufficient foundation. 3. *Lactation* defends the mother from a dangerous reflux of the milk into the blood, whence lacteal metastasis, and leucorrhœa, are so frequent in lying-in women who do not give suck. The motion of the milk also being so hastened through the breast by the sucking of the child, prevents the very common induration of the breast, which arises in consequence of the milk being stagnated. 4. Adults may live upon milk, unless they have been accustomed to the drinking of wine. For all nations, the Japanese alone excepted, use milk, and many live upon it principally.

Milk, mare's. *Lac equinum*. This is thinner than that of the cow, but scarcely so thin as human milk. Its cream cannot be converted into butter by agitation. The whey contains sugar.

Milk-blotch. The *crusta lactea*, a species of porrigo. See *Porrigo larvalis*.

Milk-fever. See *Febris lactea*.

Milk-teeth. See *Teeth*.

Milk-thistle. See *Carduus marianus*.

Milk-vetch. See *Astragalus excapus*.

Milk-wort. See *Polygala vulgaris*.

Milk-wort, rattle-snake root. See *Polygala senega*.

Millefo'lium. (*um, ii.* n.; from *mille*, a thousand, and *folium*, a leaf: named from its numerous leaves.) Milfoil. See *Achillea millefolium*.

Millemo'rbia. (From *mille*, a thousand, and *morbus*, a disease: so called from its use in many diseases.) See *Scrofularia nodosa*.

MI'LLEPES. (*es, edis.* m.; from *mille*, a thousand, and *pes*, a foot: named from its numerous feet.) Several insects are known under this name, and have been confounded with each other in the pharmacopœias, in which they once had a place. These insects are, 1. The *Armadillo vulgaris*, or *officinalis*, commonly called the pill millepede; 2. The *porcellio scaber*, formerly prized in Scotland, and called in the vernacular language of that country *sclater*; 3. The *oniscus asellus*, or common wood-louse. All these insects have had medicinal virtues ascribed to them. See their respective titles.

Millet. See *Panicum miliaceum*.

Millet, Indian. See *Panicum italicum*.

Mill-mountain. See *Linum*.

Milpho'sis. Μιλφωσις. A baldness of the eyebrows.

Mi'ltos. Μιλτος. Red lead.

Miltwaste. See *Asplenium ceterach*.

Milzade'lla. (From *milza*, the Spanish for the spleen: so called from its supposed virtues in diseases of the spleen.) See *Angelica archangelica*.

MIMO'SA. (*a, æ.* f.; from *mimus*, an actor, or imitator, meaning a sort of imitative plant, the motions of which mimic the sensibility of animal life.) The name of a genus of plants in the Linnæan system. Class, *Polygamia*; Order, *Monœcia*. The sensitive plant.

Mimosa catechu. See *Acacia catechu*.

Mimosa nilotica. See *Acacia vera*.

Mimosa senegal. See *Acacia vera*.

MIND. This term, like *life*, is used in two acceptations: in the one, it signifies the phenomena arising from the exercise of the power of thinking; in the other, it signifies the thinking power or principle itself. Some philosophers regard the phenomena of thought merely as a function of the brain, just as the secretion of bile is a function of the liver: these philoso-

phers are called *materialists.* The greater part of reasoning men, however, have always regarded the mental phenomena as appertaining to a distinct, incorporeal being, called the *soul*, connected with the body by some relation which is beyond our comprehension. Without pretending to dogmatise on the subject, we humbly conceive, that the latter will ever be the opinion of persons endowed with common sense, and not mystified by false philosophy. However this may be, it is manifest that man possesses certain faculties, which are called *sensation*, *association*, *memory*, *imagination*, *judgment*, and *will*.

1. *Sensation* gives rise to simple ideas.

2. *Association* combines simple ideas, to form those which are complex.

3. *Memory* is the power by which ideas are retained, and recalled in the order in which they were originally impressed on the mind.

4. *Imagination* combines the ideas of things which have been actually perceived, to form a whole which has no existence but in the mind: thus we may imagine a landscape, such as we never saw, but it will be composed of the ideas of objects which we have seen.

5. *Judgment* is the power by which we compare the ideas acquired by the exercise of the other faculties, determine their relations, and discern truth from falsehood.

6. *Will* is the power which determines to action, and rules those functions which are called *voluntary*, as opposed to those which are involuntary: thus we are able, by the exercise of the will, to apply the mind to the investigation of any subject; but we cannot, by an effort of the will, prevent certain ideas from rising in the mind at the sight of certain objects: again, we can by an effort of the will, throw any of the voluntary muscles into action, or restrain that action, but we cannot by any effort of the will, accelerate or restrain the action of the heart.

Perception has been sometimes considered as a primary power of the mind, but an attentive consideration of the subject will easily show, that it results from the combined exercise of sensation and association.

It is evident that the greater part of our ideas are originally derived from sensation, and according to the doctrine of Locke, all our ideas whatsoever are derived from the ideas of sensation, and the minds own operation upon them. Other metaphysicians again contend that certain ideas are innate, and present to the mind from its first existence. This is too large a question to be discussed here.

A very singular view of the constitution of the mind, and one in many respects much opposed to the opinions of the greatest metaphysicians, has been promulgated by Drs. Gall and Spurzheim. See *Phrenology*.

MINERAL. (*Mineralis*; from *mina*, a mine of metal.) The term mineral is properly applied to any inorganic substance, but it is frequently applied also, to substances found in the bowels of the earth, which in reality are of organic origin, as some kinds of coal, &c.

MINERAL KINGDOM. That department of nature, which includes minerals or inorganic bodies.

Mineral acids. See *Acid, mineral.*

Mineral caoutchouc. See *Caoutchouc.*

MINERAL OIL. Petroleum.

MINERAL PITCH. Bitumen.

Mineral poisons. See *Poisons.*

Mineral salts. See *Salts.*

MINERAL WATERS. *Aquæ minerales.* Natural springs of water are found in many places which are so strongly impregnated with substances foreign to the common composition of water, that they exert some marked action on the animal economy, and are hence unfit for the ordinary purpose of drinking, while they are, in many instances, medicines of great power and utility.

Mineral waters may be arranged into the five following classes: — 1. ACIDULOUS WATERS; 2. ALKALINE WATERS; 3. CHALYBEATE WATERS; 4. SULPHUREOUS WATERS; 5. SALINE WATERS. We shall first give a sketch of the physical characters and medicinal properties of each of these classes; and then describe the method of determining the ingredients, and their proportions, contained in any mineral water.

1. ACIDULOUS WATERS owe their properties chiefly to carbonic acid. They sparkle when drawn from the spring, or when poured into a glass; have an acidulous taste, and become vapid when exposed to the air. Besides free carbonic acid, on the presence of which these qualities depend, acidulous waters contain generally also carbonates of soda, bicarbonates of lime, of magnesia, and of iron.

They may be divided into *thermal*, or *warm acidulous waters*, and *cold acidulous waters*; the temperature of the former, however, does not exceed 72°, while that of the latter is generally about 55°.

Of this kind are the springs of Cleves in Germany; Granshaw in Ireland; Languac, Upper Loire; Orston, and Thorston, Nottinghamshire; Passi, near Paris; Stonefield, Lincolnshire; Tonstein in Germany; Wisbaden, in Nassau; and Bandola in Italy; but the most celebrated springs of this class are Pyrmont, Seltzer, Spa, and Carlsbad. They are tonic and diuretic; and in large doses produce a sensible degree of exhilaration. They all afford a grateful and moderate stimulus to the stomach; but the Pyrmont and Spa, containing carbonate of iron, are especially useful in all cases of impaired digestion; while those which contain alkaline carbonates, as the Carlsbad and Seltzer, are more particularly employed as palliatives in calculous affections.

2. ALKALINE WATERS owe their properties to a free alkali, or one very slightly carbonated. They display an alkaline reaction. Alkaline springs are not very numerous.

3. CHALYBEATE WATERS owe their properties to iron, in combination generally with carbonic acid; and as this is usually in excess, they are often acidulous as well as chalybeate. The metal is found also in the form of a sulphate, but the instances of this are very rare.

Chalybeate waters have a styptic or inky taste; they are, when newly drawn, transparent, and strike a black with tincture of nut-galls; but an ochry sediment, a hydrated peroxide of iron,

soon falls, and the water loses its taste. If the iron be in the state of sulphate and hydrochlorate, however, no sediment falls; and the black colour is produced by the above test, even after the water has been boiled and filtered. Chalybeate springs are very numerous. On the Continent are those of Abcourt, St. Germain; Aumale and Forges, near Rouen; Bologne; Buzot, in Spain (*a warm spring*); Caroline baths, Bohemia; Daswild, Baden, Germany; Driburgin, Westphalia; Naptha, in Russia; Nisdeniee, in Germany; Swalbach, in Nassau, Ponges, Hassenfratz; Perekop, Russia; Sarepta, Russia; Scolliensis, Switzerland; Suchalda, Hungary; and Vechy, near Moulins. There are many chalybeates in Great Britain; as, for instance, those of Arbroath and Peterhead in Scotland; Ashton, in Wiltshire; Balemore, Worcestershire; Ballycastle, Antrim; Ballynahinch, Down; Ballyspellan, Kilkenny; Bandon, Cork; Bromley, Kent; Brownstown, Kilkenny; Castlecomer, Kilkenny; Castleconnel, Limerick; Castlemain, Kerry; Coalcullen, Kilkenny; Corville, Tipperary; Coventry; Crosstown, Waterford; Doneraile, Cork; Dunnard, Dublin; Galway; Garry-hill, Carlow; Haigh, Lancashire; Hampstead; Hartfell, Scotland; Islington; Kilcoran, Clare; Kilagee, Down; Kirby, Westmoreland; Lancaster; Llandridad, Wales; Luz, Essex; Listerlin, Kilkenny; Milltown, Mallay, Clare; Newton Stuart, Tyrone; Oakfield, Cavan; Phœnix Park, Dublin; Scool, Clare; Shadwell, near London; Somersham, Huntingdonshire; and many others: but the most celebrated are Tunbridge, Brighton, and Peterhead; the Cheltenham spring also contains carbonate of iron; but on account of the large proportion of saline matter, and its strong purgative properties, it is not ranked in this class. The Spa springs also belong to this class.

Chalybeate waters are powerful tonics, and are employed in dyspepsia, scrofulous affections, cancer, amenorrhœa, chlorosis, and the other diseases of debility for which the artificial preparations of iron are used. Much of the benefit derived from the use of chalybeate waters depends on the extreme division of the metallic salts they contain, as well as the vehicle in which it is held in solution; while at the same time their operation is much modified by the carbonic acid by which the iron is suspended. When the water is a carbonated chalybeate, it should be drunk the moment it is drawn from the spring; but the same precaution is not necessary with a water containing sulphate of iron.

4. Sulphureous Waters derive their character chiefly from sulphuretted hydrogen gas; which in some of them is uncombined, while in others it is united with lime or an alkali. They are transparent when newly drawn from the spring, and have the fœtid odour of rotten eggs, which is gradually lost by exposure to the air, and the water becomes turbid. When they are strongly impregnated with the gas, they redden infusion of litmus; and, even in a weak state, they blacken silver and lead. Besides containing sulphuretted hydrogen gas, they are not unfrequently, also, impregnated with carbonic acid. They generally contain chloride of magnesium, or other saline matters, which modify their powers as a remedy.

The most important sulphureous springs in this island are those of Kilburn, Harrowgate, and Moffat; but the following are also of some note: — Annaduff, Leitrim; Askeron in Yorkshire; Broughton in Yorkshire; Clonmel, Tipperary; Codsalwood, Staffordshire; Derrylister, Cavan; Drumasnane, Leitrim; Dudley, Worcestershire; Kedlistone, Derbyshire; Killashen, Fermanagh; Loansbury, Yorkshire; Maudley, Lancashire; Nottington, Dorsetshire; Ripon, Yorkshire; Shapmoor, Westmoreland; Wardrew, Northumberland; and Wirksworth in Derbyshire. On the Continent, Aix-la-Chapelle; Barège; Baden; Baia, Italy; Dux, Bayonne; Ems, Germany; Montmorency, near Paris; Motte, near Grenoble; Viterbo, in Italy; and St. Amands, near Valenciennes; which are resorted to chiefly for the cure of cutaneous eruptions, and are applied locally as well as drunk. They are slightly sudorific and diuretic, and are apt to occasion in some patients headach of short duration, directly they are drunk. They are also employed for curing visceral and scrofulous obstructions, torpor of the intestines, and some dyspeptic and hypochondriacal cases.

5. Saline Mineral Waters owe their properties altogether to saline compounds. Those which predominate, and give their character to the waters of this class, are either,

1. Salts, the basis of which is lime;
2. Chlorides of sodium and magnesium;
3. Sulphate of magnesia;
4. Alkaline carbonates; particularly carbonate of soda.

They are mostly purgative, the powers of the salts they contain being very much increased by the large proportion of water in which they are exhibited. The most celebrated saline springs are those of Cheltenham, Leamington, Bristol, Kinalton, Pancras near London, Scarborough, Sydenham, and Thirsk in Yorkshire, in England; Pitcaithly, in Scotland; and Seidlitz on the Continent. They are employed in diseases which require continued and moderate intestinal evacuations; such as dyspepsia, hypochondriasis, chronic hepitatis, jaundice, and strumous swellings. They are more grateful to the stomach when carbonic acid also is present; and when they contain iron, as in the case of the Cheltenham spring, their tonic powers, combined with their purgative qualities, render them still more useful in dyspeptic complaints and amenorrhœa.

To this class the water of the ocean belongs. The quantity of saline matter Sea Water contains varies in different latitudes; thus, between 10° and 20° it is rather more than $\frac{1}{24}$; at the equator it is $\frac{1}{25}$; and at 57° north it is only $\frac{1}{27}$. The saline ingredients, in 10·000 parts of sea-water, according to the last analysis of Dr. Murray, are chloride of sodium, 220·01; chloride of calcium, 7·84; chloride of magnesium, 42.08; and sulphate of soda, 33·16. When brought up from a great depth, its taste is purely saline; but when taken from the surface it is disagreeably bitter, owing, perhaps to the animal and vegetable matters suspended in it. Its specific gravity varies from 1·0269 to 1·0285; and it does

Table of the more celebrated Mineral Waters, showing the Ingredients contained in each Water.

	Names of the Springs.	Quantity of water.	Gases.				Carbonates of				Sulphates of				Chlorides of				Silica.	Ammonia.	Resin.	Temperature.
			Oxygen.	Carb. acid.	Sulp. Hydr.	Nitrogen.	Soda.	Lime.	Magnesia	Iron.	Soda.	Lime.	Magnesia.	Iron.	Soda.	Lime.	Magnesia.	Potash.				
		grains.	cubic inch.	cubic inch.	cubic inch.	cubic inch.	grains.	grains.	grains.	grains.	grains.	grains.	grains.	grains.	grains.	grains.	grains.	grains.	grains.	grains.	grs.	
Acidulous.	Seltzer	8949	·435	13·068	—	—	5·22	78·3	6·32	—	—	—	—	—	13·74	—	—	—	—	—	—	cold
	Pyrmont	8950	—	19·6	—	—	—	4·3	9·8	0·70	—	8·38	5·44	—	1·7	—	—	—	—	—	—	cold
	Spa	8933	—	9·8	—	—	1·85	1·85	4·35	0·70	—	—	—	—	0·21	—	—	—	—	—	—	cold
	Carlsbad	25320	—	50·	—	—	38·5	12·5	—	0·1¼	63·75	—	—	—	32·5	—	—	—	2·25	—	—	165°
	Kilburn	178240	—	84·	36·	—	—	2·4	1·25	0·3	18·2	13·0	91·0	—	6·0	0·6	2·8	—	—	—	6·	cold
	Ponges	7291	—	30·	—	—	16·	12·	1·2	2·5	—	—	—	—	2·5	—	—	—	0·5	—	—	cold
	St. Parize	7291	—	22·	—	—	—	11·5	0·5	—	—	13·	—	—	—	—	—	—	—	—	—	cold
	Ems	7291	—	51·	—	—	10·75	1·14	0·8	0·626	6·	—	—	—	7·654	—	—	0·04	60·4	—	—	117°
	Marienbad	7291	—	125·	—	—	8·26	4·13	3·05	0·175	39·72	—	—	—	12·45	—	—	—	0·88	0·75	—	cold
	Anschowitz	7291	—	119·56	—	—	6·197	4·016	2·4	0·4	22·544	—	—	—	8·926	—	—	—	0·669	—	—	cold
	Eger	7291	—	154·	—	—	5·00	—	0·600	0·359	25·50	—	—	—	7·96	—	—	—	0·558	—	—	cold
	Geilnau	7291	—	163·3	—	—	6·32	2·97	2·170	—	0·042	—	—	—	0·543	—	—	—	0·26	0·247	—	cold
Sulphureous.	Harrowgate	103643	—	8·	19·	7·	—	18·5	5·5	—	—	—	0·5	—	615·5	3·	9·1	—	—	—	—	cold
	Moffat	103643	—	1·	16·	4·	—	—	—	—	—	—	—	—	3·6	—	—	—	—	—	—	cold
	Aix-la-Chapelle	8940	—	—	12·06	—	—	15·25	5·89	—	—	—	—	—	6·21	—	—	—	—	—	—	143°
	Enghien	92160	—	18·5	70·	—	—	21·4	1·35	—	—	33·3	5·8	—	2·4	—	8·0	—	—	—	—	cold
	Cheltenham Sulphur Spring	7291	—	—	1·5	—	—	—	—	0·3	23·5	1·2	5·	—	35·	—	—	—	—	—	—	cold
Saline.	Seidlitz	58309	—	8·	—	—	—	6·7	21·	—	—	41·1	14·44	—	—	—	36·5	—	—	—	—	cold
	Cheltenham	103643	—	30·3	3·	12·	—	—	12·5	5·	48·0	40·	—	—	5·	—	12·5	—	—	—	—	cold
	Plombieres	—	—	—	—	—	4·4	1·	—	—	4·7	—	—	—	0·5	—	—	—	2·6	—	—	cold
	Leamington	5760	—	—	—	—	—	—	—	—	7·83	—	—	—	53·75	28·64	20·16	—	—	—	—	74°
	Bristol	7291	—	5·5	—	—	—	1·5	—	—	—	1·5	1·5	—	0·5	—	1·	—	—	—	—	cold
	Scarborough	7291	—	—	—	—	—	—	—	—	—	20·	9·	—	—	—	—	—	—	—	—	cold
	Barege	7291	—	—	—	—	2·5	—	—	—	—	—	—	—	0·5	—	—	—	—	—	—	120°
Chalybeate.	Tunbridge	103643	1·4	10·6	—	4·	—	—	—	1·	—	1·25	—	—	0·5	—	2·25	—	—	—	—	cold
	Toplitz	92516	—	—	—	—	13·5	16·5	—	32·5	—	—	—	—	61·3	28·5	—	—	—	15·1	—	cold
	Brighton	7291	—	2·2	—	—	—	—	—	1·4	—	4·	—	—	3·	—	0·75	0·14	—	—	—	cold
Calcareous, nearly pure.	Bath	15360	—	2·4	—	—	—	1·6	—	·004	3·	18·	—	—	6·6	—	—	—	0·4	—	—	114°
	Buxton	58309	—	—	—	2·	—	10·5	—	—	—	2·5	—	—	1·5	—	—	—	—	—	—	82°
	Matlock	58309	—	—	—	—	—	—	—	—	—	min. por.	—	—	—	—	—	—	—	—	—	96°
	Malvern	58309	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	cold

not freeze until cooled down to 28·5° Fahrenheit. Its medicinal properties are the same as those of the saline purging waters, but more powerful; and as a bath, its efficacy is much superior to that of fresh water.

The general effects of mineral waters are modified by temperature, whether they be taken internally, or be externally applied. In some springs, as those of Bath, Matlock, Buxton, Wildbad in Germany, Bagnols in France, Bonnes in the Lower Pyrenees, Borset near Aix-la-Chapelle, Canteries in the Upper Pyrenees, Digne in the Lower Alps, Klintschysela in Russia, Lucca in Italy, Plombieres in Lorraine, and Pontigibault in France: their virtues depend almost altogether on temperature; and in others, as Malvern, which has been found to contain scarcely any foreign matter, the simple diluent power of the pure water seems to produce the benefit that results from drinking them. Some of the good effects of all of them, however, must be allowed to proceed from change of scene, relaxation from business, amusement, temperance, and regular hours; and in these circumstances, the drinking the waters at the springs possesses advantages which cannot be obtained from artificial waters, however excellent the imitations may be; nor even from the natural waters, when bottled and conveyed to a distance from the springs. — *A. T. Thomson.*

Some more particular account of the principal mineral waters will be found under their respective heads.

For the method of analysing mineral waters we must refer the reader to the treatises on chemistry.

Mineralis. See *Mineral.*

MINERALISED. Metallic substances are said to be mineralised when deprived of their usual properties by combination with some other substance.

MINERA'LOGY. (*Mineralogia, æ,* f.; from *mineralis,* a mineral, and λογος, a discourse.) That part of natural history which relates to minerals. See *Mineral.*

MINIA'TUS. A dull red: applied, in *Natural History,* to designate colour. See *Colour.*

Minim. See *Minimum.*

MI'NIMUM. (*um, i.* n.) A minim. The sixtieth part of a fluid drachm. An important change has been adopted in the London Pharmacopœia, for the mensuration of liquids, and the division of the wine pint, to insure accuracy in the measurement of quantities of liquids below one drachm. The number of drops contained in one drachm has been assumed to be sixty; and taking water as a standard, this number, though by no means accurate, would still be sufficient for ordinary purposes; but when other liquids of less specific gravity are used, a much larger number is required to fill the same measure, as of proof spirit, 140 drops are required to equal the bulk of 60 of water, dropped from the same vessel. If, therefore, in the composition of medicines, measures suited to the standard of water were used occasionally only, and it was generally assumed that 60 drops were equal to one fluid drachm, and one fluid drachm was substituted for 60 drops prescribed, twice the dose intended would be given. There are further objections to the use of drops; that their bulk is influenced by the quantity of liquid contained in the bottle from which they fall, by the thickness of the lip, and even by the inequalities on the surface of the lip of the same bottle; that volatile liquids, to which this mode is most commonly applied, are thus exposed with extensive surfaces, and their evaporation promoted; and, on all these accounts, the adoption of some more accurate, convenient, and uniform measure became necessary. The subdivision of the wine pint has, therefore, been extended to the sixtieth part of the fluid drachm, which is termed minim; and glass measures, expressive of such subdivision, have been adopted by the college.

MI'NIUM. Red oxide of lead. See *Lead.*

MINIUM GRÆCORUM. Native cinnabar.

Mint. See *Mentha.*

Mint, pepper. See *Mentha piperita.*

Mint, water. See *Mentha aquatica.*

Miscarriage. See *Abortion.*

MISERE'RE MEI. (*Have compassion on me;* so named from its torments.) Ileus was formerly so called. See *Ileac passion.*

Mislaw. See *Musa paradisiaca.*

Misletoe. See *Viscum.*

MISTU'RA. (*a, æ.* f.) A mixture. A fluid composed of two or more ingredients. It is mostly contracted in prescriptions thus, *mist.* e. g. —*f. mist.*, which means, let a mixture be made.

MISTURA ACACIÆ. (*Mucilago acaciæ.*) Mixture of acacia. Mucilage of gum-arabic. Take of acacia powdered, ten ounces; boiling water, a pint. Rub the acacia with the water gradually poured in till it be dissolved. For its uses, see *Acacia vera.*

MISTURA AMMONIACI. *Lac ammoniaci.* Mixture of ammoniacum. Take of ammoniacum, five drachms; water, a pint; rub the ammoniacum with the water gradually added, till they are thoroughly mixed.

MISTURA AMYGDALÆ. *Lac amygdalæ.* Almond mixture, or emulsion. Take of almond confection, two ounces and a half; distilled water, a pint; gradually add the water to the almond confection, rubbing them together, till properly mixed; then strain.

MISTURA ASSAFŒTIDÆ. *Lac assafœtidæ.* Mixture of assafœtida. Take of assafœtida, five drachms; water, a pint: rub the assafœtida with the water, gradually poured in till they are thoroughly mixed.

MISTURA CAMPHORÆ. Camphor mixture. Camphor julep. Take of camphor, half a drachm; rectified spirit, ten minims; water, a pint. First rub the camphor with the spirit, then with the water gradually added, and strain the liquor. A very elegant preparation of camphor, for delicate stomachs, and those which cannot bear it in substance, as an antispasmodic and nervine. There is a great loss of camphor in making it as directed by the Pharmacopœia. Water can only take up a certain quantity. For its virtues, see *Laurus camphora.*

MISTURA CASCARILLÆ COMPOSITA. Compound mixture of cascarilla. Take of infusion of cascarilla, seventeen fluid ounces: vinegar of squill, a fluid ounce; compound tincture of camphor, two fluid ounces. Mix.

A tonic and expectorant preparation. It is useful in chronic bronchitis, &c. Dose ℥j. or ℥jss. twice or three times a day.

Mistura cornu usti. *Decoctum album.* Decoction of hartshorn. Take of hartshorn, burnt and prepared, two ounces; acacia gum, powdered, an ounce; water, three pints. Boil down to two pints, constantly stirring, and strain. This is a much weaker absorbent than the mistura cretæ, but is much more agreeable to most people. It forms an excellent drink in fevers attended with diarrhœa, and acidities of the primæ viæ.

Mistura cretæ. Chalk mixture. Cretaceous mixture. Take of prepared chalk, half an ounce; sugar, three drachms; mixture of acacia, a fluid ounce and a half; cinnamon water, eighteen fluid ounces. Mix. A very useful and pleasant form of administering chalk as an astringent and antacid. It is particularly calculated for children, in whom it allays the many deranged actions of the primæ viæ, which are produced by acidities. Dose, one ounce to three, frequently. See *Creta*, and *Carbonas calcis*.

Mistura ferri composita. — Take of myrrh, powdered, two drachms; carbonate of potash, a drachm; rose water, eighteen fluid ounces; sulphate of iron, powdered, two scruples and a half; spirit of nutmeg, a fluid ounce; sugar, two drachms. Rub together the myrrh, the spirit of nutmeg, and the carbonate of potash; and, during the trituration, add gradually, first, the rose-water with the sugar, and last, the sulphate of iron. Pour the mixture immediately into a proper glass vessel, and stop it. This preparation is the celebrated mixture of Dr. Griffiths. A chemical decomposition is effected in forming this mixture, a subcarbonate of iron is formed, and a sulphate of potash.

Mistura gentianæ composita. Compound mixture of gentian. Take of compound infusion of gentian, twelve fluid ounces; compound infusion of senna, six fluid ounces; compound tincture of cardamom, two fluid ounces. Mix. A laxative and tonic mixture introduced into the London Pharmacopœia of 1836. Dose ℥j. to ℥js.

Mistura guai'aci. — Take of guaiacum resin, three drachms; sugar, half an ounce; mixture of acacia, half an ounce; cinnamon water, nineteen fluid ounces. Rub the guaiacum with the sugar, then with the mixture of acacia; and, when they are mixed, pour on the cinnamon-water gradually, rubbing them together. For its virtues, see *Guaiacum*.

Mistura moschi. — Take of musk, acacia, powdered, sugar, of each three drachms; rose-water, a pint. Rub the musk first with the sugar, then with the gum, and add the rose-water by degrees. An excellent antispasmodic. It is by far the best form for administering musk, when boluses cannot be swallowed. Dose, one ounce to three frequently.

Mite. See *Acarus*.

Mithridate mustard. See *Thlaspi campestre*.

MITHRIDA'TIUM. (*um, ii.* n.; so named after Mithridates, king of Pontus and Bithynia, who, experiencing the virtues of the simples separately, afterwards combined them.) *Mithridate. Confectio Damocratis. Theriaca Andromachi. Theriaca Veneti.* This composition originally consisted of but few ingredients; viz. twenty leaves of rue, two walnuts, two figs, and a little salt: of this we are informed that Mithridates took a dose every morning, to guard himself against the effects of poison. It was afterwards altered, and the number of ingredients increased to sixty-one. In this more complex form it contained opium, and was in effect an aromatic opiate, of which the opiate confection of the present day may be considered as a simplification. The mithridate is still prepared in some shops, and is occasionally, though very rarely, prescribed. The dose is from ten grains to a scruple.

Mitral valve. *Valvula mitralis.* The valve at the orifice of the left ventricle of the heart: so named from its resemblance to a mitre.

Mi'va. An old name of marmalade.

Mixed fever. See *Synochus*.

MIXTURE. 1. In *Pharmacy.* See *Mistura*.

2. In *Chemistry*, mixture should be distinguished from solution: in the former, the aggregate particles can again be separated by mechanical means, and the proportion of the different particles determined; but, in solution, no mechanical power whatsoever can separate them.

Mochli'a. (Μοχλια. Μοχλεια from μοχλευω, to use a lever.) The reduction of a dislocated bone.

MODI'OLUS. (*us, i.* m.; diminutive of *modius*, a measure.) The central pillar of the cochlea of the ear. See *Auris*.

Mofette. See *Nitrogene*.

MOFFAT. A village situated about fifty-six miles south-west of Edinburgh. It affords a cold sulphureous water, of a very simple composition: when first drawn, it appears rather milky and bluish; the smell is exactly similar to that of Harrowgate: the taste is sulphureous and saline, without any thing bitter. It sparkles somewhat on being poured from one glass into another.

According to Dr. Garnett's analysis, a wine gallon of Moffat water contains thirty-six grains of muriate of soda, five cubic inches of carbonic acid gas, four of azotic gas, and ten of sulphuretted hydrogen, making altogether nineteen cubic inches of gas. Moffat water, therefore, is not very dissimilar in composition to the sulphureous springs of Harrowgate, with which also it agrees in medicinal efficacy. If kept in an open vessel it soon loses the hepatic gas, on which depends the greatest part of its medicinal power. The only sensible effect of this water is that of increasing the flow of urine; when it purges, it appears to do so rather from the excessive dose than from its mineral ingredients. This water appears to be useful chiefly in cutaneous eruptions, and, as an external application at an increased temperature, scrofula in its early stage, is thought to be alleviated by it. It is also used as an external application to irritable ulcers, and is recommended in dyspepsia, and in torpid states of the alimentary canal.

Mogila'lia. (From μογις, with difficulty, and λαλεω, to speak.) A difficulty of articulating certain syllables.

MO'LA. (*a, æ.* f.) 1. The knee-pan: so named because it is shaped like a millstone.

2. A mole, or shapeless mass of flesh in the uterus. See *Mole.*

Molares dentes. (*Molarisa*, millstone.) The grinding-teeth. See *Teeth.*

Molares glandulæ. Molar glands. Two salivary glands situated on each side of the mouth, between the masseter and buccinator muscles, the excretory ducts of which open near the last dens molaris.

Molasses. See *Saccharum officinale.*

Mo'lassic. See *Melassic.*

Moldavica. See *Dracocephalum.*

MOLE. *Mola.* By this term authors have intended to describe different productions of, or excretions from, the uterus.

By some it has been used to signify every kind of fleshy substance, particularly those which are properly called polypi; by others, those only which are the consequence of imperfect conception, or when the ovum is in a morbid or decayed state; and by many, which is the most popular opinion, every coagulum of blood which continues long enough in the uterus to assume somewhat of an organised form, and to have only the fibrous part, as it has been called, remaining, is denominated a mole. There is surely much impropriety, says Dr. Denman, in including, under one general name, appearances so contrary, and substances so different.

1. For an account of the first kind, see *Polypus.*

2. Of the second kind, which has been defined as an *ovum deforme*, as it is the consequence of conception, it might more justly be arranged under the class of monsters; for, though it has the appearance of a shapeless mass of flesh, if examined carefully with a knife, various parts of a child may be discovered, lying together in apparent confusion, but in actual regularity. The pedicle also, by which it is connected to the uterus, is not of a fleshy texture, like that of the polypus, but has a regular series of vessels like the umbilical cord, and there is likewise a placenta and membranes containing water. The symptoms attending the formation, growth, and expulsion of this apparently confused mass from the uterus, correspond with those of a well-formed child.

3. With respect to the third sort of mole, an incision into its substance will discover its true nature; for, although the external surface appears at the first view to be organised flesh, the internal part is composed merely of coagulated blood. As substances of this kind, which mostly occur after delivery, would always be expelled by the action of the uterus, there seems to be no reason for a particular inquiry, if popular opinion had not annexed the idea of mischief to them, and attributed their formation or continuance in the uterus to the negligence or misconduct of the practitioner. Hence the persuasion arose of the necessity of extracting all the coagula of blood out of the uterus, immediately after the expulsion of the placenta, or of giving medicines to force them away; but abundant experience has proved that the retention of such coagula is not, under any circumstances, productive of danger, and that they are most safely expelled by the action of the uterus, though at very different periods after their formation.

MO'LECULE. The smallest particles into which a mass can be conceived to be divided. Molecules are distinguished into integrant and constituent. *Integrant molecules* are the smallest particles into which a simple body can be conceived to be divided, or the smallest particles into which a compound body can be conceived to be divided without being resolved into its elements. *Constituent molecules* are the molecules of each element which form an integrant molecule of a compound.

MOLENDINA'CEOUS. (From *mola*, a mill.) Like a windmill; resembling the sails of a windmill. Applied in botany to seeds which have many wings. See *Ala.*

Molle. See *Schinus molle.*

MOLLIFICA'TIO. (Low Latin.) Softening. Relaxation. Applied to a palsy arising from relaxation of the muscles.

MOLLI'TIES. (*es, ei.* f.; from *mollis*, soft.) A softness: applied to bones, nails, and other parts.

Mollities ossium. See *Malacosteon.*

Mollities unguium. A preternatural softness of the nails: it often accompanies chlorosis.

MOLLU'SCA. (From *mollis*, soft.) A great division of invertebral animals. See *Animal kingdom.*

MOLLUSCUM. A tubercular disease of the skin, characterised by the appearance of numerous tubercles, of slow growth and little sensibility, and of various sizes, from that of a vetch to that of a pigeon's egg. These contain an atheromatous matter, and are of various forms, some being sessile, globular, or flattish, and some attached by a neck, and pendulous. The growth of the tubercles is apparently unconnected with any constitutional disorder: they show no tendency to inflammation or ulceration; but continue through life, having apparently no natural termination. A very extraordinary instance of this cutaneous deformity, which occurred in a poor man, who was living in good health at Muhlberg, in 1793, and whose body, face, and extremities were thickly studded with these atheromatous tubercles, has been described by Professor Tilesius, who has given portraits of the naked patient in three positions, in a pamphlet, edited at Leipsic, in that year, by Professor Ludwig.

Molluccense lignum. See *Croton.*

MO'LY. Μολυ. The specific name of a species of garlic, the *Allium moly* of Linnæus. An herb called *moly* is celebrated by Homer as the means by which Ulysses resisted the enchantments of Circe. What herb the moly of Homer was, can now only be matter of conjecture.

MOLY'BDATE. *Molybdas.* A salt formed by the union of the molybdic acid with salifiable bases: thus, *molybdate of antimony*, &c.

MOLYBDE'NUM. (*um, i.* n.; from μολυβδος, lead.) *Molybdena.* A metal which exists mineralised by sulphur in the ore, called *sulphuret of molybdena.* This ore, which is very scarce, is so similar in several of its properties to plumbago, that they were long considered as

varieties of the same substance: and it is the only one known which contains this metal, for the accurate analysis of which we are indebted to Mr. Hatchet.

MOLY'BDIC. (*Molybdicus*, from *molybdenum*, its base.) The name of an acid.

Molybdic acid. *Acidum molybdicum.* The native sulphuret of molybdenum being roasted for some time, and dissolved in water of ammonia, when nitric acid is added to this solution, the molybdic acid precipitates in fine white scales, which become yellow on melting and subliming them. It changes the vegetable blues to red, but less readily and powerfully than the molybdous acid.

Molybdena. See *Molybdenum.*

Molybditis. See *Molybdenum.*

Moly'bdos. (Μολυβδος.) Lead.

Molybdous acid. *Acidum molybdosum.* This forms salts with different alkaline, earthy, and metallic bases.

Moly'za. (Diminutive of μωλυ, moly.) A kind of garlic mentioned by Hippocrates.

Momi'scus. (From μωμος, a blemish.) That part of the teeth which is next the gums, and which is often covered with a foul tartareous crust.

MOMO'RDICA. (*a*, *æ*. f.; from *mordeo*, to bite, from its sharp taste.) The name of a genus of plants in the Linnæan system. Class, *Monœcia*; Order, *Syngenesia.*

Momordica elaterium. The systematic name of the wild or squirting cucumber; called also, *Elaterium*, *Cucumis agrestis*, *Cucumis asininus*, *Cucumis sylvestris*, *Elaterium officinarum*, *Boubalios*, *Charantia*, and *Guarerba orba*. *Momordica — pomis hispidis cirrhis nullis*, of Linnæus. The dried sediment from the juice of this plant is the elaterium of the shops. It has neither smell nor taste, and is the most powerful cathartic in the whole Materia Medica. Its efficacy in dropsies is said to be considerable; it, however, requires great caution in the exhibition. From the eighth to the half of a grain should be given at first, and repeated at proper intervals until it operates. The cathartic power of this substance is derived from a small portion of a very active principle, which Dr. Paris, in his *Pharmacologia*, has called *elatin*. From ten grains of elaterium he obtained,

Water	0·4
Extractive	2·6
Fecula	2·8
Gluten	0·5
Woody matter	2·5
Elatin, Bitter principle	1·2
	10·

MONADE'LPHIA. (*a*, *æ*.; from μονος, alone, and αδελφια, a brotherhood.) A class of plants in the sexual system of Linnæus, consisting of plants with hermaphrodite flowers, in which all the stamina are united below into one body or cylinder, through which the pistil passes.

MONA'NDRIA. (*a*, *æ*, f.; from μονος, alone, and ανηρ, a husband.) The name of a class of plants in the sexual system of Linnæus, consisting of plants with hermaphrodite flowers, which have only one stamen.

MONA'RDA. (*a*, *æ*. f.; so called in honour of Nicholas Monardes, a Spanish physician and botanist.) The name of a genus of plants in the Linnæan system. Class, *Diandria*; Order, *Monogynia.*

Monarda fistulosa. The purple monarda. The leaves of this plant have a fragrant smell, and an aromatic and somewhat bitter taste, possessing nervine, stomachic, and deobstruent virtues. An infusion is recommended in the cure of intermittent fevers.

Mone'lli. A species of *Anagallis.*

Money-wort. See *Lysimachia.*

MONILIFO'RMIS. (From *monile*, an ornament for any part of the body, especially a necklace or collar, and *forma*, likeness.) Moniliform: necklace-like. Applied to the pod of the *Hedysarum moniliferum*, from its necklace appearance.

Monk's rhubarb. See *Rumex alpinus.*

Monkshood. See *Aconitum napellus.*

MONOCOTYLE'DON. (*on*, *onis*. f.; from μονος, one, and κοτυληδων, a cotyledon.) Having one cotyledon.

Monocotyle'dones. A tribe of plants which are supposed to have only one cotyledon; as the grass and corn tribe, palms, and the orchis family. See *Cotyledon.*

Monocolum. A barbarous name of the cæcum.

Mono'culus. The name of a bandage adapted to cover only one of the eyes.

MONŒ'CIA. (*a*, *æ*. f.; from μονος, alone, and οικια, a house.) The name of a class of plants in the sexual system of Linnæus, consisting of those which have male and female organs in separate flowers, but on the same plant.

MONOGY'NIA. (*a*, *æ*. f.; from μονος, alone, and γυνη, a woman, or wife.) The name of an order of plants of the sexual system of Linnæus. It contains those plants which, besides their agreement in the classic character, have only one style.

Monohe'meros. (Μονοήμερος; from μονος, one, and ήμερα, a day.) A term applied by the Greeks to a disease of one day's duration, or to a medicine which cures in one day.

MONO'ICUS. (*us*, *i*. m.; from μονος, one, and οικια, a house.) Linnæus calls flowers *monoici*, monœcious, when the stamens and pistils are situated, in different flowers, on the same individual plant, because they are confined to one house, as it were, or dwelling; and if the barren and fertile flowers grow from separate roots, *flores dioici*, or diœcious flowers.

Mono'machon. The intestinum cæcum is so called in the book *de compagine membrorum*, falsely ascribed to Galen.

MONOMA'NIA. (*a*, *æ*. f.; from μονος, one, and μαινομαι, to rage: *i. e.* being irrational on one subject only.) A form of insanity. See *Insanity.*

Monope'gia. (From μονος, single, and πηγνυμι, to compress.) A name given to hemierania by Valesco de Taranta.

MONOPE'TALOUS. (*Monopetalus*; from μονος, one, and πεταλον, a leaf.) One-petalled: applied to a flower which has only one petal; as that of the *Convolvulus*, *Primula*, &c.

MONOPHY'LLOUS. (*Monophyllus*; from

μονος, one, and φυλλον, a leaf.) One-leafed; having only one leaf; applied to the perianthium of flowers; thus the flower-cup of the *Datura stramonium* is monophyllous, or formed of one leaf.

MONO'RCHIS. (*is, idis.* f.; from μονος, one, and ορχις, a testicle.) An epithet for a person that has but one testicle.

MONOSPERMOUS. (*Monospermus*; from μονος, one, and σπερμα, a seed.) Having one seed: applied to seed-vessels.

Mons veneris. The triangular eminence immediately over the os pubis of women, that is covered with hair.

MONSTER. (*Monstrum, i.* n.) Any remarkable exception to the ordinary laws of nature. In physiology the term is applied to anomalies of organisation in which the individual differs greatly in physical conformation or dimension from other individuals of the species to which it belongs. See *Anomalies of organisation* in the Supplement.

Moon-wort. See *Ophioglossum lunaria.*

Morbid temperature. See the Supplement.

MORBI'LLI. (*i, orum.* m.; diminutive of *morbus*, a disease.) The measles. See *Rubeola.*

Morbus. See *Disease.*

Morbus arquatus. The jaundice.

Morbus attonitus. The epilepsy and apoplexy are so called by some writers.

Morbus cæruleus. See the Supplement.

Mo'rbus coxa'rius. Hip disease. The morbus coxarius is a scrofulous disease nearly allied to white swelling. It most commonly makes its attacks without any apparent cause, before the age of puberty; but the disease is not necessarily confined to youth, as it sometimes occurs in middle life and even in old age, in which cases it can be most commonly traced to a blow. Like other scrofulous affections of the bones, it is of such an insidious nature that in general it has made considerable progress before it is observed, as it is apt to be mistaken either for growing pains or rheumatism. The patient for a long time complains only of a weakness and weariness of the limb, attended with a slight halt in walking and a particular uneasiness about the knee. There is at this time so little pain in the hip-joint, that the disease has been frequently mistaken for some affection of the knee. But if the diseased limb be compared with the sound one, it will be found much emaciated and considerably lengthened. By the thickening of the soft parts within the joint, in consequence of the inflammation, the head of the bone will be raised to a certain extent from the socket, and this might, at first sight, seem to account for the elongation of the limb; but we shall soon find that this cause is inadequate, as the limb is frequently lengthened to the extent of some inches.

Mr. Hunter ascribes the lengthening of the limb to the diseased side of the pelvis falling lower than the other; and, upon a careful examination, the tuberosity of the ischium will be found to be situated lower than that of the opposite side. This is always the case when the elongation prevails to a marked extent, and can only be ascribable to the oblique position in which the patient places his body in throwing the weight on the sound leg, which he always does, as he is unable to bear any pressure on the diseased limb. Although the patient, in this incipient stage of the disease, actually complains of more pain in the knee than in the hip joint, it will be perceived that the pain in the knee is not increased upon motion; whereas, if the acetabulum be pressed upon, or the joint rudely handled, the pain in it is exquisite. If the nates be examined after the disease has made a little more progress, that of the affected side will be found to be larger, to have lost its natural roundness, and to have acquired a flattened form, all arising from the increased size of the joint, and from the emaciation of the glutæi muscles. — When the disease has arrived at this stage, there is considerable pain, on the joint being pressed upon, particularly on the fore part a little below the groin, and towards the outside of the thigh, where the joint is more superficial.

At this period of the disease, the lymphatic inguinal glands, as in white swelling of the knee, are sometimes enlarged.

This series of symptoms characterises the inflammatory stage of the disease.

The second stage, is that which is accompanied by or terminates in suppuration, and takes place with greater or less rapidity, according to the activity of the inflammation. When suppuration ensues, the disease generally terminates in one of two ways. Either, after the suppuration is established, the head of the thigh bone and the acetabulum being carious, an anchylosis takes place without the matter pointing externally; or, the sinovial membrane and capsular ligament ulcerating, the soft parts surrounding the joint, inflaming, swelling, and forming an abscess, the matter bursts out externally, and a serous fluid is discharged, mixed with curdly flakes. Not unfrequently in this case, the patient dies, exhausted by the profuse discharge and hectic fever.

From the great irritation which accompanies diseases of the joints, hectic fever sometimes appears early; but its symptoms are most obvious after the formation of matter, and are always greatly increased when the abscess bursts, or is opened by art. When the inflammation within the joint is increasing and running on to suppuration, the pain becomes very acute; the patient is hot and restless during the night; he starts in his sleep; and when the limb is attempted to be moved, he screams in agony.

In the secondary stage of the disease, when it has terminated in suppuration, there takes place a remarkable retraction or shortening of the limb. The head of the bone is now plainly out of the socket; and, in consequence of the destruction of the cartilages, ligaments, and bone forming the acetabulum, the muscles, more especially those which are implanted into the trochanters, retract the bone and shorten the limb to a considerable extent. When the disease has been of long duration, not only all the soft parts immediately connected with the joint are destroyed, but the caries destroying the acetabulum, penetrates deep into the bones of the pelvis, attacks the head of the femur, and even extends to its neck.

It is probable that this disease, like true white swelling, always originates in the bones; and it

has been found, upon dissection, that it generally if not always, commences in the acetabulum. The cartilages soon inflame and ulcerate, the articular cavity soon becomes carious, and, in the progress of the disease, the caries extends to the head of the os femoris. The Morbus Coxarius, by an inexperienced practitioner, might be mistaken in the stage of suppuration for lumbar abscess; but it may always be distinguished by the wasting and shortening of the limb, by the enlargement and flatness of the hip, and by the pain in the site of the joint, which is aggravated on pressure or motion.

Amongst the ancients from the time of the Arabian physicians, the actual and potential cauteries were much employed for the cure of pains of the bones and diseases of the joints; and by them, therefore, this affection was treated much in the same manner as it is now. In the early stage of the disease, it has been proposed to employ fomentations, the Bath water, blistering, cupping and tropical blood-letting; but there is nothing we can place any dependence on except the caustic issue. Perhaps blistering and topical blood-letting conjoined with rest, may have some effect when employed very early; and where there is evidently much acute inflammation, the application of leeches with warm fomentations is highly proper. But we should never waste time on trifling and insignificant remedies, when we can employ the caustic issue, which the concurring testimony of the ancients and moderns declares to be the only efficacious remedy in this disease. It is useful at all periods of the disease, and when employed early, before the suppurative stage commences, it never fails to effect a perfect cure. Even when suppuration had taken place, and the pain was exquisitely acute, the caustic has been known to give such relief, that the patient was able to sleep sound, the night of its application, although the pain of the disease had prevented him from doing so for many weeks. The caustic issue seems to act not so much by the discharge it produces, as by the external irritation it excites, by which the internal inflammation is relieved, or a state induced favourable to anchylosis. The issue should be large and frequently renewed; its use ought to be persevered in for a length of time; and, during its employment, the limb should be kept completely at rest, by confinng the patient to a couch. If the joint has suppurated or become carious, the limb ought to be kept extended, because, should it anchylose, the extended position is the most serviceable in which the limb can be fixed. The place most favourable for the introduction of the issue, is the hollow immediately behind and below the great trochanter. While we pursue these local means, the constitutional treatment in the advanced stage of the disease, should be the same as in lumbar abscess — opiates to mitigate pain, diluted sulphuric acid to restain hectic sweats, and bark, wine, and generous diet to support the strength.—*Allan's System of Surgery.*

Morbus gallicus. The venereal disease.

Morbus herculeus. The epilepsy.

Morbus indicus. The venereal disease.

Morbus infantilis. The epilepsy.

Morbus magnus. The epilepsy.

Morbus niger. See *Melæna.*

Morbus regius. The jaundice.

Morbus sacer. The epilepsy.

MORCHE'LLA. (*a, æ.* f.; a name of Persoon's, of the derivation of which nothing is known.) The name of a genus of plants. Class, *Cryptogamia;* Order, *Fungi.* The morel.

Morchella esculenta. This and the *gigas* are the morels mostly used. All the morchellæ are also very wholsome and agreeable in sauces and made dishes. They are distinguished from the stinkhorns, or phalli, by the absence of the fœtid juice of the latter, and also of the volva which envelopes the young phalli.

MORDANT. In dyeing, the substance combined with the vegetable or animal fibre, in order to fix the dye.

Morel. See *Morchella esculenta.*

More'tus. (From *morum*, the mulberry.) A cordial julep in which syrup of mulberries was an ingredient.

MO'RIA. (*a, æ.* f.; from *μωρος*, foolish.) *Morocis.* A term of somewhat vague application, but most generally used to signify that variety of monomania in which the illusion is of a joyous character, and the patient a hero, a great genius, &c.

Moringa aptera. See the Supplement.

Mo'ro. (From *morum*, a mulberry.) A small abscess resembling a mulberry.

Morochtus lapis. *Morochites.* An ancient name of the agaric mineral.

Morosis. See *Moria.*

MORO'XYLATE. (*Moroxylas, atis.* f.) A compound of moroxylic acid with a salifiable basis.

MOROXY'LIC ACID. *Acidum moroxylicum.* In the botanic garden at Palermo, Mr. Thomson found an uncommon saline substance on the trunk of a white mulberry tree. It appeared as a coating on the surface of the bark in little granulous drops of a yellowish and blackish-brown colour, and had likewise penetrated its substance. This salt was found to be a compound of lime and a peculiar vegetable acid, with some extractive matter.

MORPHE'A. (*a, æ.* f.; from *μορφη*, form.) A barbarous name given by the translators of the Arabians to the *alphos* of the Greeks; *lepra alphoides* of Willan.

Morphew. (*Morphea*, low Latin.) An old English name given to various cutaneous affections of the face.

MO'RPHIA. (*a, æ.* f.) A vegetable alkali, extracted from opium, of which it constitutes the narcotic principle. See *Papaver somniferum.*

Morphiæ acetas. Acetate of morphia. See *Papaver somniferum.*

Morphine. See *Morphia.*

Mo'rpio. The crab-louse. See *Pediculus pubis.*

Morsellus. A lozenge.

Mo'rsulus. An ancient name for that form of medicine which was to be chewed in the mouth as a lozenge; the word signifying a little mouthful.

MO'RSUS. (*us, ûs.* m.; from *mordeo.*) A bite, sting, or grasp.

Mo'rsus dia'boli. A whimsical name of the mbriæ of the Fallopian tubes.

Mort de chien. (Said to be a French corruption of the Indian *mordezym*, or Arabic *mordekie*.) A name of the spasmodic cholera of ot climates.

Morta. See *Pemphigus.*

Mortari'olum. (Diminutive of *mortarium*, mortar.) 1. In *Chemistry*, a sort of mould or making cupels with.

2. A little mortar.

3. In *Anatomy*, the socket of a tooth.

MORTIFICATION. (*Mortificatio, onis.* f.; rom *mors*, death, and *fio*, to become.) When any part of a living individual loses its vitality, so hat the circulation and all the other functions naturally carried on in the part entirely cease, hat part is said to be in a state of mortification. Mortification is divided into *acute* and *chronic*, he former is also sometimes called *humid gan-rene*, and the latter *dry gangrene.*

The terms gangrene and mortification are ften used synonymously; but *gangrene* properly signifies the state which immediately precedes mortification, while the complete mortification, or absolute death of a part, is called *phacelus.* A part which has passed into the tate of sphacelus is called a *slough.* When a part becomes gangrenous, it loses its natural heat and sensibility, it becomes livid, and vesications appear on its surface. Although this state generally leads to that of complete mortification, degree of vitality remains, and in some rare nstances the circulation is re-established, and he part restored to health. When sphacelus nas taken place, the part becomes black and putrid; it is entirely dead and disorganised, and he living system must either cast it off, or sink rom the effects of the absorption of putrid matter.

The ordinary causes of mortification are, inflammation, particularly that of the erysipelatous kind,—(See *Inflammation*)—interruption of the circulation or innervation of parts — severe mechanical injury — intense cold — certain poisonous articles of food — and specific contagion. Chemical agents which destroy the texture of parts, as high degrees of heat, and caustics, are sometimes enumerated among the causes of mortification; but the destruction of parts induced by these cannot properly be called mortification, as it is simply the chemical decomposition of the textures.

Mortification, supervening on inflammation or injury, is attended with a sudden and overwhelming depression of the vital powers; the pulse is very rapid and feeble, the countenance cadaverous, and the surface of the body covered with a cold sweat. Hiccough is a common symptom, especially in mortification of the abdominal viscera; as in cases of strangulated hernia.

Besides the common forms of mortification arising from inflammation, injury, or debility of parts, there are three which have peculiar characters, viz.

1. The *gangræna senilis*, or dry gangrene of old age, which usually commences in the shape of a purple or black spot on the under surface of one of the smaller toes, and gradually extends up the limb. It is sometimes attended with great pain and constitutional disturbance, proving rapidly fatal, and at other times with hardly any pain, little derangement of the system, and a more protracted, though equally fatal, issue.

2. The *mortification arising from ergotism.* See *Secale cornutum.*

3. *Hospital gangrene. Phagedæna gangrenosa*, which is generally supposed to arise from specific contagion. It consists in a very rapid destruction of parts, not by the formation of ordinary sloughs, but by the conversion of the parts into an ash-coloured viscid substance interspersed with bloody specks. It appears to be an affection intermediate between phagedenic ulceration and ordinary gangrene. It prevails only in hospitals, where it is sometimes a perfect scourge, attacking every wound, however trivial, so that the slightest operation cannot be performed with safety.

The treatment of mortification is constitutional and local. The following remarks upon it are taken from the late Mr. Allan's *System of Pathological and Operative Surgery.* "By attending to the progress of the disease from its incipient state to its final completion, we shall frequently be able to observe two distinct stages; the knowledge of which is of great utility, as it not only enables us to arrange our ideas, but regulates the whole of our practice. The first stage, or the incipient state of gangrene, is most commonly a state of morbidly increased action; the pulse is full, and strong, the febrile symptoms continue unabated, and the mortification seems to take place from the violence of the inflammatory action. This stage most frequently presents itself when mortification follows inflammation in consequence of external injury. The second stage is a state of extreme debility, the pulse sinks, the powers of life are languid, and all the actions of the system are brought low. Now it is evident, that our practice must differ, as the one or the other of these stages prevails. In the stage of increased action, we bleed, purge, and enjoin the strictest antiphlogistic regimen, as we do in acute inflammation, especially if the patient be young, and the inflammatory fever high. In the stage where the symptomatic fever is gone, where the pulse is sunk, or the fever of the typhoid kind, we pursue an opposite plan, and prescribe strong soups, wine, and medicines of the class of tonics or stimulants. Our constitutional treatment must, therefore, be regulated according as either of these stages prevails. In the stage of increased action, or where the inflammatory fever is violent, we bleed, and repeat it if necessary. We keep up the action of the bowels by brisk cathartics; interdict all animal food and strong liquors; give acidulated drinks, and keep the patient low and cool. But if called to a patient when the symptomatic inflammatory fever is gone, or when the stage of debility is present, we pursue an opposite plan, which consists in exhibiting bark and wine, strong soups, opium, and other stimulants. Bark was, at one time, considered a specific in mortification, as mercury is in the venereal disease; but its high reputation

has been for some years past on the decline. Mr. Sharp had no faith in bark for the cure of mortification. Mr. Pott says, that in mortification of the feet and toes it is inefficacious; and in every case where I have tried it, and my practice at one time was pretty extensive, I never found it of the smallest utility. It is always exhibited in combination with port wine. As bark belongs to the class of tonics, we must remember, that it cannot be given with safety during the inflammatory symptoms, and is only adapted for the completely-formed state of the disease. Opium is another medicine which has been much recommended of late years. It was much used by Mr. Pott in gangrene of the feet and toes. It is one of the best medicines, particularly in the advanced stages of mortification; and it should always be exhibited in small doses, frequently repeated. Bark, port wine, and opium, have been the constitutional remedies most generally employed in the cure of mortification; but the whole class of stimulants may be occasionally resorted to with more or less advantage.

"The best local application during the stage of increased action or high inflammation, are warm emollient poultices, and warm fomentations. The poultices may be made of bread and milk, or of oatmeal and the powder of linseed boiled in water, or the yeast, the turnip, or carrot poultice, may be employed. They should be applied as hot as the patient can easily bear, and renewed every three or four hours. At each renewal of the poultice, the gangrened and adjacent inflamed parts should be well fomented with flannels, wrung out of a decoction of poppy-heads, and henbane or hemlock leaves, to which a little opium may be added.

"If the gangrene has passed into the second stage, and all inflammation gone, it will be advisable to apply stimulant remedies to excite the ulcerative inflammation, by which the dead are separated from the living parts, as cloths dipped in camphorated spirits of wine, turpentines, and resins, in the form of hot dressings, tincture of myrrh and bark, warm vinegar, the red oxide of mercury, carbonic acid gas, the fumes of nitrous acid, &c.

"When the gangrene is situated in the extremities, and the farther progress of the disease is stopped, we either wait for the natural separation, treating the ulcerated surface like a common sore, or we perform amputation at a higher point in the limb. In general, it will be better to amputate as soon as the gangrene has stopped, and the line of separation is fairly marked; because, in this case, we have it in our power to remove the limb at the place most convenient for making a serviceable stump. We heal the wound by the first intention, by which we effect a cure in a far shorter time than we could cicatrise a large ulcerated surface; and we always procure a stump, covered by a cushion of strong integuments, including the true skin; whereas, after natural separation, the stump is only covered with a tender cuticle, which is prone to ulcerate upon the slightest accident."

Mo'rum. (*um, i.* n.) See *Morus nigra.*

MO'RUS. (*us, i.* f.; from μαυρος, black: so called from the colour of its fruit when ripe.) The name of a genus of plants in the Linnæan system. Class, *Monœcia;* Order, *Tetrandria.* The mulberry tree.

Morus nigra. The systematic name of the mulberry tree. *Morus—foliis cordatis scabris,* of Linnæus. Mulberries abound with a deep violet-coloured juice, which, in its general qualities, agrees with that of the fruits called *acido-dulces,* allaying thirst, partly by refrigerating, and partly by exciting an excretion of mucus from the mouth and fauces. It was formerly in high esteem as an antiseptic and corroborant, and was much used in low fevers. The London College directs a *syrupus mori,* which is an agreeable vehicle for various medicines. The bark of the root of this tree is said, by Andrée, to be useful in cases of tænia.

Moschelæ'um. A compound aromatic oil containing musk.

Mosaic gold. See *Aurum musivum.*

Moschata nux. See *Myristica moschata.*

Mosch. 1. The same as musk.

2. A name given by Ludovicus Bilsius to certain vessels in the kidney, which nobody had seen before him, and nobody hath seen since.

MOSCHA'TUS. (From *moschus,* musk.) Musky: applied to plants, &c.

MO'SCHUS. (*us, i.* m. *Mosch,* Arabian.) Musk. See *Moschus moschiferus.*

Moschus moschiferus. The systematic name of the musk animal, a ruminating quadruped, resembling the antelope. An unctuous substance is contained in excretory follicles about the navel of the male animal, the strong and permanent smell of which is peculiar to it. It is contained in a bag placed near the umbilical region. The best musk is brought from Tonquin, in China; an inferior sort from Agria and Bengal; and a still worse from Russia. It is slightly unctuous, of a black colour, having a strong durable smell and a bitter taste. It yields part of its active matter to water, by infusion; by distillation the water is impregnated with its flavour; alkohol dissolves it, its impurities excepted. Chewed, and rubbed with a knife on paper, it looks bright, yellowish, smooth, and free from grittiness. Laid on a red-hot iron, it catches fire, and burns almost entirely away, leaving only an exceedingly small quantity of light greyish ashes. If any earthy substances have been mixed with the musk, the impurities will discover them. The medicinal and chemical properties of musk and castor are very similar; the virtues of the former are generally believed to be more powerful, and hence musk is preferred in cases of imminent danger. It is prescribed as a powerful antispasmodic, in doses of three grains or upwards, even to half a drachm, in the greater number of spasmodic diseases, especially in hysteria and singultus, and also in diseases of debility. In typhus it is employed to remove subsultus tendinum, and other symptoms of a spasmodic nature. In cholera, it frequently stops vomiting; and, combined with ammonia, it is given to arrest the progress of gangrene. It is best given in the form of bolus. To children it is given in the form of enema

and is an efficacious remedy in the convulsions arising from dentition. It is also given in hydrophobia, and in some forms of mania.

Moseley's pills. These consist of rhubarb and ginger.

Mosquito. See *Culex.*

MOSS. The English name for several species of *musci*, which grow on walls, old wood, trees, damp ground, &c.

Moss, pectoral. See *Lichen pulmonarius.*

Moss, sea. See *Fucus helminthochorton.*

MOSY'LLUM. Μοσυλλον. The best cinnamon.

MOTHER. 1. See *Mater.*

2. This term was applied to many chemical preparations and plants, from whimsical more than good reasons.

Mother of thyme. See *Thymus serpyllum.*

Mother of pearl. The shining internal part of those shells which produce pearls. It is similar in its composition to pearl. See *Margarita.*

Mother-water. When sea-water, or any other solution containing various salts, is evaporated, and the crystals taken out, there always remains a fluid containing deliquescent salts, and the impurities, if present. This is called the mother-water.

Mother-wort. See *Leonurus.*

Motility. *Motivity.* The power of moving.

Motion, muscular. See *Muscular motion.*

Motion, peristaltic. See *Peristaltic motion.*

MOTOR. (*or, oris.* m.; from *moveo*, to move.) A mover or stirrer: applied to muscles, &c.

Motor oculi. See *Motores oculorum.*

Moto'res oculorum. (*Nervi motores oculorum:* so called because they supply the muscles which move the eye.) The third pair of nerves of the brain. They arise from the crura cerebri, and are distributed on the muscles of the bulb of the eye.

Motos. Μοτος. Lint.

Mould. See *Fontanella.*

Mountain parsley, black. See *Athamanta oreoselinum.*

Mouse-ear. See *Hieracium pilocella.*

MOUTH. *Os.* 1. The aperture in animals by which the food is taken in. In man, parts which constitute it are the common integuments, the lips, the muscles of the upper and under jaw, the palate, two alveolar arches, the gums, the tongue, the cheeks, and salivary glands. The bones of the mouth are the two superior maxillary, two palatine, the lower jaw, and thirty-two teeth. The arteries of the external parts of the mouth are branches of the infra orbital, inferior alveolar, and facial arteries. The veins empty themselves into the external jugulars. The nerves are branches from the fifth and seventh pair. The use of the mouth is for mastication, speech, respiration, deglutition, suction, and taste.

2. A part of the corolla of flowers. See *Faux.*

Mo'xa. (*a, æ.* f.; a Japanese word. See *Artemisia chinensis.*

Moxa Japanica. See *Artemisia chinensis.*

Mucic acid. *Acidum mucicum.* This acid was originally called *saccholactic*, because it was first obtained by Scheele from sugar of milk; but as all the gums appear to afford it, and the principal acid in sugar of milk is the oxalic, it is now generally called *mucic* acid.

If one part of gum be heated gently with three of nitric acid, till a small quantity of nitrous gas and of carbonic acid is disengaged, the dissolved mass will deposit, on cooling, the mucic acid. According to Fourcroy and Vauquelin, different gums yield from 14 to 26 hundredths of this acid.

This pulverulent acid is soluble in about sixty parts of hot water, and, by cooling, a fourth part separates in small shining scales, that grow white in the air. It is decomposed by a strong heat. It acts very little on the metals, but forms with their oxides salts scarcely soluble. With potash and soda it forms salts soluble in boiling water; the latter more so than the former. Both these salts are still more soluble when the acid is in excess. It forms nearly insoluble salts with lime, baryta, and magnesia. With ammonia, it forms one which is decomposed by heat, the ammonia being liberated.

MU'CATE. Mucas. A salt is formed by the mucic acid, with a base.

MU'CILAGE. (*Mucilago, inis.* f.; from *mucus.*) An aqueous solution of gum. See *Gum.*

MUCILAGINOUS. (*Mucilaginosus;* from *mucilago*, mucilage.) Gummy.

Mucilaginous extracts. Extracts that readily dissolve in water, scarcely at all in spirits of wine, and undergo spirituous fermentation.

Mucilago. See *Mucilage.*

Mucilago acaciæ. Mucilage of acacia. *Mucilago gummi arabici.* Take of acacia gum, powdered, four ounces; boiling water, half a pint. Rub the gum with the water, gradually adding, until it incorporates into a mucilage. A demulcent preparation, more frequently used to combine medicines than in any other form.

Mucilago a'myli. Starch mucilage. Take of starch, three drachms; water, a pint. Rub the starch, gradually adding the water to it; then boil until it incorporates into a mucilage. This preparation is mostly exhibited with opium, in the form of clyster in diarrhœas and dysenteries, where the tenesmus arises from an abrasion of the mucus of the rectum.

Mucilago arabici gummi. See *Mistura acaciæ.*

Mucilago seminis cydonii. See *Decoctum cydoniæ.*

Mucilago tragacanthæ. Mucilage of tragacanth, joined with syrup of mulberries, forms a pleasant demulcent, and may be exhibited to children, who are fond of it.

Mucoca'rneus. M. A. Severinus applies this epithet to an abcess, which is partly fleshy and partly mucous.

Mucocele. A distention of the lachrymal sac with mucus.

MU'COUS. (*Mucosus;* from *mucus.*) Of the nature of mucus.

Mucous acid. See *Mucic acid.*

Mucous glands. *Glandulæ mucosæ.* Mucipalous glands. Glands that secrete mucus, such as the glands of the Schneiderian membrane of the nose, the glands of the fauces, œsophagus, stomach, intestines, bladder, urethra, &c.

Mucous membrane. *Mucous web.* See *Texture.*

Mucous web. See *Mucous membrane.*

Mucronata cartilago. *Mucronatum os.* The ensiform cartilage of the sternum.

MUCRONA'TUS. (From *mucro*, a sharp point.) Sharp-pointed; dagger-pointed. See *Cuspidatus.*

MUCUS. (*us, i.* m.; from *μυξα*, the mucus of the nose.) A name given to the two following substances: —

1. *Mucus, animal.* One of the primary fluids of an animal body, perfectly distinct from gelatine, and vegetable mucus. Tannin, which is a delicate test for gelatine, does not effect mucus. This fluid is transparent, glutinous, thready, and of a saline taste; it reddens litmus paper, contains a great deal of water, muriate of potash and soda, lactate of lime and of soda, and phosphate of lime. According to Fourcroy and Vauquelin, the mucus, secreted by all the mucous membranes, is the same. On the contrary, Berzelius thinks it variable, according to the situation in which it is formed.

Mucus forms a layer of greater or less thickness on the surface of the mucous membranes, and it is renewed with more or less rapidity; the water it contains evaporates under the name of *mucous exhalation;* it also protects these membranes against the action of the air, of the aliment, the different glandular fluids, &c.; it is, in fact, to these membranes nearly what the epidermis is to the skin. Independently of this general use, it has others that vary according to the parts of mucous membranes. Thus, the mucus of the nose is favourable to the smell; that of the mouth gives facility to the taste; that of the stomach and the intestines assists in the digestion; that of the genital and urinary ducts serves in the generation, and the secretion of the urine, &c.

A great part of the mucus is absorbed again by the membranes which secrete it; another part is carried outwards, either alone, as in blowing the nose, or spitting, or mixed with the pulmonary transpiration, or else mixed with the excremental matter, or the urine, &c.

Animal mucus differs from that obtained from the vegetable kingdom, in not being soluble in water, swimming on its surface, nor capable of mixing oil with water, and being soluble in mineral acids, which vegetable mucus is not.

2. *Mucus, vegetable.* See *Gum.*

Mu'cus malpighia'nus. The *Rete mucosum.* See *Cutis.*

MU'GIL. *Mugilis.* The name of a genus of fishes, of the order *Malacopterygii abdominales.*

Mugil cephalus. The silvery grey mullet. An excellent fish, but not often found in our market. It is easy of digestion, and was much esteemed by the Romans.

Mugilis. See *Mugil.*

Mugwort. See *Artemesia vulgaris.*

Mugworth, chinense. See *Artemisia chinense.*

Mu'læ. Pustules contracted either by heat or cold.

Mulberry. See *Morus nigra.*

Mule. See *Hybrid.*

Mule's fern. See *Asplenium hemionitis.*

Mullein. See *Verbascum.*

Mullet. See *Mugil*, and *Mullus.*

MU'LLUS. The name of a genus of fishes, of the order *Thoracici.* The surmullet.

Mullus barbatus. *Mullus ruber.* The red surmullet, found in the Mediterranean and Northern Seas, where it comes to the length of 12 or 15 inches. Its colour is an elegant rose-red, tinged with olive on the back, and a silvery cast towards the belly. Its flesh is esteemed very delicious. The Romans held it in such high repute, that prodigious sums of money were given for it.

Mullus sarmuletus. The striped surmullet. This is found of all sizes, from four inches to a foot long. As an article of food, it is equally esteemed with the red mullet.

Mulsum. See *Hydromeli.*

MULTA'NGULAR. (*Multangularis;* from *multus*, many, and *angulus*, a corner.) Many cornered.

MULTI'FIDUS. (From *multus*, many, and *findo*, to divide.) Divided into many parts. 1. In *Anatomy*, applied to a muscle which is deeply and much divided.

2. In *Botany*, applied to leaves, petals, &c. the borders of which are cleft into many segments.

Multifidus Spinæ. *Transverso-spinalis lumborum; Musculus sacer; Semi-spinalis internus, sive transverso-spinalis dorsi; Semi-spinalis, sive transverso spinalis colli, pars interna*, of Winslow. *Transversalis lumborum, vulgo sacer; Transversalis dorsi; Transversalis colli*, of Douglas. The generality of anatomical writers have unnecessarily multiplied the muscles of the spine, and hence their descriptions of these parts are confused, and difficult to be understood. Under the name of *multifidus spinæ*, Albinus has, therefore, very properly included those portions of muscular flesh, intermixed with tendinous fibres, which lie close to the posterior part of the spine, and which Douglas and Winslow have described as three distinct muscles, under the names of *transversales*, or *transverso-spinales*, of the loins, back, and neck. The multifidus spinæ arises tendinous and fleshy from the upper convex surface of the os sacrum, from the posterior adjoining part of the ilium, from the oblique and transverse processes of all the lumbar vertebræ, from the transverse processes of all the dorsal vertebræ, and from those of the cervical vertebræ, excepting the three first. From all these origins the fibres of the muscles run in an oblique direction, and are inserted, by distinct tendons into the spinous processes of all the vertebræ of the loins and back, and likewise into those of the six inferior vertebræ of the neck. When this muscle acts singly, it extends the back obliquely or moves it to one side; when both muscles act they extend the vertebræ backwards.

MULTIFLO'RUS. (From *multus*, many and *flos*, a flower.) Many-flowered. Applied to the flower-stalk of plants, which is so called when it bears many flowers; as the *Daphne laureola.* See *Pedunculus.*

Multiforme os. See *Ethmoid bone.*

MULTILO'CULAR. (*Multilocularis;* from

ultus, many, and *loculus*, a little place or cell.) Having many cells: applied to the seed-vessels of plants.

MU'LTIPARTITE. *Multipartitus.* Having many and deep divisions: applied to leaves, &c.

MU'LTIPES. (From *multus*, many, and *pes*, a foot.) 1. The wood-louse.

2. The polypus.

3. Any animal having more than four feet.

MU'LTIVALVE. *Multivalvis.* Having more than two valves. Applied in zoology and botany.

Mumps. See *Parotitis.*

MUNDICATI'VUS. (From *mundo*, to cleanse.) *Mundificans.* Having the property of purifying and cleansing away foulness.

Mundificans. See *Mundicativus.*

Mungos. See *Ophiorrhiza mungos.*

MURÆ'NA. (*a*, *æ*. f.) The name of a genus of fishes of the order *Apodes.* The eel.

MURÆNA ANGUILLA. The common eel, which is found almost everywhere in fresh waters. The flesh of this fish, when boiled, stewed, baked, or fried, is very tender: it is easy of digestion to some stomachs, but uniformly disagrees with others. It is prepared in a variety of ways for the tables of the rich, when its compounded state renders it more difficult to digest.

MURÆNA CONGER. The conger eel. An extremely voracious fish, which sometimes acquires a considerable size, weighing a hundred pounds. It is found in European seas. There is a fishery for congers at Mount Bay, in Cornwall, where they form a considerable article of commerce. They are exported in a dried state to Spain and Portugal, where, being reduced to powder, they are used for enriching soup. The flesh fish is considered coarse, difficult of digestion, even when well boiled or stewed. It is, however, eaten by the common people.

MURÆNA HELENA. *Muræna Romana.* The Roman eel. This fish is found in great plenty along the coasts of the Mediterranean Sea, and was the celebrated favourite of the ancient Romans, who kept it in reservoirs appropriated for that purpose, and are said to have tamed it to such a degree as to come at a call to receive its food.

MURA'LIS. (From *murus*, a wall.) Appertaining to a wall. Applied as a specific name to some plants which grow on walls.

MURA'RIA. (*a*, *æ*. f.; from *murus*, a wall: because it grows about walls.) A species of maiden-hair; the *Asplenium murale.*

MURIA. 1. A kind of sauce or pickle made from the tunny, used by the ancient Romans.

2. Brine.

MURIACITE. Gypsum.

MU'RIAS. (*as*, *atis*. f.; so called because formed with the muriatic acid.) A muriate, or salt, formed by the union of the muriatic acid with a salifiable base. The term muriate is still in daily use, but the substances called muriates are in reality chlorides when dry, and hydrochlorates when dissolved: thus common salt is *chloride of sodium* when dry, but becomes a *hydrochlorate of soda.* The term muriate, therefore, is still convenient to designate such substances, whether in the moist or dry state.

MURIAS AMMONIÆ. See *Ammoniæ murias.*

MURIAS ANTIMONII. See *Antimony.*

Murias barytæ. See *Baryta.*

MURIAS CALCIS. See *Calcii chloridum.*

Murias ferri. See *Tinctura ferri sesquichloridi.*

MURIAS FERRI AMMONIACALIS. See *Ferri ammonio-chloridum.*

MURIAS HYDRARGYRI. There are two muriates of mercury. See *Hydrargyri chloridum* and *Hydrargyri bichloridum.*

MURIAS HYDRARGYRI AMMONIACALIS. See *Hydrargyri ammonio-chloridum.*

Murias hydrargyri oxygenatus. See *Hydrargyri bichloridum.*

Murias potassæ. See *Potassii chloridum.*

Murias potassæ oxygenatus. See *Potassæ chloras.*

Murias sodæ. See *Sodii chloridum.*

Murias stibii. See *Antimony.*

MURIA'TIC. (*Muriaticus*; from *muria*, brine.) Belonging to sea-salt.

Muriatic acid. See *Hydrochloric acid.*

Muriatic acid, oxygenated. See *Chlorum.*

Muriatic ether. See *Ether hydrochloric.*

MURICA'TUS. Sharp-pointed: applied generally in *Natural History*, and particularly to seeds; as those of the *Ranunculus parviflorus*, and *Sida ciliaris.*

MU'SA. (*a*, *æ*. f. This word is corrupted, or rather refined, from *Mauz*, the Egyptian appellation of this valuable plant; and is made classical in the works of Linnæus, by an allusion to *Musa*, a muse; or, with much greater propriety, to *Antonius Musa*, the physician of Augustus, who, having written on some botanical subjects, may justly be commemorated in the above name.) The name of a genus of plants. Class, *Polygamia*; Order, *Monœcia.* The plantain and banana tree.

MUSA PARADISI'ACA. The plantain-tree; called also, *Musa*, *Palma humilis*, *Ficus indica*, *Bala*, and *Platanus.* It grows spontaneously in many parts of India, but has been immemorially cultivated by the Indians in every part of the continent of South America. It is an herbaceous tree, growing to the height of fifteen or twenty feet. The fruit are nearly of the size and shape of ordinary cucumbers, and when ripe, of a pale yellow colour, of a mealy substance, a little clammy, with a sweetish taste, and will dissolve in the mouth without chewing. The whole spike of fruit often weighs forty or fifty pounds. When they are brought to table by way of dessert, they are either raw, fried, or roasted; but, if intended for bread, they are cut before they are ripe, and are then either roasted or boiled. The trees being tall and slender, the Indians cut them down to get at the fruit; and in doing this they suffer no loss, for the stems are only one year's growth, and would die if not cut; but the roots continue, and new stems soon spring up, which in a year produce ripe fruit also. From the ripe plantains they make a liquor called *mistaw.* When they make this, they roast the fruit in their husks, and, after totally beating them to a mash, they pour water upon them, and, as the liquor is wanted,

it is drawn off. But the nature of this fruit is such, that they will not keep long without running into a state of putrefaction; and therefore, in order to reap the advantage of them at all times, they make cakes of the pulp, and dry them over a slow fire, and, as they stand in need of mistaw, they mash the cakes in water, and they answer all the purposes of fresh fruit. These cakes are exceedingly convenient to make this liquor in their journeys, and they never fail to carry them for that purpose. The leaves of the tree, being large and spacious, serve the Indians for tablecloths and napkins.

Musa sapientum. The systematic name of the banana tree; called also, *Banana*, *Bananeira*, *Ficoides*, *Ficus indica*, *Musa fructu cucumerino breviori*, *Senoria*, and *Pacœira*. This and the plantain-tree are among the most important productions of the earth. The banana tree is cultivated, on a very extensive scale, in Jamaica; without the fruit of which, Dr. Wright says, the island would scarcely be habitable, as no species of provision would supply their place. Even flour, or bread itself, would be less agreeable, and less able to support the laborious negro, so as to enable him to do his business, or to keep in health. Plantains also fatten horses, cattle, swine, dogs, fowls, and other domestic animals. The leaves, being smooth and soft, are employed as dressings after blisters. The water from the soft trunk is astringent, and employed by some to check diarrhœas. Every other part of the tree is useful in different ways in rural economy. The leaves are used as napkins and tablecloths, and are food for hogs. The second sort, musa sapientum, or banana tree, differs from the paradisaica, in having its stalks marked with dark purple stripes and spots. The fruit is shorter, straighter, and rounder; the pulp is softer, and of a more luscious taste. It is never eaten green; but, when ripe, is very agreeable, either eaten raw or fried in slices as fritters, and is relished by all ranks of people in the West Indies. Both the above plants were carried to the West Indies from the Canary Islands, whither, it is believed, they had been brought from Guinea, where they grow naturally.

Musadi. *Sal ammoniac.*

MU'SCA. (*a*, *æ*. f. Μυισκη; from *μύζω*, to murmur.) A very extensive genus of insects, of the order *Diptera*. The fly.

Muscadell. Clary wine. A sweet wine made from the flowers of the clary. *Salvia sclarea.*

Muscæ volitantes. See *Pseudoblepsis.*

Musce'rda. 1. The dung of mice. See *Album nigrum.*

2. A kind of lozenge to correct fœtor of the breath.

MUSCLE. (*Musculus*, *i*. m.; a diminutive of *mus*, a mouse, from its resemblance to a flayed mouse.) The parts that are usually included under this name consist of distinct portions of flesh, susceptible of contraction and relaxation; the motions of which, in a natural and healthy state, are subject to the will, and for this reason they are called *voluntary* muscles. Besides these, there are other parts of the body that owe their power of contraction to their muscular fibres: thus the heart is a muscular texture, forming what is called a hollow muscle; and the urinary bladder, stomach, intestines, &c. are enabled to act upon their contents, merely because they are provided with muscular fibres; these are called *involuntary* muscles, because their motions are not dependent on the will. The muscles of respiration, being in some measure influenced by the will, are said to have a *mixed* motion. The names by which the voluntary muscles are distinguished, are founded on their size, figure, situation, use, or the arrangement of their fibres, or their origin and insertion; but, besides these particular distinctions, there are certain general ones that require to be noticed. Thus, if the fibres of a muscle are placed parallel to each other, in a straight direction, they form what anatomists term a *rectilinear* muscle; if the fibres cross and intersect each other, they constitute a *compound* muscle; when the fibres are disposed in the manner of rays, a *radiated* muscle; when they are placed obliquely with respect to the tendon, like the plume of a pen, a *penniform* muscle. Muscles that act in opposition to each other are called *antagonists*; thus every extensor has a flexor for its antagonist, and *vice versâ*. Muscles that concur in the same action are termed *congeneres*. The muscles being attached to the bones, the latter may be considered as levers, that are moved in different directions by the contraction of those organs. That end of the muscle which adheres to the most fixed part, is usually called the *origin*; and that which adheres to the more moveable part, the *insertion* of the muscle. In almost every muscle, two kinds of fibres are distinguished: the one soft, of a red colour, sensible, and irritable, called *fleshy* fibres, or *Muscular fibre*; the other of a firmer texture, of a white glistening colour, insensible without irritability or the power of contracting, and named *tendinous* fibres. They are occasionally intermixed, but the fleshy fibres generally prevail in the belly, or middle part of the muscle, and the tendinous ones in the extremities. If these tendinous fibres are formed into a round slender cord, they form what is called the *tendon* of the muscle: on the other hand, if they are spread into a broad flat surface, it is termed an *aponeurosis.*

Each muscle is surrounded by a very thin and delicate covering of cellular membrane, which encloses it, as it were, like a sheath, and dipping down into its substance, surrounds the most minute fibres we are able to trace, connecting them to each other, lubricating them by means of the fat, which its cells contain in more or less quantity in different subjects, and serving as a support to the blood-vessels, lymphatics, and nerves which are so plentifully distributed through the muscles. This cellular membrane, which in no respect differs from what is found investing and connecting the other parts of the body, has been sometimes mistaken for a membrane peculiar to the muscles; and hence we often find writers giving it the name of *membrana propria musculosa.*

muscles owe the red colour which so particularly distinguishes their belly part, to an infinite number of arteries, which are every where dispersed through the whole of their reticular substance; for their fibres, after having been macerated in water, are (like all other parts of the body divested of their blood) found to be of a white colour. These arteries usually enter the muscles by several considerable branches, and ramify so minutely through their substance, that we are unable, even with the best microscopes, to trace their ultimate branches. Ruysch fancied that the muscular fibre was hollow, and a production of a capillary artery; but this was merely conjectural. The veins, for the most part, accompany the arteries, but are found to be larger and more numerous. The lymphatics, likewise, are numerous, as might be expected from the great proportion of reticular substance which is every where found investing the muscular fibres. The nerves are distributed in such abundance to every muscle, that the muscles of the thumb alone are supplied with a greater proportion of nervous influence than the largest viscera; as the liver, for instance. They enter the generality of muscles by several trunks, the branches of which, like those of the blood-vessels, are so minutely dispersed through the cellular substance, that their number and minuteness soon elude the eye and the knife of the anatomist. This has given rise to a conjecture, as groundless as all the other conjectures on this subject, that the muscular fibre is ultimately nervous.

A Table of the Muscles. — The generality of anatomical writers have arranged muscles according to their several uses; but this method is evidently defective, as the same muscle may very often have different and opposite uses. The method here adopted is that more usually followed at present; they are enumerated in the order in which they are situated, beginning with those that are placed nearest the integuments, and proceeding from these to the muscles that are more deeply seated.

[The reader will observe, that all the muscles are in pairs, except those marked thus *.]

Muscles of the integuments of the cranium: — *Occipito frontalis.** *Corrugator supercilii.*

Muscles of the eyelids: — *Orbicularis palpebrarum. Levator palpebræ superioris.*

Muscles of the eyeball: — *Rectus superior. Rectus inferior. Rectus internus. Rectus externus. Obliquus superior. Obliquus inferior.*

Muscles of the nose and mouth: — *Levator palpebræ superioris alæque nasi. Levator labii superioris proprius. Levator anguli oris. Zygomaticus major. Zygomaticus minor. Buccinator. Depressor anguli oris. Depressor labii inferioris. Orbicularis oris.* Depressor labii superioris alæque nasi. Constrictor nasi. Levator menti vel labii inferioris.*

Muscles of the external ear: — *Superior auris. Anterior auris. Posterior auris. Helicis major. Helicis minor. Tragicus. Antitragicus. Transversus auris.*

Muscles of the internal ear: — *Laxator tympani. Membrana tympani. Tensor tympani. Stapedius.*

Muscles of the lower jaw: — *Temporalis. Masseter. Pterygoideus externus. Pterygoideus internus.*

Muscles about the anterior part of the neck: — *Platysma myoides. Sterno-cleidomastoideus.*

Muscles between the lower jaw and os hyoides: — *Digastricus. Mylo-hyoideus. Genio-hyoideus. Genio-glossus. Hyo-glossus. Lingualis.*

Muscles situated between the os hyoides and trunk: — *Sterno-hyoideus. Crico-hyoideus. Sterno-thyroideus. Thyro-hyoideus. Crico-thyroideus.*

Muscles between the lower jaw and os hyoides laterally: — *Stylo-glossus. Stylo-hyoides. Stylo-pharyngeus. Circumflexus. Levator palati mollis.*

Muscles about the entry of the fauces: — *Constrictor isthmi faucium. Palatopharyngeus. Azygos uvulæ.**

Muscles situated on the posterior part of the pharynx: — *Constrictor pharyngis superior. Constrictor pharyngis medius. Constrictor pharyngis inferior.*

Muscles situated about the glottis: — *Crico-arytænoideus posticus. Crico-arytænoideus lateralis. Thyro-arytænoideus. Arytænoideus obliquus.* Arytænoideus transversus.* Thyro-epiglottideus. Arytæno-epiglottideus.*

Muscles situated about the anterior part of the abdomen: — *Obliquus descendens externus. Obliquus ascendens internus. Transversalis abdominis. Rectus abdominis. Pyramidalis.*

Muscles about the male organs of generation: — *Dartos.* Cremaster. Erector penis. Accelerator urinæ. Transversus perinei.*

Muscles of the anus: — *Sphincter ani.* Levator ani.**

Muscles of the female organs of generation: — *Erector clitoridis. Sphincter vaginæ.*

Muscles situated within the pelvis: — *Obturator internus. Coccygeus.*

Muscles situated within the cavity of the abdomen: — *Diaphragma.* Quadratus lumborum. Psoas parvus. Psoas magnus. Iliacus internus.*

Muscles situated on the anterior part of the thorax: — *Pectoralis major. Subclavius. Pectoralis minor. Serratus major anticus.*

Muscles situated between the ribs, and within the thorax: — *Intercostales externi. Intercostales interni. Triangularis.*

Muscles situated on the anterior part of the neck, close to the vertebræ: — *Longus colli. Rectus internus capitis major. Rectus capitis internus minor. Rectus capitis lateralis.*

Muscles situated on the posterior part of the trunk: — *Trapezius. Latissimus dorsi. Serratus posticus inferior. Rhomboideus. Splenius. Serratus superior posticus. Spinalis dorsi. Levatores costarum. Sacro lumbalis. Longissimus dorsi. Complexus. Trachelo mastoideus. Levator scapulæ. Semi-spinalis dorsi. Multifidus spinæ. Semi-spinalis colli. Transversalis colli. Rectus capitis posticus minor. Obliquus capitis superior. Obliquus capitis inferior. Scalenus. Interspinales. Intertransversales.*

Muscles of the superior extremities: — *Supra-spinatus. Infra-spinatus. Teres minor. Teres major. Deltoides. Coracobrachialis. Subscapularis.*

Muscles situated on the os humeri : — *Biceps flexor cubiti. Brachialis internus. Biceps extensor cubiti. Anconeus.*

Muscles situated on the fore-arm : — *Supinator radii longus. Extensor carpi radialis longior. Extensor carpi radialis brevior. Extensor digitorum communis. Extensor minimi digiti. Extensor carpi ulnaris. Flexor carpi ulnaris. Palmaris longus. Flexor carpi radialis. Pronator radii teres. Supinator radii brevis. Extensor ossis metacarpi pollicis manus. Extensor primi internodii. Extensor secundi internodii. Indicator. Flexor digitorum sublimis. Flexor digitorum profundus. Flexor longus pollicis. Pronator radii quadratus.*

Muscles situated chiefly on the hand : — *Lumbricales. Flexor brevis pollicis manus. Opponens pollicis. Abductor pollicis manus. Adductor pollicis manus. Abductor indicis manus. Palmaris brevis. Abductor minimi digiti manus. Abductor minimi digiti. Flexor parvus minimi digiti. Interossei interni. Interossei externi.*

Muscles of the inferior extremities : — *Pectinalis. Triceps adductor femoris. Obturator externus. Gluteus maximus. Gluteus minimus. Gluteus medius. Pyriformis. Gemini. Quadratus femoris.*

Muscles situated on the thigh : — *Tensor vaginæ femoris. Sartorius. Rectus femoris. Vastus externus. Vastus internus. Cruralis. Semi-tendinosus. Semi-membranosus. Biceps flexor cruris. Popliteus.*

Muscles situated on the leg : — *Gastrocnemius externus. Gastrocnemius internus. Plantaris. Tibialis anticus. Tibialis posticus. Peroneus longus. Peroneus brevis. Extensor longus digitorum pedis. Extensor proprius pollicis pedis. Flexor longus digitorum pedis. Flexor longus pollicis pedis.*

Muscles chiefly situated on the foot : — *Extensor brevis digitorum pedis. Flexor brevis digitorum pedis. Lumbricales pedis. Flexor brevis pollicis pedis. Abductor pollicis pedis. Adductor pollicis pedis. Abductor minimi digiti pedis. Flexor brevis minimi digiti pedis. Transversales pedis. Interossei pedis externi. Interossei pedis interni.*

MUSCULAR. (*Muscularis*; from *musculus*, a muscle.) Belonging to a muscle.

Muscular fibre. *Fibra muscularis.* The fibres that compose the body of a muscle are disposed in fasciculi, or bundles, which are easily distinguishable by the naked eye ; but these fasciculi are divisible into still smaller ones; and these again are probably subdivisible *ad infinitum.* The most minute fibre we are able to trace seems to be somewhat plaited ; these plaits disappearing when the fibre is put upon the stretch, seem evidently to be the effect of contraction, and have probably induced some writers so assert, that the muscular fibre is twisted or spiral. Various have been the opinions concerning the structure of these fibres, their form, size, position, and the nature of the atoms that compose them. A fibre is essentially composed of *fibrine* and ozmazome, receives a great deal of blood, and, at least, one nervous filament. All other suppositions are founded only on conjecture, and therefore we shall mention only the principal ones, and this with a view rather to gratify the curiosity of the reader, than to afford him information. Borelli supposes them to be so many hollow cylinders, filled with a spongy medullary substance, which he compares to the pith of elder, *spongiosa ad instar sambuci.* These cylinders, he contends, are intersected by circular fibres, which form a chain of very minute bladders. This hypothesis has since been adopted by a great number of writers, with certain variations. Thus, for instance, Bellini supposes the vesicles to be of a rhomboidal shape ; whereas Bernouilli contends that they are oval. Cowper went so far as to persuade himself that he had filled these cells with mercury ; a mistake, no doubt, which arose from its insinuating itself into some of the lymphatics. It is observable, however, that Leeuwenhoeck says nothing of any such vesicles. Here, as well as in many other of her works, Nature seems to have drawn a boundary to our inquiries, beyond which no human penetration will probably ever extend. By chemical analysis, muscle is found to consist chiefly of fibrine, with albumen, gelatine, extractive, phosphate of soda, phosphate of ammonia, phosphate and carbonate of lime, and sulphate of potash.

Muscular motion. Muscular motions are of three kinds : namely, voluntary, involuntary and mixed. The *voluntary motions* of muscles are such as proceed from an immediate exertion of the active powers of the will : thus the mind directs the arm to be raised or depressed, the knee to be bent, the tongue to move, &c. The *involuntary motions* of muscles are those which are performed by organs, seemingly of their own accord, without any attention of the mind, or consciousness of its active power ; as the contraction and dilatation of the heart, arteries, veins, absorbents, stomach, intestines, &c. The *mixed motions* are those which are in part under the control of the will, but which ordinarily act without our being conscious of their acting ; and is perceived in the muscles of respiration, the intercostals, the abdominal muscles, and the diaphragm.

When a muscle acts, it becomes shorter and thicker ; both its origin and insertion are drawn towards its middle. The sphincter muscles are always in action ; and so, likewise, are antagonist muscles, even when they seem at rest. When two antagonist muscles move with equal force the part which they are designed to move remains at rest ; but if one of the antagonist muscles remains at rest, while the other acts, the part is moved towards the centre of motion.

When a muscle is divided, it contracts. If a muscle be stretched to a certain extent, it contracts, and endeavours to acquire its former dimensions, as soon as the stretching cause is removed : this takes place in the dead body, in muscles cut out of the body, and also in parts not muscular ; and is called, by the immortal Haller, *vis mortua*, and by some *vis elastica*. It is greater in living than in dead bodies, and is called the *tone* of the muscles.

When a muscle is wounded, or otherwise irritated, it contracts independent of the will. This power is called *irritability*, and, by Hal-

vis insita: it is a property peculiar to, and inherent in, the muscles. The parts of our body which possess this property are called irritable; as the heart, arteries, muscles, &c., to distinguish them from those parts which have no muscular fibres. With regard to the degree of this property peculiar to various parts, the heart is the most irritable, then the stomach and intestines; the diaphragm, the arteries, veins, absorbents, and, at length, the various muscles follow; but the degree of irritability depends upon the age, sex, temperament, mode of living, climate, state of health, idiosyncrasy, and likewise upon the nature of the stimulus.

When a muscle is stimulated, either through the medium of the will or any foreign body, it contracts; and its contraction is greater or less in proportion as the stimulus applied is greater or less. The contraction of muscles is different according to the purpose to be served by their contraction: thus, the heart contracts with a jerk; the urinary bladder slowly and uniformly; puncture a muscle, and its fibres vibrate; and the abdominal muscles act slowly in expelling the contents of the rectum. Relaxation generally succeeds the contraction of muscles, and alternates with it.

Muscular contraction, such as takes place in the ordinary state of life, supposes the free exercise of the brain, of the nerves which enter the muscles, and of the muscles themselves. The discoveries of Sir C. Bell and M. Magendie have shown that the anterior columns of the spinal cord are the immediate seat of that modification of nervous power on which the action of the voluntary muscles depends. Every one of these organs ought to receive arterial blood, and the venous blood ought not to remain too long in its tissue. If one of these conditions is wanting, the muscular contraction is weakened, injured, or rendered impossible.

Phenomena of Muscular Contraction. — When a muscle contracts, its fibres shorten, become hard, with more or less rapidity, without any preparatory oscillation or hesitation: they acquire, all at once, such an elasticity, that they are capable of vibrating or producing sounds. The colour of the muscle does not appear to change in the instant of contraction; but there is a certain tendency to become displaced, which the *aponeuroses* oppose.

There have been discussions about the size of a muscle in its contracted and relaxed state. The question does not seem to be resolved in which of these states it is most voluminous: it is, happily, of small consequence.

The whole of the sensible phenomena of muscular contraction passes in the muscles; but, to a certainty, no action can take place without the immediate action of the brain and the nerves.

If the brain of a man or of an animal is compressed, the faculty of contracting the muscles ceases: the nerves of a muscle being cut, it loses all power.

What change happens in the muscular tissue during the state of contraction? This is totally unknown. In this respect there is no difference between muscular contraction and the vital actions, of which no explanation can be given. There is no want of attempts to explain the action of the muscles, as well as that of the nerves and the brain, in muscular contraction; but none of the proposed hypotheses can be received.

Instead of following such speculations, which can be easily invented or refuted, and which ought to be banished from physiology, it is necessary to study in muscular contraction, — 1st, the intensity of the contraction; 2dly, its duration; 3dly, its rapidity; 4thly, its extent.

The intensity of muscular contraction, that is, the degree of power with which the fibres draw themselves together, is regulated by the action of the brain; it is generally regulated by the will, according to certain limits, which are different in different individuals. A particular organisation of the muscles is favourable to the intensity of their contraction: this organisation is a considerable volume of fibres, strong, of a deep red, and striated transversely. With an equal power of the will, these will produce much more powerful effects than muscles, whose fibres are fine, colourless, and smooth. However, should a very powerful cerebral influence, or a great exertion of the will, be joined to such fibres, the contraction will acquire great intensity; so that the cerebral influence, and the disposition of the muscular tissue, are the two elements of the intensity of muscular contraction.

A very great cerebral energy is rarely found united, in the same individual, with that disposition of the muscular fibres which is necessary to produce intense contractions: these elements are almost always in an inverse ratio. When they are united, they produce astonishing effects. Perhaps this union existed in the *athletæ* of antiquity: in our times it is observed in certain mountebanks.

The muscular power may be carried to a wonderful degree by the action of the brain alone: we know the strength of an enraged person, of maniacs, and of persons in convulsions.

The will governs the duration of the contraction: it cannot be carried beyond a certain time, however it may vary in different individuals. A feeling of weariness takes place, not very great at first, but which goes on increasing until the muscle refuses contraction. The quick development of this painful feeling depends on the intensity of the contraction and the weakness of the individual.

To prevent this inconvenience, the motions of the body are so calculated that the muscles act in succession, the duration of each being but short: our not being able to rest long in the same position is thus explained, as an attitude which causes the contraction of a small number of muscles cannot be preserved but for a very short time.

The feeling of fatigue occasioned by muscular contraction soon goes off, and, in a short time, the muscles recover the power of contracting.

The quickness of the contractions are, to a certain degree, subject to cerebral influence: we have a proof of this in our ordinary motions:

but, beyond this degree, it depends evidently on habit. In respect of the rapidity of motion, there is an immense difference between that of a man who touches a piano for the first time, and that which the same man produces after several years' practice. There is, besides, a very great difference in persons, with regard to the quickness of contractions, either in ordinary motions, or in those which depend on habit.

As to the extent of the contractions, it is directed by the will; but it must necessarily depend on the length of the fibres: long fibres having a greater extent of contraction than those that are short.

After what has been said, we see that the will has generally a great influence on the contraction of muscles: it is not, however, indispensable: in many circumstances, motions take place, not only without the participation of the will, but even contrary to it: we find very striking examples of this in the effects of habit, of the passions, and of diseases.

Musculus. See *Muscle.*

Musculus cutaneus. See *Platysma myoides.*

Musculus fasciæ latæ. See *Tensor vaginæ femoris.*

Musculus patientiæ. See *Levator scapulæ.*

Musculus stapedius. See *Stapedius.*

Musculus supercilii. See *Corrugator supercilii.*

Musculus tubæ novæ. See *Circumflexus palati.*

MU'SCUS. (*us, i.* m.; the moss of a tree: from *μοσχος*, tender: so called from its delicate and tender consistence.) A moss. A cryptogamous plant, which has its fructification contained in a capsule.

Mosses are distinguished, according to the splitting of the capsule, into, —

1. *Musci frondosi*, the capsule of which is *operculate*, having a lid and the fronds very small.

2. *Musci hepatici*, liverworts; the capsules of which split into *valves*, and the herbage is *frondose* and stemless.

The parts of the capsule of frondose mosses, which are distinguished by particular names, are, —

1. The *surculus*, which bears the leaves.

2. The *seta*, or fruit-stalk, which goes from the surculus, and supports the theca.

3. The *theca*, or capsule; the dry fructification adhering to the apex of the frondose stem.

4. The *operculum*, or lid, found in the fringe.

5. The *peristoma*, *peristomium*, or fringe, which, in most mosses, borders the opening of the theca.

6. The *calyptra*, the veil, placed on the capsule like an extinguisher on a candle; as in *Bryum cæspititium.*

7. The *perichætium*, a slender or squamous membrane at the base of the fruit-stalk.

8. The *fimbria*, or fringe; a dentate ring of the operculum, by the elastic force of which the operculum is displaced.

9. The *epiphragma*, a slender membrane which shuts the fringe; as in *Polytricum.*

10. The *sphrongidium*, or *columnula*; the last column or filament which passes the middle of the capsule, and to which the seeds are attached.

Mosses are found in the hottest and coldest climates. They are extremely tenacious of life; and, after being long dried, easily recover their health and vigour by moisture. Their beautiful structure cannot be too much admired. Their species are numerous, and difficult to determine.

Muscus arboreus. See *Lichen plicatus.*

Muscus caninus. See *Lichen caninus.*

Muscus clavatus. See *Lycopodium.*

Muscus cranii humani. See *Lichen saxatilis* and *Usnea.*

Muscus camutalis. See *Lichen aphthosus.*

Muscus erectus. See *Lycopodium selago.*

Muscus islandicus. See *Lichen islandicus.*

Muscus marinus. See *Conferva rupestris.*

Muscus maritimus. See *Corallina officinalis.*

Muscus pulmonarius quercinus. See *Lichen pulmonarius.*

Muscus pyridatus. See *Lichen pyridatus.*

Muscus squamosus terrestris. See *Lycopodium.*

Mushroom. See *Agaricus.*

Mushroom, goat's beard. See *Clavaria.*

Mushroom, hedgehog. See *Hydnum erinaceum.*

MU'SIA PATTRÆ. A name of moxa.

Musk. See *Moschus.*

MUSK, ARTIFICIAL. Let three fluid drachms and a half of nitric acid be gradually dropped on one fluid drachm of rectified oil of amber, and well mixed. Let it stand twenty-four hours, then wash it well, first in cold, and then in hot water. One drachm of this resinous substance, dissolved in four ounces of rectified spirit, forms a good tincture, of which the mean dose is twenty minims. In preparing the above great attention should be given to the washing the resin, otherwise it is offensive to the stomach.

Musk-cranesbill. See *Geranium moschatum.*

Musk-melon. See *Cucumis melo.*

Musk-seed. See *Hibiscus abelmoschus.*

Mussel. See *Mytilus.*

MUSSE'NDA. (A Ceylonese word.) The name of a genus of plants. Class, *Pentandria*; Order, *Monogynia.*

MUSSENDA PONDOSA. Ray attributes a cooling property to an infusion or decoction of this plant, which the Indians drink by the name of *beleson.*

MUST. The expressed juice of the grape. By fermentation it forms wine.

Mustard. See *Sinapis.*

Mustard, hedge. See *Erysimum alliaria.*

Mustard, mithridate. See *Thlaspi.*

Mustard, treacle. See *Thlaspi.*

Mustard, yellow. See *Sinapis.*

MU'TICUS. (From *mutilus*, without horns.) Beardless; awnless: applied to the arista or awn of plants. *Glumæ muticæ*, beardless husks. See *Gluma.*

MUTI'TAS. (*as, atis.* f.; from *mutus*, dumb.) Dumbness. See *Aphonia.*

Muza. See *Musa.*

MYACA'NTHA. (*a, æ.* f.; from *μυς*, a mouse, and *ακανθα*, a thorn: so called because its prickly leaves are used to cover whatever is intended to be preserved from mice.) The plant butcher's broom. See *Ruscus aculeatus.*

MY'CES. *Μυκης.* A fungus.

MYCTE'RES. *Μυκτηρης.* The nares.

MYCTEROPHO'NIA. (From *μυκτηρες*, the nostrils, and *φωνη*, the voice.) Nasal voice; that defect of voice which consists in speaking through the nose, as it is called. — *Plouquet.*

MYDE'SIS. (From *μυδαω*, to abound with moisture.) It imports, in general, a corruption of any part from a redundant moisture; but Galen applies it particularly to a purulent discharge from the eyelids.

MY'DON. (*Μυδων*; from *μυδαω*, to grow putrid.) A fleshy fungus in a fistulous ulcer. — *Julius Pollux.*

MYDRI'ASIS. (*is, is.* f. *Μυδριασις*, derivation doubtful.) A preternatural dilatation of the pupil.

MYELI'TIS. (From *μυελος*, marrow.) This name has been given to inflammation of the substance of the spinal cord, but it signifies simply inflammation of marrow. As the word *μυων* is used by Hippocrates to signify the spinal cord, *æonitis* might be adopted to express this disease.

MYLABRIS. A genus of coleopterous insects..

MYLABRIS VARIABILIS. This is brought from China, and is used as a substitute for cantharides.

MYLABRIS CICHORII. This species is said to be the same with the *buprestis* of the Greeks, which Pliny tells us was used as a vesicatory.

MYLA'CRIS. (From *μυλη*, a grindstone: so called from its shape.) The patella, or knee-pan.

MY'LE. *Μυλη.* 1. The knee-pan.

2. A mole in the uterus.

MY'LO HYOIDE'US. This muscle, which was first described by Fallopius, is so called from its origin near the *dentes molares* (*μυλοι*), and its insertion into the os hyoides. It is a thin, flat muscle, situated between the lower jaw and the os hyoides, and is covered by the anterior portion of the digastricus. It arises fleshy, and a little tendinous, from all the inner surface of the lower jaw, as far back as the insertion of the pterygoideus internus, or, in other words, from between the last dens molaris and the middle of the chin, where it joins its fellow, to form one belly, with an intermediate tendinous streak, or *linea alba*, which extends from the chin to the os hyoides, where both muscles are inserted into the lower edge of the basis of that bone. This has induced Riolanus, Winslow, Albinus, and others, to consider it as a single penniform muscle. Its use is to pull the os hyoides upwards, forwards, and to either side.

Mylo-pharyngeus. See *Constrictor pharyngis superior.*

MYOCE'PHALUM. (*um, i.* n.; from *μυια*, a fly, and *κεφαλη*, a head: from its resemblance to the head of a fly.) An incipient staphyloma.

MYOCOILI'TIS. (*is, idis.* f.; from *μυς*, a muscle, and *κοιλια*, a belly.) Inflammation of the muscles of the belly.

MYODESO'PSIA (*a, æ.* f.; from *μυια*, a fly, *ειδος*, resemblance, and *οψις*, vision.) An ill-constructed term which has been applied to that state of vision in which *muscæ volitantes* are seen before the eyes.

MYO'LOGY. (*Myologia, æ.* f.; from *μυς*, a muscle, and *λογος*, a discourse.) The doctrine of the muscles.

MYO'PIA. (*a, æ.* f.; from *μυω*, to contract, and *ωψ*, the eye.) Near-sightedness: persons are considered near-sighted who cannot see distinctly above twenty inches. The term is also applied to the exercise of vision at shorter distances than usual. The proximate cause is the adunation of the rays of light in a focus before the retina. This disease arises from,

1. Too great a convexity of the cornea. The cause of this convexity is either congenital, or consists in a greater secretion of the aqueous humour: hence on one day there shall be a greater myopia than on another.

2. Too great a longitude of the bulb. This length of the bulb is native, or acquired from a congestion of the humours in the eye: hence artificers occupied on minute objects, as the engravers of seals, and persons reading much, frequently, after puberty, become myopes.

3. Too great a convexity of the anterior superficies of the crystalline lens. This is likewise from birth. The image will so much sooner be formed as the cornea or lens is more convex. This perfectly accounts for short-sightedness; but too great convexity of the cornea is the most common cause.

4. Too great a density of the cornea, or humours of the eye; for optics teach us, that the rays of light are forced into a focus so much the sooner, as the diaphanous body is denser.

5. Too dilated a pupil.

6. Infants, from the great convexity of the cornea, are often myopes; but, by degrees, as they advance in years, they perceive objects more remotely, by the cornea becoming less convex. The best palliatives of this disease are concave spectacles.

MY'OPS. (*ops, opis.* n.; from *μυω*, to contract, and *ωψ*, the eye.) One who is near-sighted. See *Myopia.*

MYO'SIS. (*is, is.* f. *Μυωσις.*) A disease of the eye, which consists in a contraction or too small perforation of the pupil.

MYOSI'TIS. (*is, idis.* f.; from *μυς*, a muscle.) Inflammation of a muscle. It is the term applied by Sagar to acute rheumatism.

MYOSO'TIS. (*is, is.* f. *Μυς*, a muscle, and *ους, ωτος*, an ear: so called because its leaves are hairy, and grow longitudinally, like the ear of a mouse.) See *Hieracium pilosella.*

MYO'TOMY. (*Myotomia, æ.* f.; from *μυς*, a muscle, and *τεμνω*, to cut.) The anatomy of the muscles.

MYRI'CA. (*a, æ.* f.; a name borrowed from the ancient Greeks, whose *μυρικη*, however, appears to be the *Tamarix gallica.*) The name of a genus or family of plants. Class, *Dioecia;* Order, *Tetrandria.*

MYRICA CERI'FERA. A North American plant, the berries of which yield a green wax, which is made into candles. The root is strongly astringent.

MYRICA GALE. The systematic name of the Dutch myrtle or sweet willow; called also, *Myrtus brabantica, Myrtus Anglica, Myrtifolia belgica, Gale, Gagel, Rus sylvestris, Acaron, Elæagnus, Elæagnus cordo, Chamælæagnus,* and *Dodonæa.* The leaves, flowers, and seeds of this plant have a strong, fragrant smell, and a bitter

taste. They are said to be used amongst the common people for destroying moths and cutaneous insects, and the infusion is given internally, as a stomachic and vermifuge.

MYRI'CIN. The ingredient of wax which remains after digestion in alkohol. It is insoluble, also, in water and æther; but very soluble in fixed and volatile oils. Dr. John, who discovered it, gave it this name, because it is very abundant in the wax of the myrica cerifera.

Myriophy'llon. (*um*, *i.* n.; from *μυριος*, infinite, and *φυλλον*, a leaf: named from the number of its leaves.) Milfoil, a species of Achillea. See *Achillea millefolium*.

MYRI'STICA. (*a*, *æ.* f.) The name of a genus of plants in the Linnæan system. Class, *Diœcia*; Order, *Monadelphia*.

Myristica aromatica. Swart's name for the nutmeg-tree.

Myristica moschata. The nutmeg and mace tree.

1. The nutmeg; called also, *Myristicæ nucleus*, *Nux moschata*, *Nucista*, *Nux myristica*, *Chrysobalanus Galeni*, *Unguentaria*, *Assala*, and *Nux aromatica*. The seed, or kernel, of the *Myristica—foliis lanceolatis*, *fructu glabro*, of Linnæus. It is a spice that is well known, and has been long used, both for culinary and medical purposes. Distilled with water, it yields a large quantity of essential oil, resembling in flavour the spice itself: after the distillation, an insipid sebaceous matter is found swimming on the water; the decoction, inspissated, gives an extract of an unctuous, very slightly bitterish taste, and with little or no astringency. Rectified spirit extracts the whole virtue of nutmegs, by infusion, and elevates very little of it in distillation: hence the spirituous extract possesses the flavour of the spice in an eminent degree. Nutmegs, when heated, yield to the press a considerable quantity of limpid, yellow oil. There are three kinds of unctuous substances, called oil of mace, though really expressed from the nutmeg. The best is brought from the East Indies, in stone jars: this is of a thick consistence, of the colour of mace, and has an agreeable fragrant smell. The second sort, which is paler coloured, and much inferior in quality, comes from Holland, in solid masses, generally flat, and of a square figure. The third, which is the worst of all, and usually called common oil of mace, is an artificial composition of suet, palm oil, and the like, flavoured with a little genuine oil of nutmeg. The nutmeg is aromatic, and stomachic, and hence it has been much used in diarrhœas and dysenteries. There is also reason to believe that it has a narcotic power, which resides in the essential oil. See *Agrypnia*.

2. *Mace* is the middle bark of the nutmeg. A thick, tough, reticulated, unctuous membrane, of a lively, reddish yellow colour, approaching to that of saffron, which envelopes the shell of the nutmeg. The mace, when fresh, is of a blood red colour, and acquires its yellow hue in drying. It is dried in the sun, upon hurdles fixed above one another, and then, it is said, sprinkled with sea-water, to prevent its crumbling in carrying. It has a pleasant, aromatic smell, and a warm, bitterish, moderately pungent taste. It is in common use as a grateful spice, and appears to be in its general qualities nearly similar to the nutmeg. The principal difference consists in the mace being much warmer, more bitter, less unctuous, and sitting easier on weak stomachs. Mace possesses qualities similar to those of nutmeg, but is less astringent, and its oil is supposed to be more volatile and acrid.

Myristica nux. See *Myristica moschata*.

Myristica otoba. This species grows in Santa Fé; and also produces a nutmeg.

Myrme'cium. *Μυρμηκιον*; from *μυρμηξ*, an ant: so called either from some fancied resemblance, or from its occasioning a pain like the sting of an ant. A moist soft wart, about the size of a lupin, with a broad base, deeply rooted, and very painful. It grows on the palms of the hands, and soles of the feet.

Myro'balan. See *Myrobalanus*.

MYROBA'LANUS. (*us*, *i.* f.; from *μυρος*, an unguent, and *βαλανος*, a nut: so called because it was formerly used in ointments.) A myrobalan. A dried fruit of the plum kind, brought from the East Indies. All the myrobalans have an unpleasant bitterish, very austere taste, and strike a black colour, with solutions of iron. They are said to have a gently purgative, as well as an astringent and corroborating virtue. In this country they have been long expunged from the pharmacopœias. Of this fruit there are several species.

Myrobalanus bellirica. The belliric myrobalan. The fruit is of a yellowish grey colour, and an irregular roundish or oblong figure, about an inch in length, and three quarters of an inch thick.

Myrobalanus che'bula. The chebule myrobalan. This resembles the yellow in figure and ridges, but is larger, of a darker colour, inclining to brown or blackish, and has a thicker pulp.

Myrobalanus citrina. Yellow myrobalan. This fruit is somewhat longer than the belliric with generally five large longitudinal ridges and as many smaller between them, somewhat pointed at both ends.

Myrobalanus e'mblica. The emblic myrobalan is of a dark blackish grey colour, roundish about half an inch thick, with six hexagonal faces, opening from one another.

Myrobalanus indica. The Indian or black myrobalan, of a deep black colour, oblong, octangular, differing from all the others in having no stone, or only the rudiments of one, from which circumstance they are supposed to have been gathered before maturity.

Myrole'. (From *μυρον*, a perfumed oil.) A French term for a medicated volatile oil.

My'ron. (*Μυρον*; from *μυρω*, to flow or drop.) An ointment, or medicated oil.

MYRO'XYLON. (*um*, *i.* n.; from *μυρον*, an ointment, and *ξυλον*, wood.) The name of a genus of plants in the Linnæan system. Class, *Diandria*; Order, *Monogynia*.

Myroxylon peruiferum. The systematic name of the tree which gives out the Peruvian balsam. *Balsamum peruvianum*. *Putzochi*. *Indian*, *Mexican*, and *American balsam*. *Cabureiba* is the name of the tree from which, a

cording to Piso and Ray, it is taken. It is the *Myroxylon peruiferum* of Linnæus, which grows n the warmest provinces of South America, nd is remarkable for its elegant appearance. Every part of the tree abounds with a resinous uice; even the leaves being full of transparent esinous points, like those of the orange tree.

Balsam of Peru is of three kinds; or rather, t is one and the same balsam, having three everal names: — 1. The balsam of incision; 2. The dry balsam; 3. The balsam of lotion. The virtues of this balsam, as a cordial, pectoral, nd restorative stimulant and tonic, are, by some, thought to be very great. It is given with advantage from 5 to 10 or 15 drops for a dose, in yspepsia, atonic gout, in consumptions, asthmas, aephritic complaints, obstructions of the viscera, nd suppressions of the menses. It is best aken dropped upon sugar. The yoke of an gg, or mucilage of gum-arabic, will, indeed, issolve it: it may, by that way, be made into n emulsion; and it is less acrid in that form han when taken singly. It is often made an ngredient in boluses and electuaries, and enters nto two of the officinal compositions, — the nctura balsami Peruviani composita, and the rochisci glycyrrhizæ. Externally, it is recomnended as an useful application to relaxed ulcers, ot disposed to heal.

MY'RRHA. (*a*, *æ*. f.; a Hebrew word.) Σμυρνη. Μυῤῥα. The name *stacte* has also been pplied to this among other substances. Myrrh. The plant which affords this drug is not known. Bruce conjectured it to be an *acacia*. Nees Von Esenbek refers it to the genus *balsamodendron*. The tree that affords the myrrh, which is obained by incision, grows on the eastern coast of Arabia Felix, and in that part of Abyssinia which is situated near the Red Sea, and is called y Bruce, *Troglodyte*. Good myrrh is of a urbid black-red colour, solid and heavy, of a eculiar smell, and bitter taste. Its medicinal ffects are warm, corroborant, and antisceptic: has been given as an emmenagogue, in doses rom 5 to 20 grains. It is also given in canexies, and applied externally as an antiseptic nd vulnerary. In doses of half a drachm, Dr. Cullen remarks that it heated the stomach, proluced sweat, and agreed with the balsams in ffecting the urinary passages. It has lately ome more into use as a tonic in hectical cases, nd is said to prove less heating than most ther medicines of that class. Myrrh dissolves most totally in boiling water; but, as the quor cools, the resinous matter subsides. Rectified spirit dissolves less of this concrete than ater; but extracts more perfectly that part in hich its bitterness, virtues, and flavour reside: he resinous matter which water leaves unssolved is very bitter; but the gummy matter hich the spirit leaves undissolved is insipid, he spirituous solution containing all the active art of the myrrh: it is applied to ulcers, and ther external affections of a putrid tendency; nd also as a wash, when diluted, for the teeth nd gums. The tincture of myrrh is officinal, nd it forms an ingredient in several officinal edicines. See *Mistura ferri composita*, and *ilula aloes cum myrrha*.

MY'RRHIS. (From *μυρρα*, myrrh: so named from its myrrh-like smell.) Sweet cicely. See *Scandix odorata*.

MYRSINELÆ'UM. (From *μυρσινη*, the myrtle, and *ελαιον*, oil.) Oil of myrtle.

MYRTACA'NTHA. (*a*, *æ*. f.; from *μυρτος*, a myrtle, and *ακανθα*, a thorn: so called from its likeness to myrtle, and from its prickly leaves.) Butcher's broom. See *Ruscus*.

MYRTI'DANUM. (From *μυρτος*, the myrtle.) An excrescence growing on the trunk of the myrtle; formerly used as an astringent.

Myrtiform caruncles. See *Carunculæ myrtiformes*.

Myrtiform glands. See *Carunculæ myrtiformes*.

Myrtillus. See *Vaccinium myrtillus*.

MYRTI'TES. An old medicine prepared with honey and the juice of the myrtle berries.

Myrtle. See *Myrtus*.

Myrtle, Dutch. See *Myrica gale*.

MY'RTOCHEI'LIDES. (From *μυρτον*, the clitoris, and *χειλος*, a lip.) The nymphæ of the female pudenda.

MYRTOI'DEÆ. A natural family of plants, of which the myrtle is the type.

MY'RTON. Μυρτον. The clitoris.

MY'RTUS. (*us*, *i*. f.; from *μυρρα*, because of its smell; or from *Myrrha*, a virgin who was fabled to have been turned into this tree.) 1. The name of a genus of plants in the Linnæan system. Class, *Icosandria*; Order, *Monogynia*.

2. The pharmacopœial name of the myrtle. See *Myrtus communis*.

Myrtus brabantica. See *Myrica gale*.

MYRTUS CARYOPHY'LLATA. The tree which affords the clove bark. *Cassia caryophyllata*. The bark of this tree, *Myrtus — pedunculis trifido-multifloris, foliis ovatis*, of Linnæus, is a warm aromatic, of the smell of clove spice, but weaker, and with a little admixture of the cinnamon flavour. It may be used with the same views as cloves, or cinnamon.

MYRTUS COMMUNIS. The common myrtle.

MYRTUS COMMUNIS ITALICA. *Oxymyrrhine. Oxymyrsine.* The berries of this plant are recommended in alvine and uterine fluxes, and other disorders from relaxation and debility. They have a roughish, and not unpleasant taste, and appear to be moderately astringent and aromatic.

MYRTUS PIMENTA. The tree which bears the Jamaica pepper, or allspice. *Pimento. Piper caryophyllatum. Cocculus Indi aromaticus. Piper chiapæ. Amomum pimenta. Caryophyllus aromaticus. Caryophyllus americanus. Piper odoratum jamaicense. Myrtus — floribus trichotoma-paniculatis, foliis oblongo-lanceolatis*, of Linnæus. This spice, which was first brought over for dietetic uses, has been long employed in the shops as a succedaneum to the more costly Oriental aromatics: it is moderately warm, of an agreeable flavour, somewhat resembling that of a mixture of cloves, cinnamon, and nutmegs. The pharmacopœias direct an aqueous and spirituous distillation to be made from these berries; and also an essential oil.

MY'STAX. (*ax*, *acis*. f. Μυσταξ.) 1. The

hair which forms the beard in man, on each side the upper lip.

2. The upper lip itself.

MY'STRUM. Μυστρον. An ancient measure.

Mystrum magnum. A measure containing three ounces and eight scruples, when applied to wine, and three ounces when applied to oil.

Mystrum parvum. A measure containing twenty scruples of wine, or six drachms of oil.

MY'TILUS. (*us*, *i.* m.; said to be derived from μυς.) The name of a genus of shell-fish. Class, *Vermes;* Order, *Testacea.* The mussel or muscle.

Mytilus edu'lis. The edible or eatable muscle. This is found in the European seas, in vast beds, and generally adhering to other bodies by a long silky beard. The flesh is esteemed by some, when boiled; for it is never eaten raw. It is not so easy of digestion as the oyster; and a small quantity often disagrees. It sometimes acts as a poison, producing in some cases violent bowel complaints; in others a nettle rash, accompanied with asthma; and in others a peculiar comatose affection. The circumstances under which the muscle becomes poisonous are not understood.

Mytilus margariti'ferus. The pearl muscle, found in the American and Indian seas. It is about eight inches long, and still broader than it is long. The inside is beautifully polished; produces the true mother of pearl, and frequently the most valuable pearls. It was formerly referred to the genus *ostrea.*

Myu'rus. (Μυουρος; from μυς, a mouse, and ουρα, a tail.) A whimsical name given by the Greeks to a sort of sinking pulse, the second stroke of which is less than the first, the third than the second, &c., the pulse thus diminishing towards the end like a mouse's tail. Of this there are two kinds; the first is, when the pulse sinks progressively, till it ceases; the other, when it rallies again, in some degree, but finally fails.

Myxa. Μυξα. Mucus.

Myxosarco'ma. (From μυξα, mucus, and σαρξ, flesh.) A tumour which is partly fleshy and partly mucous.

My'xter. (From μυξα, the mucus of the nose.) The nose or nostril.

N.

N. In prescriptions, this letter is a contraction for *numero*, in number. Thus, Pil. Hydrarg. N. xij., means mercurial pills, twelve in number.

Na'cta. An abscess of the breast.

Na'ducem. A uterine mole.

NÆ'VUS. (*us*, *i.* m.) A natural mark, spot, or blemish.

Nævus maternus. *Macula matricis. Stigma. Metroccelis.* A mother's mark. A mark on the skin of children, which is born with them, and which is said to be produced by the longing of the mother for particular things, or her aversion to them; hence these marks resemble mulberries, strawberries, grapes, pines, bacon, &c.

Na'i corona. A name of the cowhage.

Nail. See *Unguis.*

Naja. See the Supplement.

Naked. See *Nudus.*

Na'kir. A name given by Schenk to wandering pains in the limbs, supposed to arise from wind.

Nanceic acid. (*Acidum nancicum:* so called by Braconnot, in honour of the town of Nancy, where he lived.) Zumic acid. He discovered it in many acescent vegetable substances; in sour rice; in putrefied juice of beet-root; in sour decoction of carrots, peas, &c. He imagines that this acid is generated at the same time as vinegar in organic substances, when they become sour. It is without colour, does not crystallise, and has a very acid taste.

Nanus. See *Dwarf.*

Nape'llus. (*us*, *i.* m.; diminutive of *napus:* so called because it has a bulbous root like that of the *napus.*) See *Aconitum.*

Na'pilæ flores. Orange flowers are sometimes so called. See *Citrus aurantium.*

NA'PHTHA. (*a*, *æ.* f. Ναφθα.) A native combustible liquid of a yellowish white colour, perfectly fluid and shining. It feels greasy, and exhales an agreeable bituminous smell. It occurs in considerable springs on the shores of the Caspian sea, in Sicily, and Italy. It is used instead of oil, and differs from petroleum obtained by distilling coal only by its greater purity and lightness. This fluid has been used as an external application for removing old pains, nervous disorders, such as cramps, contractions of the limbs, paralytic affections, &c.

Naphtha vitrioli. See *Æther sulphuricus.*

NA'PHTHALINE. A greyish white substance found during the rectification of the petroleum of the coal-gas works, incrusting the pipes. It may be obtained in thin white scales of a pearly brightness, by slow re-sublimation in glass vessels. Its specific gravity is 1·048. It has a strong odour of naphtha, is insoluble in water, but very soluble in ether, and moderately so in alkohol and oils. According to Dr. Ure's analysis, it is a solid bicarburet of hydrogen.

Napifolia. See *Brassica.*

Napium. See *Lapsana communis.*

Napta. See *Natta.*

Napus. See *Brassica.*

Napus dulcis. See *Brassica rapa.*

Napus sylvestris. See *Brassica rapa.*

Napy. See *Sinapi.*

NARCA'PHTHUM. Ναρκαφθον. An aromatic ark brought from India. It was used in fumigations.

NA'RCEINE. A principle detected by Pelletier n opium. Little is yet known concerning it.

NARCI'SSUS. (*us, i.* m.) A genus of plants in the Linnæan system. Class, *Hexandria;* Order, *Monogynia.*

NARCISSUS PSEUDONARCISSUS. Common daffodil. The root of this plant is emetic and cathartic, and the flowers are said to be antispasmodic. The dose of the former is ʒij. That of the latter, ʒj. or more.

NARCO'SIS. (*is, is.* f.; ναρκωσις; from ναρκοω, to stupify.) The effect of a narcotic.

NARCO'TIC. (*Narcoticus;* from ναρκοω, to stupify.) A term applied substantively and adjectively to medicines which have the power of stupifying and diminishing the activity of the nervous system. Most narcotics have a degree of stimulating power, and this is manifested chiefly when they are given in small doses, while a full dose generally produces the narcotic effect at once, without any apparent stimulation preceding it. Cullen believed that the stimulating effect is owing to the resistance offered by the *vis medicatrix naturæ* to the sedative influence of the medicine; and hence, that a large dose is immediately sedative, because the resistance of the system is overpowered. Brown, on the contrary, maintained that narcotics are in reality highly diffusible stimuli, which exhaust the system by the rapidity of their action.

Thus, Cullen regarded them as directly sedative and indirectly stimulant; and Brown, directly stimulant and indirectly sedative. The hypothesis of Cullen seems much preferable to that of Brown; but neither of them is now generally received, and we are content to confess that we do not know how narcotics act. To the class of narcotics belong opium, hemlock, henbane, belladonna, aconite, stramonium, camphor, digitalis, tobacco, alkohol, ether, nux vomica, leopard's bane, hop, strong scented lettuce, and a variety of other substances. Prussic acid has been considered as a narcotic, but it does not seem properly referrible to this class. It seems to be direct sedative, and never to exert any stimulating power.

NA'RCOTINE. (*a. æ,* f.; so called because of its stupifying power.) An active principle of opium. See *Papaver somniferum.*

Nard. See *Valeriana celtica.*

Nard, Indian. See *Andropogon nardus.*

NARDO'STACHYS. (*ys, eos.* f.; from ναρδος, spikenard, and σταχυς, sage.) A species of wild sage, resembling spikenard in its leaves and smell.

NA'RDUS. (*us, i.* f.; from *nard,* Syrian.) Spikenard. See *Lavendula spica.*

Nardus celtica. See *Valeriana celtica.*

Nardus indica. See *Andropogon nardus.*

Nardus italica. See *Lavendula spica.*

Nardus montana. See *Asarum.*

Nardus rustica. See *Asarum.*

NARIFUSO'RIA. (From *nares,* the nostrils, and *fundo,* to pour.) Medicines dropped into the nostrils have been so called.

NA'RIS. (*is, is.* f.) The nostril. The cavity of the nostrils is of a pyramidal figure, and is situated under the anterior part of the cranium, in the middle of the face. The two nostrils are composed of fourteen bones, viz. the frontal, two maxillary, two nasal, two lachrymal, two inferior spongy, the sphenoid, the vomer, the ethmoid, and two palatine bones, which form several eminences and cavities. The eminences are the septum narium, the cavernous substance of the ethmoid bone, called the superior conchæ, and the inferior spongy bones. The cavities are three pair of pituitary sinuses, namely, the frontal, sphenoid, and maxillary; the anterior and posterior foramina of the nostrils; the ductus nasalis, the spheno-palatine foramina, and anterior palatine foramina. All these parts are covered with periosteum, and a pituitary membrane which secretes the mucus of the nostrils. The arteries of this cavity are branches of the internal maxillary. The veins empty themselves into the internal jugulars. The nerves are branches of the olfactory, ophthalmic, and superior maxillary. The use of the nostrils is for smelling, respiration, and speech.

Naris compressor. See *Compressor naris.*

NA'RTA. (Ναρτα, *ex nardi odore,* from its smell.) A plant used in ointments.

NASAL. (*Nasalis;* from *nasus,* the nose.) Appertaining to the nose.

NASAL FOSSÆ. The cavity of the nares. See *Naris.*

NASAL NERVE. A branch of the ophthalmic which passes to the inside of the orbit, and gives off a branch which enters the nose by the foramen orbitarium internum anterius, re-enters the cranium through the cribriform plate of the ethmoid bone, and again descends through the same plate to the nose.

Nasalis labii superioris. See *Orbicularis oris.*

NASA'RIUM. (From *nasus,* the nose.) The mucus of the nose. — *Turton.*

NASCA'LE. 1. A pessary.

2. A compress of lint, or other soft material impregnated with some medicament, intended to be introduced into the vagina. — *P. Morel.*

NASCA'PHTHUM. Νασκαφθον. The same as *narcapthon.*

Nasi depressor. See *Depressor labii superioris alæque nasi.*

NASI OSSA. The two small bones of the nose, that are so termed, form the bridge of the nose. In figure they are quadrangular and oblong.

NA'SO-LOBA'RIS. The name given by Chaussier to one of the filaments of the nasal nerve.

NA'SO-OCULA'RIS. Soëmmering's name for the nasal branch of the ophthalmic nerve.

NA'SO-PA'LATINE GANGLION. A small ganglion situated in the anterior palatine foramen.

NASO-PALATINE NERVE. A twig sent out from the sphenopalatine ganglion.

NA'SO-PA'LPEBRAL MUSCLE. The orbicular muscle of the eye. — *Chaussier.*

NA'SO-SUPERCILIA'RIS. The corrugator supercilii muscle.

NASTU'RTIUM. (*um, i.* n.; *quod nasum torqueat,* because the seed, when bruising, irri-

tates the nose!) The name of a genus of plants in the Linnæan system. Class, *Tetradynamia;* Order, *Siliquosa.*

Nasturtium aquaticum. See *Sisymbrium nasturtium.*

Nasturtium hortense. See *Lepidium.*

Nasturtium indicum. See *Tropæolum.*

NA'SUS. (*us, i.* m.) The nose. The external part of this organ is composed of the *dorsum,* or bridge of the nose; the *lobe,* or tip of the nose; the *alæ nasæ,* or sides of the nostrils; and the *columna,* or inferior termination of the septum. For the internal structure of the nose, see *Naris* and *Smell.*

Nata. See *Natta.*

NA'TANS. (From *nato,* to swim.) Floating. Applied to leaves on the surface of the water, in opposition to those which are naturally under, and different, and are called demersed, immersed, and submersed; as in *Potamogeton natans.*

NA'TES. (*es, is.* f.; from *nato* to flow: because the excrements are discharged from them.) 1. The buttocks.

2. Two of the eminences of the brain, called tubercula quadrigemina, are so named from their resemblance.

Nates cerebri. See *Tubercula quadrigemina.*

NA'TRON. (Indeclinable. So called from *Natron,* a lake in Judæa, where it was found.) *Natrum.* 1. The name formerly given to the alkali now called soda. See *Soda.*

2. A native salt, which is found crystallised in Egypt, in the lake called Natron, and in other hot countries, in sands surrounding lakes of salt water. It is an impure subcarbonate of soda, and there are two kinds of it, the common and the radiated.

3. The name of an impure subcarbonate of soda, obtained by burning various marine plants. See *Soda.*

Natron muriatum. See *Sodæ murias.*

Natron præparatum. See *Sodæ subcarbonas.*

Natron tartarisatum. See *Soda tartarizata.*

Natron vitriolatum. See *Sodæ sulphas.*

NATTA. *Nata. Napta.*

NA'TULÆ. (Diminutive of *nates,* the buttocks: so called from their resemblance.) The two uppermost of four small eminences of the brain. See *Nates.*

NATURAL. *Naturalis.* Appertaining to nature.

Natural actions. See *Actions.*

Natural functions. See *Actions.*

NATURAL ORDERS. A division or arrangement of animals, plants, &c., from their external habits or characters. See *Vegetable Kingdom.*

NATURA'LIA. (*a, um.* pl. n.; from *natura,* nature.) The parts of generation.

NAUCLEA. The name of a genus of plants.

NAUCLEA GAMBIR. The plant which yields the East Indian kino. See *Kino.*

NAU'SEA. (*a, æ.* f. Ναυσεα; from *ναυς,* a ship: because it is a sensation similar to that produced by sailing in a ship.) An inclination to vomit without effecting it. See *Sickness.*

Nausiosis. See *Nausea.*

Nautia. See *Nausea.*

NAUTICUS MUSCULUS. The sailor's muscle. The tibialis posticus was so named by Spigelius, because it is employed in the act of climbing.

Navew. See *Brassica rapa.*

Navew, garden. See *Brassica rapa.*

Navew, sweet. See *Brassica rapa.*

NAVI'CULAR. (*Navicularis;* from *navicula,* a little boat.) 1. Boat-like. See *Naviculare os.*

2. Applied to parts of plants; as the valves of the seed-vessels of the *Isatis tinctoria,* and the lower petal of many of the papilionaceous blossoms.

NAVICULA'RE OS. *Naviforme os. Cymba.* A bone of the tarsus is so called, from its supposed resemblance to a boat.

Naviformis. See *Navicular.*

NEAPOLITA'NUS MO'RBUS. The venereal disease has been so called, because it was supposed to have made its first appearance in the army of Charles the Eighth of France, during the siege of Naples, in 1495.

Near-sightedness. See *Myopia.*

NE'BULA. (*a, æ.* f.; from νεφελη. 1. A superficial opacity of the cornea, occupying only its outer layer.

2. The cloud-like appearance in the urine, after it has been a little time at rest.

NECK. *Collum.* The parts which form the neck are divided into external and internal.

1. The *external* parts are the common integuments, several muscles, eight pair of cervical nerves, the eighth pair of nerves of the cerebrum, and the great intercostal nerve; the two carotid arteries, the two external jugular veins, and the two internal; the glands of the neck, viz. the jugular, submaxillary, cervical, and thyroid.

2. The *internal* parts are the fauces, pharynx, œsophagus, larynx, and trachea.

3. The bones of the neck are the seven cervical vertebræ.

NECROSCOPICAL. (From νεκρος, dead, and σκοπεω, to explore.) Relating to the examination of dead bodies.

NECRO'SIS. (*is, is.* f.; from νεκροω, to destroy.) This word, the strict meaning of which is only mortification, is, by the general consent of surgeons, confined to an affection of the bones. The death of parts of bones was not distinguished from caries, by the ancients. However, necrosis and caries are essentially different; for, in the first, the affected part of the bone is deprived of the vital principle; but this is not the case when it is simply carious. Caries is very analogous to ulceration; while necrosis is exactly similar to mortification of the soft parts.

NECROSIS USTILAGI'NEA. A painful convulsive contraction of the limbs. See *Raphania.*

NE'CTAR. (*ar, aris.* n. Νεκταρ, the drink of the gods.) A drink made of wine and honey.

NECTA'RIUM. (*um, ii.* n.; from nectar, because it contains a sweet honey-like fluid.) The nectary or honey-cup. An accidental part of a flower, which does not come under the description of any of its organs. It may be de-

fined that part of the corolla which contains or which secretes honey, though it is not necessary to a nectary that honey be present.

Scarce a flower can be found that has not more or less honey, though it is far from being universally, or even generally formed, by an apparatus separate from the petals.

In monopetalous flowers, as the *Lamium album*, the dead nettle, the tube of the corolla contains, and probably secretes, the honey, without any evident nectary.

Sometimes the part under consideration is a production or elongation of the corolla, as in the violet: sometimes, indeed, of the calyx, as in the garden nasturtium, *Tropæolum*, the coloured calyx of which partakes much of the nature of the petals.

Sometimes it is distant from both, either resembling the petals, as in *Aquilegia*; or more different, as in *Epimedium*, *Aconitum*, *Helleborus*, *Delphinium*. Such, at least, is what Linnæus and his followers understand of the four last-mentioned plants.

The most indubitable of all nectaries, as actually secreting honey, are those of a glandular kind. In the natural order of cruciform plants, composing the class *Tetradynamia*, there are generally four green glands at the base of the stamens, as in *Dentaria* and *Sisymbrium*; whilst in *Pelargonium*, the nectary is a tube running down one side of the flower-stalk. The elegant *Parnassia* has a most elaborate apparatus or nectary. — *Smith.*

From the figure of the nectary, it is said to be, —

1. *Calcarate*, or spur-like; as in *Aquilegia vulgaris*, *Delphinium ajax*, and *Antirrhinum linaria*.

2. *Cucullate*, hooded; as in *Impatiens balsamina*, *Aconitum*, and *Asclepias vincetoxicum*.

3. *Foveate*, a little depression in the claw of the petal; as in *Fritillaria imperialis*.

4. *Campanulate*; as in *Narcissus jonquilla*, and *Pseudonarcissus*.

5. *Crown-like*; as in *Passiflora cærulea*.

6. *Pedicellate*, resting on a partial flower-stalk; as in *Aconitum napellus*.

7. *Abilabiate tube*; as in *Helleborus fœtidus*, and *Nigella*.

8. *Poriform*, there being three pores in the germen; as in the Hyacinths.

9. *Squamate*, a little scale on the claw; as in *Ranunculus*.

10. *Glandular*, little nectiferous glands between the stamens and pistils; as in *Sinapis alba*.

11. *Stellate*, a double star covering the internal organs; as in *Stapelia*.

12. *Pilous*, fine hairy fascicles at the base of the stamina; as in *Parnassia palustris*.

13. *Bearded*; as in *Iris germanica*.

14. *Forniciform*, arched; small prolongations at the opening of the corolla, and covering the internal organs; as in *Symphytum officinale*, and *Myosotis scorpioides*.

15. *Bristle-like*, fine horn-like filaments around the internal organs; as in *Periploca græca*.

16. *Rotate*; as in *Cissampelos*.

17. *Scrotiforme*, behind the flower; as in *Satyrium*.

18. *Horn-like*, behind the flower; as in *Orchis*.

19. *Sandaliform*, slipper-like; as in *Cypripedium calceolus*.

20. *Globose*, investing the germen; as in *Mirabilis jalappa*.

21. *Cyathiform*, cup-like; as in *Urtica urens*.

22. *Conical*; as in *Utricularia foliosa*.

23. *Ascidiforme*, pitcher-like, a membranous tube, containing water, and behind the flower; as in *Ascium*, and *Ruyschia*.

24. *Calycine*, adhering to the calyx by a spur; as in *Tropæolum majus*.

NEDY'IA. (Νηδυΐα; from νηδυς, the belly.) The intestines.

NEDYS. Νηδυς. The belly.

Needle. See *Acus*.

Needle-shaped leaf. See *Acerosus*.

Needle zeolite. See *Zeolite*.

Negro cachexy. See *Cachexia*.

NEIÆRA. Νειαιρα; (from νειαρος, furthermost.) The lower part of the belly.

NEMOROSUS. (From *nemus*, a grove.) Appertaining to a grove. The specific name of many plants which grow in woods; as *Anemone nemosa*.

Nep. See *Nepeta cataria*.

Nepa theophrasti. See *Spartium*.

NEPE'NTHES. (Νηπενθες; from νη, priv. and πενθος, grief. 1. A remedy much celebrated among the ancients for allaying grief. According to Diodorus Siculus, the Theban women alone possessed the secret of its composition. It is generally thought to have contained opium; but Adanson believes it to have been the preparation of hemp, now known in the East under the name of *bangue*. The word νηπενθες occurs in Homer, and the critics have worked hard to discover what substance, or the produce of what plant, Homer designated by this name. Now, the truth is, that, in the passage in question, the word is not a *name*, but an *epithet*. Homer tells us that Helen cast into the wine "*a drug* banishing sorrow, allaying wrath, and causing oblivion of all evils."

Αυτικ' αρ' εις οινον βαλη φαρμακον ενθεν επινον,
Νηπενθες τ'ακολον τε κακων επιληθον απαντων.
Odyss. lib. iv. v. 220.

But Homer does not say what drug it was, and νηπενθες is no more the name of the drug than ακολον, or κακων επιληθον απαντων. It is merely an epithet of the φαρμακον. It is very likely, therefore, that the poet had no particular drug in view; and hence, that those who know what the φαρμακον νηπενθες was, know more of Homer's meaning than he knew himself. However this may be, it is singular that the word *nepenthes*, as used by Homer, should have been so continually mistaken for the name of a drug; since the reverse is not only very obvious, but was long ago clearly explained by Pierre Petit, in his treatise entitled *Homeri Nepenthes; sive, de Helenæ Medicamento*, &c.

2. A name given by Theodore Zwinger, and other old writers, to a composition of opium, saffron, lignum aloes, crocus solis, and ambergris. It was to this preparation that Paracelsus first gave the name of *laudanum*.

3. The name of a genus of plants of the Class *Diœcia*, and Order *Polyandria*.

NE'PETA. (*a*, *æ*. f.; from *nepte*, German.) The name of a genus of plants in the Linnæan system. Class, *Didynamia*; Order, *Gymnospermia*.

Nepeta cataria. The systematic name of the nep, or catmint; called also, *Herba felis*, *Mentha felina*, *Calamintha*, *Nepetella*, and *Mentha cataria*. The leaves of this plant, *Nepeta — floribus spicatis; verticillis subpedicellatis; foliis petiolatis, cordatis, dentato-serratis*, of Linnæus, have a moderately pungent aromatic taste, and a strong smell, like an admixture of spearmint and pennyroyal. The herb is recommended in uterine disorders, dyspepsia, and flatulency.

Nepete'lla. (*a*, *æ*. f.; diminutive of *nepeta*.) The lesser catmint.

Ne'phela. (*a*, *æ*. f.; diminutive of *νεφος*, a cloud.) The same as *nebula*.

Nephelοi'des. (From *νεφελη*, a cloud, and *ειδος*, a likeness.) Cloudy: applied to the urine.

NEPHRA'LGIA. (*a*, *æ*. f.; from *νεφρος*, the kidney, and *αλγος*, pain.) Pain in the kidney.

NEPHRITIC. (*Nephriticus*; from *νεφρος*, the kidney.) Appertaining to the kidney, or acting on the kidney.

Nephritic wood. Lignum nephriticum. See *Moringa aptera* in the Supplement.

Nephritica. Medicines which act on the kidneys.

Nephritica aqua. A spirituous distillation of nutmeg and hawthorn flowers.

NEPHRI'TIS. (*is*, *idis* f.; from *νεφρος*, a kidney.) Inflammation of the kidney. This disease is known by fever, pain in the region of the kidneys, and shooting along the course of the ureter; drawing up of the testicles; numbness of the thigh; vomiting; urine high coloured, and frequently discharged; costiveness, and colic pains. Nephritis is symptomatic of calculus, gout, &c.

This inflammation may be distinguished from the colic by the pain being seated very far back, and by the difficulty of passing urine, which constantly attends it; and it may be distinguished from rheumatism, as the pain is but little influenced or increased by motion.

Nephritis is to be distinguished from a calculus in the kidney or ureter, by the symptoms of fever, accompanying, or immediately following, the attack of pain, and these continuing without any remarkable intermission; whereas, in a calculus of the kidney or ureter, they do not occur until a considerable time after violent pain has been felt. In the latter case, too, a numbness of the thigh, and a retraction of the testicle on the affected side, usually takes place.

The causes which give rise to nephritis are external contusions, strains of the back, acrids conveyed to the kidneys in the course of the circulation, violent and severe exercise, either in riding or walking, calculous concretions lodged in the kidneys or ureters, and exposure to cold. In some habits, there is an evident predisposition to this complaint, particularly the gouty, and in these there are often translations of the matter to the kidneys, which very much imitate nephritis.

An inflammation of the kidney is attended with a sharp pain on the affected side, extending along the course of the ureter; and there is a frequent desire to make water, with much difficulty in expelling it. The body is costive, the skin is dry and hot, the patient feels great uneasiness when he endeavours to walk, or sit upright; he lies with most ease on the affected side, and is generally troubled with nausea and frequent vomiting.

When the disease is protracted beyond the seventh or eighth day, and the patient feels an obtuse pain in the part, has frequent returns of chillness and shiverings, there is reason to apprehend that matter is forming in the kidney, and that a suppuration will ensue.

Dissections of nephritis show the usual effects of inflammation on the kidney; and they likewise often discover the formation of abscesses, which have destroyed its whole substance. In a few instances, the kidney has been found in a scirrhous state.

The disease is to be treated by bleeding, general and local, the warm bath, or fomentations to the loins, emollient clyster, mucilaginous drinks, and the general antiphlogistic plan. The bowels should be effectually cleared at first by some sufficiently active formula; but the saline cathartics are considered not so proper, as they may add to the irritation of the kidney. Calomel, with antimonial powder, followed by the infusion of senna, or the ol ricini, may be given in preference, and repeated occasionally. It will be right, also, to endeavour to promote diaphoresis, by moderate doses of antimonials especially. Blisters are inadmissible in this disease; but the linimentum ammoniæ, or other rubefacient application, may in some measure supply their place. Opium will often prove useful, particularly where the symptoms appear to originate from calculi, given in the form of glyster or by the mouth; in which latter mode of using it, however, it will be much better joined with other remedies, which may obviate its heating effect, and determine it rather to pass off by the skin. A decoction of the dried leaves of the peach-tree is said to have been serviceable in many cases of this disease. In affections of a more chronic nature, where there is a discharge of mucus or pus, by urine, in addition to suitable tonic medicines, the uva ursi in moderate doses, or some of the terebinthinate remedies may be given with probability of relief.

Nephroce'le. (*Νεφρος*, the kidney, and *κηλη*, a tumour.) Hernia of the kidney — a very rare case.

Nephro'lithos. (*Νεφρος*, the kidney, and *λιθος*, a stone.) A renal calculus.

Nephrople'gia. (*Νεφρος*, the kidney, and *πλησσω*, to strike.) Paralysis of the kidney.

Nephropyo'sis. (*Νεφρος*, the kidney, and *πυωσις*, suppuration.) Suppuration of the kidney.

NE'PHROS. *Νεφρος*. The kidney. See *Kidney*.

NEPHROTOMY. (*Nephrotomia*, *æ*. f. from *νεφρος*, a kidney, and *τεμνω*, to cut.) T

peration of extracting a stone from the kidney, —a proceeding which, perhaps, has never been ctually put in practice. The cutting into the idney, the deep situation of this viscus, and the vant of symptoms by which the lodgment of a tone in it can be certainly discovered, will lways be strong objections to the practice.

NE'RIUM. (*um, ii.* n.; from *νηρος*, humid: o called because it grows in moist places.) The name of a genus of plants in the Linæan system. Class, *Pentandria;* Order, *Monogynia.*

NERIUM ANTIDYSENTE'RICUM. The systemtic name of the tree, *Nerium —foliis ovatis, cuminatis, petiolatis,* of Linnæus, which affords he Codaga pala bark; which is also called, *Conessi cortex, Cortex codagæ palæ, Cortex Belaye,* and *Cortex profluvii.* It grows on the oast of Malabar. It is of a dark black colour xternally, and generally covered with a white oss, or scurf. It is very little known in the hops; has an austere, bitter taste; and is recommended in diarrhœa, dysentery, &c., as an stringent.

NERIUM TINCTORIUM. This tree grows in Hindostan, and, according to Dr. Roxburgh, ffords indigo.

NE'ROLI OLEUM. Essential oil of orange owers. See *Citrus aurantium.*

NERVA'LIA OSSA. The parietal bones have een so called, why we know not.

Nervalis. See *Nervous.*

NERVE. (*Nervus, i.* m.; from *νεῦρον.*)

A. In the anatomy of the ancients, the nerves nd the tendons were confounded under this ame; and this accounts for the opposite meanngs of the word *nervous,* which sometimes ignifies strong, sinewy, and at others, weak and ritable. In the language of modern anatomy, he nerves are those long white cords which rise from the brain and spinal cord, and are istributed to all parts of the frame, endowing with sensation and voluntary motion. The erves are distinguished into *cerebral* and *spinal:* he cerebral nerves are generally reckoned as ine pairs; the spinal are thirty pairs, and are ivided into twelve pair of dorsal, five pair of umbar, and five of sacral.

CEREBRAL NERVES.

1. The *first pair,* or *olfactory.* These rise from he under and back part of the anterior lobes of he cerebrum, by three filaments, two which are hite, and one grey. One of the white filaents may be traced into the corpus striatum. Each olfactory nerve forms a bulb on the ribriform plate of the ethmoid bone, on each de the crista galli. From this bulb numerous laments, which are distinguished into internal, iddle, and external, pass through the foramina f the cribriform plate, and are distributed to the chneiderian membrane.

2. The *second pair,* or *optic nerves.* These rise partly from the nates, and partly from the ptic thalami. They proceed forward, beneath he crura cerebri, to which they adhere, and meet rom the opposite sides, in front of the sella rcica, forming a commissure, on the nature of hich there is great difference of opinion. (See *ptic commissure.*) The nerves then divaricate, and each passes through the foramen opticum into the orbit, and expands into the retina.

3. The *third pair,* or *motores oculorum.* These arise from the under, inner, and back part of the crura cerebri. They penetrate the dura mater, pass through the cavernous sinuses, and proceed through the foramina lacera anteriora, into the orbit, where they are distributed to all the muscles of the eye-ball, except the superior oblique and the abductor. Each gives a filament to the ophthalmic ganglion.

4. The *fourth pair, pathetici,* or *trochleares.* These arise from the valve of Vieussens. They pass between the crura cerebri and cerebellum, to the cavernous sinus, along the outer side of which they run to the *foramina lacera anteriora,* through which they enter the orbit, and are distributed chiefly to the superior oblique muscle of the eyeball. They are the smallest of the cerebral nerves.

5. The *fifth pair,* or *trigemini.* These are the largest of the cerebral nerves. One is given off on each side, from the lower and anterior part of the crus cerebelli, near its junction with the tuber annulare. It consists of very numerous filaments, which are divisible into two fasciculi, of which the anterior or smaller may be traced through the pons varolii to the medullary fibres prolonged from the corpus pyramidale, while the posterior and larger fasciculus is found to arise from the corpus restiforme. The compound nerve, thus constituted, enters the dura mater just below the the tentorium, and passes into a canal formed for it by that membrane. Here the fasciculi, which form the nerve, diverge: those derived from the posterior root form the Gasserian ganglion; while those derived from the anterior root pass forward beneath the ganglion. From the anterior margin of the Gasserian ganglion arise the *ophthalmic, superior maxillary,* and *inferior maxillary* nerves. The portion which separates from the rest, and passes beneath the ganglion, makes its exit from the cranium at the same foramen as the inferior maxillary nerve, with which it immediately afterwards incorporates. Now, the ophthalmic and superior maxillary are nerves of sense only; but the inferior maxillary is also a motor nerve, which power it derives from that portion which has been just described as unconnected with the ganglion. Hence the trigeminal nerve taken as a whole, is a compound nerve, entirely analogous to those of the spine. For the distribution of the three great branches of this nerve, see *Ophthalmic nerve,* and *Maxillary nerve.*

6. The *sixth pair,* or *abducentes.* These arise on each side from the tuber annulare, near the groove which divides it from the medulla oblongata. They pass along the basilar process of the occipital bone, penetrate the dura mater, pass through the cavernous sinus, and enter the orbit through the foramen lacerum anterius, to be distributed to the abductor muscle of the eye-ball.

7. The *seventh pair.* Each of these consists of two nerves, the *facial* or *portio dura,* and the *auditory* or *portio mollis.* See *Portio dura,* and *Portio mollis.*

8. The *eighth pair*. These consist on each side of three distinct nerves, the *glosso-pharyngeal*, the *nervus vagus*, and the *nervus accessorius*.

The glosso-pharyngeal nerve and the nervus vagus, are situated at the upper and lateral part of the medulla oblongata. The nervus accessorius ascends along the side of the spinal cord and medulla oblongata, to join the other two nerves.

The *Glosso-pharyngeal nerve* arises on each side by several filaments from the lateral part of the medulla oblongata, immediately below the tuber annulare, and behind the corpus olivare. These filaments unite into a single nerve, which is situated directly above the nervus vagus. It is distributed to the root of the tongue, pharynx, and larynx.

The *Nervus vagus* arises by many filaments, arranged perpendicularly along the lateral part of the medulla oblongata, immediately below the origins of the glosso-pharyngeal nerve. These filaments form six or eight cords, which are united in the form of a flattened band.

The glosso-pharyngeal nerve and the nervus vagus, proceed together outwards and forwards to the foramen lacerum posterius, through which they pass out of the cranium.

The *Nervus accessorius* arises by several filaments from the lateral part of the spinal cord, between the anterior and posterior origins of the cervical nerves. They unite into a single nerve, which ascends through the foramen magnum into the skull, and thence proceeds outwards to the foramen lacerum posterius, through which it passes with the two other divisions of the eighth pair.

For the distribution of the two latter nerves, see *Pneumogastric nerve*, and *Accessorius nervus*.

9. The *ninth pair*, *lingual*, *hypoglossal*, or *motores linguæ*. Each nerve arises by numerous filaments from the furrow between the corpus pyramidale and corpus olivare. It passes through the anterior condyloid foramen, descends behind the posterior portion of the digastric muscle, and forms an arch with its convexity downwards; it then passes between the mylohyoid and hyoglossus muscles to the tongue, throughout the muscular substance of which it is distributed. From the above-mentioned arch, a twig, termed *descendens noni*, runs down in front of the sheath of the common carotid artery, to the sterno-hyoid, sterno-thyroid, and adjacent muscles.

Soëmmering, and other anatomists, have divided the encephalic nerves into twelve pairs: viz. 1. *The olfactory*. 2. *The optic*. 3. *Motores oculorum*. 4. *Pathetici*. 5. *Trigemini*. 6. *Abducentes*. 7. *Facial*. 8. *Auditory*. 9. *Glosso-pharyngeal*. 10. *Nervus vagus*. 11. *Accessory nerves*. 12. *Lingual*.

This arrangement, though not commonly adopted, is the true and natural one, as the twelve pairs of nerves just enumerated are perfectly distinct.

Spinal Nerves.

Those nerves are called *spinal* which pass out through the lateral or intervertebral foramina of the spine. They consist of thirty-one pairs; and each nerve has two roots, the one rising from the anterior, and the other from the posterior column of the cord. The fibres of the posterior root converge, and, while yet enclosed in the sheath of the cord, form a ganglion. The fibres of the anterior root converge in like manner, passing by the ganglion, unite with the fibres of the posterior root, and form one nerve. Each nerve thus formed, is therefore a compound nerve. The researches of Sir C. Bell have demonstrated that the spinal nerves have a double function; the anterior nerves being *motor* nerves, and the posterior, *sensatory* nerves. The spinal nerves are divided into *cervical*, *dorsal*, *lumbar*, and *sacral* nerves.

Cervical Nerves.

The *cervical nerves* are *eight* pairs.

The *first* are called the *occipital* or *suboccipital*: they arise from the beginning of the spinal marrow, pass out between the margin of the occipital foramen and atlas, form a ganglion on its transverse process, and are distributed about the occiput and neck.

The *second* pair of cervical nerves send a branch to the accessory nerve of Willis, and proceed to the parotid gland and external ear.

The *third* cervical pair supply the integuments of the scapula, the trapezius, and triangularis muscles, and send a branch to form with others the diaphragmatic nerve.

The *fourth*, *fifth*, *sixth*, *seventh*, and *eighth* pair, all converge to form the *brachial plexus*, from which arise the six following: —

Nerves of the upper Extremities.

1. The *supra scapular*.
2. The *subscapular*.
3. The *thoracic*, which are usually three in number. Two of them are anterior, and distributed to the pectoral muscles. The third, a very long branch, is posterior, and distributed to the serratus magnus muscle.
4. The *circumflex*, or *axillary* nerve, which sometimes arises from the radial nerve. It runs backwards and outwards around the neck of the humerus, and ramifies in the muscles of the scapula.
5. The *external cutaneal*, which perforates the caraco-brachialis muscle to the bend of the arm, where it accompanies the median vein as far as the thumb, and is lost in its integuments.
6. The *internal cutaneal*, which descends on the inside of the arm, where it bifurcates. From the bend of the arm the anterior branch accompanies the basilic vein, to be inserted into the skin of the palm of the hand; the posterior branch runs down the internal part of the fore-arm, to vanish in the skin of the little finger.
7. The *median* nerve, which accompanies the brachial artery to the cubit, then passes between the brachialis internus, pronator rotundus, and the perforatus and perforans, under the ligament of the wrist to the palm of the hand, where it sends off branches in every direction to the muscles of the hand, and then supplies the digital nerves, which go to the extremities of the thumb, fore, and middle fingers.
8. The *ulnar* nerve, which descends between the brachial artery and basilic vein, between

internal condyle of the humerus and the cranon, and divides in the fore-arm into an *ernal* and *external* branch. The former passes er the ligament of the wrist and sesamoid ne, to the hand, where it divides into three nches, two of which go to the ring and little ger, and the third forms an arch towards the mb, in the palm of the hand, and is lost in e contiguous muscles. The latter passes over e tendon of the extensor carpi ulnaris and ck of the hand, to supply also the two last gers.

9. The *radial* nerve, which sometimes gives the axillary nerve. It passes backwards, out the os humeri, descends on the outside the arm, between the brachialis externus and ernus muscles, to the cubit; then proceeds, tween the supinator longus and brevis, to the perior extremity of the radius, giving off rious branches to adjacent muscles. At this ace it divides into two branches; *one* goes ng the radius, between the supinator longus d radialis internus, to the back of the hand, d terminates in the interosseus muscles, the mb, and three first fingers; the *other* passes tween the supinator brevis and head of the lius, and is lost in the muscles of the fore-n.

Dorsal Nerves.

The *dorsal* nerves are twelve pairs in num-r. The first pair gives off a branch to the achial plexus. The upper dorsal nerves are stributed to the muscles of the back, inter-stals, serrati, pectoral, abdominal muscles, and aphragm. The five inferior pairs go to the uscles of the thorax and abdomen.

Lumbar Nerves

The five pair of lumbar nerves are bestowed out the loins and muscles, skin of the ab-men and loins, scrotum, ovaria, and dia-ragm. The second, third, and fifth pair ite and form the *obturator nerve*, which de-ends over the psoas muscle into the pelvis, d passes through the foramen thyroideum to e obturator muscle, triceps, pectineus, &c.

The third and fourth, with some branches of e second pair, form the *crural nerve*, which sses under Poupart's ligament with the fe-oral artery, sends off branches to the adjacent rts, and descends, in the direction of the sar-rius muscle, to the internal condyle of the mur, whence it accompanies the saphena vein the internal ankle, to be lost in the skin the great toe.

The fifth pair are joined to the first pair of e sacral nerves.

Sacral Nerves, and Nerves of the Inferior Extremities.

There are five pair of *sacral* nerves, all of hich arise from the *cauda equina*, or termination the medulla spinalis, so called from the nerves sembling the tail of a horse. The four first ir give off branches to the pelvic viscera, and e afterwards united to the last lumbar, to rm a large *plexus*, which gives off

The *ischiatic nerve*, the largest in the body. he ischiatic nerve, immediately at its origin, nds off branches to the bladder, rectum, and rts of generation; proceeds from the cavity of the pelvis through the ischiatic notch, between the tuberosity of the ischium and great trochanter, to the ham, where it is called the *popliteal nerve*. In the ham it divides into two branches.

1. The *peroneal*, which descends on the fibula, and distributes many branches to the muscles of the leg and back of the foot.

2. The *tibial*, which penetrates the gastrocnemii muscles to the internal ankle, passes through a notch in the os calcis to the sole of the foot, where it divides into an *internal* and *external plantar* nerve, which supply the muscles and aponeurosis of the foot and the toes.

Besides the encephalic and spinal nerves, there is a set of nerves constituting what is called the *sympathetic* or *ganglionic* system. This has, till of late years, been described as a single nerve, called the great sympathetic or great intercostal, arising from the fifth and sixth cerebral nerves; but it is, in truth, a great collection of ganglia, connected by filaments with each other, and with almost every nerve of the frame. For a description of its course, see *Intercostal nerve.*

According to the views of Sir C. Bell, there is a particular system of nerves which minister to respiration. The medulla oblongata is composed of three fasciculi on each side: an anterior, which gives origin to nerves of motion; a posterior, which gives origin to nerves of sensation; and a middle, which gives rise to *respiratory* nerves.

A great portion of the spinal nerves concur in producing the respiratory movements; but there are certain nerves which are the special respiratory nerves of particular regions, and are therefore most important.

These are, —

1. The *portio dura*, or respiratory of the face.

2. The *nervus vagus*, or respiratory of the larynx.

3. The *glosso-pharyngeal.*

4. The *accessory nerve*, or *superior respiratory.*

5. The *phrenic*, or *great internal respiratory.*

6. The *posterior thoracic*, or *external respiratory.*

B. In *Botany*, applied to a cluster of vessels that runs like a rib or chord on certain leaves; as that of the *Laurus cinnamomum*, and *Arctium lappa.*

Nerveless. See *Enervis.*

NE'RVINE. (*Nervinus*; from *nervus*, a nerve.) Neurotic. Applied to that which relieves disorders of the nerves. All the antispasmodics, and the various preparations of bark and iron.

Nervorum resolutio. Apoplexy and palsy have been so called.

NERVOUS. *Nervosus.* Appertaining to a nerve. Applied, 1. In *Medicine*, to fevers and affections of the nerves, and to medicines which act on the nervous system.

2. In *Anatomy* and *Physiology*, to the structure and functions of parts.

3. In *Botany*, to leaves which have hard fibres or nerve-like cords.

Nervous diseases. See *Neuroses.*

Nervous fever. *Febris nervosa.* See *Typhus.*

Nervous fluid. See *Nervous system.*

Nervous headach. See *Cephalalgia.*

NERVOUS SYSTEM. This consists of the encephalos and its nerves; the spinal cord and its nerves; and the ganglia of the sympathetic, and filaments connecting them with each other. These parts are described under their respective heads, and we shall here merely notice the functions which they are supposed to perform.

1. The *brain* has been generally considered as the seat and organ of the mind; but if the real amount of our knowledge on the subject be carefully weighed, it will be found that all we are warranted in asserting is, that *the brain is the general receptacle of all impressions made on the external senses, and the centre from which volition is communicated to the organs subservient to the will.* We are entirely ignorant of the nature of mind, and know not whether thought has any organ, or the mind has any seat. If the mind be *immaterial*, as most philosophers have believed, it must be connected with the organism by some relation which it is impossible for us, in the present state of our existence, to understand, and which evidently cannot involve the idea of *position.* Physiologists, in general, have considered the brain as a single organ. Drs. Gall and Spurzheim, however, regard it as a congeries of organs, each of which is the seat of some particular intellectual power, moral quality, or animal instinct. See *Phrenology.*

2. Several conjectures have been formed as to the particular function of the *cerebellum.* Of these, the only two which seem worthy of any attention, are those of Flourens and Gall. Flourens found in his experiments on animals, that when the cerebellum was removed, the animals retained the power of moving their muscles; but were no longer able to combine their action into orderly movements, and were incapable of standing, walking, springing, flying, &c. M. Flourens hence concludes that the cerebellum is the *regulator of motion*, and this opinion is countenanced in some degree by the experiments of several other physiologists. Dr. Gall regards the cerebellum as the *organ of the sexual instinct* — an opinion which, on the whole, does not seem to be countenanced either by comparative anatomy or pathological observation.

3. It has been established, by the discoveries of Sir C. Bell, that the spinal cord is the immediate seat of the power by which the muscles are moved, and of the common sensibility of parts. The anterior columns of the cord are the motory portion, and the posterior the sensatory.

Sir C. Bell regards the central portion of the *medulla oblongata* as presiding over respiration, and giving origin to the nerves which minister to that function. The opinions of Sir C. Bell on this subject, though generally influential, have not received so unlimited an assent as those with respect to the motory and sensatory powers of the spinal cord.

4. Less is positively known of the functions of the *sympathetic*, than of any other portion of the nervous system. The most prevalent ideas are, that it is either the source of that power by which the organic functions are carried on, or the medium through which the actions of the different parts of the nervous system are in some way combined and modified for the production of the organic functions.

5. Attempts have been made at different times to explain the intimate actions which take place in the nerves when thrown into operation Thus, it has been supposed that the nerves contain a subtle fluid, called the *nervous fluid*, on the motions of which sensation and voluntary motion depend. Another hypothesis, which was maintained by the celebrated Hartley, refers all the phenomena of the nervous system to vibrations in the nervous substance. It is scarcely necessary to do more than mention such hypotheses, which are now generally discarded, because, as they explain nothing which cannot be explained as well without them, and are supported by no kind of direct evidence, they serve merely to place us one remove further from the truth.

Dr. Wilson Philip, from his well known and striking experiments on the power of galvanism in sustaining the action of parts after their nervous communication with the brain is cut off, infers that the nervous and galvanic energies are identical; but this conclusion has not been adopted, and cannot, in truth, be legitimately deduced from the experiments, which merely prove that when a nerve is divided, its distant extremity retains a susceptibility of stimulation, and that galvanism is an agent capable of stimulating it.

Nervous quinsy. Heberden gives this name to the *Globus hystericus.*

Nes'tis. Νησις. The jejunum.

Nests, edible. See *Alcyon.*

Nettle. See *Urtica.*

Nettle, dead. See *Lamium album.*

Nettle-rash. See *Urticaria.*

NEURA'LGIA. (*a*, *æ*. f.; from νευρον a nerve, and αλγος, pain.) Pain in a nerve. Various parts of the body are liable to be affected with excruciating pain, which is quite independent of any inflammation of the part and which may often be traced in the course of the nerves. Such affections all come under the head of *neuralgia.* In many cases, they appear to be strictly idiopathic; in some, they are symptomatic of derangement of the digestive or other functions, and in a third class of cases they are the result of injuries of the nerves from accidents or surgical operations. The principal seats of neuralgia are, the branches of the fifth pair of nerves; the sacro-sciatic nerve; the nerves of the female breast; and those of the hands and feet. When the disease occupies the branches of the fifth pair of nerves, it is called *neuralgia facialis*, or *tic douloureux*; when it is seated in the sacro-sciatic nerve, it is often confounded with very different affections, under the name of *sciatica.* In a few cases of neuralgia, the neurilemma has been observed to be inflamed; and hence it has been hastily inferred that neuralgia consists in inflammation of

nerve; in the majority of cases, however, no such appearances are to be detected; and hence, when they occur, they are to be regarded as merely an effect of the disease.

The treatment of neuralgia will vary greatly according to its cause. Where it is symptomatic, the primary disease is to be attacked; when it is idiopathic, powerful tonic medicines and local counter-irritation are generally found the most effectual means of cure. Carbonate of iron, in large doses, seems to have been more frequently successful than any other remedy, but bark and arsenic are also in many instances decidedly useful. Where the disease has any tendency to periodicity, the bark is to be preferred to any other medicine. Division of the affected nerve has often been resorted to, but the relief derived from this is very temporary, for the nervous connexion is no sooner re-established, than the pain returns. In a few melancholy instances, neuralgia is utterly incurable, and the patient dies worn out by years of torture, which admits of only partial relief from large quantities of opium.

NEURILE'MMA. (*a, atis.* n.; from νευρον, a nerve, and λεμμα, the bark or covering.) The membranous sheath which invests the nerves, and also the several fibrils of which they are composed.

NEUROLOGY. (*Neurologia, æ.* f.; from νευρον, a nerve, and λογος, a discourse.) The doctrine of the nerves. See *Nerve.*

NEUROME'TORES. (From νευρον, a nerve, and μητηρ, a matrix.) The psoas muscles are so called by Fallopius, as being the repository of many small nerves.

NEURO'PTERA. (From νευρον, a nerve, and πτερον, a wing.) The name of an order of insects. See *Animal kingdom.*

NEURO'SES. (The plural of *neurosis.*) Nervous diseases. The second class of Cullen's nosology is so called: it comprehends affections in which sense and motion are disturbed, without either idiopathic pyrexia, or topical disease.

NEURO'TICUS. (From νευρον, a nerve.) Nervous; appertaining to the nerves: applied to — 1. Diseases of the nervous system.

2. Nervine medicines.

NEURO'TOMY. (*Neurotomia, æ.* f.; from νευρον, a nerve, and τεμνω, to cut.) The dissection of the nerves, or the division of a nerve.

NEUTRAL. (*Neutralis;* from *neuter,* neither one nor the other.) 1. In *Chemistry,* applied to saline compounds of an acid and an alkali, which are so called, because they do not possess the characters of acid or alkaline salts; such are Epsom salts, nitre, and all the compounds of the alkalis with the acids.

2. In *Botany,* applied to such flowers or parts as contain neither stamens nor pistils, and of course produce no seed.

NEUTRALISA'TION. *Neutralisatio.* When acid and alkaline matter are combined in such proportions that the compound does not change the colour of litmus or violets, they are said to be neutralised.

Nicked leaf. See *Emarginatus.*

NI'CKEL. A metal found in nature generally in the metallic state, more rarely in that of an oxide. Its ores have a coppery red colour, generally covered more or less with a greenish-grey efflorescence. The most abundant ore is that termed *sulphuret of nickel;* besides which there is what is called *native oxide of nickel,* or *nickel ochre;* the sulphuret, and *martial nickel.*

Nickel is a metal of great hardness, of an uniform texture, and of a colour between silver and tin; very difficult to be purified, and magnetical. It even acquires polarity by the touch.

NICOTIA'NA. (*a, æ.* f.; from Nicott, who first brought it into Europe. Tobacco. 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Monogynia.*

2. The former pharmacopœial name of the tobacco. See *Nicotiana tabacum.*

NICOTIANA AMERICANA. American or Virginian tobacco. See *Nicotiana tabacum.*

Nicotiana minor. See *Nicotiana rustica.*

NICOTIANA RUSTICA. The systematic name of the English tobacco; called also, *Nicotiana minor, Priapeia,* and *Hyoscyamus luteus.* This plant is much weaker than the Virginian tobacco; the leaves are chiefly used to smoke vermin, though they promise, from their more gentle operation, to be a safer remedy in some cases than the former.

NICOTIANA TABA'CUM. The systematic name of the Virginian tobacco-plant, which is also called *Petum,* by the Indians, *Tabacum, Hyoscyamus-peruvianus,* and *Picelt.*

Nicotiana — foliis lanceolato-ovatis sessilibus decurrentibus florentibus acutis, of Linnæus.

The use of this herb for smoking is now general throughout the greater part of the world. There has been much dispute as to the salubrity of this habit; some contending that it is conducive to health, and others maintaining that it is an absolute slow poison. It disagrees with some constitutions, but in a general way appears to have no effect on the health one way or another. Where shall we find healthier men than in our navy? Yet almost all sailors smoke tobacco, and many chew it.

This plant is also employed medicinally. It is narcotic, emetic, purgative, diuretic, and sternutatory. A decoction of the leaves is sometimes applied as a wash, in porrigo, scabies, and other cutaneous affections. The fumes and infusion are employed as enemata, in strangulated hernia, and some other cases; they occasion extreme faintness and relaxation, and require to be used with proper caution, lest these effects take place to a fatal extent. Vauquelin has obtained a peculiar principle from this plant, in which its active properties reside. See *Nicotin.*

NI'COTIN. A peculiar principle obtained by Vauquelin from tobacco. It is colourless, and has the peculiar taste and smell of the plant. It dissolves both in water and alkohol: it is volatile and poisonous.

NICTITA'TIO. Twinkling, or winking of the eyes. It is a natural and instinctive action for the purpose of cleansing and moistening the

eyeball, and rendering it better fitted for vision; but in nervous persons, it is sometimes repeated so frequently as to become a morbid habit.

Nidi esculenti. Edible birds' nests. See *Alcyon.*

NI'DULANS. (From *nidulor*, to place in a nest.) Nidulate: applied to the seeds of some fruits, which nestle, as it were, or are embedded on their surface; as those of the strawberry.

NIGE'LLA. (*a*, *æ*. f.; *quasi nigrella*; from *niger*, black: so named from its black seed.) 1. The name of a genus of plants in the Linnæan system. Class, *Polyandria*; Order, *Pentagynia.*

2. The pharmocopœial name of the *nigella sativa.*

Nigella officinarum. See *Agrostemma githago.*

Nigella sativa. The systematic name of the devil in a bush. Fennel-flower. *Melanthium. Melaspermum.* This plant was formerly employed medicinally as an expectorant and deobstruent, but is now fallen into disuse.

Nigella'strum. (*um*, *i.* n.; from *nigella*, fennel-flower.) See *Agrostemma githago.*

NIGER. Black. Applied very generally in *Natural History*, to designate the colour of animals, plants, minerals, &c.; as *Sambucus niger*; and in *Anatomy* and *Pathology* thus: *pigmentum nigrum*, *morbus niger*, &c. See *Colour.*

Night-blindness. See *Hemeralopia.*

Nightmare. See *Ephialtes.*

Nightshade. See *Solanum*, *Phytolacca*, and *Atropa.*

Nightshade, American. See *Phytolacca.*

Nightshade, deadly. See *Atropa.*

Nightshade, Palestine. See *Solanum.*

Nightshade, woody. See *Solanum.*

NIGRITIES. (From *niger*, black.) A caries is called *nigrities ossium*, a blackness of the bones.

Nihil album. *Nihilum album.* A name formerly given to the flowers or oxide of zinc.

Ninzi radix. See *Sium ninsi.*

Ninzin. See *Sium ninsi.*

NIPPLE. *Papilla.* The small projecting body in the middle of the breasts of men and women. See *Mamma.*

Nipple-wort. See *Lapsana.*

Nirles. A popular name of Herpes phlyctænodes.

Nisus formativus. A creative or formative effort. This phrase is used by Blumenbach synonymously with vital activity.

NI'TIDUS. Polished; smooth; shining; glossy. Applied, in *Botany*, to parts of plants; as the stem of the *Chærophyllum sylvestre*, the leaves of the *Ilex*, *Hedera*, *Buxus*, &c.

NI'TRAS. (*as*, *atis.* f.) A nitrate. A salt formed by the union of the nitric acid with a salifiable base; as the nitrate of potash, soda, silver, &c.

Nitras ammoniæ. *Ammonia nitrata. Sal ammoniacus nitrosus. Alkali volatile nitratum.* Nitrate of ammonia. This salt has been employed internally as a diuretic and deobstruent, and externally as a discutient. It is also sialagogue.

Nitras argenti. See *Argenti nitras.*

Nitras calcis. Nitrate of lime. Calcareous nitre. By particular treatment this salt becomes phosphorescent. See *Baldwin's phosphorus.*

Nitras potassæ. See *Potassæ nitras.*

Nitras potassæ fusus. *Sal Prunellæ. Nitrum tabulatum.* This salt, besides the nitric acid and potash, contains a little sulphuric acid.

Nitras sodæ. *Alkali minerale nitratum. Nitrum cubicum.* Nitrate of soda. A neutral salt composed of soda and nitric acid. Its virtues are similar to those of nitrate of potash, for which it may be safely substituted.

Nitrate. See *Nitras.*

Nitrate of potash. See *Nitre.*

Nitrate of silver. See *Argenti nitras.*

NI'TRE. (Νιτρον. *Nitrum*, *i.* n.) *Alaurat. Algali. Atac. Baurack. Acusto. Halinitrum. Saltpetræ. Potassæ nitras.* Saltpetre. A perfect neutral salt, formed by the union of the nitric acid with the vegetable alkali, thence called nitrate of potash. Nitre exists in large quantities in the earth, and is continually formed in inhabited places; it is found in great quantities upon walls which are sheltered from the rain. It is found ready formed in the East Indies, in Spain, in the kingdom of Naples, and elsewhere, in considerable quantities; but nitrate of lime is still more abundant. Far the greater part of the nitrate made use of is produced by a combination of circumstances which tend to compose and condense nitric acid. This acid appears to be produced in all situations where animal matters are completely decomposed with access of air, and of proper substances with which it can readily combine. Grounds frequently trodden by cattle, and impregnated with their excrements, or the walls of inhabited places where putrid animal vapours abound, such as slaughter-houses, drains, or the like, afford nitre by long exposure to the air. Artificial nitre beds are made by an attention to the circumstances in which this salt is produced by nature. Dry ditches are dug, and covered with sheds open at the side, to keep off the rain. They are filled with animal substances, such as dung or other excrements, with the remains of vegetables, and old mortar, or other loose calcareous earth; this substance being found to be the best and most convenient receptacle for the acid to combine with. Occasional watering, and turning up from time to time, are necessary to accelerate the process, and increase the surface to which the air may apply; but too much moisture is hurtful. When a certain portion of nitrate is formed, the process appears to go on more quickly; but a certain quantity stops it altogether; and after this cessation, the materials will go on to furnish more, if what is formed be extracted by lixiviation. After a succession of many months, more or less, according to the management of the operation, in which the action of a regular current of fresh air is of the greatest importance, nitre is found in the mass. If the beds contained much vegetable matter, a considerable portion of the nitrous salt will be common salpetre; but

herwise, the acid will, for the most part, be mbined with the calcareous earth. It consists 6·75 acid + 6 potash.

To extract the saltpetre from the mass of rthy matter, a number of large casks are pre- red, with a cock at the bottom of each, and a antity of straw within, to prevent its being pped up. Into these the matter is put, to- ther with wood-ashes, either strewed at top, added during the filling. Boiling water is n poured on, and suffered to stand for some ne; after which it is drawn off, and another ter added in the same manner, as long as any ine matter can be thus extracted. The weak ne is heated, and passed through other tubs, til it becomes of considerable strength. It is n carried to the boiler, and contains nitre ll other salts, the chief of which is common inary salt, and sometimes muriate of mag- sia. It is the property of nitre to be much re soluble in hot than cold water; but com- n salt is very nearly as soluble in cold as in water. Whenever, therefore, the evapora- n is carried by boiling to a certain point, ch of the common salt will fall to the tom, for want of water to hold it in solution, ugh the nitre will remain suspended by tue of the heat. The common salt thus se- ated is taken out with a perforated ladle, l a small quantity of the fluid is cooled, from e to time, that its concentration may be wn by the nitre which crystallises in it. en the fluid is sufficiently evaporated, it is en out and cooled, and great part of the re separates in crystals; while the remaining mon salt continues dissolved, because equally ble in cold and in hot water. Subsequent poration of the residue will separate more e in the same manner. By the suggestion Lavoisier, a much simpler plan was adopted; ucing the crude nitre to powder, and wash- it twice with water.

This nitre, which is called nitre of the first ling, contains some common salt, from which may be purified by solution in a small quantity water, and subsequent evaporation; for the stals thus obtained are much less contami- ed with common salt than before; because proportion of water is so much larger, with pect to the small quantity contained by the re, that very little of it will crystallise. For e purposes, the solution and crystallisation of re are repeated four times. The crystals of e are usually of the form of six-sided flat- ed prisms, with dihedral summits. Its taste penetrating; but the cold produced by placing salt to dissolve in the mouth, is such as to dominate over the real taste at first. Seven ts of water dissolve two of nitre, at the tem- ature of sixty degrees; but boiling water olves its own weight. 100 parts of alkohol, heat of 176°, dissolve only 2·9.

On being exposed to a gentle heat, nitre s; and in this state, being poured into ulds, so as to form little round cakes, or s, it is called *sal prunella*, or *crystal mineral*. s, at least, is the way in which this salt is usually prepared, conformably to the directions of Boerhaave, though in most dispensatories a twenty-fourth part of sulphur was directed to be deflagrated on the nitre before it was poured out. This salt should not be left on the fire after it has entered into fusion, otherwise it will be converted into a *nitrate* of potash. If the heat be increased to redness, the acid itself is decomposed, and a considerable quantity of tolerably pure oxygen gas is evolved, succeeded by nitrogen.

This salt powerfully promotes the combustion of inflammable substances. Two or three parts mixed with one of charcoal, and set on fire, burn rapidly; azote and carbonic acid gas are given out, and a small portion of the latter is retained by the alkaline residuum, which was formerly called *clyssus of nitre*. Three parts of nitre, two of subcarbonate of potash, and one of sulphur, mixed together in a warm mortar, form the *fulminating powder*; a small quantity of which, laid on a fire-shovel, and held over the fire till it begins to melt, explodes with a loud sharp noise. Mixed with sulphur and charcoal, it forms *gunpowder*.

Three parts of nitre, one of sulphur, and one of fine sawdust, well mixed, constitute what is called the powder of fusion. If a bit of base copper be folded up and covered with this powder in a walnut-shell, and the powder be set on fire with a lighted paper, it will detonate rapidly, and fuse the metal into a globule of sulphuret without burning the shell.

Silex, alumina, and barytes, decompose this salt in a high temperature, by uniting with its base. The alumina will affect this even after it has been made into pottery.

The uses of nitre are various. Beside those already indicated, it enters into the composition of fluxes, and is extensively employed in metallurgy; it serves to promote the combustion of sulphur in fabricating its acid; it is used in the art of dyeing; it is added to common salt for preserving meat, to which it gives a red hue; it is an ingredient in some frigorific mixtures; and it is prescribed in medicine as cooling, febrifuge, and diuretic; and some have recommended it, mixed with vinegar, as a very powerful remedy for the sea scurvy. It is of great use in the arts; it is the principal ingredient in gunpowder; and burned with different proportions of tartar, forms the substances called fluxes. It is of considerable importance in medicine, as a febrifuge, diuretic, and antiphlogistic remedy, in doses of from five to twenty grains. It is from this salt we obtain one of the most powerful acids, namely, the *nitric*.

NI'TRIC. (*Nitricus*; from *nitrum*.) Of or belonging to nitre.

Nitric acid. *Acidum nitricum*. This acid is composed of the two principal constituents of our atmosphere; which, when in certain proportions, are capable, under particular circumstances, of combining chemically, and forming nitric acid. If oxygen and nitrogen, in a gaseous state, be mixed in a proper proportion in a glass tube about a line in diameter, over mercury, and a series of electric shocks be passed through them for some hours, they will form

nitric acid; or, if a solution of potash be present with them, nitrate of potash will be obtained. The constitution of this acid may be further proved, analytically, by driving it through a red-hot porcelain tube, as thus it will be decomposed into oxygen and nitrogen gases. For all practical purposes, however, the nitric acid is obtained from nitrate of potash, from which it is expelled by sulphuric acid.

Three parts of pure nitrate of potash, coarsely powdered, are to be put into a glass retort, with two of strong sulphuric acid. This must be cautiously added, taking care to avoid the fumes that arise. Join to the retort a tubulated receiver of large capacity, with an adopter interposed, and lute the junctures with glazier's putty. In the tubulure fix a glass tube, terminating in another large receiver, in which is a small quantity of water; and if you wish to collect the gaseous products, let a bent glass tube from this receiver communicate with a pneumatic trough. Apply heat to the receiver by means of a sand-bath. The first product that passes into the receiver is generally red and fuming; but the appearances gradually diminish, till the acid comes over pale, and even colourless, if the materials used were clean. After this it again becomes more and more red and fuming, till the end of the operation; and the whole mingled together will be of a yellow or orange colour.

Empty the receiver, and again replace it. Then introduce by a small funnel, very cautiously, one part of boiling water in a slender stream, and continue the distillation. A small quantity of a weaker acid will thus be obtained, which can be kept apart. The first will have a specific gravity of about 1·500, if the heat have been properly regulated, and if the receiver was refrigerated by cold water or ice. Acid of that density, amounting to two thirds of the weight of the nitre, may thus be procured; but commonly the heat is pushed too high, whence more or less of the acid is decomposed, and its proportion of water uniting to the remainder, reduces its strength. It is not profitable to use a smaller proportion of sulphuric acid, when a concentrated nitric is required. But when only a dilute acid, called in commerce *aquafortis*, is required, then less sulphuric acid will suffice, provided a portion of water be added. One hundred parts of good nitre, sixty of strong sulphuric acid, and twenty of water, form economical proportions.

In the large way, and for the purposes of the arts, extremely thick cast iron or earthen retorts are employed, to which an earthen head is adapted, and connected with a range of proper condensers. The strength of the acid, too, is varied, by putting more or less water in the receivers. The nitric acid thus made, generally contains sulphuric acid, and also muriatic, from the impurity of the nitrate employed. If the former, a solution of nitrate of barytes will occasion a white precipitate; if the latter, nitrate of silver will render it milky. The sulphuric acid may be separated by a second distillation from very pure nitre, equal in weight to an eighth of that originally employed; or by precipitating with nitrate of barytes, decanting the clear liquid, and distilling it. The muriatic acid may be separated by proceeding in the same way with nitrate of silver, or with litharge, decanting the clear liquid, and redistilling it, leaving an eighth or tenth part in the retort. The acid for the last process should be condensed as much as possible, and the redistillation conducted very slowly; and if it be stopped when half is come over, beautiful crystals of muriate of lead will be obtained on cooling the remainder, if litharge be used, as Steinacher informs us; who also adds, that the vessel should be made to fit tight by grinding, as any lute is liable to contaminate the product.

As this acid still holds in solution more or less nitrous gas, it is not in fact nitric acid, but a kind of nitrous. It is therefore necessary to put it into a retort, to which a receiver is added, the two vessels not being luted, and to apply a very gentle heat for several hours, changing the receiver as soon as it is filled with red vapours. The nitrous gas will thus be expelled, and the nitric acid will remain in the retort as limpid and colourless as water. It should be kept in a bottle secluded from the light, otherwise it will lose part of its oxygen.

What remains in the retort is a bisulphate of potash, from which the superfluous acid may be expelled by a pretty strong heat, and the residuum, being dissolved and crystallised, will be sulphate of potash.

As nitric acid, in a fluid state, is always mixed with water, different attempts have been made to ascertain its strength, or the quantity of real acid contained in it.

The nitric acid is of considerable use in the arts. It is employed for etching on copper; as a solvent of tin, to form with that metal a mordant for some of the finest dyes; in metallurgy and assaying; in various chemical processes, on account of the facility with which it parts with oxygen, and dissolves metals; in medicine as a tonic, and as a substitute for mercurial preparations in syphilis and affections of the liver, as also in form of vapour to destroy contagion. For the purposes of the arts it is commonly used in a diluted state, and contaminated with the sulphuric and muriatic acids, by the name of *aquafortis*. This is generally prepared by mixing common nitre with an equal weight of sulphate of iron, and half its weight of the same sulphate calcined, and distilling the mixture; or by mixing nitre with twice its weight of dry powdered clay, and distilling in a reverberatory furnace. Two kinds are found in the shops, one called *double aquafortis*, which is about half the strength of nitric acid; the other simply *aquafortis*, which is half the strength of the double.

A compound made by mixing two parts of the nitric acid with one of muriatic, known formerly by the name of *aqua regia*, and now by that of *nitro-muriatic acid*, has the property of dissolving gold and platina. On mixing the two acids, heat is given out, an effervescence takes place, and the mixture acquires an orange

colour. This is likewise made by adding gradually to an ounce of powdered muriate of ammonia four ounces of double aquafortis, and keeping the mixture in a sand heat till the salt is dissolved, taking care to avoid the fumes, as the vessel must be left open; or by distilling nitric acid with an equal weight, or rather more, of common salt.

On this subject we are indebted to Sir H. Davy for some excellent observations, published by him in the first volume of the Journal of Science. If strong *nitrous* acid, saturated with nitrous gas, be mixed with a saturated solution of muriatic acid gas, no other effect is produced than might be expected from the action of nitrous acid of the same strength on an equal quantity of water; and the mixed acid so formed has no power of action on gold or platina. Again, if muriatic acid gas, and nitrous gas, in equal volumes, be mixed together over mercury, and half a volume of oxygen be added, the immediate condensation will be no more than might be expected from the formation of nitrous acid gas. And when this is decomposed, or absorbed by the mercury, the muriatic acid gas is found unaltered, mixed with a certain portion of nitrous gas.

It appears, then, that *nitrous* acid and muriatic acid gas have no chemical action on each other. If *colourless nitric* acid and muriatic acid of commerce be mixed together, the mixture immediately becomes yellow, and gains the power of dissolving gold and platinum. If it be gently heated, pure chlorine arises from it, and the colour becomes deeper. If the heat be longer continued, chlorine still rises, but mixed with nitrous acid gas. When the process has been very long continued, till the colour becomes very deep, no more chlorine can be procured, and it loses its power of acting upon platinum and gold. It is now *nitrous* and muriatic acids. It appears then, from these observations, which have been very often repeated, that nitro-muriatic acid owes its peculiar properties to a mutual decomposition of the nitric and muriatic acids; and that water, chlorine, and nitrous acid gas, are the results. Though nitrous gas and chlorine have no action on each other when perfectly dry, yet, if water be present, there is an immediate decomposition, and nitrous acid and muriatic acid are formed. 118 parts of strong liquid nitric acid being decomposed in this case, yield 67 of chlorine. *Aqua regia* does not oxidise gold and platina: it merely causes their combination with chlorine.

With different saline, earthy, and metallic bases, the nitric acid forms the class of salts denominated *nitrates*.

The nitrates used in the cure of diseases are,

1. The nitrate of soda.
2. ——————— potash.
3. ——————— silver.
4. ——————— mercury.
5. The subnitrate of bismuth.

Besides these, chemists are well acquainted with nitrates of baryta, soda, strontia, lime, magnesia, glucine, zirconia, and yttria.

Nitric acid, oxygenised. The apparent oxygenation of nitric acid by Thénard, ought to be regarded merely as the conversion of a portion of its combined water into deutoxide of hydrogen. See *Hydrogen*.

Nitric oxide. See *Nitrogen, deutoxide of.*

Nitric oxide of mercury. See *Hydrargyri nitrico-oxydum.*

Nitrico-oxydum hydrargyri. See *Hydrargyri nitrico-oxydum.*

NITROGEN. (*Nitrogenium, ii.* n.; from νιτρον, nitre, and γενναω, to generate: so called because it is the generator of nitre.) Azote; Azot. An important elementary or undecomposed principle. As it constitutes four fifths of the volume of atmospheric air, the readiest mode of procuring azote is to abstract the oxygen with which it is associated by the combustion of phosphorus or hydrogen. It may also be obtained from animal matters, subjected in a glass retort to the action of nitric acid, diluted with 8 or 10 times its weight of water.

It is a disputed point whether the nitrogen and oxygen of the atmosphere are chemically combined, or only mechanically mixed. See *Atmosphere*.

Azote possesses all the physical properties of air. It extinguishes flame and animal life. It is absorbable by about 100 volumes of water. Its spec. gravity is 0·9722. 100 cubic inches weigh 29·65 grains. It has neither taste nor smell. Exclusive of atmospheric air, there are five known compounds of nitrogen and oxygen, viz. the *protoxide*, the *deutoxide*, *hyponitrous acid*, *nitrous acid*, and *nitric acid*.

I. *Protoxide of azote.* This combination of nitrogen and oxygen was formerly called the *dephlogisticated nitrous gas*, but now gaseous oxide of nitrogen, or nitrous oxide. It was first discovered by Priestley.

Sir Humphrey Davy has examined with uncommon accuracy the formation and properties of all the substances concerned in its production.

It exists in the form of a permanent gas. A candle burns with a brilliant flame and crackling noise in it; before its extinction, the white inner flame becomes surrounded with a blue one. Phosphorus introduced into it, in a state of *actual* inflammation, burns with increased splendour, as in oxygen gas. Sulphur introduced into it when burning with a feeble blue flame is instantly extinguished; but when in a state of *vivid inflammation*, it burns with a rose-coloured flame. Ignited charcoal burns in it more brilliantly than in atmospheric air. Iron wire, with a small piece of wood affixed to it, when inflamed, and introduced into a vessel filled with this gas, burns vehemently, and throws out bright scintillating sparks. No combustible body, however, burns in it, unless it be previously brought to a state of vivid inflammation. Hence sulphur may be melted, and even sublimed in it: phosphorus may be liquefied in it without undergoing combustion. Nitrous oxide is pretty rapidly absorbed by water that has been boiled: a quantity of gas equal to rather more than half the bulk of the water may be thus made to disappear: the water acquires a sweetish taste, but its other properties do not differ perceptibly from com-

mon water. The whole of the gas may be expelled again by heat. It does not change blue vegetable colours. It has a distinctly sweet taste, and a faint but agreeable odour. It undergoes no diminution when mingled with oxygen or nitrous gas. Most of the liquid inflammable bodies, such as ether, alkohol, volatile and fat oils, absorb it rapidly and in great quantity. Acids exert but little action on it. The affinity of the neutro-saline solutions for gaseous oxide of nitrogen is very feeble. Green muriate and green sulphate of iron, whether holding nitrous gas in solution, or not, do not act upon it. None of the gases, when mingled with it, suffer any perceptible change at common temperatures; the muriatic and sulphureous acid gases excepted, which undergo a slight expansion. Alkalis freed from carbonic acid, exposed in the dry or solid form, have no action upon it; they may, however, be made to combine with it in the nascent state, and then constitute *saline compounds* of a peculiar nature. These combinations deflagrate when heated with charcoal, and are decomposed by acids; the gaseous oxide of nitrogen being disengaged. It undergoes no change whatever from the simple effect of light. The action of the electric spark, for a long while continued, converts it into a gas, analogous to atmospheric air and nitrous acid: the same is the case when it is made to pass through an ignited earthen tube. It explodes with hydrogen in a variety of proportions, at very high temperatures; for instance, when electric sparks are made to pass through the mixture. Sulphuretted, heavy, and light carburetted hydrogen gases, and gaseous oxide of carbon, likewise burn with it when a strong red heat is applied. 100 parts by weight of nitrous oxide contain 36·7 of oxygen, and 63·3 of nitrogen; 100 cubic inches weigh 50 grains at 55° temperature and 30 inches atmospheric pressure. Animals, when wholly confined in gaseous oxide of nitrogen, give no signs of uneasiness for some moments, but they soon become restless, and then die.

When mingled with atmospheric air, and then received into the lungs, this gas generates highly pleasurable sensations: the effects it produces on the animal system are eminently distinguished from every other chemical agent. It excites every fibre to action, and rouses the faculties of the mind, inducing a state of great exhilaration, an irresistible propensity to laughter, a rapid flow of vivid ideas, and unusual vigour and fitness for muscular exertions, in some respects resembling those attendant on the pleasantest period of intoxication, without any subsequent languor, depression of the nervous energy, or disagreeable feelings; but more generally followed by vigour, and a pleasurable disposition to exertion, which gradually subsides.

Gaseous oxide of nitrogen is produced when substances, having a strong affinity with oxygen, are brought into contact with nitric acid, or with nitrous gas. It may, therefore, be obtained by various processes, in which nitrous gas or nitric acid is decomposed by substances capable of attracting the greater part of their oxygen. The most commodious and expeditious, as well as the cheapest, mode of obtaining it, is by decomposing nitrate of ammonia.

II. *Deutoxide of nitrogen;* termed likewise nitrous gas, or nitric oxide.

This is an elastic, colourless, gaseous fluid, having no sensible taste: it is neither acid nor alkaline: it is exceedingly hurtful to animals, producing instant suffocation whenever they attempt to breathe it. The greater number of combustible bodies refuse to burn in it. It is, nevertheless, capable of supporting the combustion of some of these bodies. Phosphorus burns in nitrous gas when introduced into it in a state of inflammation: pyrophorus takes fire in it spontaneously.

Ardent spirits, saccharine matters, hydro-carbonates, sulphureous acid, and phosphorus, have no action on it at the common temperature. It is not sensibly changed by the action of light. Heat dilates it. It rapidly combines with oxygen gas at common temperatures, and converts it into nitrous acid. Atmospheric air produces the same effect, but with less intensity. It is absorbable by green sulphate, muriate and nitrate of iron, and decomposable by alkaline, terrene, and metallic sulphurets, and other bodies that have a strong affinity for oxygen; but it is not capable of combining with them chemically, so as to form saline compounds. From the greatest number of bodies which absorb it, it may be again expelled by the application of heat.

It communicates to flame a greenish colour before extinguishing it: when mixed with hydrogen gas this acquires the property of burning with a green flame. It is absorbable by nitric acid, and renders it fuming.

When exposed to the action of caloric, in an ignited porcelain tube, it experiences no alteration; but when electric sparks are made to pass through it, it is decomposed and converted into nitrous acid, and nitrogen gas. Phosphorus does not shine in it. It is composed of about eight parts of oxygen, and seven of nitrogen.

Methods of obtaining deutoxide of nitrogen. — 1. Put into a small proof, or retort, some copper wire, or pieces of the same metal, and pour on it nitric acid of commerce diluted with water: an effervescence takes place, and nitrous gas will be produced. After having suffered the first portions to escape, on account of the atmosphoric air contained in the retort, collect the gas in the water apparatus as usual. In order to obtain the gas in a pure state, it must then be shook for some time in contact with water. The water, in this instance, suffers no alteration; on the contrary, the acid undergoes a partial decomposition; the metal robs some of the nitric acid of the greatest part of its oxygen, and becomes oxidised; the acid having lost so much of its oxygen, becomes thereby so altered, that, at the usual temperature, it can exist no longer in the liquid state, but instantly expands and assumes the form of gas, ceasing, at the same time, to act as an acid, and exhibiting different properties: but the acid remaining undecomposed combines with the oxide of copper, and forms nitrate of copper.

III. *Hypo-nitrous acid.* This substance has not yet been obtained in a free state. If deutoxide of nitrogen be added in excess to oxygen gas, in a tube over mercury, which tube contains a strong solution of pure potash, the gases combine to form hypo-nitrous acid, which is instantly absorbed by the potash forming a hypo-nitrate of potash. The same product may be obtained by keeping deutoxide of nitrogen for three months over mercury in a glass tube containing a strong solution of pure potash: the deutoxide is resolved into protoxide and hypo-nitrous acid; the former remains in the tube, and the latter combines with the potash.

When an acid is added to the hypo-nitrate of potash, the hypo-nitrous acid is decomposed and converted into nitrous acid and deutoxide of nitrogen. Hypo-nitrous acid is presumed to consist of one equivalent of nitrogen and three of oxygen.

IV. *Nitrous acid.* See *Nitrous acid.*

V. *Nitric acid.* See *Nitric acid.*

Nitrogen combines with chlorine and iodine, to form two very formidable compounds: —

1. The *chloride of nitrogen.* Put into an evaporating porcelain basin a solution of one part of nitrate or muriate of ammonia in 10 of water, heated to about 100°, and invert into it a wide-mouthed bottle filled with chlorine. As the liquid ascends by the condensation of the gas, oily-looking drops are seen floating on its surface, which collect together, and fall to the bottom in large globules. This is *chloride of azote.* It should be formed only in very small quantities. Thus obtained, it is an oily-looking liquid, of a yellow colour, and a very pungent intolerable odour, similar to that of chlorocarbonous acid. This experiment, and indeed every one with the chlorides and iodides of azote, require the greatest caution, as they detonate from slight causes, and produce serious injuries.

2. *Iodide of nitrogen.* Azote does not combine directly with iodine.

It may be obtained by putting pulverulent iodine into common water of ammonia; and this is the best way of preparing it. It is pulverulent, and of a brownish-black colour. It detonates from the smallest shock, and from heat, with a feeble violet vapour. When properly prepared, it often detonates spontaneously.

The strongest arguments for the compound nature of azote are derived from its slight tendency to combination, and from its being found abundantly in the organs of animals which feed on substances that do not contain it.

Its uses in the economy of the globe are little understood. This is likewise favourable to the idea that the real chemical nature is as yet unknown, and leads to the hope of its being decomposable.

It would appear that the atmospheric azote and oxygen spontaneously combine in other proportions, under certain circumstances, in natural operations. Thus we find, that mild calcareous or alkaline matter favours the formation of nitric acid, in certain regions of the earth; and that they are essential to its production in our artificial arrangements, forming nitre by decomposing animal and vegetable substances.

Nitrogen, deutoxide of. See *Nitrogen.*

Nitrogen, protoxide of. See *Nitrogen.*

NITRO-LEUCIC ACID. *Acidum nitro-leucicum. Leucine* is capable of uniting to nitric acid, and forming a compound, which Braconnot has called the nitro-leucic acid. When we dissolve leucine in nitric acid, and evaporate the solution to a certain point, it passes into a crystalline mass, without any disengagement of nitrous vapour, or of any gaseous matter: if we press this mass between blotting paper, and redissolve it in water, we shall obtain from this, by concentration, fine, divergent, and nearly colourless needles. These constitute the new acid. It unites to the bases, forming salts which fuse on red-hot coals. The nitro-leucates of lime and magnesia are unalterable in the air.

NI'TRO-MURIA'TIC ACID. *Aqua regia.* When nitric and muriatic acids are mixed, they become yellow, and acquire the power of readily dissolving gold, which neither of them possessed separately. This mixture evolves chlorine, a partial decomposition of both acids having taken place; and water, chlorine, and nitrous acid gas, being thus produced. Aqua regia, therefore, is a mixture of chlorine, nitrous acid, and water.

NITRO-SA'CCHARIC ACID. *Acidum nitro-saccharicum.* Nitro-saccharine acid. When we heat the *sugar of gelatine* with nitric acid, they dissolve without any apparent disengagement of gas; and if we evaporate this solution to a proper degree, it forms, on cooling, a crystalline mass. On pressing this mass between the folds of blotting paper, and recrystallising them, we obtain beautiful prisms, colourless, transparent, and slightly striated. These crystals are very different from those which serve to produce them; and constitute, according to Braconnot, a true acid, which results from the combination of the nitric acid itself with the sweet matter of which the first crystals are formed. Thénard conceives it is the *nitrous* acid which is present.

Nitro-saccharic acid has a taste similar to that of the tartaric, only it is a little sweetish. Exposed to the fire in a capsule, it froths much, and is decomposed with the diffusion of a pungent smell. Thrown on burning coals, it acts like saltpetre. It produces no change in saline solutions. Finally, it combines with the bases, and gives birth to salts which possess peculiar properties. For example, the salt which it forms with lime is not deliquescent, and is very little soluble in strong alkohol. That which it produces with the oxide of lead detonates to a certain degree by the action of heat. *Ann. de Chimie et de Phys.* xiii. 113.

NI'TROUS. *Nitrosus.* Of or belonging to nitre, or its combinations.

NITROUS ACID. *Acidum nitrosum.* Fuming nitrous acid. This acid appears to form a distinct genus of salts, that may be termed *nitrites.* But these cannot be made by a direct union of their component parts, being obtainable only by exposing a nitrate to a high temperature, which expels a portion of its oxygen in the state of

gas, and leaves the remainder in the state of a nitrite, if the heat be not urged so far, or continued so long, as to effect a complete decomposition of the salt. In this way the nitrites of potash and soda may be obtained, and perhaps those of barytes, strontian, lime, and magnesia. The nitrites are particularly characterised, by being decomposable by all the acids, except the carbonic, even by the nitric acid itself, all of which expel from them nitrous acid. We are little acquainted with any one except that of potash, which attracts moisture from the air, changes blue vegetable colours to green, is somewhat acrid to the taste, and, when powdered, emits a smell of nitric oxide.

The acid itself is best obtained by exposing nitrate of lead to heat in a glass retort. Pure *nitrous* acid comes over in the form of an orange-coloured liquid. It is so volatile as to boil at the temperature of 82°. Its specific gravity is 1·450. When mixed with water it is decomposed, and nitrous gas is disengaged, occasioning effervescence. It is composed of one volume of oxygen united with two of nitrous gas. It therefore consists ultimately, by weight, of 1·75 nitrogen + 4 oxygen; by measure, of 2 oxygen + 1 nitrogen. The various coloured acids of nitre are not *nitrous* acids, but nitric acid impregnated with nitrous gas, the deutoxide of nitrogen or azote.

Nitrous oxide. See *Nitrogen.*

Nitrum. See *Nitre.*

Nitrum Purificatum. See *Nitre.*

Nitrum stibiatum. *Nitrum antimoniatum. Anodynum minerale.* An old preparation made by dissolving the *antimonium diaphoreticum* in water, and evaporating to dryness.

Nitrum vitriolatum. See *Sodæ sulphas.*

NO'BILIS. (*Quasi noscibilis;* from *nosco*, to know.) Noble. Some objects of Natural History so called by way of eminence: thus gold and silver are called *noble metals*, and *nobilis* is the specific name of several plants.

NOCTAMBULA'TION. (*Noctambulatio, onis.* f.; from *nox*, night, and *ambulo*, to walk.) Sleep-walking. See *Oneirodynia activa.*

Noctisu'rgium. (*um, ii.* n.; from *nox*, night, and *surgo*, to arise.) Sleep-walking. See *Oneirodynia activa.*

Nocturnal blindness. See *Hemeralopia*, and *Nyctalopia.*

Nocturnal emisson. See *Gonorrhœa.*

Nodding. See *Nutans.*

NODE. (*Nodus, i.* m.; from *anad*, Hebrew, to tie.) 1. In *Surgery*, a hard circumscribed tumour, proceeding from a bone, and caused by a swelling of the periosteum. Nodes appear on every part of the body, but are more common on such as are thinly covered with muscles, as the os frontis, forepart of the tibia, radius, and ulna. As they increase in size, they become more painful, from the distension they occasion in the periosteum. When they continue long, the bone becomes completely carious.

2. In *Botany*, applied to joints that have small elevations, as observed in the stems of some grasses.

NODO'SUS. Nodose: knotty; as the seed-vessel of the *Cucurbita melopepo.*

No'li me' ta'ngere. *Lupus.* A species of malignant herpes, or lupus, affecting the skin, and not unfrequently the cartilages of the nose, very difficult to cure, because it is exasperated by most applications. The disease generally commences with small, superficial spreading ulcerations, which become more or less concealed beneath furfuraceous scabs. The whole nose is frequently destroyed by the progressive ravages of this peculiar disorder, which sometimes cannot be stopped or retarded by any treatment, external or internal.

NO'MA. (*a, æ.* f.; from νεμω, to eat.) An ulcer that attacks the skin, and often the cheek or vulva of young girls. It appears in the form of red and somewhat livid spots; is not attended with pyrexia, pain, or tumour, and in a few days becomes gangrenous.

Nomenclature, anatomical. See the Supplement.

Noni descendens. A branch of the ninth pair of nerves. See *Nerve.*

NON-NATURALS. *Res non-naturales.* Under this term, the old physicians comprehended air, eating and drinking, sleep and watching, motion and rest, the retentions and excretions, and the affections of the mind; or, in other words, those principal matters which do not enter into the composition of the body, but at the same time are necessary to its existence.

Nooth's apparatus. An apparatus contrived by Dr. Nooth for impregnating water with gases, particularly the carbonic acid.

No'pal. *Nopalnochetzth.* The plant that feeds the cochineal insect.

Norlandica bacca. See *Rubus.*

Norris's drops. According to Dr. Paris, this is a solution of emetic tartar in rectified spirit, with the addition of some vegetable colouring matter.

Norton's drops. A coloured solution of corrosive sublimate.

Nose. Nasus. See *Nares*, and *Smell.*

Nose, bleeding of the. See *Epistaxis.*

Nosocomia'lis. Nosocomial. Appertaining to a hospital, as *febris nosocomialis*, hospital fever.

NOSOCOMI'UM. (*um, ii.* n.; νοσοκομειον; from νοσος, a disease, and κομεω, to take care of.) *Nosodochium.* A hospital or infirmary for the sick.

Nosodochi'um. (Νοσοδοχειον; from νοσος, a disease, and δοκειον, a receptacle.) A hospital.

NOSO'GRAPHY. *Nosographia;* from νοσος, a disease, and γραφω, to describe. The description of diseases.

NOSO'LOGY. (*Nosologia, æ.* f.; from νοσος, a disease, and λογος, a discourse.) This term is, from its derivation, synonymous with pathology; but it is always applied to that division of medical science which considers the most appropriate names of diseases, and their methodical arrangement or classification.

A number of celebrated authors have occupied themselves in the classification of diseases; but the increased cultivation of pathology has tended to diminish greatly the importance of nosological systems. The principal are those of Sauvages, Linnæus, Vogel, Sagar, Macbride,

Cullen, and Good. Others, as those of Darwin, Crichton, Par, Pinel, Young, &c. have attracted less attention. In this country, Cullen's nosology is the one generally used, and is perhaps more convenient than any other. The following is a synoptical view of it: —

CLASS I. — PYREXIÆ.

Order I. FEBRES.

§ 1. *Intermittentes.*

1. Tertiana.
2. Quartana.
3. Quotidiana.

§ 2. *Continuæ.*

4. Synocha.
5. Typhus.
6. Synochus.

Order II. PHLEGMASIÆ.

7. Phlogosis.
8. Ophthalmia.
9. Phrenitis.
10. Cynanche.
11. Pneumonia.
12. Carditis.
13. Peritonitis.
14. Gastritis.
15. Enteritis.
16. Hepatitis.
17. Splenitis.
18. Nephritis.
19. Cystitis.
20. Hysteritis.
21. Rheumatismus.
22. Odontalgia.
23. Podagra.
24. Arthropuosis.

Order III. EXANTHEMATA.

25. Variola.
26. Varicella.
27. Rubeola.
28. Scarlatina.
29. Pestis.
30. Erysipelas.
31. Miliaria.
32. Urticaria.
33. Pemphigus.
34. Aphtha.

Order IV. HÆMORRHAGIÆ.

35. Epistaxis.
36. Hæmoptysis.
37. Hæmorrhois.
38. Menorrhagia.

Order V. PROFLUVIA.

39. Catarrhus.
40. Dysenteria.

CLASS II. — NEUROSES.

Order I. COMATA.

41. Apoplexia.
42. Paralysis.

Order II. ADYNAMIÆ.

43. Syncope.
44. Dyspepsia.
45. Hypochondriasis.
46. Chlorosis.

Order III. SPASMI.

47. Tetanus.
48. Convulsio.
49. Chorea.
50. Raphania.
51. Epilepsia.
52. Palpitatio.
53. Asthma.
54. Dyspnœa.
55. Pertussis.
56. Pyrosis.
57. Colica.
58. Cholera.
59. Diarrhœa.
60. Diabetes.
61. Hysteria.
62. Hydrophobia.

Order IV. VESANIÆ.

63. Amentia.
64. Melancholia.
65. Mania.
66. Oneirodynia.

CLASS III. — CACHEXIÆ.

Order I. MARCORES.

67. Tabes.
68. Atrophia.

Order II. INTUMESCENTIÆ.

§ 1. *Adiposæ.*

69. Polysarcia.

§ 2. *Flatuosæ.*

70. Pneumatosis.
71. Tympanites.
72. Physometra.

§ 3. *Aquosæ.*

73. Anasarca.
74. Hydrocephalus.
75. Hydrorachitis.
76. Hydrothorax.
77. Ascites.
78. Hydrometra.
79. Hydrocele.

§ 4. *Solidæ.*

80. Physconia.
81. Rachitis.

Order III. IMPETIGINES.

82. Scrofula.
83. Syphilis.
84. Scorbutus.
85. Elephantiasis.
86. Lepra.
87. Framboesia.
88. Trichoma.
89. Icterus.

CLASS IV. — LOCALES.

Order I. DYSÆSTHESIÆ.

90. Caligo.
91. Amaurosis.
92. Dysopia.
93. Pseudoblepsis.
94. Dysecoea.
95. Paracusis.
96. Anosmia.
97. Agheustia.
98. Anæsthesia.

Order II. DYSOREXIÆ.

§ 1. *Appetitus erronei.*

99. Bulimia.
100. Polydipsia.
101. Pica.
102. Satyriasis.
103. Nymphomania.
104. Nostalgia.

§ 2. *Appetitus deficientes.*

105. Anorexia.
106. Adipsia.
107. Anaphrodisia.

Order III. DYSCYNESIÆ.

108. Aphonia.
109. Mutitas.
110. Paraphonia.
111. Psellismus.
112. Strabismus.
113. Dysphagia.
114. Contractura.

Order IV. APOCENOSES.

115. Profusio.
116. Ephidrosis.
117. Epiphora.
118. Ptyalismus.
119. Enuresis.
120. Gonorrhœa.

Order V. EPISCHESES.

121. Obstipatio.
122. Ischuria.
123. Dysuria.
124. Dyspermatismus.
125. Amenorrhœa.

Order VI.
TUMORES.

126. Aneurisma.
127. Varix.
128. Ecchymoma.
129. Scirrhus.
130. Cancer.
131. Bubo.
132. Sarcoma.
133. Verruca.
134. Clavus.
135. Lupia.
136. Ganglion.
137. Hydatis.
138. Hydarthrus.
139. Exostosis.

Order VII.
ECTOPIÆ.

140. Hernia.
141. Prolapsus.
142. Luxatio.

Order VIII.
DYALYSES.

143. Vulnus.
144. Ulcus.
145. Herpes.
146. Tinea.
147. Psora.
148. Fractura.
149. Caries.

NOSTA'LGIA. (*a, æ.* f.; from *νοστος*, a return, and *αλγος*, pain.) A vehement desire for revisiting one's country, attended with melancholy, loss of appetite, and want of sleep. A genus of disease in the class *Locales*, and order *Dysoreziæ*, of Cullen. The Swiss are particularly subject to this affection, which is also observed sometimes in other mountaineers.

Nostoc. See *Temella nostoc.*

NOSTOMA'NIA. (From *νοστος*, a return, and *μανια*, madness.) The highest degree of nostalgia.

Nostril. See *Naris.*

NO'STRUM. This word means *our own*, and is applied to all quack medicines, the composition of which is kept secret.

NO'TENCE'PHALUS. (From *νωτος*, the back, and *εγκεφαλος*, the brain.) A monster in which the brain forms a hernia behind, and rests upon the dorsal vertebræ which are open posteriorly. — *G. St. Hilaire.*

Notched. See *Erosus.*

NO'THUS. (*Νοθος*, spurious) Spurious. Bastard. See *Bastard.*

NOTIÆ'US. (From *νωτον*, the back.) An obsolete epithet of the spinal marrow.

NOTIO'DES. (From *νοτις*, moisture.) An obsolete word, applied to a fever attended with a vitiation of the fluids, or a colliquative wasting.

NUBA. Copper. — *Ruland.*

NUBE'CULA. (*a, æ.* f.; diminutive of *nubes*, a cloud.) The same as *nebula.*

Nucamentum. See *Amentum.*

Nucesta. See *Myristica moschata.*

NU'CHA. (*a, æ.* f.; Arabic.) *Nucha capitis.* The hind part or nape of the neck. The part is so called where the spinal marrow begins.

NUCI'STA. The nutmeg.

NU'CLEUS. (*us, i.* m.; *a nuce*, from the nut.) 1. A kernel or fruit enclosed in a hard shell.

2. When the centre of a tumour or morbid concretion, as a stone of the bladder, has an obvious difference from the surrounding parts, that is called the nucleus: thus, a cherry-stone and other things have been found in calculi of the bladder, forming the nucleus of that concretion.

NU'CULA. (*a. æ.* f.; diminutive of *nux*, a nut.) A little nut.

Nucula saponaria. See *Sapindus saponaria.*

NU'DUS. Naked: applied to flowers, leaves, stems, receptacles, seeds, &c. of plants. A flower is said to be naked when the calyx is wanting, as in the tulip, and white lily; and a leaf when it is destitute of all kinds of clothing or hairiness, as in the genus *orchis*: the stem is naked that bears no leaves, scales, or any other vesture, as *Cuscuta europea*; the receptacle of the *Leontodon taraxacum*, and *Lactuca*; the seeds of the gymnospermous plants, &c.

NUMI'DIA. (The name of the country whence the bird comes.) The name of a genus of birds, of the order *Gallinæ.*

NUMIDIA MELEA'GRIS. The guinea-fowl, the flesh of which is of easy digestion.

NUMMULA'RIA. (*a, æ.* f.; from *nummus*, money: so called because its leaves are round, and of the size of the old silver twopence.) See *Lysimachia nummularia.*

Nut. See *Nux.*

Nut, Barbadoes. See *Jatropha curcas.*

Nut, cocoa. See *Cocos nucifera.*

Nut, pistachio. See *Pistacia vera.*

Nut, purging. See *Jatropha curcas.*

NU'TANS. (From *nuto*, to bend.) Nutant: drooping, or nodding. Applied to stems, &c. when bent towards the end near the flower; as the *Narcissus, Scilla nutans*, &c.

Nutmeg. See *Myristica moschata.*

NUTRITION. (*Nutritio, onis.* f.) Nutrition may be considered the completion of the assimilating functions. The food, changed by a series of decompositions, animalised and rendered similar to the being which it is designed to nourish, applies itself to those organs, the loss of which it is to supply; and this identification of nutritive matter to our organs constitutes nutrition.

The living body is continually losing its constituent parts.

From the state of the embryo to the most advanced old age, the weight and volume of the body are almost continually changing; the different organs and tissues present infinite variations in their consistence, colour, elasticity, and sometimes their chemical composition. The volume of the organs augments when they are often in action; on the contrary, their size diminishes when they remain long at rest. By the influence of one or other of these causes, their chemical and physical properties present remarkable variations. Many diseases often produce, in a very short time, remarkable changes in the exterior conformation, and in the structure of a great number of organs.

If madder is mixed with the food of an animal, in fifteen or twenty days the bones present a red tint, which disappears when the use of it is left off.

There exists, then, in the organs, an insensible motion of the particles which produce all these modifications. It is this that is called *nutrition*, or *nutritive action.*

This phenomenon, which the observing spirit of the ancients had not permitted to escape, was to them the object of many ingenious suppositions that are still admitted. For example, it is said that, by means of the nutritive action, the whole body is renewed, so that, at a certain period, it does not possess a single particle of the matter that composed it formerly. Limits have even been assigned to this total renewal: some have fixed the period of three years; others think it not complete till seven: but there is nothing to give probability to these conjectures; on the contrary, certain well-proved facts seem to render them of no avail.

It is well known that soldiers, sailors, and several savage nations colour their skins with substances which they introduce into the tissue of this membrane itself: the figures thus traced preserve their form and colour during their lives, should no particular circumstances occur. How can this phenomenon agree with the renewal of the skin according to these authors? The recent use of nitrate of silver internally, in the cure of epilepsy, furnishes a new proof of this kind. After some months' use of this substance, some sick persons have had their skin coloured of a greyish blue, probably by a deposition of the salt in the tissue of this membrane, where it is immediately in contact with the air. Several individuals have been in this state for some years without the tint becoming weaker; whilst, in others, it has diminished by degrees, and disappeared in two or three years.

It is admitted, in the metaphorical language now used in physiology, that the atoms of the organs can only serve for a certain period, in their composition; that in time they *wear*, and become at last improper to enter into their composition; and that they are then absorbed and replaced by new atoms proceeding from the food.

It is added, that the animal matters of which our excretions are composed are the *detritus* of the organs, and that they are principally composed of atoms that can no longer serve in their composition, &c.

Instead of discussing these hypotheses, we shall mention a few facts from which we have some idea of the nutritive movement.

A. In respect to the rapidity with which the organs change their physical and chemical properties by sickness or age, it appears that nutrition is more or less rapid according to the tissues. The glands, the muscles, the skin, &c., change their volume, colour, consistence, with great quickness; the tendons, the fibrous membranes, the bones, the cartilages, appear to have a much slower nutrition, for their physical properties change but slowly by the effect of age and disease.

B. If we consider the quantity of food consumed proportionally to the weight of the body, the nutritive movement seems more rapid in infancy and youth, than in the adult and in old age; it is accelerated by the repeated action of the organs, and retarded by repose. Indeed, children and young people consume more food than adults and old people: these last can preserve all their faculties by the use of a very small quantity of food. All the exercises of the body, and hard labour, require necessarily a greater quantity, or more nutritive food; on the contrary, perfect repose permits of longer abstinence.

C. The blood appears to contain most of the principles necessary to the nutrition of the organs; the fibrine, the albumen, the fat, the salts, &c. that enter into the composition of the tissues, are found in the blood. They appear to be deposited in their parenchyma at the instant when the blood traverses them; the manner in which this deposit takes place is entirely unknown. There is an evident relation between the activity of the nutrition of an organ and the quantity of blood it receives. The tissues that have a rapid nutrition have larger arteries; when the action of an organ has determined an acceleration of its nutrition, the arteries increase in size.

Many proximate principles that enter into the composition of the organs are not found in the blood: as ozmazome, the cerebral matter, gelatine, &c. They are, therefore, formed from other principles in the parenchyma of the organs, in some chemical but unknown manner.

D. Since chemical analysis has made known the nature of the different tissues of the animal economy, they have been all found to contain a considerable portion of azote. Our food being also partly composed of this simple body, the azote of our organs likewise probably comes from them; but several eminent authors think that it is derived from respiration; others believe that it is formed by the influence of life solely. Both parties insist particularly upon the example of the herbivorous animals, which are supported exclusively upon non-azotised matter; upon the history of certain people that live entirely upon rice and maize; upon that of negroes who can live a long time without eating any thing but sugar; lastly, upon what is related of *caravans*, which, in traversing the deserts, have for a long time had only gum in place of every sort of food. Were it, indeed, proved by these facts, that men can live a long time without azotised food, it would be necessary to acknowledge that azote has an origin different from the food; but the facts cited by no means prove this. In fact, almost all the vegetables upon which man and the animals feed contain more or less azote: for example, the impure sugar that the negroes eat presents a considerable portion of it; and with regard to the people, as they say, who feed upon rice or maize, it is well known that they eat milk, or cheese: now *casein* is the most azotised of all the nutritive proximate principles.

E. A considerable number of tissues in the economy appear to have no nutrition, properly so called; as the epidermis, the nails, the hair, the teeth, the colouring matter of the skin, and, perhaps, the cartilages.

These different parts are really secreted by particular organs, as the teeth and the hair; or by parts which have other functions at the same time, as the nails and the epidermis. The most of the parts formed in this mode wear by the friction of exterior bodies, and are con-

stantly renewed: if they are entirely carried away, they are capable of reproduction. A very singular fact is, that they continue to grow several days after death. — *Magendie's Physiology.*

Nutritum unguentum. A composition of litharge, vinegar, and oil.

NUX. (*x, cis.* f.) A nut, or fruit which has a hard shell.

Botanists consider this as distinct from the drupa, and define it a pericarp, the seed being contained in a hard bony shell.

From the number of seeds it contains, it is called, —

1. *Monosperm*, having one; as in *Corylus ellana.*

2. *Disperm*, with two; as in *Halesia.*

From its loculaments:

1. *Unilocular, bilocular, trilocular*, with one, two, or three; as in *Corylus, Lygeum*, and *Elais.*

From its figure:

1. *Alate*, winged; as in *Pinus thuja.*
2. *Angulate;* as in *Cypressus.*
3. *Ovate;* as in *Corylus*, and *Carpinus.*
4. *Quadrangular;* as in *Halesia.*
5. *Tetragonal;* as in *Peladium* and *Mesua.*
6. *Reniform;* as in *Anacardium.*
7. *Spinous;* as in *Trapa natans.*

Nux aquatica. See *Trapa natans.*

Nux aromatica. See *Myristica.*

Nux barbadensis. See *Jatropha curcas.*

Nux basilica. See *Juglans regia.*

Nux ben. See *Moringa aptera*, in the Supplement.

Nux cathartica. See *Jatropha curcas.*

Nux cathartica americana. See *Jatropha curcas.*

Nux indica. See *Cocos nucifera.*

Nux juglans. See *Juglans regia.*

Nux medica. See *Jatropha curcas.*

Nux metella. See *Strychnos.*

Nux moschata. See *Myristica.*

Nux myristica. See *Myristica.*

Nux persica. See *Juglans regia.*

Nux pistacia. See *Pistacia vera.*

Nux purgans. See *Jatropha curcas.*

Nux serapionis. See *Ignatia amara.*

Nux vomica. See *Strychnos.*

NYCTALO'PIA. (*a, æ.* f.; from *νυξ*, the night, and *ωψ*, an eye.) A defect in vision, by which the person sees little or nothing in the day, but in the evening and night sees tolerably well. This disease is dependent upon a peculiar irritability of the retina, produced by two very different causes: a sudden exposure to a stronger light than the eye has been wont to sustain; and a deficiency of the pigmentum nigrum. From the first cause, the disease is common with those who have been accustomed to a privation of light, by living in caverns, mines, dungeons, &c., or who have recently had a cataract depressed or extracted, the growth of which excluded the light from the retina. Ramazini asserts, that this affection is common with the peasants in Italy, who are employed in agriculture; and many Æthiopians, Africans, and Asiatics have it, most probably from the clearness of the atmosphere, the brightness of the sky, and the warmth of the air, the joint operation of which is likely to produce habitual debility of the iris, and irritability of the retina. A deficiency of the pigmentum nigrum is occasionally found in persons of a fair complexion and light hair; and, as the retina is hereby deprived of the natural shade that softens the light in its descent upon this very sensible membrane, its morbid irritability is not to be wondered at.

Sedative applications, as dilute tincture of belladonna, and the internal use of hyoscyamus, and conium, with cinchona or cascarilla, are likely to be beneficial where the disease proceeds from an accidental irritability, taking care to remove the causes. In old age, and an early deficiency of the black pigment, medicine can do but little.

Modern critics are greatly at variance as to the etymology and signification of the term *nyctalopia;* nor is the question to be settled by an appeal to the ancients, for the Greek writers on medicine do not agree in their definitions of it. For the benefit of the curious reader we quote the following authorities:

Hippocrates says, Οἱ δε της νυκτος ὁρωντες, οὑς δη νυκταλωπες καλεομεν — those who see by night, whom we call nyctalopes. — *Prorrhet.* lib. ii. sect. 2. edit. *Fœs.* tom. i. p. 110.

Galen, in his *Exegesis*, or exposition of the terms used by Hippocrates, defines *nyctalopes* as οἱ της νυκτος αλαοι — those who are blind by night.

The author of the *Definitiones Medicæ*, ascribed to Galen, says, Νυκταλωψ εστι παθος και διαθεσις οφθαλμων διχα φανερας αιτιας, συμβαινει δε τοις ούτω διακειμενοις ἡμερας μεν μη ὁραν, νυκτος δε βλεπειν. Nyctalops is a disease and disposition of the eyes without a manifest cause: it happens to those who are thus affected not to see in the day time, but to see at night. — *Galeni Op. Om. Basil.* 1538. tom. iv. p. 400.

In the *Isagoge*, ascribed to Galen, it is said, Νυκταλωπας δε λεγουσιν ὁταν ἡμερας μεν βλεπωσιν αμαυροτερον, δυομενου δε ἡλιου λαμπροτερον, νυκτος δε ετι μαλλον· η ὑπεναντιως ἡμερας μεν ολιγα, ἑσπερας δε η νυκτος ουδολως. They call those *nyctalopes* who see dimly in the day, more clearly at sunset, and better still at night; or who, on the contrary, see but little in the day, and not at all in the evening and night. — Cap. xv. *sub fine. Galeni Op. Om. Basil.* 1538. tom. iv. p. 387.

Oribasius says, "nyctalopem vocant eum qui per diem videt, sole occidente obscurius, nocte vero omnino nihil cernit." They call him nyctalops who sees (clearly) in the day, more obscurely at sunset, and at night not at all. — *Synopseos*, lib. viii. c. 46. We quote the Latin translation of Janus Cornarius, in the *Medicæ Artis Principes.*

Aëtius says, Νυκταλωπα δε λεγουσιν ὁταν συμβη την μεν ἡμεραν βλεπειν, δυνοντος δε του ἡλιου, αμαυροτερον ὁραν· ειτα νυκτος γενομενης, μηδολως βλεπειν. They call him nyctalops who sees (distinctly) in the day, but when the sun sets more obscurely, and when night comes can discern nothing at all. — *Tetrabibl.* ii. serm. 3. c. 46. Edit. Ald.

Paul of Ægina says, Νυκταλωπα λεγουσιν, ὁταν συμβη την μεν ἡμεραν βλεπειν· δυομενου τε ἡλιου αμαυροτερον ὁρᾶν· νυκτος δε γενομενης ονδαμως ὁρᾶν. They call a person nyctalops when he can see (clearly) in the day-time, more obscurely at sunset, and when the night comes not at all. — Lib. iii. c. 27. Edit. Ald. p. 35.

The meaning of the term *Hemeralopia* can only be settled as the opposite to that of *Nyctalopia*, since the former term, though used by the author of the *Isagoge*, is not defined by him or any other Greek writer. See *Hemeralopia*. Such being the confusion which arises from the use of these terms, it is evident that they ought both to be discarded, and new ones framed.

NY'CTALOPS. (*ops, opis.* c. g.; from νυξ, the night, and ωψ, the eye.) One who sees only in the night: also the disease more commonly called *nyctalopia*.

NYCTO'BASIS. (*is, is.* f.; from νυξ, the night, and βαινω, to go.) Walking in the sleep.

NY'MPHA. (*a, æ.* f.; from νυμφα, a water-nymph: so called because it stands in the water-course.) A membranous and fleshy fold, situated just within the external labia of the female parts of generation, one on each side. They have been also denominated, *Alæ internæ minores clitoridis, Colliculi, Collicula, Myrtocheilides*, and *Labia minora*.

NYMPHÆ'A. (*a, æ.* f.; from νυμφα, a water-nymph: because it grows in watery places.) The name of a genus of plants in the Linnæan system. Class, *Polyandria;* Order, *Monogynia*. The water-lily.

Nymphæa alba. The systematic name of the white water-lily: also named, *Leuco-nymphæa, Nenuphar*, and *Micro-leuconymphæa*. This beautiful plant was formerly employed medicinally, as a demulcent and slightly anodyne remedy. It is now laid aside.

Nymphæa glandifera. See *Nymphæa nelumbo*.

Nymphæa lotus. The Egyptian lotus. An aquatic plant, a native of Egypt and both Indies. The root is conical, firm, about the size of a middling pear, covered with a blackish bark, and set round with fibres. It has a sweetish taste, and, when boiled or roasted, becomes as yellow within as the yolk of an egg. The plant grows in abundance on the banks of the Nile, and is there much sought after by the poor, who, in a short time, collect enough to supply their families with food for several days.

Nymphæa lutea. The systematic name of the yellow water-lily. *Nymphæa major lutea*, of Caspar Bauhin. This beautiful plant was employed formerly with the same intentions as the white water-lily, and, like it, is now fallen into disuse. Lindestolpe informs us that, in some parts of Sweden, the roots, which are the strongest part, were, in times of scarcity, used as food, and did not prove unwholesome.

Nymphæa nelumbo. The pontic, or Egyptian bean. The *Faba ægyptica, Bentamara, Bemtamara, Cyamus ægyptiacus, Nymphæa indica*, and *Nymphæa glandifera*, of old writers. This plant grows on marshy grounds in Egypt, and some of the neighbouring countries. The fruit is eaten either raw or boiled, and is a tonic and astringent.

Nymphoi'des. (From νυμφαια, the water-lily, and ειδος, likeness.) Resembling the water-lily; thus *Menyanthes nymphoides*.

NYMPHOMA'NIA. (*a, æ.* f.; from νυμφα, nympha, which is the seat of the irritation, and μανια, madness.) Excessive and violent desire for coition in women; called also, *Furor uterinus, Acrai, Brachuna, Arascon, Arsatum, Œstromania*. This affection acknowledges the same causes as satyriasis; but as females, especially in warm climates, have a more irritable fibre, they are apt to suffer more severely than the males.

It is a species of temporary madness, or an high degree of hysterics. The effects, as described by Juvenal, in his sixth satire, are most humiliating to human nature. Its immediate cause is a preternatural irritability of the uterus and nymphæ and clitoris of women, or an unusual acrimony of the fluids in these parts. Its presence is known by the wanton behaviour of the female; she speaks and acts with unrestrained obscenity, and, as the disorder increases, she scolds, cries, and laughs by turns. While reason is retained, she is silent, and seems melancholy, but her eyes discover an unusual wantonness. The symptoms are better or worse, until the greatest degree of the disorder approaches, and then, by every word and action, her condition is too manifest. The strong and sanguineous require bleeding and cooling purgatives, with an abstemious diet, to remove this disease; and the nervous and irritable, sedatives, tonics, and a more generous diet. Marriage, or sexual intercourse, is the most natural remedy.

Nympho'tomy. (*Nymphotomia, æ.* f.; from νυμφα, the nympha, and τεμνω, to cut.) The operation of removing the nympha, when too large or diseased.

NYSTA'GMUS. (*us, i.* m.; from νυσταω, to nod sleepily.) An involuntary movement of the eyes, such as happens when a person is very sleepy. Authors also define nystagmus to be an involuntary agitation of the ocular bulb. It is known by the instability or involuntary and constant motions of the globe of the eye, from one canthus to another, or in some other directions. Sometimes it is accompanied with a hippus, or an alternate and repeated dilatation and constriction of the pupil.

O.

O. A contraction used in medical formulæ for *octarium*, a pint.

Oak. See *Quercus.*

Oak, Jerusalem. See *Chenopodium botrys.*

Oak, sea. See *Fucus vesiculosus.*

Oak, willow-leaved. See *Quercus phellos.*

Oak leather. See *Xylostroma giganteum.*

Oak lungs. See *Lichen pulmonarius.*

Oat. See *Avena.* and *Triticum.*

OBCORDA'TUS. Obcordate, or inversely heart-shaped; that is, with the point of the heart next to the stem: applied to leaves, seed-vessels, &c.; as the pericarp of the *Thlaspi bursa pastoris*, and leaves of some of the trefoils.

OBELÆ'A. (Οβελαια; from οβελος, a dart.) An epithet of the sagittal suture of the skull.

OBELI'SCOTHE'CA. (From οβελισκος, an obelisk, and θηκα, a bag: so called from the shape of its seed-bags.) The dwarf sun-flower. See *Cystus helianthemum.*

OBE'SITY. (*Obesitas, atis*, f.; from *obesus*, fat.) See *Polysarcia.*

OBLI'QUUS. Oblique. 1. In *Anatomy*, a term applied to parts from their direction.

2. In *Botany*, it means the same as *radix obliquus*, but sometimes it means twisted. *Folium obliquum*, for example, is a leaf, one part of which is vertical, the other horizontal; as in *Fritillaria obliqua.*

Obliquus ascendens abdominis. See *Obliquus internus abdominis.*

Obliquus ascendens internus. See *Obliquus internus abdominis.*

Obliquus auris. See *Laxator tympani.*

Obliquus capitis inferior. See *Obliquus inferior capitis.*

Obliquus capitis superior. See *Obliquus superior capitis.*

Obliquus descendens abdominis. See *Obliquus externus abdominis.*

Obliquus descendens externus. See *Obliquus externus abdominis.*

Obliquus externus. See *Obliquus externus abdominis.*

OBLIQUUS EXTERNUS ABDOMINIS. A muscle of the abdomen, so named by Morgagni, Albinus, and Winslow. It is the *Obliquus descendens* of Vesalius and Douglas, and the *Obliquus major* of Haller, and some others. It is a broad, thin muscle, fleshy posteriorly, and tendinous in the middle and lower part, and is situated immediately under the integuments, covering all the other muscles of the lower belly. It arises from the lower edges of the eight, and sometimes, though rarely, of the nine inferior ribs, not far from their cartilages, by as many distinct fleshy portions, which indigitate with corresponding parts of the serratus major anticus, and the latissimus dorsi. From these several origins, the fibres of the muscle descend obliquely forwards, and soon degenerate into a broad and thin aponeurosis, which terminates in the linea alba. About an inch and a half above the pubes, the fibres of this aponeurosis separate from each other, so as to form an aperture, which extends obliquely inwards and forwards, and more than an inch in length, and is wider above than below, being nearly of an oval figure. This is what is sometimes, though erroneously, called the *ring* of the abdominal muscles, *annulus abdominis*, for it belongs only to the external oblique, there being no such opening either in the obliquus internus, or in the transversalis, as some writers, and particularly Douglas and Cheselden, would give us to understand. This opening, or ring, serves for the passage of the spermatic vessels in men, and of the round ligament of the uterus in women, and is of a larger size in the former than in the latter. The two tendinous portions, which, by their separation, form this aperture, are called the *columns* of the ring. The anterior, superior, and inner column, which is the broadest and thickest of the two, passes over the symphysis pubis, and is fixed to the opposite os pubis; so that the anterior column of the right obliquus externus intersects that of the left, and is, as it were, interwoven with it, by which means their insertion is strengthened, and their attachment made firmer. The posterior, inferior, and exterior column approaches the anterior one as it descends, and is fixed behind and below it to the os pubis of the same side. The fibres of that part of the obliquus externus which arises from the two inferior ribs, descend almost perpendicularly, and are inserted, tendinous and fleshy, into the outer edge of the anterior half of the spine of the ilium. From the anterior superior spinous process of that bone, the external oblique is stretched tendinous to the os pubis, forming what is called *Poupart's*, and sometimes *Fallopius's* ligament, Fallopius having first described it. Winslow, and many others, name it the *inguinal* ligament. But, after all, it has no claim to this name, it being nothing more than the tendon of the muscle, which is turned or folded inwards at its interior edge. It passes over the blood-vessels of the lower extremity, and is thickest near the pelvis; and in women, from the greater size of the pelvis, it is longer and looser than in men. Hence we find that women are most liable to crural herniæ: whereas men, from the greater size of the ring of the external oblique, are most subject to the inguinal. From this ligament, and from that part of the tendon which forms the ring, we observe a detachment of tendinous fibres, which are lost in the *fascia lata* of the thigh. This may, in some measure, account for the pain which, in cases of strangulated herniæ, is felt when the patient stands upright, and which is constantly relieved upon bending the thigh upwards. This muscle serves to draw down the ribs in expiration; to bend the trunk forwards when both muscles act,

or to bend it obliquely in one side, and, perhaps, to turn it slightly upon its axis, when either acts singly; it also raises the pelvis obliquely when the ribs are fixed; it supports and compresses the abdominal viscera, assists in the evacuation of the urine and fæces, and is likewise useful in parturition.

Obliquus inferior. See *Obliquus inferior capitis,* and *Obliquus inferior oculi.*

Obliquus inferior capitis. This muscle of the head, the *obliquus inferior sive major,* of Winslow, is larger than the obliquus superior capitis. It is very obliquely situated between the two first vertebræ of the neck. It arises tendinous and fleshy from the middle and outer side of the spinous process of the second vertebra of the neck, and is inserted tendinous and fleshy into the lower and posterior part of the transverse process of the first vertebra. Its use is to turn the first vertebra upon the second, as upon a pivot, and to draw the face towards the shoulder.

Obliquus inferior oculi. *Obliquus minor oculi,* of Winslow. An oblique muscle of the eye, that draws the globe of the eye forwards, inwards, and downwards. It arises by a narrow beginning from the outer edge of the orbitar process of the superior maxillary bone, near its junction with the lachrymal bone, and, running obliquely outwards, is inserted into the sclerotic membrane of the eye.

Obliquus inferior sive major. See *Obliquus inferior capitis.*

Obliquus internus. See *Obliquus internus abdominis.*

Obliquus internus abdominis. *Musculus acclivis.* A muscle of the abdomen. The *obliquus ascendens,* of Vesalius, Douglas, and Cowper; the *obliquus minor,* of Haller; the *obliquus internus,* of Winslow; the *obliquus ascendens internus,* of Innes. It is situated immediately under the external oblique, and is broad and thin like that muscle, but somewhat less considerable in its extent. It arises from the spinous processes of the three inferior lumbar vertebræ, and from the posterior and middle part of the os sacrum, by a thin tendinous expansion, which is common to it, and to the serratus posticus inferior; by short tendinous fibres, from the whole spine of the ilium, between its posterior tuberosity and its anterior and superior spinous process; and from two thirds of the posterior surface of what is called Fallopius's ligament, at the middle of which we find the round ligament of the uterus in women, and the spermatic vessels in men, passing under the thin edge of this muscle; and in the latter, it likewise sends off some fibres, which descend upon the spermatic chord, as far as the tunica vaginalis of the testis, and constitute what is called the *cremaster* muscle, which surrounds, suspends, and compresses the testicle. From these origins, the fibres of the internal oblique run in different directions: those of the posterior portion ascend obliquely forwards; the middle ones become less and less oblique, and at length run in an horizontal direction; and those of the anterior portion extend obliquely downwards. The first of these are inserted, by very short tendinous fibres, into the cartilages of the fifth, fourth, and third of the false ribs; the fibres of the second, or middle portion, form a broad tendon, which, after being inserted into the lower edge of the cartilage of the second false rib, extends towards the linea alba, and separates into two layers: the anterior layer, which is the thickest of the two, joins the tendon of the obliquus externus, and runs over the two upper thirds of the rectus muscle, to be inserted into the linea alba; the posterior layer runs under the rectus, adheres to the anterior surface of the tendon of the transversalis, and is inserted into the cartilages of the first of the false, and the last of the true ribs, and likewise into the linea alba. By this structure we may perceive that the greater part of the rectus is enclosed, as it were, in a sheath. The fibres of the anterior portion of the internal oblique, or those which arise from the spine of the ilium and the ligamentum Fallopii, likewise form a broad tendon, which, instead of separating into two layers, like that of the other part of the muscle, runs over the lower part of the rectus, and adhering to the under surface of the tendon of the external oblique, is inserted into the fore part of the pubes. This muscle serves to assist the obliquus externus; but it seems to be more evidently calculated than that muscle is to draw the ribs downwards and backwards. It likewise serves to separate the false ribs from the true ribs, and from each other.

Obliquus major abdominis. See *Obliquus externus abdominis.*

Obliquus major capitis. See *Obliquus inferior capitis.*

Obliquus major oculi. See *Obliquus superior oculi.*

Obliquus minor abdominis. See *Obliquus internus abdominis.*

Obliquus minor capitis. See *Obliquus superior capitis.*

Obliquus minor oculi. See *Obliquus inferior oculi.*

Obliquus superior capitis. Riolanus, who was the first that gave particular names to the oblique muscles of the head, called this muscle *obliquus minor,* to distinguish it from the inferior, which, on account of its being much larger, he named *obliquus major.* Spigelius afterwards distinguished the two, from their situation with respect to each other, into *superior* and *inferior;* and in this he is followed by Cowper and Douglas. Winslow retains both names. This little muscle, which is nearly of the same shape as the *recti capitis,* is situated laterally between the occiput and the first vertebra of the neck, and is covered by the complexus and the upper part of the splenius. It arises, by a short thick tendon, from the upper and posterior part of the transverse process of the first vertebra of the neck, and ascending obliquely inwards and backwards, becomes broader, and is inserted, by a broad flat tendon, and some few fleshy fibres, into the occipitis, behind the back part of the mastoid process, under the insertion of the complexus and splenius, and a little above that of the rectus major. The use of this muscle is to draw the head backwards, and perhaps to assist in its rotatory motion.

Obliquus superior oculi. *Trochlearis. Longissimus oculi. Obliquus major*, of Winslow. An oblique muscle of the eye, that rolls the globe of the eye, and turns the pupil downwards and outwards. It arises, like the straight muscles of the eye, from the edge of the foramen opticum at the bottom of the orbit, between the rectus superior and rectus internus; from thence runs straight along the papyraceous portion of the ethmoid bone to the upper part of the orbit, where a cartilaginous trochlea is fixed to the inside of the internal angular process of the os frontis, through which its tendon passes, and runs a little downwards and outwards, enclosed in a loose membranaceous sheath, to be inserted into the sclerotic membrane.

Obliquus superior sive minor. See *Obliquus superior capitis.*

Obliquus superior sive trochlearis. See *Obliquus superior oculi.*

OBLITERA'TION. In medical language, the disappearance of any part of the animal body that has become useless: thus the *ductus venosus* is obliterated after birth.

OBLO'NGUS. Oblong. A term used very generally. In *Botany*, it is applied to leaves, petals, seeds, &c., which are three or four times longer than broad. The term is used with great latitude, and serves chiefly in a specific character to contrast a leaf which has a variable, or not very decided, form, with others that are precisely round, ovate, linear, &c.

The *petals* of the genus Citrus and Hedera, and those of the Narcissus moschatus, are *oblong*, and the *seeds* of the Boerhaavia diffusa.

OBOVA'TUS. Obovate. Used to designate shape, and applied to leaves, &c. which are ovate, with a broader end uppermost; as those of the primrose and daisy. Linnæus first used the words *obversi ovatum.*

Obsidia'num. 1. The name of a mineral — *obsidian.*

2. Libavius gives this name to glass of antimony.

OBSOLETE. *Obsoletus.* In the language of *Botany* it is applied to parts of plants which are by nature imperfectly developed, or of which only a *vestigium* remains.

OBSTE'TRIC. (*Obstetricus*; from *obstetrix*, a midwife.) Belonging to midwifery.

OBSTE'TRICS. Midwifery. The art of assisting women in childbirth, and treating their diseases during pregnancy and after delivery.

Obstipa'tion. (*Obstipatio, onis.* f.; from *obstipo*, to stop up.) See *Costiveness.*

OBSTRUENS. (From *obstruo*, to shut up.) Closing the orifices of the ducts, or vessels. Medicines supposed to have this power have been called *obstruentia.*

Obtundens. (From *obtundo*, to make blunt.) Having the property of obviating or blunting irritation; as bland, oily, or mucilaginous matters, which form a covering on inflamed and irritable surfaces, particularly those of the stomach, lungs, and anus.

OBTURA'TOR. (*or, oris.* m.; from *obturo*, to shut up.) A stopper up, or that which covers any thing.

Obturator externus. A small flat muscle, situated obliquely at the upper and anterior part of the thigh, between the pectinalis and the fore part of the foramen thyroideum, and covered by the abductor brevis femoris. It arises tendinous and fleshy from all the inner half of the circumference of the foramen thyroideum, and likewise from part of the obturator ligament. Its radiated fibres collect and form a strong roundish tendon, which runs outwards; and, after adhering to the capsular ligament of the joint, is inserted into a cavity at the inner and back part of the root of the great trochanter. The chief uses of this muscle are to turn the thigh obliquely outwards, to assist in bending the thigh, and in drawing it inwards. It likewise prevents the capsular ligament from being pinched in the motions of the joint.

Obturator internus. *Marsupialis, seu obturator internus*, of Douglas. *Marsupialis, seu bursalis*, of Cowper; and *Intrapelvio-trochanterien*, of Dumas. A considerable muscle, a great part of which is situated within the pelvis. It arises, by very short tendinous fibres, from somewhat more than the upper half of the internal circumference of the foramen thyroideum of the os innominatum. It is composed of several distinct fasciculi, which terminate in a roundish tendon that passes out of the pelvis, through the niche that is between the spine and the tuberosity of the ischium; and after running between the two portions of the gemini, which enclose it as in a sheath, is inserted into the cavity at the root of the great trochanter, after adhering to the adjacent part of the capsular ligament of the joint. This muscle rolls the os femoris obliquely outwards, by pulling it towards the ischiatic niche, upon the cartilaginous surface of which its tendon, which is surrounded by a membranous sheath, moves as upon a pulley.

Obturator nerve. A nerve of the thigh, that is lost upon the muscles situated on the inside of the thigh.

OBTUSE. *Obtusus.* Blunt; not pointed. In general use in every department of science.

OBTU'SUS. Blunt: applied to a leaf which terminates in a segment of a circle; as that of the *Linum catharticum*, the petals of the *Tropæolum majus.* This form of leaf has sometimes a small point, *obtusum cum acumine*, in the *Statyce limonium.*

OCCI'PITAL. *Occipitalis.* Belonging to the occiput or back part of the head.

Occipital bone. *Os occipitis. Os memoriæ. Os nervosum. Os basilare.* This bone, which forms the posterior and inferior part of the skull, is of an irregular figure, convex on the outside, and concave internally. Its external surface, which is very irregular, serves for the attachment of several muscles. It affords several inequalities, which sometimes form two semicircular hollows separated by a scabrous ridge. The inferior portion of the bone is stretched forwards in form of a wedge, and hence is called the *cuneiform* process, or basilary process. At the base of this process, situated obliquely on each side of the foramen magnum, are two flat, oblong protuberances, named *condyles.* They are covered with cartilage, and serve for the

articulation of the head with the first vertebra of the neck. In the inferior portion of this bone, at the basis of the cranium, and immediately behind the cuneiform process, we observe a considerable hole, through which the medulla oblongata passes into the spine. The nervi accessorii, the vertebral arteries, and sometimes the vertebral veins likewise, pass through it. Man being designed for an erect posture, this foramen magnum is found nearly in the middle of the basis of the human cranium, and at a pretty equal distance from the posterior part of the occiput, and the anterior part of the lower jaw; whereas in quadrupeds it is nearer the back part of the occiput. Besides this hole, there are four other smaller foramina, viz. two before, and two behind the condyles. The former serve for the transmission of the ninth pair of nerves, and the two latter for the veins which pass from the external parts of the head to the lateral sinuses. On looking over the internal surface of the os occipitis, we perceive the appearance of a cross, formed by a very prominent ridge, which rises upwards from near the foramen magnum, and by two transverse sinuosities, one on each side of the ridge. This cross occasions the formation of four fossæ, two above and two below the sinuosities. In the latter are placed the lobes of the cerebellum, and in the former the posterior lobes of the brain. The two sinuosities serve to receive the lateral sinuses. In the upper part of this bone is seen a continuation of the sinuosity of the longitudinal sinus; and at the basis of the cranium we observe the inner surface of the cuneiform process made concave, for the reception of the medulla oblongata. The occipital bone is thicker and stronger than any of the other bones of the head, except the petrous part of the ossa temporum; but it is of unequal thickness. At its lateral and inferior parts, where it is thinnest, it is covered by a great number of muscles. The reason for so much thickness and strength in this bone seems to be, that it covers the cerebellum, in which the least wound is of the utmost consequence; and that it is, by its situation, more liable to be fractured by falls than any other bone of the cranium. For if we fall forwards, the hands are naturally put out to prevent the forehead touching the ground; and if on one side, the shoulders, in a great measure, protect the sides of the head; but if a person fall backwards, the hind part of the head consequently strikes against the earth, and that, too, with considerable violence. Nature, therefore, has wisely constructed this bone so as to be endowed with the greatest strength at its upper part, where it is the most exposed to injury. The os occipitis is joined, by means of the cuneiform process, to the sphenoid bone, with which it often ossifies, and makes but one bone in those who are advanced in life. It is connected to the parietal bones by the lamboidal suture, and to the temporal bones by the additamentum of the temporal suture. The head is likewise united to the trunk by means of this bone. The two condyles of the occipital bone are received into the superior oblique processes of the atlas, or first vertebra of the neck, and it is by means of this articulation that a certain degree of motion of the head backwards and forwards is performed. But it allows only very little motion to either side; and still less of a circular motion, which the head obtains principally by the circumvolution of the atlas on the second vertebra, as is described more particularly in the account of the vertebræ. In the fœtus, the os occipitis is divided by an unossified cartilaginous substance into four parts. One of these, which is the largest, constitutes all that portion of the bone which is above the foramen magnum; two others, which are much smaller, compose the inside of the foramen magnum, and include the condyloid processes; and the fourth is the cuneiform process. This last is sometimes not completely united with the rest, so as to form one bone, before the sixth or seventh year.

OCCI'PITO-FRONTA'LIS. *Digastricus cranii. Epicranius*, of Albinus. *Frontalis et occipitalis*, of Winslow and Cowper. A single, broad, digastric muscle, that covers the cranium, pulls the skin of the head backwards, raises the eyebrows upwards, and at the same time draws up and wrinkles the skin of the forehead. It arises from the posterior part of the occiput, goes over the upper part of the os parietale and os frontis, and is lost in the eyebrows.

O'CCIPUT. (*ut, itis.* n.) The hinder part of the head.

OCCLU'SUS. Occluse: shut up. Applied to the florets of the fig, which are shut up in the fleshy receptacle that forms the fruit.

OCCU'LT. *Occultus.* Hidden. A term formerly applied to things, concerning which, authors wrote without understanding their own meaning: thus magic and alchemy were *occult sciences;* phenomena which could not be explained were referred to *occult causes;* and when the doctors met with a disease that they could make nothing of, they called it an *occult disease.*

OCHETEU'MA. (Οχετευμα; from οχετος, a duct.) The opening of the nostril.

O'CHETUS. (From οχεω, to convey.) A canal or duct: applied formerly to the urinary or intestinal canal.

O'CHEUS. (Οχεος; from οχεω, to carry.) The scrotum.

O'CHRA. (*a, æ.* f.; from ωχρος, pale: so named because it is often of a pale colour.) 1. Ochre. An argillaceous earth, impregnated with iron, of a red or yellow colour. The Armenian bole, and other earths, are often adulterated with ochre.

2. The fore-part of the tibia.

OCHRA'CEUS. Ochrelike: applied to designate a yellowish colour striped with brown. See *Colour.*

OCHTHO'DES. Οχθωδες. An epithet for ulcers which have callous and tumid edges, and are consequently difficult to heal.

OCIMA'STRUM. (Diminutive of *ocimum*, basil.) A species of basil.

O'CIMUM. (*um, i.* n.; from ωκυς, swift: so called from its quick growth.) *Ocymum.* The name of a genus of plants in the Linnæan system. Class, *Didynamia;* Order, *Gymnospermia.*

OCIMUM BASI'LICUM. The systematic name

of the common or citron basil. *Basilicum. Herba regia. Ocimum—foliis ovatis glabris; calycibus ciliatis*, of Linnæus. This plant is supposed to possess nervine qualities, but is seldom employed but as a condiment to season high dishes, to which it imparts a grateful odour and taste.

Ocimum caryophylla'tum. *Ocimum minimum* of Caspar Bauhin. Small or bush basil. This plant is mildly balsamic. Infusions are drunk as tea, in catarrhal and uterine disorders, and the dried leaves are made into cephalic and sternutatory powders. They are, when fresh, very juicy, of a weak aromatic and very mucilaginous taste, and of a strong and agreeable smell, improved by drying.

Ocob. Sal ammoniac. — *Ruland.*

OCO'TEA. A genus of plants of the laurel tribe.

Ocotea puchu'ry. This plant as well as the *Lauruspichurim*, is said to yield the pichurim bean.

Ocotea cy'mbarum. This affords the Orinoco sassafras.

O'CREA. A term applied by Rotball to the membrane that enfolds the flower-stalks in *Cyperus*, and which Sir J. Smith thinks is a species of bractea.

OCTA'NUS. (From *octo*, eight.) The eighth: applied to an erratic intermitting fever, which returns every eighth day.

OCTA'NDRIA. (*a. æ.* f.; from οκτω, eight, and ανηρ, a husband.) The name of a class of plants in the sexual system of Linnæus, consisting of those which have hermaphrodite flowers, furnished with eight stamina.

Octavus humeri. See *Teres minor.*

Octavus humeri Placentini. See *Teres minor.*

Ocula'ria. (*a, æ.* f.; from *oculus*, the eye: so called from its uses in disorders of the eye.) See *Euphrasia officinalis.*

Ocula'ris communis. A name for the nerve called *Motor oculi.*

O'CULUS. (*us, i.* m.; from οκκος, *i. e.* οφθαλμος, the eye.) The eye. The globular organ which occupies the cavity of the orbit and constitutes the apparatus of vision. There are certain parts called appendages of the eye: these are the *eyelids*, see *Tarsi;* the *lachrymal apparatus*, the *plica semilunaris*, the *caruncula lachrymalis*, see these titles; the *blood-vessels and nerves of the eye*, see *Ophthalmic Artery, Optic Nerve*, &c.; lastly, the muscles of the eye, which are six in number. See *Rectus* and *Obliquus.*

The globe of the eye is situated at the internal and anterior part of the orbital fossa, which lodges it and its appendages: its form is that of a spheroid, slightly compressed at the four opposite points of its circumference, which correspond with the insertion of the recti muscles. The direction of the axis of the globe of the eye does not correspond with that of the orbit; the axes of the eye are parallel with one another, whilst those of the orbits diverge considerably in front, and if prolonged backwards would decussate behind the body of the sphenoid bone; hence, as the optic nerves coincide in their direction with that of the axes of the orbits, each of them enters the globe of the corresponding eye to the inner side of its axis, and consequently of the axis of vision. When viewed in profile, the globe appears to be composed of segments of two spheres, of which the anterior is smaller and more prominent; hence, when its different diameters are compared, it will be found that the antero-posterior exceeds the others by about a line. Anteriorly, the globe of the eye is in relation with the conjunctiva, which is reflected from the eyelids upon it; posteriorly, with the vessels and nerves (optic and ciliary) which enter it, and with a quantity of adipose substance in which it is in some measure embedded; round its circumference, with the six muscles inserted into it; superiorly, and towards its outer side, with the lachrymal gland; and internally, with the caruncula, tensor tarsi, and lachrymal sac.

The globe, or, as it is often called, the ball of the eye, is composed of membranes placed one within the other, and of humours or fluids which they inclose; the former are not unfrequently called coats, or tunics; but as none of them forms a complete investment, the term is not so applicable as that here adopted. The membranes are the conjunctiva, sclerotica, cornea, choroid, retina, and iris, the capsule of the crystalline lens, the hyaloid membrane, and that of the aqueous humour. The humours are the aqueous, vitreous, and the crystalline lens.

The Conjunctiva. — The conjunctiva (*membrana conjunctiva, sive adnata*) is included by some writers amongst the accessory structures of the globe of the eye, and not amongst its proper membranes; as if it were a tegument or means of connexion with adjacent structures, and did not form part of the organ itself, considered as an optical instrument. Be this as it may, the membrane lines the free border and inner surface of the eye-lids, from which it is reflected upon the globe of the eye, so as to cover its anterior third. Along the borders of the lids it is continuous with the skin, and by lining the *puncta lachrymalia*, forms a continuous surface with the mucous membrane of the lachrymal passages and nasal fossæ. It is red and vascular on the lids, but firm and pale on the sclerotica: it becomes thin and transparent on the cornea, so much so that some anatomists have doubted whether it extends over the entire of its surface. At present very few persons continue sceptical on this point; for even *à priori* we should infer its extension over the cornea, as every structure of the kind is known to require the protection of a tegumentary membrane. Moreover, in reptiles which cast their epidermis at stated times, the covering of the cornea comes away together with the rest; and finally, in the mus typhlus it is covered with hairs.

The Sclerotica.—The sclerotic (σκληρος, hard; *cornea opaca*) belongs to the class of fibrous membranes; it is firm and resistent in its texture, and forms about four-fifths of the external investment of the eye, extending from the entrance of the optic nerve to the border of the cornea. Its external surface is convex, and in relation with the conjunctiva, with the tendinous expansions of the muscles, and the vessels and

nerves of the orbit: the internal surface is concave and in apposition with the choroid membrane, with which it is connected by vascular and nervous filaments, and by some delicate cellular tissue. Posteriorly it is pierced by a small circular aperture for the transmission of the optic nerve, situated a little to the inner side of the axis of the globe: anteriorly it is truncated, so as to leave an aperture about six lines in diameter, but somewhat greater in the transverse than in the vertical direction. The inner edge of this aperture is slightly bevelled off, so as to allow the cornea to be inserted into it, somewhat as a watch-glass is into its case. The sclerotica being a fibrous membrane, its fibres interlace intimately, but do not assume any assignable direction. It is thicker posteriorly than towards its anterior part; but in this latter situation it is strengthened by the tendinous expansions of the muscles, which some anatomists have considered as a distinct membrane, and denominated *tunica albuginea*. At the back part of the globe it is about a line in thickness; at the insertion of the recti muscles it is scarcely half a line; but near the cornea it thickens somewhat. The aperture for the optic nerve is a little nearer to the nasal than to the temporal side of the globe, and is found to be divided by a number of septa, so as to constitute a *cribriform plate*, through which the pulp of the nerve may be made to ooze as if through minute pores. In the middle will be found one of these of larger size than the rest, which is named *porus opticus*. It gives passage to the arteria centralis retinæ. At its exit from the skull, the nerve receives an investment from the dura mater, which accompanies it to the point at which it pierces the sclerotica, where it separates from the nerve, and becomes blended with the substance of the latter membrane.

The Cornea. — The cornea (*cornea pellucida*) occupies the anterior fifth of the globe of the eye, its transverse diameter being about seven lines, the vertical a little less. The anterior surface, which is convex and prominent, is in contact with the conjunctiva; the posterior is concave, and is lined by the membrane of the aqueous humour: its circumference, nearly circular in the human subject, is received within the anterior border of the sclerotica, with which it is so intimately united as not to be separable from it without long-continued maceration. Its degree of convexity varies in different individuals, and at different periods of life. It is composed of five or six concentric lamellæ, united by some connecting medium, probably a fine cellular tissue, the interstices of which contain an aqueous or serous fluid. It is thicker than the sclerotica, which may be readily seen by making a section of both; but it is by no means so dense; its layers will be found to slide almost upon one another when it is pressed between the fingers. The lamellated structure of the cornea is beautifully adapted to the functions of the eye. Were it fibrous, like the sclerotica, even though at the same time translucent, it would cause a dispersion of the rays of light, and thereby resolve them into their primitive or prismatic rays, which would necessarily produce a coloured and confused image. The effect may be readily exemplified by looking at a lighted taper through a feather: the flame will instantly appear surrounded by a halo of coloured images; and were the cornea made up of fibres woven ever so finely, the effect would be similar.

Ciliary Ligament. — The ciliary ligament (*orbiculus ciliaris*, Haller) is a ring of light grey matter, about a line and a half in breadth, which is attached to the inner surface of the sclerotica, just at its junction with the cornea. Externally, it is united, though slightly, with the sclerotica; posteriorly, with the choroid membrane; and anteriorly, with the iris, which may be said to be inserted into its substance. It adheres more firmly to the choroid than to the other textures: for though it is separated by a slight effort from the latter, it remains securely attached to the former. The ciliary arteries pass through it, and distribute some twigs to it, as do the ciliary nerves in their course to the iris. Its external surface or circumference presents a slight groove which runs around it, so that when in apposition with the sclerotica a minute canal is inclosed between them. Fontana appears to have been the first who noticed this circumstance. Some anatomists have considered the ciliary ligament as a ganglion in which the ciliary nerves terminate, and from which branches proceed to the iris; but no instance can be adduced in which a nervous ganglion forms the medium of union and connexion between parts in the same way that this structure does, as we find it attached to the sclerotica, and giving attachment to the iris, choroid membrane, and ciliary processes.

The Choroid. — The choroid membrane (*tunica vasculosa, choroidea*) lies between the sclerotica and the retina, extending from the entrance of the optic nerve as far as the ciliary ligament. In the greater part of its extent it is connected, though loosely, to the sclerotica by cellular tissue, and by the vessels which pass from without to reach it; but anteriorly, the union is established through the medium of the ciliary ligament. The inner surface is in apposition with the retina, or rather with Jacob's membrane. Posteriorly, the choroid presents a foramen, with a well-defined margin, for the transmission of the optic nerve: its anterior termination requires a particular description, as some difference of opinion has existed with regard to it. The membrane consists of two lamellæ, which, though separable at the posterior, are united at the anterior part, where it becomes connected with the ciliary ligament; there it drops inwards towards the axis of the eye, and is drawn into a number of delicate folds, the aggregate of which forms a complete circle, resting, like a collar, round the border of the crystalline lens, and the anterior surface of the vitreous humour. In this manner are formed the ciliary processes, the aggregate of which has been variously named by different anatomists (*corpus ciliare, corona ciliaris*).

The choroid membrane is essentially vascular in its structure, being composed of minute arteries and veins, united by cellular tissue. When the sclerotica is removed so as fully to

expose the choroid membrane, we find lying upon its surface, if the dissection has been carefully executed, the ciliary nerves compressed and flat: their destination is the ciliary ligament and iris. Two long arteries will also be found (long ciliary arteries) passing horizontally forwards, maintaining little, if any, connexion with the choroid; for, after having pierced the sclerotica, they lie between the latter and the choroid, without giving branches to either; and when they reach the ciliary ligament, they turn inwards and divide into branches, which are exclusively distributed to the iris. These vessels are situated at opposite sides of the globe, nearly on a line with its axis; the external one, however, is a little above, the internal a little below it. But there is a set of vessels which are intimately connected with this membrane, being distributed to it exclusively, viz. the *short ciliary arteries*, which pierce the sclerotica nearer to the optic nerve than the long ones, and soon divide into branches; these run at first parallel with one another, and mutually send twigs of communication, so that they all freely anastomose, particularly towards the anterior part of the choroid, where they form a circle, consisting of a most minute interlacement of vessels. The veins are readily distinguishable from the arteries by their greater size, as well as by their peculiar arrangement. They extend from before backwards in a radiated form, describing arches as they converge to the posterior part of the eye, and form by this union three or four small vessels, which pierce the sclerotica, and open into some of the secondary branches of the ophthalmic vein. As the veins of the choroid membrane are disposed in whirls, they are usually denominated *vasa vorticosa;* they occupy for the most part the external, and the arteries the internal surface of the membrane. On this distribution of the vessels is founded the division of the choroid into two lamellæ, of which the internal is denominated *tunica Ruyschiana*, in compliment to Ruysch, who was the first that succeeded in demonstrating its structure by injection. The inner surface of the membrane, from its villous or fleecy appearance, has been called tapetum; when minutely injected, it is of a deep scarlet colour. It appears to secrete the colouring matter (*pigmentum nigrum*), which is a viscid and apparently mucous secretion, deposited upon the anterior surface of the membrane. Its quantity varies in different parts, being more abundant anteriorly and in the interstices of the ciliary processes.

Ciliary processes. — The ciliary processes formed, as has been above stated, of the anterior margin of the choroid, are from sixty to eighty in number. The form of each lamella, or process, is triangular; one side looks forward to the iris, the other backward to the crystalline lens and vitreous humour, with which it is in contact; the third or internal one, the shortest, is free. The processes are alternately long and short, and in their arrangement resemble the plicæ observable on the under surface of a mushroom. The intervals between the processes are filled by a pigment similar to the pigmentum nigrum in every particular, which leaves on the surface of the lens and of the vitreous humour a number of dark striated lines, corresponding not with the processes, but with the intervals between them. When removing the ciliary processes, it will be observed that they are not merely in contact with the anterior part of the hyaloid membrane; minute plicæ of the latter project into the interstices between the processes, and seem to be connected with them. The name ciliary body (corpus ciliare) is usually given to the aggregate of the ciliary process.

Retina. — The retina (*tunica nervea*) is placed between the choroid membrane and the vitreous humour, with which it is merely in apposition. It extends from the bottom of the eye, where it is continuous with the optic nerve, forwards as far as the commencement of the ciliary processes, where it appears to terminate by a defined and rather prominent line. Its structure is soft and pulpy; in the living subject it is transparent, and so continues for some hours after death, but then becomes of a pale white colour. When the ophthalmic artery has been minutely injected, the membrane can be shown to consist of two lamellæ, of which the internal is vascular, and presents several small vessels, which arise from the centralis retinæ artery; the external lamella appears to consist of white nervous matter. If the eye be macerated for some days in water, the latter part of the retina can be washed away, leaving the vascular lamella in its natural position. About two lines outside the entrance of the optic nerve may be observed in the retina a small hole and a yellow spot, first described by Sœmmering, and named by him, the one *foramen centrale*, the other *limbus luteus*. The yellow spot appears to coincide with the axis of vision; the appearance which has been called a foramen is owing to a transparent point in the retina, and not to a perforation of its substance; the outer or medullary layer is merely deficient.

Exclusively of the two layers here noticed, the retina is found to be covered on its external surface by a delicate transparent membrane, united to it by cellular substance and vessels. If the sclerotica be removed, and the choroid membrane carefully torn and averted, small portions of the structure here alluded to can be detached, or a globule of air, or even of quicksilver, may be insinuated beneath it, by which means it is raised, and can be seen distinctly if held towards the light." This is now known as *Jacob's membrane*. It cannot be said to be a part of the retina, or to consist of its medullary lamella detached by the process resorted to in the dissection of the organ; for the yellow spot of Sœmmering is not distinctly seen until Jacob's membrane is removed; and when this has been effected we can still show the retina to consist of its two lamellæ.

The Iris. — The iris, which presents the coloured circle seen through the transparent cornea, resembles a partition placed vertically so as to divide, but very unequally, the interval between the cornea and the lens into two parts. This interval is filled by the aqueous humour,

so that the iris moves freely in the fluid. The space between it and the cornea, which is much the larger, is called the *anterior chamber;* that behind it is the *posterior chamber:* both communicate through the pupil. The iris presents two flat surfaces and two circumferences; on the anterior surface, which is differently coloured in different individuals, may be observed two concentric rings, of which the external (annulus major) is broader than the internal, but not so deeply coloured: it is marked by several striated lines, which pass from the great circumference inwards to the pupil, where they seem to bifurcate. The inner ring (annulus minor) is more deeply coloured, and surrounds the pupil. The posterior surface contiguous to the ciliary processes is covered by a dark pigment similar to that of the choroid; it is usually called *uvea*. When this is washed off, a number of fine lines, or fibres, may be observed, with the assistance of a magnifying power, converging from the greater circumference to the pupil: these are distinct from one another in the former situation, but in the latter are blended so as to form a membranous zone.

The great circumference of the iris corresponds with the ciliary ligament, into which it may be said to be inserted; the smaller forms the border of the aperture called the *pupil* (pupilla). The pupillary aperture is closed in the fœtus, up to the seventh month, by a delicate transparent membrane, called, from this circumstance, *membrana pupillaris*. If examined after the vessels of the eye have been injected, it will be found distinct from the iris, and appearing as if inserted into its margin, so as to cut off all communication between the two chambers. It becomes reticulated a little after the time referred to, then a few fragments of it only remain, and finally, it disappears before birth. According to M. Jules Cloquet's account, it is a sort of mediastinum formed by the contiguous sides of two small culs-de-sac, one of which is the membrane of the aqueous humour continued across upon the front of the iris, the other the lining membrane of the posterior chamber, both being in apposition at the pupil.

The iris is abundantly supplied with nerves from the ciliary nerves: it receives the two long ciliary arteries which pass along between the choroid and sclerotica, and the smaller, or anterior ones, which pierce the ciliary ligament from without. These vessels approach the iris from four opposite directions, and at its greater circumference freely anastomose, so as to form the larger vascular circle of the iris. From this circle branches pass inwards, converging, and form at a little distance from the pupil another circle, by a second anastomosis. Finally, from this inner circle minute filaments pass inwards, and seem to terminate at the pupillary margin of the iris. The veins, in general, take the same course as the arteries, but the greater number open into the vasa vorticosa. The ciliary nerves, after having passed through the ciliary ligament, incline inwards upon the anterior surface of the iris, where they divide into fine filaments, which soon elude our research, even with the aid of a microscope.

Aqueous Humour. — The *aqueous* humour is a thin, pellucid fluid, which fills up the two chambers of the eye, occupying the space between the cornea and crystalline lens. Its specific gravity and chemical composition differ little, if at all, from that of the vitreous humour; it is moreover inclosed in a thin transparent membrane, which secretes it in the first instance, and reproduces it when evacuated by accident, or during operations. This membrane, usually called the *capsule* of the aqueous humour, lines the cornea and the anterior surface of the iris, but does not seem to extend into the posterior chamber.

Crystalline Lens. — The crystalline lens is situated at the union of the anterior third with the two posterior thirds of the eye, lying behind the iris, surrounded by the ciliary processes, and embedded in the vitreous humour; it is perfectly transparent, soft in the greater part of its extent, but of high refracting power. The lens is doubly convex; but the posterior segment which is received into the vitreous humour is more convex than the anterior; the convexity of both is greater in infancy than in adult age. The greatest thickness of the lens is about two lines and a half; its circumference measures from twelve to fourteen. It consists externally of a soft and homogeneous substance, presenting no trace of organisation; but the central part, more dense and firm, is made up of concentric lamellæ.

The lens is inclosed in a delicate capsule, which invests it all round, but without any distinguishable adherence to it, and is thicker and firmer on the anterior than on the posterior surface. If a puncture be made in the membrane, a small quantity of a pellucid fluid, which is termed *liquor Morgagni*, issues from the incision. When macerated in a dilute acid, or suddenly plunged into boiling water, the capsule becomes opaque and corrugated, presenting a pale, milky appearance. The lens and its capsule are both inclosed within a duplicature of the hyaloid membrane; or rather, after investing the vitreous humour, this membrane approaches the circumference of the lens, where it may be conceived to divide in two lamellæ, of which one passes before, the other behind that body. By this arrangement an interstice of a triangular form is left, the apex of which is at the point of division of the membrane, the base at the margin of the lens; and as this is continued all round, it forms a canal named the *canal of Petit*. When distended with air, which can be easily done by puncturing it and inserting the point of a blowpipe, it presents the appearance of a chain of minute vesicles disposed round the lens, communicating freely, inasmuch as the air passes from one to the other.

The capsule of the lens receives a minute branch from the arteria centralis retinæ, which ramifies on its posterior segment, but none of its branches have been found to extend to the substance of the lens. The lens has been

supposed to be muscular in its structure, and thereby to possess the power of altering its form, so as to adapt the eye to the different distances within which distinct vision obtains. This opinion was first promulgated by Dr. Pemberton, in a thesis written at Leyden. Dr. Young brought it forward again some years ago, and several physiologists have assented to it. Chemical analysis, however, has long since shown that the lens consists of pure albumen, some gelatine, and water, without the slightest admixture of fibrine, the essential constituent of muscle. Moreover, were it muscular, it must consist of fibres of some sort; and were these ever so minute or so fine, the density of the points corresponding with the fibres must be greater than that of the intervals, for intervals there must be where there are striæ, or lines; and to suppose a muscle without lines and intervals, is to suppose what has not yet been seen in nature. Were such a structure as this made a medium for the transmission of light, the rays must be dispersed and resolved into their primitive or prismatic rays, producing of necessity a colouration of the image and indistinctness of vision. The remarks and the experiment above cited, to show that the cornea must be homogeneous, apply with equal force to the structure of the lens.

Vitreous Humour. — The vitreous humour (*humor vitreus, corpus vitreum*) fills up the posterior two thirds of the globe of the eye. It consists of a thin transparent fluid inclosed in a fine membrane (*hyaloid membrane*); this not only invests it externally, but forms a number of processes, projecting inwards, and dividing it into detached masses, which may thus be said to be lodged within the areolar intervals of the membrane. This structure, though thin and transparent, is yet firm, particularly at the forepart. The term *corpus vitreum* is sometimes applied to the fluid and the capsule taken together. Anteriorly, at the central part, is a slight depression which lodges the posterior segment of the crystalline lens, and farther out, where it corresponds with the ciliary processes, is an annulus, or disk, called the zonula of Zinn: we here observe a number of dark lines converging like radii, and disposed in the form of a disk round the lens. But, besides the dark lines, which are merely streaks left by the pigment which had exuded from the intervals between the ciliary processes, there are also some delicate plicæ in the membrane itself: these project so as to be received between the contiguous ciliary processes, and form a connexion with them. This part of the membrane appears to differ somewhat from the rest of it, which induced Zinn to consider it a distinct structure; hence he called it "membranula," and the coloured disk and plicæ "zonula coronæ ciliaris."

When the eye is examined as an optical instrument, with a view to determine the influence which it can exert upon the rays of light, it becomes necessary to examine the dimensions, form, densities, &c. of its different components. The humours being so many media of transmission, their effects can be calculated only by knowing their density, refracting, and dispersive powers. And as the membranes serve to inclose the area within which all the changes take place, the form of the space, its axis, and diameters, require to be subjected to accurate measurement. — *Quain.*

For the function of the eye, see the article *Vision.*

Oculi adductor. See *Rectus internus.*

Oculi attollens. See *Rectus superior.*

Oculi cancrorum. See *Cancer.*

Oculi depressor. See *Rectus inferior.*

Oculi elevator. See *Rectus superior.*

Oculi levator. See *Rectus superior.*

Oculi obliquus inferior. See *Obliquus inferior oculi.*

Oculi obliquus major. See *Obliquus superior oculi.*

Oculi obliquus minor. See *Obliquus inferior oculi.*

Oculo-musculares. Vicq D'Azyr gives this name to the third pair of nerves.

Oculo-musculares communes. Chaussier thus calls the third pair of nerves.

Oculo-musculares externi. Chaussier gives this name to the sixth pair of nerves.

Oculum movens primus. See *Rectus internus.*

Oculum movens quartus. See *Rectus inferior.*

Oculum movens secundus. See *Rectus externus.*

Oculum movens tertius. See *Rectus superior.*

Oculus bovinus. See *Hydrophthalmia.*

Oculus bovis. See *Chrysanthemum.*

Oculus bubulus. See *Hydrophthalmia.*

Oculus christi. Austrian flea-bane; a species of *inula*, sometimes used as an astringent by continental physicians.

Oculus elephantinus. See *Hydrophthalmia.*

Oculus genu. The knee-pan.

Oculus lachrymans. Weeping eye. See *Epiphora.*

Oculus mundi. A species of *opal*, generally of a yellowish colour. By lying in water it becomes of an amber colour, and also transparent. This and other kinds of opal were formerly esteemed corroborant, alexipharmic, &c.

ODAXE'SMOS. (Οδαξησμος.) A pungent itching; especially that which is felt in the gums of children before the protrusion of the teeth.

ODONTAGO'GOS. (*us, i.* m.; from οδους, a tooth, and αγω, to draw.) The name of an instrument to draw teeth, one of which, made of lead, Forrestus relates to have been hung up in the temple of Apollo, denoting, that such an operation ought not to be performed but when the tooth was loose enough to be drawn with as little force as was required with it.

ODO'NTAGRA. (*a, æ.* f.; from οδους, a tooth, and αγρα, a seizure.) 1. An instrument for drawing teeth.

2. A toothach arising from retrocedent gout.

ODONTA'LGIA. (*a, æ.* f.; from οδους, a tooth, and αλγος, pain.) *Odontia. Odaxismus.* The toothach. This well-known disease makes its attack by a most violent pain in the teeth, most frequently in the molares, more rarely in

the incisorii, reaching sometimes up to the eyes, and sometimes backwards into the cavity of the ear. Toothach arises from a variety of causes.

1. The most common cause is caries of the tooth in which the pain is. When pain takes place in a carious tooth, it is from the admission of cold air, which irritates the exposed nervous fibrils in the hollow or carious part. The pain thus produced will sometimes cease very suddenly; especially upon the application of an opiate, some acrid essential oil, or solution of pure potash: but the irritation is often communicated to the internal periosteum, which inflames and swells, and hence the pain becomes permanent and distressing, for the inflamed membrane is incapable of relieving itself by stretching. In all these cases, the inflammation must be removed by bleeding the gums, blisters, or extraction. If the pain abate without extraction, which should always be avoided when there is inflammation present, the carious part may be filled with gold or zinc, or such compositions as dentists use.

There are very many cures for toothach from caries; burning the nerve with a hot iron wire; or destroying it by caustic, cajeput oil, oil of thyme, the root of the *peteveria alliacea*, or guinea-hen-weed; the sedative juice of the *coccinella septem punctata*, or ladybird, brandy, alkohol, the tincture of pyrethrum, and various other sialogogues.

2. The next cause of toothach is rheumatism. This may affect a carious tooth, and often does. Rheumatic odontalgia is known by the soreness that attends the gums and face from the very beginning, and from the pains communicating to the muscles about the jaw. It requires the remedies for rheumatism—blisters behind the ears, fomentations, the internal exhibition of Dover's powder; antimony, with opium and calomel; saline medicines: guaiacum is an excellent medicine against rheumatic toothach: washing the mouth with stimulating gargles composed of sialagogues, as the pyrethrum, seseli vulgare, or laserpitium siler.

3. Cutting the permanent teeth and wise teeth. When toothach results from this cause, it is from inflammation of the gums, and requires that the gums be scarified, and the person put on an antiphlogistic diet.

The toothach is sometimes merely a rheumatic affection, arising from cold, but a carious tooth is a more frequent cause. It is also a symptom of pregnancy, and takes place in some nervous disorders. It may attack persons at any period of life, though it is most frequent in the young and plethoric. From the variety of causes which may produce this affection, it has been named by authors odontalgia cariosa, scorbutica, catarrhalis, arthritica, gravidarum hysterica, stomachica, and rheumatica.

Many empirical remedies have been proposed for the cure of the toothach, but have not in any degree answered the purpose. When the affection is purely rheumatic, blistering behind the ear will almost always remove it; but when it proceeds from a carious tooth, the pain is much more obstinate. In this case it has been recommended to touch the pained part with a hot iron, or with oil of vitriol, in order to destroy the aching nerve; to hold spirits in the mouth; to put a drop of oil of cloves into the hollow of the tooth, or a pill made of camphire, opium, and oleum caryophylli. Others recommend gum mastich, dissolved in oleum terebinthinæ, applied to the tooth upon a little cotton. The great Boerhaave is said to have applied camphire, opium, oleum caryophylli, and alkohol, upon cotton. The caustic oil which may be collected from writing paper, rolled up tight, and set fire to at the end, will sometimes destroy the exposed nervous substance of a hollow tooth. The application of radix pyrethri, by its power of stimulating the salivary glands, either in substance or in tincture, has also been attended with good effects. But one of the most useful applications of this kind is strong nitrous acid, diluted with three or four times its weight of spirit of wine, and introduced into the hollow of the tooth, either by means of a hair pencil, or a little cotton. When the constitution has had some share in the disease, the Peruvian bark has been recommended, and perhaps with much justice, on account of its tonic and antiseptic powers. When the pain is not fixed to one tooth, leeches applied to the gum are of great service. But very often all the foregoing remedies, will fail, and the only infallible cure is to draw the tooth.

ODONTA'LGIC. (*Odontalgicus*; from *οδονταλγια*, the toothach.) Relating to the toothach.

ODONTIA. (*a, æ.* f.; from *οδους*, a tooth.) The toothach. See *Odontalgia.*

ODONTI'ASIS. (*is, is.* f.; from *οδοντιαω*, to put forth the teeth.) Dentition, or the cutting of the teeth. See *Dentition.*

ODO'NTICUS. (From *οδους*, a tooth.) *Odontic.* Appertaining to the teeth.

ODON'TIS. (From *οδους*, a tooth: so called because its decoction was supposed useful in relieving the toothach.) A species of lychnis.

ODONTI'TIS. (*is, idis.* f.; from *οδους*, a tooth, and *ιτις.*) Inflammation of a tooth.

ODONTOGLY'PHUM. (*um, i.* n.; *οδοντογλυφον*, from *οδους*, a tooth, and *γλυφω*, to scrape.) An instrument for scaling and scraping the teeth.

ODO'NTOID. (*Odontoides*; from *οδους*, a tooth, and *ειδος*, form: because it is shaped like a tooth.) Tooth-like. See *Dentatus.*

ODONTO'LITHOS. (*us, i.* m.; from *οδους*, a tooth, and *λιθος*, a stone.) The tartar, or stony crust upon the teeth.

ODONTO'LOGY. (*Odontologia*; from *οδους*, a tooth, and *λογος*, a discourse.) The anatomy of the teeth.

ODONTOPHY'IA. (*a, æ.* f.; from *οδους*, a tooth, and *φυω*, to grow.) Dentition, or cutting teeth. See *Teething.*

ODONTOTRI'MMA. (From *οδους*, a tooth, and *τριβω*, to wear away.) A dentifrice, or medicine to clean the teeth.

Odor. See *Odour.*

ODORI'FEROUS. (*Odoriferous*; from *odor*, a smell, and *fero*, to bear.) Having a smell.

ODORIFEROUS GLANDS. *Glandulæ odoriferæ.* Small glands which are situated around the

corona glandis of the male, and under the skin of the labia majora and nymphæ of females. They secrete a cebaceous matter, which emits a peculiar odour.

O'DOUR. (*Odor, oris.* m. ; from *odeo*, i. e. *oleo*, to smell.) Smell. This, which is the emanation of an odoriferous body, is generally ascribed to a portion of the body itself, converted into vapour : but, from some experiments of M. Robiquet, it would seem probable, that in many cases the odour is owing not to the substance itself, but to a gas or vapour resulting from its combination with an appropriate vehicle, capable of diffusion in space.

Œ'A. (Οιη ; from οιω, to bear : so named from its fruitfulness.) The *Cratægus torminalis*, or service tree.

ŒCONOMY. *Œconomia, æ.* f. ; from οικος, a house, and νομος, a law.) The conduct of Nature, in any of her departments, in preserving bodies and following her usual order : thus animal œconomy, vegetable œconomy, &c.

Œconomy, animal. (*Œconomia animalis.* The aggregate of those organs, functions, and laws on which the life of an animal depends.

Economy, vegetable. The aggregate of the organs, functions, and laws on which the life of a vegetable depends.

ŒDE'MA. (*a, atis.* n. Οιδημα, οιδος ; from οιδεω, to swell.) This word is sometimes used by Hippocrates for a tumour of any kind, but it is now restricted to a minor degree of anasarca. See *Anasarca.*

Œde'me de la glotte. *Angina œdematosa.* An œdematous swelling of the mucous membrane, surrounding the aperture of the glottis. It occurs chiefly in persons debilitated by chronic diseases, or convalescents from acute ones. It produces paroxysms of suffocation with crowing inspiration, which last a few minutes and return at intervals. The intervals become shorter as the disease advances, and the patient dies, generally in the course of a few days. The affection is almost uniformly fatal, and no treatment makes any impression on it.

ŒDE'MATO'DES. (From οιδεω, to swell, and ειδος, resemblance.) Like to an œdema.

ŒDE'MOSA'RCA. (From οιδημα, a swelling, and σαρξ, flesh.) A tumour mentioned by Severinus, of a middle nature, betwixt an *œdema* and *sarcoma.*

ŒNA'NTHE. (*e, es.* f. ; from οινος, wine, and ανθος, a flower : so called because its flowers smell like the vine.) 1. The name of a genus of the umbelliferous plants. Class, *Pentandria ;* Order, *Digynia.*

2. The pharmacopœial name of the hemlock dropwort. See *Œnanthe crocata.*

Œnanthe crocata. The hemlock dropwort. *Œnanthe — chærophylli foliis,* of Linnæus. An active poison, that has too often proved fatal, by being eaten in mistake instead of water-parsnep. The juice, nevertheless, cautiously exhibited, promises to be an efficacious remedy in inveterate scorbutic eruptions. The root of this plant is not unpleasant to the taste. It is esteemed to be the most deleterious of all the vegetables which this country produces. Mr. Howel, surgeon at Haverfordwest, relates, that "eleven French prisoners had the liberty of walking in and about the town of Pembroke. Three of them being in the fields a little before noon, dug up a large quantity of this plant, which they took to be wild celery, to eat with their bread and butter for dinner. After washing it, they all three ate, or rather tasted of the roots. As they were entering the town, without any previous notice of sickness at the stomach, or disorder in the head, one of them was seized with convulsions. The other two ran home, and sent a surgeon to him. The surgeon endeavoured first to bleed, and then to vomit him ; but those endeavours were fruitless, and he died presently. Ignorant of the cause of their comrade's death, and of their own danger, they gave of these roots to the other eight prisoners, who ate of them with their dinner. A few minutes afterwards the remaining two who gathered the plants were seized in the same manner as the first, of whom one died ; the other was bled, and a vomit, with great difficulty, forced down, on account of his jaws being, as it were, locked together. This operated, and he recovered, but was some time affected with dizziness in his head, though not sick, or the least disordered in the stomach. The other eight, being bled and vomited immediately, were soon well." At Clonmell, in Ireland, eight boys mistaking this plant for water-parsnep, ate plentifully of its roots. About four or five hours after, the eldest boy became suddenly convulsed, and died : and before the next morning, four of the other boys died in a similar manner. Of the other three, one was maniacal several hours, another lost his hair and nails, but the third escaped unhurt. Stalpaert Vander Wiel mentions two cases of the fatal effects of this root : these, however, were attended with great heat in the throat and stomach, sickness, vertigo, and purging ; they both died in the course of two or three hours after eating the root. Allen, in his Synopsis Medicinæ, also relates that four children suffered greatly by eating this poison. In these cases great agony was experienced before the convulsions supervened : vomitings likewise came on, which were encouraged by large draughts of oil and warm water, to which their recovery is ascribed. The late Sir William Watson, who refers to the instances here cited, also says, that a Dutchman was poisoned by the leaves of the plant boiled in pottage. It appears, from various authorities, that most brute animals are not less affected by this poison than man : and Lightfoot informs us, that a spoonful of the juice of this plant given to a dog rendered him sick and stupid : but a goat was observed to eat the plant with impunity. The great virulence of this plant has not, however, prevented it from being taken medicinally. In a letter from Dr. Pulteney to Sir William Watson, we are told that a severe and inveterate cutaneous disorder was cured by the juice of the root, though not without exciting the most alarming symptoms. Taken in the dose of a spoonful, in two hours afterwards, the head was affected in a very extraordinary manner, followed with violent sickness and

vomiting, cold sweats, and rigors; but this did not deter the patient from continuing the medicine, in somewhat less doses, till it effected a cure.

ŒNA'REA. (*Οιναρεη*; from *οιναρα*, the cuttings of vines.) The ashes prepared of the twigs, &c. of vines.

ŒNELÆ'UM. (*Οινελαιον*; from *οινος*, wine, and *ελαιον*, oil.) A mixture of oil and wine. It was used by the old surgeons as a dressing for wounds of the head.

ŒNO'GALA. (*a*, *æ*. f. *Οινογαλα*; from *οινος*, wine, and *γαλα*, milk.) A sort of potion, made of wine and milk, used by the Greeks. According to some, it was wine as warm as new milk.

ŒNO'GARUM. (*um*, *i*. n. *Οινογαρον*; from *οινος*, wine, and *γαρον*, garum.) A mixture of wine and garum.

ŒNO'MELI. (*i*, *itis*. n. *Οινομελι*; from *οινος*, wine and *μελι*, honey.) Wine sweetened with honey.

ŒNOSTA'GMA. (From *οινος*, wine, and *σταζω*, to distil.) Spirit of wine.

Œ'NOTHIO'NIC ACID. (So called from *οινος*, wine, and *θειον*, sulphur.) The sulpho-vinic acid. See *Æther sulphuricus*.

ŒSOPHAGÆ'US. (From *οισοφαγος*, the gullet.) This name has been given to the muscular fibres surrounding the upper part of the œsophagus.

ŒSOPHAGI'SMUS. (*us*, *i*. m.; from *οισοφαγος*, the gullet.) A term applied by some to inflammation of the œsophagus, by others to dysphagia, and by Vogel to spasmodic structure of the œsophagus.

ŒSOPHAGI'TIS. (*is*, *idis*. f.; from *œsophagus*, the seat of the disease, and *itis*, which implies inflammation.) Inflammation of the œsophagus. It is not a common disease, but does exist both in a phlegmonous and erysipelatous form. The cellular tissue that connects its coats may be the seat of the inflammation, which, like phlegmonous inflammation in any other part, may be resolved, or end in suppuration. The surface of the membrane which lines the œsophagus may be inflamed, and extend more or less throughout its whole extent.

The symptoms of this disease are, a sense of heat or burning in the œsophagus, with painful and difficult deglutition, and these generally circumscribed, or confined to a part which is pointed out by the patient: if it be high in the canal, it will be in the neck; if low, in the back, between the shoulders, and under the sternum.

As an idiopathic disease, œsophagitis is very rare, although it is much exposed to many of the causes of inflammation. Dissections have found inflammation here in fatal cases of hydrophobia.

In stricture, small-pox, measles, and tumours in the neighbourhood, the disease often is symptomatic.

The cure is to be effected by the usual means, bleeding, saline purgatives, and blistering; and if the fever which attends be of the phlogistic character, and urgent, by a perseverance in their use, and the exhibition of diaphoretics.

ŒSOPHAGO'TOMY. (*Œsophagotomia* from *οισοφαγος*, the gullet, and *τεμνω*, to cut.) The operation of cutting into the gullet to extract a foreign body.

ŒSO'PHAGUS. (*us*, *i*. m.; from *οιω*, to carry, and *φαγω*, to eat: because it carries the food into the stomach.) The membranous and muscular tube that descends from the pharynx to the upper orifice of the stomach. It is composed of three tunics or membranes, viz. a common, muscular, and mucous. Its arteries are the œsophageal branches, which arise from the aorta. The veins empty themselves into the vena azygos. Its nerves are from the eighth pair and great intercostal; and it is every where, under the internal or mucous membrane, supplied with glands that separate the mucus of the œsophagus, in order that the masticated bole may readily pass down into the stomach.

ŒSTROMA'NIA. (*a*, *æ*. f.; from *οιστρος*, the venereal orgasm, and *μαινομαι*, to rage.) See *Nymphomania*.

Œ'STRUM. (*um*, *i*. n.; from *œstrus*, a gadbee, which, by its bite, or sting, agitates cattle.) The orgasm, or strong excitement, experienced during the operation of the appetites or passions.

ŒSTRUM VENEREUM. 1. The pleasurable sensation experienced during coition.

2. The clitoris has been so called, as being the seat of the sensation.

Œ'SYPOS. (*Οισυπος*; from *οις*, a sheep, and *ῥυπος*, sordes.) *Œsype*. The oily matter boiled out from the wool of sheep, and skimmed from the surface of the water. It was used as an emollient in rigidity of the joints.

OFFA ALBA. (*Offa*, from *phath*, a fragment, Hebrew.) Van Helmont thus calls the white coagulum formed by a mixture of a rectified spirit of wine with urine.

Offa helmontiana. See *Offa alba*.

OFFI'CINAL. (*Officinalis*; from *officina*, a shop.) Any medicine directed by the colleges of physicians to be kept in the shops, is so termed.

Oil. See *Oleum*.

Oil, ætherial. See *Oleum æthereum*.

Oil, almond, See *Amygdalus*.

Oil of allspice. See *Oleum pimentæ*.

Oil of amber. See *Oleum succini*.

Oil of caraway. See *Oleum carui*.

Oil, castor. See *Ricinus communis*.

Oil of chamomile. See *Anthemis nobilis*.

Oil of juniper. See *Oleum juniperi*.

Oil of lavender. See *Lavandula*.

Oil of linseed. See *Oleum lini*.

Oil of mace. See *Oleum macis*.

Oil, olive. See *Olea europæa*.

Oil of origanum. See *Oleum origani*.

Oil, palm. See *Cocos butyracea*.

Oil of pennyroyal. See *Oleum pulegii*.

Oil of peppermint. See *Oleum menthæ piperitæ*.

Oil, rock. See *Petroleum*.

Oil of spearmint. See *Mentha viridis*.

Oil, sulphuretted. See *Oleum sulphuratum*.

Oil of turpentine. See *Oleum terebinthinæ*.

Oil of vitriol. See *Sulphuric acid*.

Ointment. See *Unguentum*.

OLDENLA'NDIA. (*a*, *æ*. f.; so called in honour of Oldenland, the Danish botanist.)

The name of a genus of plants. Class, *Pentandria*; Order, *Digynia*.

Oldenlandia umbella'ta. The roots of this plant, which grows wild on the coast of Coromandel, and is also cultivated there, are used by dyers and calico printers, for the same purposes as madder in this country, giving the beautiful red so much admired in the Madras cottons.

O'LEA. (*a*, *æ*. f.; Ελαια.) The name of a genus of plants in the Linnæan system. Class, *Monandria*; Order, *Monogynia*.

Olea europæa. The systematic name of the plant from which the olive oil is obtained; called also *Oliva*, and *Olea sativa*. *Olea — foliis lanceolatis integerrimis, racemis axillaribus coarctatis*, of Linnæus. The olive-tree, in all ages, has been greatly celebrated, and in held peculiar estimation, as the bounteous gift of heaven. It was formerly exhibited in the religious ceremonies of the Jews, and is still mentioned as emblematic of peace and plenty. The varieties of this tree are numerous, distinguished not only by the form of the leaves, but also by the shape, size, and colour, of the fruit; as the large Spanish olive, the small oblong Provence olive, &c. &c. These, when pickled, are well known to us by the names of Spanish and French olives, which are extremely grateful to many stomachs, and said to excite appetite and promote digestion: they are prepared from the green unripe fruit, which is repeatedly steeped in water, to which some quicklime or alkaline salt is added, in order to shorten the operation: after this, they are washed and preserved in a pickle of common salt and water, to which an aromatic is sometimes added. The principal consumption, however, of this fruit is in the preparation of the common salad oil, or *oleum olivæ* of the pharmacopœias, which is obtained by grinding and pressing them when thoroughly ripe: the finer and purer oil issues first by gentle pressure, and the inferior sorts on heating what is left, and pressing it more strongly. The best olive oil is of a bright pale amber colour, bland to the taste, and without any smell: it becomes rancid by age, and sooner if kept in a warm situation. With regard to its utility, oil, in some shape, forms a considerable part of our food, both animal and vegetable, and affords much nourishment. With some, however, oily substances do not unite with the contents of the stomach, and are frequently brought up by eructation: this happens more especially to those whose stomachs abound with acid. — Oil, considered as a medicine, is supposed to correct acrimony, and to lubricate and relax the fibres; and therefore has been recommended internally to obviate the effects of various stimuli, which produce irritation, and consequent inflammation: on this ground it has been generally prescribed in coughs, catarrhal affections, and erosions. The oil of olives is successfully used in Switzerland against the *tænia oculis superficialibus*; and it was formerly much employed in this and other countries, against nephritic pains, spasms, colic, constipation of the bowels, &c. Externally, it has been found an useful application to bites and stings of various poisonous animals; also to burns, tumours, and other affections, both by itself, or mixed in liniments or poultices. Oil rubbed over the body was formerly thought serviceable in dropsies, particularly ascites. Olive oil enters several officinal compositions, and when united with water, by the intervention of alkali, is sometimes given in coughs and hoarsenesses.

Olea'men. (*en*, *inis*. n.; from *oleum*, oil.) *Oleamentum*. Any soft liniment composed of oils.

Olea'nder. (*er*, *ri*. m.; from *olea*, the olive-tree, which it resembles.) The rose-bay. See *Nerium oleander*, in the supplement.

Olea'ster. (*er*, *ri*. m.; diminutive of *olea*, the olive-tree.) The wild olive.

OLE'CRANON. (*on*, *i*. n.; from ωλενη, the ulna, and κρανον, the head.) The elbow, or process of the ulna, upon which a person leans. See *Ulna*.

Olefiant gas. See *Carburetted hydrogen*.

Oleic acid. *Acidum oleicum*. An acid discovered by Chevreuil in fat. See *Adeps*.

O'lene. Ωλενη. The cubit, or ulna.

Oleo-resins. The native combinations of resins with essential oils, which form various terebinthinate and balsamic substances.

O'leo-ri'cinate. A salt formed by oleoricinic acid with a base.

O'leo-rici'nic acid. *Elaiodic acid*. An acid obtained by MM. Bussy and Lecanu from saponified castor oil.

OLEOSA'CCHARUM. (*um*, *i*. n.; from *oleum*, oil, and *saccharum*, sugar.) An essential oil, ground up with sugar.

OLERA'CEOUS. (*Oleraceus*; from *olus*, a potherb.) Partaking of the nature of potherbs.

Olera'ceæ. (From *olus*, a pot-herb.) The name of an order of plants in Linnæus's Fragments of a Natural Method, consisting of such as have incomplete inelegant flowers, heaped together in the calyces; as beta, chenopodium, spinacia, &c.

O'LEUM. (*um*, *ei*. n.; from *olea*, the olive: this name being at first confined to the oil expressed from the olive.) A proper juice of a fat or unctuous nature, either solid or fluid, indissoluble in water, combustible with flame, and volatile in different degrees. Oils are never formed but by organic bodies; and all the substances in the mineral kingdom, which present oily characters, have originated from the action of vegetable or animal life. They are distinguished into fat, and essential oils. Under the former head are comprehended oil of olives, almonds, rape, ben, linseed, hemp, cocoa, &c. Essential oils differ from fat oils by the following characters: their smell is strong and aromatic; their volatility is such that they arise with the heat of boiling water, and their taste is very acrid; they are likewise much more combustible than fat oils; they are obtained by pressure, distillation, &c., from strong-smelling plants, as that of peppermint, aniseed, caraway, &c. The use of fat oils in the arts, and in medicine, is very considerable: they are medicinally prescribed as relaxing, softening, and laxative remedies; they enter into many medical

compounds, such as balsams, unguents, plasters, &c., and they are often used as food on account of the mucilage they contain. See *Olea*. Essential oils are employed as cordial, stimulant, and antispasmodic remedies. See *Adeps*.

Oleum abietinum. The resinous juice which exudes spontaneously from the silver and red firs. It is supposed to be superior to that obtained by wounding the tree.

Oleum æthereum. Ethereal oil. *Oleum vini.* Take of rectified spirit, two pounds; sulphuric acid, four pounds; solution of potash, distilled water of each a fluid ounce, or as much as may be sufficient. Mix the acid and spirit cautiously. Let the liquor distil until a black froth rises, then immediately remove the retort from the fire. Separate the supernatant liquor from the heavier, and expose the former to the air for a day. Add to it the solution of potash mixed with the water, and agitate. Lastly, when sufficiently washed, separate the ethereal oil which subsides.

According to Serrullas and Dumas, this oil is a sulphate of ether, and consists of one equivalent of sulphuric acid and one of ether. It is of a yellow colour, penetrating aromatic odour, and somewhat sharp and bitter taste. Its specific gravity variable. Hennel states it at 1·5, and Dumas at 1·133. It is insoluble in water, but soluble in alkohol and ether. It is used only for the preparation of the *spiritus ætheris sulphurici compositus.*

Oleum amygdalæ. See *Amygdalus.*

Oleum animale. *Oleum animale Dippelii.* An empyreumatic oil obtained by distillation from bones and animal substances. It is sometimes exhibited as an antispasmodic and diaphoretic, in the dose of from ten to forty drops.

Oleum animale Dippelii. See *Oleum animale.*

Oleum ani'si. *Oleum essentiale anisi; Oleum e seminibus anisi.* Oil of anise. The essential oil of aniseed possesses all the virtues attributed to the anisum, and is often given as a stimulant and carminative, in the dose of from five to eight drops, mixed with an appropriate vehicle. See *Pimpinella anisum.*

Oleum anthe'midis. Oil of chamomile; formerly called, *Oleum e floribus chamæmeli.* See *Anthemis nobilis.*

Oleum camphoratum. See *Linimentum camphoræ.*

Oleum carpathicum. See *Balsamum carpathicum.*

Oleum ca'rui. Formerly called *Oleum essentiale carui; Oleum essentiale e seminibus carui.* The oil of caraway is an admirable carminative, diluted with rectified spirit into an essence, and then mixed with any proper fluid. See *Carum.*

Oleum caryophy'lli aromatici. A stimulant and aromatic preparation of the clove. See *Eugenia caryophyllata.*

Oleum ce'drinum. *Essentia de cedro.* The oil of the peel of citrons, obtained without distillation, in Italy.

Oleum cinnamo'mi. A warm stimulant, and pleasant stomachic. Given in the dose of from one to three drops, rubbed down with some yolk of egg, in a little wine, it allays disturbance of the stomach from morbid irritability, and is particularly serviceable in debility of the primæ viæ, after cholera.

Oleum cornu cervi. This is applied externally as a stimulant in paralytic affections of the limbs.

Oleum e vitellis. Oil of eggs. This is obtained by boiling the yolks of eggs and pressing them. It is used on the Continent for oxidising mercury.

Oleum gabianum. See *Gabianum oleum.*

Oleum juni'peri. *Oleum essentiale juniperi baccæ; Oleum essentiale e baccis juniperi.* Oil of juniper. Oil of juniper-berries possesses stimulant, carminative, and stomachic virtues, in the dose of from two to four drops, and in a larger dose proves highly diuretic. It is often administered in the cure of dropsical complaints, when the indication is to provoke the urinary discharge. See *Juniperus communis.*

Oleum lava'ndulæ. *Oleum essentiale lavendulæ; Oleum essentiale e floribus lavendulæ.* Oil of lavender. Though mostly used as a perfume, this essential oil may be exhibited internally, in the dose of from one to five drops, as a stimulant in nervous headachs, hysteria, and debility of the stomach. See *Lavandula spica.*

Oleum lauri. *Oleum laurinum.* It is expressed from bay-berries, and is sometimes rubbed on sprains and bruises unattended with inflammation.

Oleum limo'nis. The essential oil of lemons possesses stimulant and stomachic powers, but is principally used externally, mixed with ointments, as a perfume.

Oleum lini. Linseed oil is emollient and demulcent, in the dose of from half an ounce to an ounce. It is frequently given in the form of clyster in colics and obstipation. Cold-drawn linseed oil, with lime-water and extract of lead, forms, in many instances, the best application for burns and scalds. See *Linum usitatissimum.*

Oleum lucii piscis. See *Esox lucius.*

Oleum macis. *Oleum myristicæ expressum.* Oil of mace. A fragrant sebaceous substance, expressed in the East Indies from the nutmeg. There are two kinds. The best is brought in stone jars, is somewhat soft, of a yellow colour, and resembles in smell the nutmeg. The other is brought from Holland, in flat square cakes. The weak smell and faint colour warrants our supposing it to be the former kind sophisticated. Their use is chiefly external, in form of plaster, unguent, or liniment. See *Myristica moschata.*

Oleum macis stillatitium. See the Supplement.

Oleum malabathri. An oil similar in flavour to that of cloves, brought from the East Indies, where it is said to be drawn from the leaves of the cassia tree.

Oleum martis per deliquium. The liquid muriate of iron was formerly so called.

Oleum menthæ piperitæ. Formerly called *Oleum essentiale menthæ piperitidis.* Oil of peppermint. Oil of peppermint possesses all the active principles of the plant. It is mostly used to make the simple water. Mixed with rectified spirit, it forms an essence, which is put into a variety of compounds, as sugar-drops

and troches, which are exhibited as stimulants, carminatives, and stomachics. See *Mentha piperita.*

Oleum menthæ viridis. Formerly called *Oleum essentiale menthæ sativæ.* Oil of spearmint. This essential oil is mostly in use for making the simple water, but may be exhibited in the dose of from two to five drops as a carminative, stomachic, and stimulant. See *Mentha viridis.*

Oleum myri'sticæ. The essential oil of nutmeg is an excellent stimulant and aromatic, and may be exhibited, in every case where such remedies are indicated, with advantage. See *Myristica moschata.*

Oleum myristicæ expressum. Commonly called oil of mace. See *Oleum macis.*

Oleum neroli. See *Neroli oleum.*

Oleum olivæ. See *Olea europæa.*

Oleum origani. Formerly called *Oleum essentiale origani.* Oil of origanum. A very acrid and stimulating essential oil. It is employed for alleviating the pain arising from caries of the teeth, and for making the simple water marjoram. See *Origanum.*

Oleum palmæ. See *Cocos butyracea.*

Oleum petræ. Naphtha.

Oleum petræ vulgare. Common oil of petre. This is variously made, but most frequently with oil of turpentine, Barbadoes tar, and oil of rosemary.

Oleum pimentæ. See *Myrtus pimenta.*

Oleum pulegii. Formerly called *Oleum essentiale pulegii.* Oil of pennyroyal. A stimulant and antispasmodic oil, which may be exhibited in hysterical and nervous affections. See *Mentha pulegium.*

Oleum ricini. See *Ricinus communis.*

Oleum rosmarini. Formerly called *Oleum essentiale roris marini.* Oil of rosemary. The essential oil of rosemary is an excellent stimulant, and may be given with great advantage in nervous and spasmodic affections of the stomach. See *Rosmarinus officinalis.*

Oleum sabi'næ. Oil of savine. See *Juniperus sabina.*

Oleum sassafras. Obtained from the root of sassafras by distillation with salt water. An agreeable stimulating carminative and sudorific.

Oleum sina'peos. This is pressed from the husks of black mustard seed. It resembles coarse linseed oil, and has but little acrimony. It is used as a liniment in rheumatism.

Oleum su'ccini. *Oleum succini rectificatum.* Put amber into an alembic, and with the heat of a sand-bath, gradually increased, distil over an acid liquor, an oil, and a salt contaminated with oil. Then redistil the oil a second and a third time. Oil of amber is mostly used externally, as a stimulating application to paralytic limbs, or those affected with cramp and rheumatism. Hooping-cough, and other convulsive diseases, are said to be relieved also by rubbing the spine with this oil. See *Succinum.*

Oleum sulphuratum. See *Balsamum sulphuris.*

Oleum Syriæ. See *Dracocephalum Moldavicum.*

Oleum templi'num. *Oleum templinum verum.* A terebinthinate oil, obtained from the fresh cones of the *Pinus pumilio* of Linnæus.

Oleum terebinthinæ purificatum. *Oleum terebinthinæ rectificatum.* Take of oil of turpentine, a pint; water, four pints. Distil the oil cautiously. Stimulant, diuretic, and sudorific virtues are attributed to this preparation, in the dose of from ten drops to twenty, which are given in rheumatic pains of the chronic kind, especially sciatica. Its chief use internally, however, is as an anthelmintic and styptic. In cases of tapeworm it is given in doses of from ℈ ss. to ℈ ij. every eight hours, till the worm is expelled. It is a remedy of extraordinary power in such cases. Uterine, pulmonic, gastric, intestinal, and other hæmorrhages, when passive, are more effectually relieved by oil of turpentine than by any other medicine. Externally, it is applied, mixed with ointments and other applications, to bruises, sprains, rheumatic pains, indolent ulcers, burns, and scalds.

Oleum terræ. See *Petroleum.*

Oleum vini. See *Oleum æthereum.*

Oleum vitrioli. See *Sulphuric acid.*

Olfactory nerves. *Nervi olfactorii.* The first pair of nerves are so termed, because they are the organs of smelling. See *Nerve.*

OLFA'CTUS. The sense of smell, or, the act of smelling. See *Smell.*

OLI'BANUM. (*um, i.* n.; from *lebona*, Chaldean.) See *Juniperus lycia.*

OLIGOTROPHI'A. (*a, æ.* f.; from ολιγος, small, and τρεφω, to nourish.) Deficient nourishment.

Olisthe'ma. (Ολισθημα; from ολισθαινω, to fall out.) A luxation.

Oli'va. (*a, æ.* f.; from ελαια.) The olive. See *Olea europæa.*

Oliva'ceous. Of an olive colour.

OLIVA'RIS. (From *oliva*, the olive.) Resembling the olive: applied to two eminences on the lower part of the medulla oblongata, called *corpora olivaria.* See *Encephalos.*

Olive. See *Olea europæa.*

Olive, spurge. See *Daphne mezereum.*

Olive-tree. See *Olea europæa.*

O'LIVILE. The name given by Pelletier to the substance which remains after gently evaporating the alkoholic solution of the gum which exudes from the olive-tree. It is a white, brilliant, starchy powder.

Olophly'ctis. (From ολος, whole, and φλυκτις, a pustule.) Synonymous with *phlyctæna.*

OLUSA'TRUM. (*um, i.* n.; *id est, olus atrum*, the black herb, from its black leaves.) See *Smyrnium olusatrum.*

O'MAGRA. (*a, æ.* f.; from ωμος, the shoulder, and αγρα, a seizure.) The gout in the shoulder.

OMENTI'TIS. (*is, idis.* f.; from *omentum* the caul.) *Epiploitis.* Inflammation of the omentum or epiploon. It usually occurs only in connexion with general inflammation of the peritoneum. See *Peritonitis.*

OME'NTUM. (*um, i.* n.; from *omen*, an omen: so called because the soothsayers prophesied from an inspection of this part.) The

omentum or caul, called also *epiploon*, is an adipose membranous viscus of the abdomen, attached to the stomach, and lying on the anterior surface of the intestines. It is thin and easily torn, being formed of a duplicature of the peritonæum, with more or less of fat interposed. It is distinguised into the great omentum and the little omentum.

1. The *omentum majus*, which is also termed *omentum gastrocolicum*, arises from the whole of the great curvature of the stomach, and even as far as the spleen, from whence it descends loosely behind the abdominal parietes, and over the intestines to the navel, and sometimes into the pelvis. Having descended thus far, its inferior margin turns inwards and ascends again, and is fastened to the colon and the spleen, where its vessels enter.

2. The *omentum minus*, or *omentum hepitaco gastricum*, arises posteriorly from the transverse, fissure of the liver. It is composed of a duplicature of peritonæum, passes over the duodenum and small lobe of the liver: it also passes by the lobulus spigelii and pancreas, proceeds into the colon and small curvature of the stomach, and is implanted ligamentous into the œsophagus. It is in this omentum that Winslow discovered a natural opening, which goes by his name. If air be blown in at this *foramen of Winslow*, which is always found behind the lobulus spigelii, between the right side of the liver and hepatic vessels, the duodenum, the cavity of the omentum, and all its sacs, may be distended.

The omentum is always double, and between its lamellæ, closely connected by very tender cellular substance, the vessels are distributed and the fat collected. Besides the greater and lesser omentum above described, some anatomists distinguish a *colic omentum* which binds down the colon, and a *gastro splenic* omentum, which passes between the stomach and the spleen.

Omentum colicum. See *Omentum.*

Omentum gastro-colicum. See *Omentum.*

Omentum gastro-splenicum. See *Omentum.*

Omentum hepatico-gastricum. See *Omentum.*

Omentum majus. See *Omentum.*

Omentum minus. See *Omentum.*

O'MOCO'TYLE. (*e, es.* f.; from *ωμος*, the shoulder, and *κοτυλη*, a cavity.) The cavity in the extremity of the neck of the scapula, in which the head of the humerus is articulated.

O'MO-HYOIDE'US. A muscle situated between the os hyoides and shoulder, that pulls the os hyoides obliquely downwards. *Coracohyoideus*, of Albinus and Douglas. It arises broad, thin, and fleshy, from the superior costa of the scapula, near the semilunar notch, and from the ligament that runs across it; thence ascending obliquely, it becomes tendinous below the sternocleido-mastoideus, and, growing fleshy again, is inserted into the base of the os hyoides.

O'MOPLA'TA. (*a, æ.* f.; from *ωμος*, the shoulder, and *πλατυς*, broad.) See *Scapula.*

Omoplato-hyoideus. See *Omo-hyoideus.*

OMO'TRIBES. (From *ωμος*, crude, and *τριβω*, to bruise.) Oil expressed from unripe olives.

OMPHA'CINUM. (From *ομφακιον*, the juice of unripe grapes.) Oil expressed from unripe olives.

OMPHA'CION. (From *ομφακος*, an unripe grape.) *Omphacium.* The juice of unripe grapes; and by some applied to that of wild apples, or crabs, commonly called *Verjuice.*

OMPHACI'TES. (From *ομφακος*, an unripe grape.) Wine prepared from unripe grapes.

OMPHACO'MELI. (From *ομφακος* an unripe grape, and *μελι*, honey.) An oxymel made of the juice of unripe grapes and honey.

O'MPHALOCA'RPUS. (From *ομφαλος*, the navel, and *καρπος*, fruit: so called because its fruit resembles a navel.) Cleavers. See *Galium aparine.*

O'MPHALOCE'LE. (*e, es.* f.; from *ομφαλος*, the navel, and *κηλη*, a tumour.) See *Hernia umbilicalis.*

O'MPHALOMANTI'A. (From *ομφαλος*, the navel, and *μαντεια*, a prophecy.) The foolish vaticination of midwives, who pretend to foretell the number of the future offspring from the number of knots in the navel-string of the child that is born.

O'MPHALOS. (*us, i.* m.; *Ομφαλος.*) The navel. See *Umbilicus.*

ONEIRODY'NIA. (*a, æ.* f.; from *ονειρον*, a dream, and *οδυνη*, anxiety.) Disturbed imagination during sleep. There are two species: —

1. *Oneirodynia activa*, walking in the sleep.

2. *Oneirodynia gravans*, or nightmare. See *Ephialtes.*

ONEIRO'GMOS. (From *ονειρωττω*, to dream.) 1. A venereal dream. 2. An emission of the semen during sleep.

ONEIRO'GONOS. (From *ονειρος*, a dream, and *γονη*, the seed.) *Oneirogmos.* An emission of the semen during sleep.

Onion. See *Allium cepa.*

Onion, sea. See *Scilla.*

ONI'SCUS. (*us, i.* m.; from *ονος*, an ass: so called because, like the ass, it requires much beating before it is useful.) 1. The stock-fish.

2. The slow-worm.

3. The name of a genus of apterous insects.

ONISCUS ASELLUS. The systematic name of the woodlouse: called also, hoglouse, churchbug, sow-bug. These insects were formerly esteemed as diuretics. They have generally been confounded in the pharmacopœias with other insects. See *Millepedes.*

ONOBRY'CHIS. (From *ονος*, an ass, and *βρυχω*, to bray: so called, according to Blanchard, because the smell or taste makes asses bray.) See *Hedysarum onobrychis.*

ONO'NIS. (*is, is.* f.; from *ονος*, an ass: because it interrupts asses when at plough.) 1. The name of a genus of plants in the Linnæan system. Class, *Diadelphia*; Order, *Decandria.*

2. The pharmacopœial name of the rest-harrow.) See *Ononis spinosa.*

Ononis arvensis. See *Ononis spinosa.*

ONONIS SPINOSA. The systematic name of the rest-harrow: called, also, *Resta bovis*, *Arresta bovis*, and *Remora aratri.* The roots of this plant have a faint unpleasant smell, and a sweetish,

bitterish, somewhat nauseous taste. Their active matter is confined to the cortical part, which has been sometimes given in powder, or other forms, as an aperient and diuretic.

ONOPO'RDIUM. (*um. ii.* n. Ονοπορδον; from *ονος*, an ass, and *περδω*, to break wind, said to be so named from its having that effect upon asses.) 1. The name of a genus of plants in the Linnæan system. Class, *Syngenesia*; Order, *Polygamia æqualis*.

2. The pharmacopœial name of the cotton thistle. See *Onopordium acanthium*.

Onopordium acanthium. The systematic name of the cotton thistle. Called also, *Carduus tomentosus*. The plant distinguished by this name is thus described by Linnæus: *Onopordium — calycibus squamosis; squamis patentibus; foliis ovato-oblongis, sinuatis*. Its expressed juice has been recommended as a cure for cancer, either applied by moistening lint with it, or mixing some simple farinaceous substance, so as to form a poultice, which should be in contact with the disease, and renewed twice a day.

ONO'SMA. (*a, æ.* f.; from *οσμη*, a sweet smell or savour.) The name of a genus of plants. Class, *Pentandria*; Order, *Monogynia*.

Onosma echioides. The systematic name of the plant, the root of which is called *Anchusa lutea* in some pharmacopœias. It is supposed to possess emmenagogue virtues.

ONY'CHIA. (*a, æ.* f.; from *ονυξ*, the nail.) A whitlow at the side of the finger-nail.

O'NYX. (*yx, ychis.* m. Ονυξ.) In *Surgery*, an abscess, or collection of pus between the lamellæ of the cornea: so called from its resemblance to the stone called onyx, and *unguis* from its resemblance to the nail of the finger. The diagnostic signs are, a white spot or speck, prominent, soft, and fluctuating. It is sometimes superficial, arising from inflammation; not dangerous, for it vanishes when the inflammation is resolved by the use of astringent collyria.

In other instances, it is a deep abscess, seated between the lamellæ of the cornea, sometimes breaking internally, and forming an hypopium: when it opens externally, it leaves a fistula upon the cornea; whenever the pus is exsiccated, there remains a leucoma.

Oöei'des. (From *ωον*, an egg, and *ειδος*, a likeness.) An epithet for the aqueous humour of the eye.

OPACITY. (*Opacitas, atis.* f.) The faculty of obstructing the passage of light.

OPERCULATE. *Operculatus.* Having a lid-like cover. Applied in zoology and botany.

OPE'RCULUM. (*um, i.* n.; a cover or lid.) The lid or cover of the *peristomium* or fringe of mosses. It is either *convex, acuminate, flat*, or *permanent*, never leaving the fringe; as in *Phascum*.

OPHI'ASIS. (*is, is.* f.; from *οφις*, a serpent: so called from the serpentine direction in which the disease travels round the head.) A form of porrigo decalvans, which commences at the occiput, and winds to each ear, and sometimes to the forehead.

OPHIOGLO'SSUM. (*um, i.* n.; from *οφις*, a serpent, and *γλωσσα*, a tongue: so called from the resemblance of its fruit. The name of a genus of plants. Class, *Cryptogamia*; Order, *Filices*.

Ophioglossum lunaria. Moon-wort. *Lunaria. Osmunda lunaria.* The leaves are astringent, and used by the country people against fluxes.

Ophioglossum osmunda. See *Osmunda regalis*.

Ophioglossum spicatum. Adder's tongue: called also, *Brassidella, Brassadella, Ophioglossum vulgatum*, and *Ophioglossum*. This was formerly a celebrated vulnerary.

OPHIORRHI'ZA. (*a, æ.* f.; from *οφις*, a serpent, and *ριζα*, a root: because the plant, says Hermann, is regarded in Ceylon as a grand specific for the bite of the naja or ribband snake.) The name of a genus of plants. Class, *Pentandria*; Order, *Monogynia*.

Ophiorrhiza mungos. The systematic name of the plant, the root of which is called *Radix serpentum* in the pharmacopœias. *Mungos radix*. The bitter root is much esteemed in Java, Sumatra, &c., as preventing the effects which usually follow the bite of the *naja*, a venomous serpent, and those of the bite of a mad dog, or hydrophobia, with which view it is eaten by them; and Kæmpfer highly extols it. Gremmius, who practised with great reputation at Columbo, employed it against the bite of a mad dog very largely. It is also said to be exhibited medicinally in the cure of intestinal worms.

Ophiosco'rodon. (*um, i.* n.; from *οφις*, a serpent, and *σκοροδον*, garlic: so named because it is spotted like a serpent.) Broad-leaved garlic.

Ophiosta'phylum. (*um, i.* n.; from *οφις*, a serpent, and *σταφυλη*, a berry: so called because serpents feed upon its berries.) See *Bryonia alba*.

OPHIO'XYLUM. (*um. i.* n.; from *οφις*, and *ξυλον*: because its root spreads in a zigzag manner, like the twisting of a serpent.) The name of a genus of plants. Class, *Pentandria*; Order, *Monogynia*. Serpentine-wood plant.

Ophioxylum serpenti'num. The systematic name of the tree, the wood of which is termed lignum serpentum. The nature of this root does not appear to be yet ascertained. It is very bitter. In the cure of the bite of venomous serpents, and malignant diseases, it is said to be efficacious.

O'PHRYS. (*ys, os.* f. Οφρυς; from *οφυς*, the eyebrow.) 1. The lowest part of the forehead, where the eyebrows grow.

2. An herb so called because its juice was used to make the hair of the eyebrows black.

OPHTHA'LMIA. (*a, æ.* f.; from *οφθαλμος*, the eye.) A term universally applied to an inflammation of the membranes of the eye, or of the whole bulb of the eye; but which, according to the modern nomenclature of diseases, should be called ophthalmitis. See *Ophthalmitis*.

OPHTHALMIC. (*Ophthalmicus, i.* m.; from *οφθαλμος*, an eye.) Relating to the eye; as ophthalmic nerve, muscle; ophthalmic remedy, disease, &c.

Ophthalmic artery. See the Supplement.

Ophthalmic ganglion. *Ganglion ophthalmicum.* Lenticular ganglion. This ganglion is formed in the orbit by the union of a branch of the third or fourth pair with the first branch of the fifth pair of nerves.

Ophthalmic nerve. *Nervus ophthalmicus.* The first branch given off from the Gasserian ganglion of the fifth pair of nerves. It divides into the *lachrymal*, *frontal*, and *nasal* nerves, and gives a filament to the great sympathetic.

Ophthalmici externi. See *Motores oculorum.*

OPHTHALMI'TIS. (*itis, itidis.* f.; from οφθαλμος, the eye.) *Ophthalmia.* An inflammation of one or more of the membranes constituting the eye, or of the whole bulb of the eye. It has the following species: —

1. *Ophthalmitis conjunctivæ.* Conjunctival ophthalmia. This is the common inflammation of the eye, which is usually produced by a cold easterly wind, dust, or any external irritation, &c. It generally begins with the appearance of a network of blood-vessels on some part of the conjunctiva of the eyeball or eyelids. The eyelids become swollen and tender, and the redness soon covers the whole of the tunica conjunctiva, the vessels of which are turgid with florid blood. There is more or less of constant pain, and a sensation as if particles of fine sand, or some gritty substance, had insinuated themselves under the eyelid, accompanied by a great heat and pricking pain. A glutinous matter is now secreted, especially in the night, which causes the eyelids to stick very firmly together. It is no unusual thing for the disease to commence in one eye, and in a day or two, to seize the other. Mild cases of conjunctival ophthalmitis generally run their course in a few days, and cease spontaneously, or are removed by the application of a few leeches to the temples, a purgative, and abstaining from the usual diet. The best local applications are a warm and filtered decoction of poppy-heads, or one fluid drachm of the tinctura opii, in eight fluid ounces of distilled water. The eye should be well cleansed from the glutinous matter, with warm milk and water; and when the pain abates, and the vessels of the inflamed part become relaxed, solutions of acetate of lead, sulphate of alumen, and zinc, will be best calculated to remove the disease.

Inflammation of the conjunctiva is not always so mild a disease, but is sometimes very acute, all the symptoms enumerated being very violent in a few days, with excessive pain in the head, and active fever; and, when so, it requires not only continued application of leeches, or cupping, and blisters behind the ears, but general blood-letting and purgatives, a strict antiphlogistic diet, and the use of opium as occasion may require. The light of the room should be diminished, and the air temperate. Iced water may be applied to the forehead, and the eye-waters should also have their temperature reduced by being kept in cold water. Nauseating doses of emetic tartar are much depended upon by some practitioners in acute external ophthalmia. Conjunctival ophthalmitis presents itself under other forms than that just mentioned.

a. The whole of the membrane becomes very rapidly inflamed, and the albuginea of an universal red colour, and swelled so as to be raised above the transparent cornea, which does not present any appearance of disease, but has the appearance of a gap or aperture, from which circumstance it received the name of *chemosis.* If the inflamed conjunctiva be attentively examined, the radiated or arborescent vessels will not be so perceptible as in the common ophthalmitis, and the cellular structure beneath the conjunctive membrane will be seen filled with a sanguineous secretion, which elevates the membrane, and stops at the edge which marks the line of separation between the cornea opaca and cornea transparens.

This form of conjunctival inflammation requires precisely the same treatment as the former.

b. Another form of conjunctival ophthalmitis is when the internal surface of the palpebræ is very much inflamed, as well as the conjunctiva of the ball of the eye, and there is a copious secretion of a purulent fluid. Of this purulent inflammation of the conjunctiva, there are three distinct varieties mentioned by writers on the diseases of the eyes: — the Egyptian, the gonorrhœal, and that which takes place in infants.

The *Egyptian ophthalmia* is that which our soldiers brought from Egypt, and which was so destructive to the armies of the French and English in their respective expeditions to the banks of the Nile. It was at first ascribed to the minute and glassy spiculæ of the sands: but it has since been traced either to a peculiar miasm, generated in marsh lands, or to sleeping on damp or swampy grounds, with insufficient covering, and surrounded by a moist atmosphere; and as these causes exist also in other parts of the world, the disease has been since detected in other parts as well. A peculiar miasm, however, formed in hot and swampy soils, is perhaps the real cause, and renders it epidemic. This cause acts on the mucous follicles of the conjunctive membrane, which secretes a puriform fluid, impregnated with the specific contagion; and hence it is propagated with great rapidity between those who come in contact with each other, or with materials, as towels, &c., that have been used by the infected.

The symptoms and their progress are like those of common ophthalmitis; and, from the violence of the inflammation, the eyelids soon become excessively tense and œdematous, sometimes inseparably closed, with the edges drawn inwards, and sometimes gaping, with the edges broad, turgid, and everted. The secretion of a puriform fluid and of tears is very great. An ulceration soon takes place, and, in some cases, during the first night of the attack. It commences usually in the cornea, which, from the onset of the disease, looks more or less muddy, or is studded with white spots. The ulcerative process is sometimes checked before it spreads over the whole disk of the pupil, and in this case the sight is partially preserved; but very generally it makes a rapid and irresistible advance over the entire cornea, lays open the

iris, and works its way internally: the humours escape; the iris protrudes, and more or less adheres to the ulcerated cornea; and the eye loses its figure, as well as its power of vision. The pain, through the whole progress, is intolerable: in the eye itself there is a sense of scalding or burning, and an agony in the head that is indescribable.

In some cases, the symptoms are less violent, and gradually subside, without ulceration, in a few days, and especially where the disease has been actively opposed by prompt and proper means. But innumerable granulations form, in some cases, in a few days, on the conjunctiva of one or both eyelids, and a destructive irritation is hereby kept up, which becomes a secondary source of blindness.

The treatment of this horrible disease was at first similar to that of the common acute inflammation of the eye. The French and English surgeons both naturally resorted to blood-letting generally and locally, to blisters, purgatives, detergent lotions, and the ordinary antiphlogistic regimen; according to the former with decidedly good effect: but, under the direction of the latter, this plan generally failed, which induced the late Mr. Saunders to give his attention to the disease. He first discovered that the blindness which is apt to follow, even after the first attack of the inflammation has subsided, proceeded from the friction upon the transparent cornea of innumerable irritating granulations, thrown forth from the surface of the tunica conjunctiva that lines the interior of the eyelids, and which became a new source of inflammation, less violent, indeed, but as fatal in its effects; and the disease has hence been very correctly divided into two stages, that of the primary, and that of the secondary or granulating inflammation. Mr. Saunders endeavoured to cut the disease short in the first stage, by exciting nausea, and maintaining it for a considerable length of time, so as to lower the living power, and hereby take off the inflammatory action: and where the disease had proceeded to the granulating stage, he removed the minute caruncles from the membrane, by cutting them off with a pair of scissars, and afterwards applied a solution of nitrate of silver, to prevent their sprouting again. The late Sir William Adams proceeded with the same practice, but more boldly: he gave a grain or two of tartar emetic, every one, two, or three hours, to vomit briskly, and went on with it through the whole of the disease, and pared or sliced away the diseased surface of the conjunctive membrane with a knife, and washed the parts with a solution of alum. His practice was more radical and effectual.

The *Gonorrhœal form of ophthalmia* presents the symptoms of purulent inflammation of the conjunctiva in its most intense form. It was formerly believed to arise from a metastasis of the disease, from the genital organs to the eyes; but more accurate investigation has shown that where the ophthalmic affection is really connected with gonorrhœa, it arises from the gonorrhœal matter being in some accidental manner directly applied to the eye. The treatment does not differ from that of the other forms of purulent ophthalmia.

The other variety attacks *new-born children*. This purulent ophthalmia of infants occurs very soon after birth, and is usually produced by cold; though, in some instances, it may arise from the irritation of acrimonious or specific secretions. It usually makes its appearance within the first week or fortnight from birth. The eyelids look red, and swell rapidly to such a size that it is difficult to separate them. A discharge of a yellow purulent fluid quickly succeeds, which, upon opening the lids, is found to cover the whole globe of the eye; and, from the forcible pressure of lid against lid, both are greatly thickened, and not unfrequently everted.

The late Mr. Ware, whose practice was very extensive, always found the aqua camphorata of Bates's pharmacopœia the best application: others prefer the solution of alum and acetate of lead, in the proportion of one grain to an ounce of distilled water. One of these should be passed round the eye, by means of an ivory syringe, about every six or eight hours; and this should be performed by a skilful operator. The child's bowels are to be kept open, and, if the disease do not give way, a small blister, kept on a few hours, may be serviceable.

Of late years, a very important improvement has been introduced in the treatment of the different forms of purulent inflammation of the conjunctiva, namely, the application of nitrate of silver to its surface. Dr. Ridgway recommended an aqueous solution, in the proportion of twelve grains to an ounce of water. Mr. Guthrie uses an ointment containing ten grains of the nitrate, to a drachm of lard. The caustic must be very finely levigated, and reduced to an impalpable powder, otherwise any granules that may remain will prove a source of severe irritation.

II. *Ophthalmitis tarsalis*. Here the inflammation is confined to the eyelids, and especially to the sebaceous glands, between the conjunctive membrane and the tarsus. Mr. Ware and Dr. Plenk called it *psorophthalmia*. It consists in an inflamed state of Meibomius's or the sebaceous glands, the ducts of which open on the edge of each eyelid, which causes them to pour forth a viscid or glutinous matter, that encrusts and hardens, and during sleep, when the eyelids have been for some time in contact, cements them so firmly together, that they cannot be separated without many a painful effort. This secretion, instead of being mild and lubricant, as in health, is now not only viscid, but acrimonious and erosive: whence the eye is irritated, and the edges of the lids ulcerated; and the disease is apt to become chronic, and will sometimes last for years, or even for life.

Measles and small-pox produce this disease, and any of the common exciting causes of inflammation upon a scrofulous habit.

It is more under the influence of local stimulants than any other medicines. The unguentum hydrargyri nitratis is, of all others, the best, lowered by common cerate, so as just to produce a bearable pain, when applied by a

pencil-brush every night, or occasionally. A drop of the vinum opii into the eye at bed-time, has, in some cases, been useful; and the vapour of oil of turpentine in others.

The several varieties of ophthalmitis which have been considered, occasionally leave a chronic form of disease, called *lippitudo*, which consists in a weakness and weeping of the eyes, with more or less, and generally very little, redness, and a thickened tarsus, which is sometimes inverted, with a permanent redness of the edge.

Scarifying the eyelid is serviceable before any inversion takes place; but nothing short of an operation will return the eyelid, when everted. The astringent collyria are all serviceable in their turn; and the unguentum hydrargyri nitrati is here, also, an excellent application. See *Lippitudo*, and *Ectropium*.

III. *Sclerotitis.* Inflammation of the sclerotica. In this affection the inflamed vessels are distinctly seen to be under the conjunctiva, and a bright red zone round the cornea. The cornea and pupil look hazy, and sometimes the iris participates in the inflammation, but seldom in any severe degree. The pupil, however, is generally somewhat contracted and sluggish in its movements. The pain becomes aggravated towards night, and there is a considerable degree of symptomatic fever and derangement of the general functions of the system.

This form of disease has been called *rheumatic ophthalmia*, but it does not appear to have any connexion with rheumatism. The treatment is not materially different from that of conjunctival ophthalmia, with this exception, that the application of nitrate of silver, which is so eminently useful in the purulent ophthalmia, is always injurious in sclerotitis.

IV. *Corneitis.* Inflammation of the cornea. This is a chronic disease, most common in the scrofulous constitution, and about the age of puberty. It lasts for months, and sometimes for years. It occupies chiefly the conjunctiva covering the cornea, and the superficial layers of the cornea itself. The redness of the inflamed part is not considerable: the inflamed vessels are small, forming a zone round the cornea, and sometimes ramifying towards its centre. The cornea is somewhat opake and rough, and sometimes streaked or speckled with white. In some cases the convexity of the cornea is increased, which is generally attributed to an augmented secretion of the aqueous humour. There is fever at the commencement of the case, but this soon disappears. The constitutional treatment is that of chronic inflammation in general, with the occasional application of leeches. In the early stage, the local remedies are those adapted to acute ophthalmia; when all active inflammation has ceased, the vinum opii and astringent collyria are applicable. Blisters are very useful throughout the disease.

V. *Iritis.* Inflammation of the iris. This may be acute or chronic, idiopathic or symptomatic, common or specific; and according to these circumstances the symptoms vary considerably. The general symptoms of iritis are a zone of a pale pink colour around the cornea, formed by vessels traversing the sclerotica: as the inflammation advances the redness of the vessels increases, and those of the conjunctiva also become injected; the iris undergoes a remarkable change of colour; if it be naturally dark it becomes reddish brown, if naturally light it becomes greenish. This change of colour arises from the deposition of coagulating lymph in its texture, from which cause, also, its brightness and natural fibrous texture disappear, and it becomes dull and confused; the pupil is irregularly contracted and sluggish. In the severer cases lymph is effused into the chambers of the eye, and the iris contracts adhesions to the capsule of the lens, the cornea, or the ciliary processes; the power of vision is much diminished, and sometimes fails altogether; there is deep-seated pain in the orbit, forehead, and side of the head, which is frequently increased at night.

Acute iritis is usually acompanied with inflammatory fever, but the degree of this varies much in different cases.

Iritis arises from wounds of the iris, from cold, and the other common causes of inflammation, from syphilis, scrofula, gout, and rheumatism.

In the *syphilitic* iritis there is usually more tendency to the effusion of lymph than in the other forms, and the depositions are in the shape of tubercles of a reddish or yellowish brown colour. There is also a yellowish brown discolouration of the inner circle of the iris. The pupil is distorted and drawn to an angle. Like other venereal affections, its symptoms are exacerbated at night. The nature of the case is also pointed out by the pre-existence or concomitancy of syphilitic symptoms. It has been supposed by some that this peculiar variety of iritis is caused, not by syphilis, but by the mercury used for the cure of that disease; but this idea is now known to be incorrect, as syphilitic iritis has been observed in many cases where no mercury had been taken.

In the *gouty* iritis, lymph is usually effused from the margin of the pupil, but in less abundance, and not in a distinct form; and the adhesions are generally white. There is generally more intolerance of light, and more copious flow of tears, in this than in the other forms of iritis. The pupil is contracted, but generally not distorted. A white zone is discernible between the red one and the margin of the cornea. The rheumatic does not differ materially from the gouty iritis.

In common iritis there is less disposition to the effusion of lymph than in the specific forms above mentioned, but little yellow abscesses rise from the surface of the iris, which break and effuse a yellow matter, which subsides to the bottom of the anterior chamber.

Notwithstanding the distinctions laid down by authors between the several varieties of iritis, an attentive consideration of the history of the case will generally be found the best means of diagnosis. There are three prominent indications in the treatment of iritis: first, *to allay the inflammation* which is to be effected by the same means as in common cases of acute ophthal-

mia; secondly, *to prevent the effusion of lymph*, for which the antiphlogistic treatment is available in some degree, but which is most effectually fulfilled by bringing the system speedily under the action of mercury, the effect of which should be induced in a strong degree, and sustained till all danger is over; thirdly, *to prevent adhesions*, which is fulfilled by keeping the pupil dilated with belladonna, but which can only be effected after the acute symptoms are subdued, as the belladonna has no effect on the pupil while active inflammation prevails.

In the treatment of the specific forms of iritis, we must have reference not only to general principles, but to the particular diseased state of the constitution of which they are symptomatic, and select our remedies accordingly: thus colchicum is thought to be particularly efficacious in the arthritic forms, and mercury in the venereal.

VI. The choroid coat and the retina are also liable to inflammation. *Choroiditis* seldom occurs except in connexion with iritis. *Retinitis* is generally the result of over exertion of the sight, in the examination of objects, or of exposure to too vivid a light. Its tendency is to produce amaurosis more or less rapidly, as it is more or less acute. The acute form requires absolute rest of the eye, entire darkness, and the antiphlogistic treatment.

Such are some of the chief phenomena of inflammation, as developed in the different textures of the eye. In many cases the common forms of ophthalmia are combined in one general inflammation of the eyeball, which, if not subdued, terminates in suppuration, and the complete destruction of the organ, which bursts, evacuates its contents, and shrinks into the orbit.

OPHTHALMODY'NIA. (*a*, *æ*. f.; from *οφθαλμος*, an eye, and *οδυνη*, pain.) A vehement pain in the eye, without, or with very little redness, and not produced by inflammation. The sensation of pain is various, as itching, burning, or as if gravel were between the globe of the eye and lids, or a heavy dull pain, or a most excruciating one. It may be the result of rheumatism, gout, hysteria, &c.; or produced by incipient organic diseases, as cancer, fungus hæmatodes; or an affection purely of the nerves. The cure requires the removal of the cause. When an intermittent affection, the internal use of bark is beneficial.

OPHTHALMOPO'NIA. (*a*, *æ*. f.; from *οφθαλμος*, the eye, and *πονος*, pain.) An ill-constructed term, applied by Heister to inflammation of the eye.

OPHTHALMOPTO'SIS. (*is*, *is*. f.; from *οφθαλμος*, an eye, and *πτωσις*, a fall.) A protrusion of the globe of the eye on the cheek, canthus, or upwards, the globe itself being scarce altered in magnitude. The cause is a relaxation of the muscles, and ligamentous expansions of the globe of the eye. It is produced, —

1. By a violent contusion or strong stroke, as happens sometimes in boxing. The eye falls out of the socket on the cheek or canthus of the eye, and, from the elongation and extension of the optic nerve, occasions immediate blindness.

2. By a tumour within the orbit. An exostosis, toph, abscess, encysted tumour, as atheroma, hygroma, or scirrhus, forming within the orbit, or induration of the orbital fat, may throw the bulb of the eye out of the socket upwards, downwards, or towards either canthus.

3. Or it is caused by a palsy of the recti muscles, whence a stronger power in the oblique muscles of the bulb.

4. Sometimes by a staphyloma, when it depresses the inferior eyelid, and extends on the cheek.

O'PIANE. Another name for *narcotine*.

O'PIATE. (*Opiatum*; from the effects being like that of opium.) 1. Any preparation of opium.

2. A medicine that procures sleep, &c. See *Anodyne*.

O'PION. *Οπιον*. Opium.

OPI'STHENAR. (*ar*, *aris*. n.; from *οπισω* backwards, and *θεναρ*, the palm.) The back part of the hand.

OPISTHOCRA'NIUM. (*um*, *ii*. n.; from *οπισθεν* backward, and *κρανιον*, the head.) The occiput or hinder part of the head.

OPI'STHOCYPHO'SIS. (From *οπισθεν*, backward, and *κυφωσις*, a gibbosity.) A curvature of the spine backward.

OPISTHO'TONOS. (*os*, *i*. m.; from *οπισθεν*, backwards, and *τεινω*, to draw.) The form of tetanus, in which the body is bent backwards. See *Tetanus*.

OPISTO-GASTRIC. (*Opisto-gastricus*; from *οπισθεν*, behind, and *γαστηρ*, the stomach.) The Cœliac artery is thus named by Chaussier.

O'PIUM. (*um*, *ii*. n. *Οπιον*, probably from *οπος*, juice.) The inspissated juice of the poppy. See *Papaver somniferum*.

Opium de Rousseau. See *Rousseau's drops*.

OPOBA'LSAMUM. (*um*, *i*. n.; from *οπος*, juice and *βαλσαμον*, balsam.) See *Amyris gileadensis*.

Opocalpason. See *Opocarpason*.

OPOCARPASON. *Opocalpason*. *Οποκαρπασον*. *Οποκαλπασον*. See *Carpasus*.

OPODEL'DOC. A term of no meaning frequently employed by Paracelsus. Formerly it signified a plaster for all external injuries, but now is confined to the camphorated soap liniment.

OPODELDOC, STEER'S. This is composed of Castille soap, rectified spirit, camphor, oils of rosemary and marjoram, and solution of ammonia.

OPODEOCE'LE. A term applied by Sagar to an ischiatic hernia. How he derived it we pretend not to say.

OPO'PANAX. (*ax*, *acis*. f.; from *οπος* juice, and *παναξ*, the panacea.) See *Pastinaca opopanax*.

OPO'PIA. (*Οπωπια*; from *οπτομαι*, to see.) The bones of the eyes.

OPOPONAX. Improperly written for *opopanax*.

OPO'RICE. (*e*, *es*. f.; *Οπωρικη*; from *οπωρα*, autumnal fruits.) A conserve made of ripe fruits.

OPPILA'TION. (*Oppilatio*, *onis*, f.;

oppilo, to shut up.) *Oppilation* is a close kind of obstruction: for, according to Rhodius, it signifies not only shutting out but also filling up.

Oppilati'vus. (From *oppilo*, to shut up.) Shutting up the pores of the skin.

OPPO'NENS. Opposing. A name given to some muscles from their office.

Opponens pollicis. See *Flexor ossis metacarpi pollicis.*

OPPOSITIFO'LIUS. (From *oppositus*, set, put, or placed against or opposite to, and *folium*, a leaf.) Applied to a flower-stalk when opposite to a leaf; the *Geranium molle*, and *Sium angustifolium*, afford examples of the *Pedunculus oppositifolius.*

OPPO'SITUS. Opposite to each other: used in *Natural History*, and applied to leaves, branches, &c.; as the leaves of *Saxifraga oppositifolia* and *Ballota nigra.*

OPPRE'SSION. (*Oppressio, onis.* f.) 1. A sensation of weight, as oppression of breathing, when it seems to be difficult to breathe from a sense of weight obstructing respiration: and in like manner, *oppressio præcordiorum*, which is a feeling of pressure about the *præcordia.*

2. The Catalepsy has been called *oppressio cerebri.*

Opsigonos. (From *οψι*, late, and *γινομαι*, to be born.) A late-cut tooth; as the *dens sapientiæ.*

OPTIC. (*Opticus*; from *οπτομαι*, to see.) Relating to vision.

Optic commissure. The union of the optic nerves, in front of the sella turcica. A considerable difference of opinion exists concerning the disposition of the fibrillæ of the optic nerves at their commissure. Some of the earlier anatomists supposed that they were merely applied one to the other, without any actual admixture of their substance; this opinion has now no supporters. Several physiologists are of opinion that a decussation between the nerves of opposite sides takes place, the fibres of that on the right side passing to the left, and *vice versâ*. Others, on the contrary, contend that the decussation, or crossing, exists only to a certain extent, being confined to the fibres on the inner side of each nerve, the rest passing on uninterruptedly. The anatomical examination of the fibrillæ, after the nerves have been macerated in dilute nitric acid, seems to indicate that those on the external border of each of them proceed forwards without admixture, but that several pass obliquely inwards through the commissure, and afterwards form part of the fibres which proceed to the eye of the opposite side: this, at least, is the result of Caldani's observations. Little account can be made of conclusions deduced from experiments on animals; the quantity of injury inflicted by opening the skull, in order to divide the nerves or their commissure, is sufficient to confound all the sensations of the animal, and render any inferences nugatory that may be drawn from them. Observations on the morbid conditions of the nerves have been adduced in support of both opinions: thus, in a case in which the right eye had been destroyed, the optic nerve was found altered and wasted back to the commissure on that side, and thence to the brain at the opposite side; thus supporting the theory of decussation. Some cases have also occurred in which blindness of one eye was traced to a morbid alteration of the nerve of the opposite side, at its origin from the brain. Some other instances, however, would go to prove that the decussation is only partial. In one instance in which the eye had been destroyed, and its nerve altered in texture for some way, it was found that the external fibres of the diseased nerve could be traced from the commissure directly backwards to the brain at the same side, so could the external fibres of the sound nerve; thus showing that no decussation took place between them; but the internal fibres of the diseased nerve could be traced obliquely through the commissure, and also backwards along the inner side of the opposite nerve to its origin, whilst the inner fibres of the sound nerve seemed, but not so distinctly, to cross also to the opposite side. Each of these opposing opinions, then, is borne out by the observations to a certain extent; so that the advocates of them are not warranted in concluding that either is universally true. Professor Meckel supposes that the anterior or orbital parts of the nerves issue from a common point (the commissure), produced by a union of the fibres which are prolonged from the brain, and that the mode of union is not quite identical in all cases, for that, in the different other structures which are joined along the middle line, varieties in the manner and degree of their union are constantly observed to occur.

Otto remarks, that in cyclopic monsters, and in hemicephalic cases, the optic nerves have been seen to run apart and without a commissure; and that in dropsy of the brain, the commissure has been observed torn asunder, and, instead of crossing, only connected by a transverse portion of nerve. — *Quain.*

Optic nerves. *Nervi optici.* The second pair of nerves of the brain. See *Nerve.*

Opu'ntia. (*a, æ.* f.; *ab opunte*, from the city *Opus*, near which it flourished.) See *Cactus.*

Ora serrata. The posterior serrated edge of the ciliary processes is so called.

Orache. See *Atriplex sativa*, and *Chenopodium.*

Orange. See *Citrus aurantium.*

Orange peas. The immature fruit of the Curaçoa orange. See *Aurantia curassaventia.*

Orange, Seville. See *Citrus aurantium.*

Orange, shaddock. See *Shaddock.*

ORBI'CULAR. (*Orbicularis*; from *orbiculus*, a little ring.) Round: a term in very general use in *Natural History*, *Anatomy*, &c. See *Orbiculatus.*

Orbicula're os. 1. The name of a bone of the carpus.

2. A very small bone of the internal ear. See *Auris.*

Orbicularis oris. *Sphincter labiorum*, of Douglas; *semi-orbicularis*, of Winslow; *constrictor oris*, of Cowper. A muscle of the mouth, formed in a great measure by those of the lips; the fibres of the superior descending

those of the inferior ascending and decussating each other about the corner of the mouth, they run along the lip to join those of the opposite side, so that the fleshy fibres appear to surround the mouth like a sphincter. Its use is to shut the mouth, by contracting and drawing both lips together, and to counteract all the muscles that assist in opening it.

Orbicularis palpebrarum. A muscle common to both the eyelids. *Orbicularis palpebrarum ciliaris*, of authors. It arises by a number of fleshy fibres from the outer edge of the orbitar process of the superior maxillary bone, and from a tendon near the inner angle of the eye; these fibres run a little downwards and outwards, over the upper part of the cheek, below the orbit, covering the under eyelid, and surround the external angle, being closely connected only to the skin and fat; they then run over the superciliary ridge of the os frontis, towards the inner canthus, where they mix with the fibres of the occipito-frontalis and corrugator supercilii: then covering the upper eyelid, they descend to the inner angle opposite to their inferior origin, and firmly adhere to the internal angular process of the os frontis, and to the short round tendon which serves to fix the palpebræ and muscular fibres arising from it. It is inserted into the nasal process of the superior maxillary bone, by a short round tendon, covering the anterior and upper part of the lachrymal sac, which tendon can be easily felt at the inner canthus of the eye. The use of this muscle is to shut the eye, by drawing both lids together, the fibres contracting from the outer angle towards the inner, press the eyeball, squeeze the lachrymal gland, and convey the tears towards the puncta lachrymalia.

Orbicularis palpebrarum ciliaris. See *Orbicularis palpebrarum.*

ORBICULA'TUS. Orbiculate: round and flat. Applied to a leaf that is circular or orbicular, the length and breadth being equal, and the circumference an even circular line. Precise examples of this are scarcely to be found. Some species of pepper approach it, and the leaf of the *Hedysarum styracifolium* is perfectly orbicular, except a notch at the base.

Orbiculus ciliaris. The ciliary circle. See *Oculus.*

O'RBIT. (*Orbitum, i.* n.) The two cavities under the forehead, in which the eyes are situated, are termed orbits. Each orbit is composed of seven bones, viz., the frontal, maxillary, jugal, lachrymal, ethmoid, palatine, and sphenoid. The use of this bony socket is to maintain and defend the organ of sight, and its adjacent parts.

Orbitary foramina. See *Frontis os.*

Orchi'deæ. The name of an order in Linnæus's Fragments of a Natural Method, consisting of plants which are allied to the orchis.

Orchilla. Archil. See *Lichen roccella.*

O'RCHIS. (*is, is.* m. Ορχις.) 1. A testicle.

2. (*Orchis, itis.* f.; so called *quia habet radices instar testiculorum.*) The name of a genus of plants in the Linnæan system. Class, *Gynandria*; Order, *Diandria.*

Orchis bifolia. The systematic name of the butterfly orchis, the root of which is used indifferently with that of the male orchis. See *Orchis mascula.*

Orchis mascula. The systematic name of the male orchis; called also, dog's stones, male orchis, and satyrion.

Orchis — bulbis indivisis, nectarii labio quadrilobo crenulato, cornu obtuso petalis dorsalibus reflexus, of Linnæus. The root had once a place in the Materia Medica of the Edinburgh Pharmacopœia, on account of the glutinous slimy juice which it contains. The root of the *orchis bifolia* is also collected. Satyrion root has a sweetish taste, a faint and somewhat unpleasant smell. Its mucilaginous or gelatinous quality has recommended it as a demulcent. Salep, which is imported here from the East, is a preparation of an analogous root which is considered as an article of diet, is accounted extremely nutritious, as containing a great quantity of farinaceous matter in a small bulk. The supposed aphrodisiac qualities of this root, which have been noticed ever since the days of Dioscorides, seem to be founded on the fanciful doctrine of signatures.

Orchis morio. The systematic name of the orchis plant, from the root of which the salep is made. Salep is a farinaceous powder imported from Turkey. It may be obtained from several other species of the same genus of plants. It is an insipid substance, of which a small quantity, by proper management, converts a large portion of water into a jelly, the nutritive powers of which have been greatly over-rated. Salep forms a considerable part of the diet of the inhabitants of Turkey, Persia, and Syria. The method of preparing salep is as follows: — The new root is to be washed in water, and the fine brown skin which covers it is to be separated by means of a small brush, or by dipping the root in warm water, and rubbing it with a coarse linen cloth. The roots thus cleaned are to be spread on a tin plate, and placed in an oven heated to the usual degree, where they are to remain six or ten minutes. In this time they will have lost their milky whiteness, and acquired a transparency like horn, without any diminution of bulk. Being arrived at this state they are to be removed in order to dry and harden in the air, which will require several days to effect; or they may be dried in a few hours, by using a very gentle heat. Salep, thus prepared, contains a great quantity of vegetable aliment: as a wholesome nutriment, it is much superior to rice; and has the singular property of concealing the taste of salt water. Hence, to prevent the dreadful calamity of famine at sea, it has been proposed that the powder of it should constitute part of the provisions of every ship's company. With regard to its medicinal properties, it may be observed, that its restorative, mucilaginous, and demulcent qualities render it of considerable use in various diseases when employed as aliment, particularly in scurvy, diarrhœa, dysentery, symptomatic fevers arising from the absorption of pus, and the stone or gravel.

ORCHI'TIS. (*is, idis.* f.; from ορχις testicle.) Inflammation of the testicle: which

being always accompanied by a swelling, and the swelling being simultaneous nearly with the inflammation, the disease is better known by the name of swelled testicle than inflamed testicle. The most common cause of it is a suppression of the discharge of a clap; but it takes place from blows, and all the causes of inflammation. When it takes place in the progress of a clap it is a sympathetic inflammation, and it often follows every kind of irritation on the urethra, whether produced by strictures, injections, or bougies. The swelling and inflammation appear suddenly, and as suddenly disappear, or go from one testicle to the other. The epididymis remains swelled, however, even for a considerable time afterwards.

The first appearance of swelling is generally a soft pulpy fulness of the body of the testicle, which is tender to the touch: this increases to a hard swelling, accompanied with considerable pain. The epididymis, towards the lower end of the testicle, is generally the hardest part. The hardness and swelling, however, often pervade the whole of the epididymis. The spermatic cord, and especially the vas deferens, are often thickened, and sore to the touch. The spermatic veins sometimes become varicose. A pain in the loins, and sense of weakness there, and in the pelvis, are other casual symptoms. Colicky pains, uneasiness in the stomach and bowels, flatulency, sickness, and even vomiting, are not unfrequent. The whole testicle is swelled, and not merely the epididymis, as has been asserted.

The inflammation of the part most probably arises from its sympathising with the urethra. The swelling of the testicle coming on, either removes the pain in making water, and suspends the discharge, which does not return till such swelling begins to subside, or else the irritation in the urethra, first ceasing, produces a swelling of the testicle, which continues till the pain and discharge return; thus rendering it doubtful which is the cause and which the effect. Occasionally, however, the discharge has become more violent, though the testicle has swelled; and such swelling has even been known to occur after the discharge has ceased; yet the latter has returned with violence, and remained as long as the hernia humoralis.

Orchitis, with stoppage of the discharge, is apt to be attended with strangury. A very singular thing is, that the inflammation more frequently comes on when the irritation in the urethra is going off, than when at its height.

This disease requires perfect rest, and the same treatment as inflammation of any other viscus. Blood must be taken from the arm, and from the part; the general blood-letting repeated according to the degree of the accompanying fever, and the leeches to be repeated as long as there is much local heat: after which, cold lotions to the part. The bowels are to be purged from time to time, and a strict antiphlogistic diet enforced as long as there is feverish excitement. Opiates at bed-time are required when there is much pain.

O'RCHOS. (From *ορχος*, a plantation or vineyard; so called from the regularity with which the hairs are inserted.) The extremities of the eyelids, where the eyelashes grow.

ORCHIO'TOMY. (*Orchotomia, æ.* f.; from *ορχις*, a testicle, and *τεμνω*, to cut.) Castration. The operation of extracting a testicle.

OREOSELI'NUM. (*um, i.* n.; from *oρos*, a mountain, and *σελινον*, parsley: so named because it grows wild upon mountains.) See *Athamanta oreoselinum.*

ORE'XIS. (From *ορεγομαι*, to desire.) A desire or appetite.

ORGAN. (*Οργανον. Organum, i.* n.) An organ is a part of an animal or vegetable which has a determined office in its economy: thus the eye is the organ of vision, and the ear of hearing; the muscles are the organs of motion, &c. A catenation of organs destined to one function is called an apparatus: thus, although the lungs be the immediate organ of respiration, the *apparatus* of respiration consists of the lungs, air passages, muscles and nerves, &c. of respiration, without which the function could not be performed.

ORGA'NIC. (*Organicus;* from *organum*, an organ.) 1. Possessed of organs; appertaining to organisation, or susceptible of organisation: thus we speak of organic bodies, organic functions, and organic matter.

2. Relating to an organ: pathologists call those *organic diseases* in which there is a visible change in the structure of the organ, as opposed to *diseases of function*, in which the action only of the organ is changed.

ORGANISA'TION. *Organisatio.* The construction of the parts of an animal or vegetable body, with reference to a determined function.

O'RGANISM. This term is generally applied to the sum total of the organs and powers which give rise to the phenomena of life in any living being.

O'RGASM. (*Orgasmus, i.* m. *Οργασμος*; from *οργαω*, to desire vehemently.) A state of excitement and vital turgescence of any organ: applied especially to the organs of generation, the excitement of which is termed the *venereal orgasm.*

ORGA'STICA. Diseases affecting the *orgasm.* The second order of the class *genetica* in Good's Nosology.

Orichalcum. See *Aurichalcum.*

ORI'CIA. (From *Oricus*, a city of Epirus, near which it grew.) A species of fir or turpentine tree, from Oricus.

ORIENTA'LIA FOLIA. The leaves of senna were so called.

ORI'GANUM. (*um, i.* n.; *Οριγανον.*) 1. The name of a genus of plants in the Linnæan system. Class, *Didynamia;* Order, *Gymnospermia.*

2. The pharmacopœial name of the wild marjoram. See *Origanum vulgare.*

Origanum creticum. See *Origanum dictamnus.*

ORIGANUM DICTAMNUS. The systematic name of the dittany of Crete. *Dictamnus creticus;* called also, *Origanum creticum*, and *Onitis.* The leaves of this plant, *Origanum — foliis inferioribus tomentosis, spicis nutantibus*, are now rarely used. They have been recommended as emmenagogue and alexipharmic.

Origanum marjora'na. The systematic name of sweet marjoram: called also, *Majorana*. This plant, *Origanum — foliis ovatis obtusis, spicis subrotundis compactis pubescentibus*, of Linnæus, has been long cultivated in our gardens, and is in frequent use for culinary purposes. The leaves and tops have a pleasant smell, and a moderately warm, aromatic, bitterish taste. They yield their virtues to aqueous and spirituous liquors, by infusion, and to water in distillation, affording a considerable quantity of essential oil. The medicinal qualities of the plant are similar to those of the wild plant (see *Origanum vulgare*); but being much more fragrant, it is thought to be more cephalic, and better adapted to those complaints known by the name of nervous; and may therefore be employed with the same intentions as lavender. It was directed in the *pulvis sternutatorius*, by both pharmacopœias, with a view to the agreeable odour which it communicates to the asarabacca, rather than to its errhine power, which is very inconsiderable; but it is now wholly omitted in the Pharm. Lond. In its recent state, it is said to have been successfully applied to scirrhous tumours of the breast.

Origanum syri'acum. The Syrian herb mastich. See *Teucrium marum*.

Origanum vulgare. The systematic name of the wild marjoram; also named, *Agriorigannum*, *Marjorana*, *Mancurana*, *Origanum heracleoticum*, *Onitis*, and *Zazarhendi herba*.

Origanum — spicis subrotundis paniculatis conglomeratis, bractis calyce longioribus ovatis, of Linnæus. This plant grows wild in many parts of Britain. It has an agreeable aromatic smell, approaching to that of marjoram, and a pungent taste, much resembling thyme, to which it is likewise thought to be more allied in its medicinal qualities, and therefore deemed to be emmenagogue, tonic, stomachic, &c. The dried leaves, used instead of tea, are said to be exceedingly grateful. They are employed in medicated baths and fomentations.

Oris constrictor. See *Orbicularis oris*.

Orlean'a terra. Annotto. See *Bixa orellana*.

Ormskirk medicine. An alleged remedy for hydrophobia, invented by a Mr. Hill of Ormskirk. See *Hydrophobia*.

ORNITHOPO'DIUM. (*um, ii.* n.; from ὄρνις, a bird, and πους, a foot: so called from the likeness of its pods to a bird's claw.) Bird's foot. The *Ornithopus perpusillus*, and the *Ornithopus scorpioides*, of Linnæus, have been both so called.

OROBA'NCHE. (*e, es.* f.; from ὀροβος, the wild pea, and αγχω, to suffocate: so called because it twines round the orobus, and destroys it.) The name of a genus of plants in the Linnæan system. Classes, *Gynandria* and *Didynamia*; Order, *Angiospermia*.

Orobry'chis. (From ὀροβος, the wood-pea, and βρυχω, to eat.) The same as orobanche.

O'ROBUS. (*us, i.* m.; from ερεπτω, to eat.) (?) 1. The name of a genus of plants in the Linnæan system. Class, *Diadelphia*; Order, *Decandria*.

2. The pharmacopœial name of the ervum. See *Ervum*.

Orobus tuberosus. The heath-pea. The root of this plant is said to be nutritious. The Scotch islanders hold these peas in great esteem, and chew them like tobacco.

Oroselinum. See *Oreoselinum*.

ORPIMENT. (*Orpimentum, i.* n.) A sulphuret of arsenic. See *Arsenic*.

Orpine. See *Sedum telephium*.

O'rrhos. (Ὀρρὸς.) Serum; whey.

Orrhos. (Ὄρρος.) 1. The perinæum.

2. The extremity of the sacrum.

Orris. See *Iris*.

Orris, Florentine. See *Iris florentina*.

Orseille. See *Lichen roccella*.

ORTHOCO'LON. (*on, i.* n.; from ορθος, straight, and κωλον, a limb.) A stiff joint with an extended state of the limb.

ORTHOPNŒ'A. (*a, æ.* f.; from ορθος, erect, and πνοη, breathing.) Inability of breathing in the recumbent posture, so that the patient is obliged to sleep propped up by pillows, as in hydrothorax and other cases.

Orva'le. (*Orvale*, French.) A species of clary or horminum.

Orvieta'num. A medicine once celebrated as an antidote to poisons; so named from a mountebank, called *Orvietanus*, who invented it, or from *Orvieto*, a town in the Papal territories where it was invented.

ORY'ZA. (*a, æ.* f.; from *orez*, Arabic.) 1. The name of a genus of plants in the Linnæan system. Class, *Triandria*; Order, *Digynia*. The rice plant.

2. The pharmacopœial name for rice. See *Oryza sativa*.

Oryza sativa. The systematic name of the plant which affords the rice, which is the principal food of the inhabitants in all parts of the East, where it is boiled, and eaten either alone or with their meat. Large quantities of it are annually sent into Europe, and it meets with a general esteem for family purposes. The people of Java have a method of making puddings of rice which seems to be unknown here; but it is not difficult to put in practice if it should merit attention. They take a conical earthen pot, which is open at the large end, and perforated all over. This they fill about half full with rice, and putting it into a large earthen pot of the same shape, filled with boiling water, the rice in the first pot soon swells, and stops the perforations, so as to keep out the water. By this method the rice is brought to a firm consistence, and forms a pudding, which is generally eaten with butter, oil, sugar, vinegar, and spices. The Indians eat stewed rice with good success against the bloody flux; and in most inflammatory disorders they cure themselves with only a decoction of it. The spirituous liquor called arrack is made from this grain. Rice grows naturally in moist places, and will not come to perfection, when cultivated, unless the ground be sometimes overflowed, or plentifully watered. The grain is of a grey colour when first reaped; but the growers have a method of whitening it before it is sent to market. The manner of performing this, and beating it out, in Egypt, is thus described by Hasselquist: — They have hollow iron cylin-

drical pestles, about an inch in diameter, lifted by a wheel worked with oxen. A person sits between the pestles, and, as they rise, pushes forward the rice, whilst another winnows and supplies fresh parcels. Thus they continue working until it is entirely free from chaff. Having in this manner cleaned it, they add one thirtieth part of salt, and rub them both together, by which the grain acquires a whiteness; then it is passed through a sieve, to separate the salt again from it. In the island of Ceylon they have a much more expeditious method of getting out the rice; for, in the field where it is reaped, they dig a round hole, with a level bottom, about a foot deep, and eight yards in diameter, and fill it with bundles of corn. Having laid it properly, the women drive about half a dozen oxen continually round the pit; and thus they will tread out forty or fifty bushels a day. This is a very ancient method of treading out corn, and is still practised in Africa upon other sorts of grain.

OS. 1. (*Os, ossis.* n.; supposed to be derived from the Hebrew *ozam*, strength.) A bone: a hard, dry, insensible part of the body, of a whitish colour, and composed of a spongy, compact, or reticular substance. Bones vary much in their appearances, some being long and hollow, others flat and compact, &c. The greater number of bones have several processes and cavities, which are distinguished from their figure, situation, use, &c. Thus, processes extended from the end of a bone, if smooth and round, are called *heads;* and *condyles*, when flattened either above or laterally. That part which is beneath the head, and which exceeds the rest of the bone in smallness and levity, is called the neck. Rough, unequal processes are called *tuberosities*, or tubercles: but the longer and more acute, *spinous*, or *styloid* processes, from their resemblance to a thorn. Thin broad processes, with sharp extremities, are known by the name of *cristæ*, or *sharp edges*. Other processes are distinguished by their form, and called *alar*, or *pterygoid; mamillary*, or *mastoid; dentiform*, or *odontoid*, &c. Others, from their situation, are called *superior, inferior, exterior*, and *interior*. Some have their name from their direction; as *oblique, straight, transverse*, &c.; and some from their use, as *trochanters, rotators*, &c. *Furrows, depressions*, and *cavities*, are destined either for the reception of contiguous bones, to form an articulation with them, when they are called *articular cavities*, which are sometimes deeper, sometimes shallower; or they receive hard parts, but do not constitute a joint with them. Cavities serve also for the transmission and attachment of soft parts. Various names are given to them, according to the magnitude and figure of bones. If they be broad and large at the beginning, and not deep, but contracted at their ends, they are called *foveæ*, or *pits*. Furrows are open canals, extending longitudinally in the surface of bones. A hollow, circular tube, for the most part of the same diameter from beginning to end, and more or less crooked or straight, long or short, is named a *canal*. *Foramina* are the apertures of canals, or they are formed of the excavated margins of two bones, placed against each other. If such be the form of the margin of a bone, as if a portion were taken out of it, it is called a *notch*. Respecting the formation of bones, see *Osteogeny*.

A Table of the Bones.

			No.
Bones of the Head.	Bones of the *cranium* or *skull*	Frontal	1
		Parietal	2
		Occipital	1
		Temporal	2
		Ethmoid	1
		Sphenoid	1
	Bones of the *face*	Superior maxil	2
		Jugal	2
		Nasal	2
		Lachrymal	2
		Palatine	2
		Inferior spongy	2
		Vomer	1
		Inferior maxil	1
	Dentes or *teeth*	Incisores	8
		Cuspidati	4
		Molares	20
	Bone of the *tongue*	Hyoides os	1
	Bones of the *ear*, within the temporal bones	Malleus	2
		Incus	2
		Stapes	2
		Orbiculare os	2
Bones of the Trunk.	The *spine* — Vertebræ	Cervical	1
		Dorsal	12
		Lumbar	5
	Sacrum		1
	Coccygis os		1
	The *thorax* — Sternum		1
	Ribs		24
	The *pelvis*	Innominata ossa	2
Bones of the Upper Extrem.	The *shoulder*	Clavicle	2
		Scapula	2
	The *arm*	Humeri os	2
	The *fore-arm*	Ulna	2
		Radius	2
	The *hand* — *Carpus* or *wrist*	Naviculare os	2
		Lunare os	2
		Cuneiforme os	2
		Orbiculare os	2
		Trapezium os	2
		Trapezoides os	2
		Magnum os	2
		Unciforme os	2
	Metacarpus		10
	Phalanges		28
Bones of the Low. Extr.	The *thigh*	Femur	2
	The *leg*	Patella	2
		Tibia	2
		Fibula	2
	The *foot* — *Tarsus* or *instep*	Calcaneus	2
		Astragalus	2
		Cuboides os	2
		Naviculare os	2
		Cuneiformia ossa	6
	Metatarsus		10
	Phalanges		28
Sesamoid bones of the thumb and great toe, occasionally found			8
		Total	248

Chemical analysis. — Calcined human bones, according to Berzelius, are composed, in 100 parts, of 81·9 phosphate of lime, 3 fluate of lime, 10 lime, 1·1 phosphate of magnesia, 2 soda, and 2 carbonic acid. 100 parts of bones by calcination are reduced to 63. Fourcroy and Vauquelin found the following to be the composition of 100 parts of ox bones: 51 solid gelatine, 37·7 phosphate of lime, 10 carbonate of lime, and 1·3 phosphate of magnesia; but Berzelius gives the following as their constituents: 33·3 cartilage, 55·35 phosphate of lime, 3 fluate of lime, 3·85 carbonate of lime, 2·05 phosphate of magnesia, and 2·45 soda, with a little common salt.

About 1-30th of phosphate of magnesia was obtained from the calcined bones of fowls, by Fourcroy and Vauquelin. When the enamel of teeth, rasped down, is dissolved in muriatic acid, it leaves no albumen like the other bones. Fourcroy and Vauquelin state its components to be, 27·1 gelatine and water, 72·9 phosphate of lime. Messrs. Hatchett and Pepys rate its composition at 78 phosphate of lime, 6 carbonate of lime, and 16 water and loss. Berzelius, on the other hand, found only 2 per cent. of combustible matter in teeth. The teeth of adults by Mr. Pepys, consist of 64 phosphate of lime, 6 carbonate of lime, 20 cartilage, and 10 water or loss. The fossil bones from Gibraltar are composed of phosphate of lime and carbonate, like burnt bones. Much difference of opinion exists with regard to the existence of fluoric acid in the teeth of animals, some of the most eminent chemists taking opposite sides of the question. It appears that bones buried for many centuries still retain their albumen, with very little diminution of its quantity.

Fourcroy and Vauquelin discovered phosphate of magnesia in all the bones they examined, except human bones. The bones of the horse and sheep afford about 1-36th of phosphate of magnesia; those of fish nearly the same quantity as those of the ox. They account for this by observing, that phosphate of magnesia is found in the urine of man, but not in that of animals, though both equally take in a portion of magnesia with their food.

The experiments of Mr. Hatchett show, that the membranous or cartilaginous substance, which retains the earthy compound within its interstices, and appears to determine the shape of the bone, is albumen. Mr. Hatchett observes, that the enamel of tooth is analogous to the porcellaneous shells, while mother-of-pearl approaches in its nature to true bone.

A curious phenomenon with respect to bones is the circumstance of their acquiring a red tinge, when madder is given to animals with their food. The bones of young pigeons will thus be tinged of a rose-colour in twenty-four hours, and of a deep scarlet in three days; but the bones of adult animals will be a fortnight in acquiring a rose-colour. The bones most remote from the heart are the longest in acquiring this tinge. Mr. Gibson informs us, that extract of log-wood, too, in considerable quantity, will tinge the bones of young pigeons purple. On desisting from the use of this food, however, the colouring matter is again taken up into the circulation, and carried off, the bones regaining their natural hue in a short time. It was said by Du Hamel, that the bones would become coloured and colourless in concentric layers, if an animal were fed alternately one week with madder, and one week without; and hence he inferred that the bones were formed in the same manner as the woody parts of trees. But he was mistaken in the fact; and indeed, had it been true, with the inference he naturally draws from it, the bones of animals must have been out of all proportion larger than they are at present.

Bones are of extensive use in the arts. In their natural state, or dyed of various colours, they are made into handles of knives and forks, and numerous articles of turnery. The manufacture is now very general of volatile alkali from bones, the coal of which forms bone-black; or if they be afterwards calcined to whiteness in the open air, they constitute the bone ashes of which cupels are made, and which, finely levigated, are used for cleaning articles of paste, and some other trinkets, by the name of burnt hartshorn. The shavings of hartshorn, which is a species of bone, afford an elegant jelly; and the shavings of other bones, of which those of the calf are the best, are often employed in their stead. On this principle, Mr. Proust has recommended an economical use of bones, particularly with a view to improve the subsistence of the soldier. He first chops them into small pieces, throws them into a kettle of boiling water, and lets them boil about a quarter of an hour. When this has stood till it is cold, a quantity of fat, excellent for culinary purposes when fresh, and at any time fit for making candles, may be taken off the liquor. This, in some instances, amounted to an eighth, and in others even to a fourth, of the weight of the bones. After this the bones may be ground, and boiled in eight or ten times their weight of water, of which that already used may form a part, till about half is wasted, when a very nutritious jelly will be obtained. The boiler should not be of copper, as this metal is easily dissolved by the jelly; and the cover should fit very tight, so that the heat may be greater than that of boiling water, but not equal to that of Papin's digester, which would give it an empyreuma. The bones of meat that have been boiled are nearly as productive as fresh bones; but Dr. Young found those of meat that had been roasted afforded no jelly, at least by simmering, or gentle boiling.

2. (*Os, oris.* n.; from *οσσα*, the voice.) (?) The mouth. 1. In *Anatomy*, applied to openings of parts; as *externum* and *internum*, *os tincæ*, &c.

2. In *Botany*, applied to flowers, &c. which resemble the mouth of certain animals; as the flower of the snapdragon, which is called *os leonis*, &c. See *Faux*, and *Mouth*.

Os EXTERNUM. The entrance into the vagina is so named, in opposition to the mouth of the *uterus*, which is called the *os internum*.

Os INTERNUM. The orifice or mouth of the uterus.

Os leonis. The *Antirrhinum linaria*.

Os spongiosum. The spongy bones are two in number, and are called *ossa spongiosa inferiora*. The ethmoid bone has two turbinated portions, which are sometimes called the superior spongy bones. These bones, which, from their shape, are sometimes called *ossa turbinata*, have, by some anatomists, been described as belonging to the ethmoid bone; and by others, as portions of the ossa palati. In young subjects, however, they are evidently distinct bones. They consist of a spongy lamella in each nostril. The convex surface of this lamina is turned towards the septum narium, and its concave part towards the maxillary bone, covering the opening of the lachrymal duct into the nose. From their upper edge arise two processes: the posterior of these, which is the broadest, hangs, as it were, upon the edge of the antrum highmorianum; the anterior one joins the os unguis, and forms a part of the lachrymal duct. These bones are complete in the fœtus. They are lined with the pituitary membrane; and, besides their connexion with the ethmoid bone, are joined to the ossa maxillaria superiora, ossa palati, and ossa unguis. Besides these ossa spongiosa inferiora, there are sometimes two others, situated lower down, one in each nostril. These are very properly considered as a production of the sides of the maxillary sinus turned downwards. In many subjects, likewise, we find other smaller bones standing out into the nostrils, which, from their shape, might also deserve the name of *turbinata*, but they are uncertain in their size, situation, and number.

Os tincæ. See *Tincæ os*.

Osce'do. (*o, inis.* f.) The thrush. Also yawning. — *Turton*.

O'scheal. (*Oschealis*; from *οσχεον*, the scrotum.) Relating to the scrotum.

OSCHEOCE'LE. (*e, es.* f.; from *οσχεον*, the scrotum, and *κηλη*, a tumour.) 1. Any tumour of the scrotum.

2. A scrotal hernia. See *Hernia*.

O'SCHEON. *Οσχεον*. The scrotum.

Oscheophy'ma. (*a, atis.* n.; from *οσχεον*, the scrotum, and *φυμα*, a tumour.) A swelling of the scrotum.

Oscilla'tio. Oscillation. Boerhaave gives this name to muscular irritability.

Osculato'rius. (From *osculo*, to kiss: so called because the action of kissing is performed by it.) The sphincter muscle of the lips.

O'SMAZOME. If cold water, which has been digested for a few hours on slices of raw muscular fibre, with occasional pressure, be evaporated, filtered, and then treated with pure alkohol, a peculiar animal principle will be dissolved, to the exclusion of the salts. By dissipating the alkohol with a gentle heat, osmazome is obtained. It has a brownish yellow colour, and the taste and smell of soup. Its aqueous solution affords precipitates, with infusion of nut-galls, nitrate of mercury, and nitrate and acetate of lead. According to some experiments lately published by Gsell, Gmelin, and Vienholt, osmazome has been found in most of the component parts of the body, as well solids as fluids, although in very different proportions.

OS'MIUM. A metal discovered by Tennant among fragments of crude platina, and so called by him from the pungent and peculiar smell of its oxide.

Osmund. See *Osmunda regalis*.

OSMU'NDA. (*a, æ.* f.; from *Osmund*, who first used it.) The name of a genus of plants. Class, *Cryptogamia*; Order, *Filices*.

Osmunda lunaria. See *Ophioglossum lunaria*.

Osmunda regalis. The systematic name of the osmund-royal. *Filix florida*. *Ophioglossum osmunda*. Its root possesses astringent and emmenagogue virtues. The young shoots, made into a conserve, are said to be a specific for the rickets.

O'sphys. *Οσφυς*. The loins.

Ossa incisoria. See *Ossa Intermaxillaria*.

Ossa intermaxillaria. Quadrupeds have two bones of the face which do not exist in man. They are situated between the superior maxillary bones, and are called *ossa intermaxillaria*, *ossa incisoria*, or *ossa labialia*. These bones contain the roots of the incisor teeth in animals which possess these teeth, but they exist also in the edentata.

Ossa labialia. See *Ossa intermaxillaria*.

Ossa spongiosa. See *Os spongiosum*.

O'sseous. (*Osseus*; from *os*, a bone.) Bony.

OSSI'CULUM. (*um, i.* n.; diminutive of *os*, a bone.) A little bone.

Ossicula auditus. The small bones of the internal ear are four in number; viz. the malleus, incus, stapes, and os orbiculare; and are situated in the cavity of the tympanum. See *Auris*.

Ossicula Bertini. *Cornua sphenoidalia*. The triangular processes of the sphenoid bone, or *ossa triangularia*, are so named after Bertin, who described them.

OSSIFICA'TION. (*Ossificatio, onis*, f.; from *os*, a bone, and *facio*, to make.) Ossification, or the formation of bone. See *Osteogeny*.

Ossi'fragus. (*us, i.* m.; from *os*, a bone, and *frango*, to break.) *Ossifraga*. Bone-breaker. See *Osteocolla*.

OSSI'VORUS. (From *os*, a bone, and *voro*, to devour.) An epithet given by Ruysch to a particular kind of tumour occurring in the thigh.

OS'TAGRA. (From *οστεον*, a bone, and *αγρα*, seizure.) A forceps to take out bones with.

Ostei'tes. (From *οστεον*, a bone.) The bone-binder. See *Osteocolla*.

OSTEOCO'LLA. (*a, æ.* f.; from *οστεον*, a bone, and *κολλαω*, to glue.) Glue-bone, stone, or bone-binder: called also, *Ossifraga*, *Holosteus*, *Osteites*, *Amosteus*, *Osteolithos*, and *Stelochites*. A particular carbonate of lime found in some parts of Germany, particularly in the Marché of Brandenburg, and in other countries. It is met with in loose sandy grounds, spreading from near the surface to a considerable depth, into a number of ramifications, like the roots of a tree. It is of a whitish colour, soft whilst under the earth, friable when dry, rough on the surface, for the most part either hollow within, or filled with a solid wood, or with a powdery white matter. It was formerly celebrated for promoting the coalition of fractured bones, and the formation

of callus, which virtues are not attributed to it in the present day.

Osteogene'ticus. (From οστεον, a bone, and γενναω, to generate.) Applied to that which favours the formation of bone or callus.

Osteoge'nicus. Improperly written for *osteogeneticus*.

OSTEO'GENY. (*Osteogenia, æ.* f.; from οστεον, a bone, and γενεια, generation.) The growth of bones. Bones are either formed between membranes, or in the substance of cartilage; and the bony deposition is effected by a determined action of arteries. The secretion of bone takes place in cartilage in the long bones, as those of the arm, leg, &c.; and betwixt two layers of membrane, as in the bones of the skull, where true cartilage is never seen. Often the bony matter is formed in distinct bags, and there it grows into form, as in the teeth; for each tooth is formed in its little bag, which, by injection, can be filled and covered with vessels. An artery of the body can assume this action, and deposit bone, which is formed also where it should not be, in the tendons and in the joints, in the great arteries and in the valves, in the flesh of the heart itself, or even in the soft and pulpy substance of the brain.

Most of the bones in the fœtus are merely cartilage before the time of birth. This cartilage is never hardened into bone, but, from the first, it is an organised mass. It has its vessels, which are at first transparent, but which soon dilate; and whenever the red colour of the blood begins to appear in them, ossification very quickly succeeds, the arteries being so far enlarged as to carry the coarser parts of the blood. The first mark of ossification is an artery which is seen running into the centre of the jelly which is formed. Other arteries soon appear, and a network of vessels is formed; and then a centre of ossification begins, stretching its rays according to the length of the bone; and then the cartilage begins to grow opaque, yellow, and brittle: it will no longer bend, and a bony centre may easily be discovered. Other points of ossification are successively formed, preceded by the appearance of arteries. The ossification follows the vessels, and buries and hides those vessels by which it is formed. The vessels advance towards the end of the bone, the whole body of the bone becomes opaque, and there is left a small vascular circle only at either end. The heads are separated from the body of the bone by a thin cartilage; and the vessels of the centre, extending still towards the extremities of the bone, perforate the cartilage, pass into the head of the bone, and then its ossification also begins, and a small nucleus of ossification is formed in its centre. Thus the heads and the body are at first distinct bones, formed apart, joined by a cartilage, and not united till the age of fifteen or twenty years. Then the deposition of bone begins: and while the bone is laid by the arteries, the cartilage is conveyed away by the absorbing vessels; and while they convey away the superfluous cartilage, they model the bone into its due form, shape out its cavities, cancelli, and holes, remove the thinner parts of the remaining cartilage, and harden it into due consistence. The earth which constitutes the hardness of bone, and all its useful properties, is inorganised, and lies in the interstices of bone, where it is made up of gelatinous matter, to give it consistence and strength, furnished with absorbents to keep it in health, and carry off its wasted parts; and pervaded by blood-vessels to supply it with new matter. During all the process of ossification, the absorbents proportion their action to the stimulus which is applied to them: they carry away the serous fluid, when jelly is to take place; they remove the jelly as the bone is laid; they continue removing the bony particles also, which (as in a circle) the arteries continually renew. This renovation and change of parts goes on even in the hardest bones, so that after a bone is perfectly formed, its older particles are continually being renewed, and new ones are deposited in their place. The bony particles are so deposited in the flat bones of the skull as to present a radiated structure, and the vacancies between the fibres which occasion this appearance, are found, by injection, to be chiefly passages for blood-vessels. As the fœtus increases in size, the osseous fibres increase in number, till a lamina is produced; and as the bone continues to grow, more laminæ are added, till the more solid part of a bone is formed. The ossification which begins in cartilage is considerably later than that which has its origin between membranes. The generality of bones are incomplete until the age of puberty, or between the fifteenth and twentieth years, and, in some few instances, not until a later period. The small bones of the ear, however, are completely formed at birth.

OSTEO'GRAPHY. (*Osteographia, æ.* f.; from οστεον, a bone, and γραφω, to describe.) The description of the bones. See *Os*.

Osteo'lithos. (From οστεον, a bone, and λιθος, a stone.) See *Osteocolla*.

OSTEO'LOGY. (*Osteologia, æ.* f.; from οστεον, a bone, and λογος, a discourse.) The doctrine of the bones.

Osteopœ'dion. (*on, ii.* n.; from οστεον, a bone, and παις, παιδος, an infant.) An ossified fœtus. See *Abortion*.

O'STEO-SARCO'MA. (From οστεον, a bone, and σαρκωμα, a fleshy tumour.) *Osteosarcosis*. A term that is very vaguely applied to any tumour which contains a mixture of bony and soft matter. It is most commonly applied, however, to a tumour commencing in the medullary structure of a bone, and afterwards blended with osseous matter. Such tumours may be of a malignant character or otherwise.

Osteo-sarcosis. See *Osteo-sarcoma*.

OSTHE'XIA. (*a, æ.* f.; from οστωδης, osseous or bony, and εξις, habit.) Osthexy, or the ossific diathesis.

Ostia'rius. (From *ostium*, a door.) The pylorus has been so called.

OSTIOLUM. (*um, i.* n.; diminutive of *ostium*, a door.) A little door. The valves of the heart have been called *ostiola*. The term is also applied to small openings or mouths of vessels.

O'STIUM. (*um, ii.* n.) A door or opening. Applied to foramina or openings.

O'STREA. (*a, æ.* f.; from *οστρακον*, a shell.) The oyster. The name of a genus of shell-fish. Class, *Vermes;* Order, *Testacea.*

Ostrea edu'lis The common oyster. Of this well-known and highly esteemed species there are six varieties, found in different parts of the European and Indian seas, affixed to rocks, or to large beds The shell is of various sizes, forms, and colours, white within, and often glossy, like mother of pearl. It is supposed by naturalists to be an hermaphrodite animal. The spawn, which they cast in May, adheres to the rocks, and other substances at the bottom of the sea, and the shell is said to be formed in twenty-four hours.

Oysters are of different colours in different places. In Spain they are found of a red and russet colour; in Illyria they are brown, but the fish is black; and in the Red Sea, of the colour of the rainbow. The green oyster which is eaten in Paris, is brought from Dieppe. The oysters from Brittany have been long famous; but those which are brought from Merennes, in Saintonge, are in the highest estimation. Britain has been long noted for its oysters; and the ancient Romans, who were extremely fond of this fish, had their layers or stews for oysters, as we have at present. Sergius Orata was the inventor of them, as early as the time of Lucius Crassus, the orator. This country still preserves its superiority in oysters over other countries, and they are found in plenty in most parts of our coast.

As an article of diet or luxury, oysters are in very general use. When deprived of their beards or fringe-like part, and the harder flesh by which they adhere to the shell, they are easy of digestion, and very nutritious, either raw, boiled, stewed, or roasted. For weak stomachs they are often recommended; and they are in general use in sauces and minced meats, to give a flavour which is highly esteemed.

The shell of this fish is occasionally used medicinally: its virtues are similar to those of the carbonate of lime. See *Creta.*

Ostrea maxima. The scallop. This is found in most of the European seas, in large beds. The shell is that which was formerly worn by pilgrims, on the hat or coat, as a mark that they had crossed the sea, for the purpose of paying their devotions in the Holy Land. The flesh of this species is much more coarse than that of the oyster, and should never be indulged in, for it is very difficult of digestion unless it is well stewed; and even then it requires the addition of some warm stimulating substance.

Ostruthium. See *Imperatoria ostruthium.*

OSY'RIS. (*is, is.* f. Οσυρις, of Dioscorides, which he describes as a small shrub, with numerous dark, tough branches; and Professor Martyn conjectures its derivation from *οζος*, a branch. Some take the *antirrhinum linaria* for the true *Osyris.*) The name of a genus of plants in the Linnæan system. Class, *Diœcia;* Order, *Triandria.*

Osyris alba. Poet's cassia or gardrobe; Poet's rosemary. *Cassia poetica lobelii. Cassia latinorum. Cassia lignea monspeliensium. Cassia monspeliensium.* The whole shrub is astringent. It grows in the southern parts of Europe.

OTA'LGIA. (*a, æ.* f.; from *ους*, the ear, and *αλγος*, pain.) The earache.

OTE'NCHYTES. (From *ωτος*, the genitive of *ους*, an ear, and *εγχυω*, to pour in.) A syringe for the ears.

O'TICUS. (From *ους*, the ear.) Appertaining to the ear: thus, *medicamenta otica;* medicines against diseases of the ear.

Oti'tes. (From *ους*, the ear.) An epithet of the little finger, because it is commonly made use of in scratching the ear.

OTI'TIS. (*is, idis.* f.; from *ους*, the ear.) The term applies to inflammation of the external ear, properly so called; and also to the internal ear, to which it is generally confined. Otitis is known by pain in the internal part of the ear, confusion of sound, deafness, and more or less of fever. It is not uncommon with children, but is seldom attended with much disturbance of the system. It is generally produced by cold; and occasionally by extraneous bodies that have, by accident or otherwise, got into the meatus auditorius externus, as worms, insects or their larvæ, cherry-stones, &c., of which many curious accounts are published in medical journals.

It is sometimes a serious disease, producing much fever, and ending in suppuration. Several very acute cases of inflammation of the internal ear of adults, which caused active fever and delirium, have occurred to the author; which, but for copious and repeated bleeding, blisters, and purges, as directed against inflammation of the brain, would have terminated, most probably, fatally.

Otopla'stice. (From *ους*, the ear, and *πλασσω*, to form.) An operation practised by Taliacotius for the restoration of the external ear when destroyed.

Otoplatos. Improperly used by Vogel instead of *otoplados.* A foul ulcer behind the ear; from *ους*, the ear, and *πλαδος*, redundant moisture.

OTOPYO'SIS. (*is, is.* f.; from *ους*, the ear, and *πυον*, pus.) A purulent discharge from the ear.

OTORRHŒ'A. (*a, æ.* f.; from *ους*, the ear, and *ρεω*, to flow.) A discharge from the ear.

Otto of roses. See *Oleum rosæ.*

OVA'LIS. Oval. Some parts of animals and vegetables are so called from being of this shape; as *foramen ovale, centrum ovale, folium ovale, receptaculum ovale.*

OVA'RIAN. (*Ovarianus*, from *ovarium.*) Ovarial: belonging to the ovarium.

OVA'RIUM. (*um, ii.* n.; diminutive of *ovum*, an egg.) The ovaria are two flat oval bodies, about an inch in length, and rather more than half in breadth and thickness, suspended in the broad ligaments, about the distance of one inch from the uterus behind, and a little below the Fallopian tubes. To the ovaria, according to the idea of their structure entertained by different anatomists, various uses have been assigned, or the purpose they answer has been differently explained. Some have supposed

that their texture was glandular, and that they secreted a fluid equivalent and similar to the male semen; but others, who have examined them with more care, assert that they are ovaria in the literal acceptation of the term, and include a number of vesicles, or ova, to the amount of twenty-two of different sizes, joined to the internal surface of the ovaria by cellular threads or pedicles; and that they contain a fluid which has the appearance of thin lymph. These vesicles are, in fact, to be seen in the healthy ovaria of every young woman. They differ very much in their number in different ovaria, but are very seldom so numerous as has just been stated. All have agreed that the ovaria prepare whatever the female supplies towards the formation of the fœtus; and this is proved by the operation of spaying, which consists in the extirpation of the ovaria; after which the animal not only loses the power of conceiving, but desire is for ever extinguished. The outer coat of the ovaria, together with that of the uterus, is given by the peritonæum; and whenever an ovum is passed into the Fallopian tube, a fissure is observed at the part through which it is supposed to have been transferred. These fissures healing, leave small longitudinal cicatrices on the surface, which are said to enable us to determine, whenever the ovarium is examined, the number of times a woman has conceived. The corpora lutea are oblong glandular bodies of a yellowish colour, found in the ovaria of all animals when pregnant, and, according to some, when they are salacious. They are said to be calyces, from which the impregnated ovum is dropped; and their number is always in proportion to the number of conceptions found in the uterus. They are largest and most conspicuous in the early state of pregnancy, and remain for some time after delivery, when they gradually fade and wither till they disappear. The corpora lutea are very vascular, except at their centre, which is whitish; and in the middle of the white part is a small cavity, from which the impregnated ovum is thought to have immediately proceeded. The ovaria are the seat of a particular kind of dropsy, which most commonly happens to women at the time of the final cessation of the menses, though not unfrequently at a more early period of life. It is of the encysted kind, the fluid being sometimes limpid and thin, and at others discoloured and gelatinous. In some cases it has been found contained in one cyst, often in several; and in others the whole tumefaction has been composed of hydatids not larger than grapes. The ovaria are also subject, especially a short time after delivery, to inflammation, terminating in suppuration, and to scirrhous and cancerous diseases, with considerable enlargement. In the former state, they generally adhere to some adjoining part, as the uterus, rectum, bladder, or external integuments, and the matter is discharged from the vagina, by stool, by urine, or by an external abscess of the integuments of the abdomen.

OVA'TUS. Ovate: egg-shaped. 1. Leaves, petals, seeds, &c., are so called when of the shape of an egg, cut lengthwise, the base being rounded, and broader than the extremity, — a very common form of leaves; as in *Vinca major*, and *Urtica pilulifera*; the *petals* of the *Allium flavum*, and *Narcissus pseudo-narcissus*; and the *receptacle* of the *Omphalea*.

2. A shape resembling the solid substance of an egg; as the seeds of the *Quercus*.

O'VIDUCT. (*Oviductus*; from *ovum*, an egg, and *ductus*, a canal.) The duct or canal through which the ovum, or egg, passes. In the human species, the Fallopian tube is so called, which runs from the ovary to the bottom of the womb.

OVI'PAROUS. (*Oviparus*; from *ovum*, an egg, and *pario*, to bring forth.) Animals are so called which exclude their young contained in an egg.

OVIS. The name of a genus of animals. Class, *Mammalia*; Order, *Pecora*, The sheep.

Ovis aries. The common sheep. The flesh of this animal is the best of all food for man, being easy of digestion, and highly nutritious. The lamb is considered as a delicacy.

Ovorum testæ. Egg-shells. A testaceous absorbent.

Ovu'liger. (Bearer of little eggs.) The name given by M. Raspail to a kind of hydatid found in the wrist joint, which he considers as intermediate between the genera cysticercus and cœnurus.

O'VULUM. (*um*, *i.* n.; diminutive of *ovum*.) A little egg. See *Egg*.

O'VUM. (*um*, *i.* n.; from the Greek ᾠόν, an egg.) An egg. In physiological language this term is applied to the capsule containing the prolific germ of animals. Thus the egg of a bird, the vesicles found in the ovarium in mammiferous animals, the spawn of fishes, are all *ova*.

I. *Of the Egg of the Domestic Fowl or Hen.*

The form of this is somewhat oval, larger at one extremity than the other, which is more pointed. It is of a white colour mostly, and about two inches long, and one and a half in its broadest diameter, weighing generally about two ounces.

The parts of which an egg are composed are, the shell, the membranes, and the semi-fluid substances.

1. The *shell*. This is a calcareous investment, the *cortex* or *putamen* of old anatomists. It is secreted from the internal surface of that part of the oviduct which is called the uterus. It adheres firmly to the external membrane of the egg, and is of the thickness of the nail of our thumb. It is composed of carbonate of lime principally, with a little phosphate, and the particles are held in connection by a little gelatine. This part of the hen's egg was formerly much esteemed in the cure of diseases, as an antacid and absorbent: and even in the present day, *testæ ovarum* are directed in fine powder by old practitioners, in the dose of from one to three scruples.

2. The *external membrane*. Blumenbach calls this *membrana albuminis*. It possesses exactly the form of the shell, which adheres firmly to it like a lining. It is very delicate and smooth on the side next to the egg. It is composed of two laminæ, which at the great

nd of the egg are separate, thus forming a space: this space is called the *folliculus æris*, or *air-cell*.

8. The semifluid substances are the white nd the yolk, which together form nearly the vhole bulk of the egg.

a. The white was called, by Aristotle, μοριον λευκον; by Pliny, *liquor albus ovi*; by Celsus, *candidum ovi*; by Apicius, *album et albimentum ovi*; nd by Fabricius ab Aquapendente, *albumen*; vhich latter name is now generally used. This part of the egg is a white, viscid, tenacious, emifluid mass, commonly called the white of he egg. It does not float about promiscuously hrough the egg, but adheres to the membrane ining the small end of the egg, and always preserves its proper relative position to the yolk. In its natural state, it has little taste or smell. When spread thin and slowly over any body, it orms a varnish similar to what is made from um-acacia. It soon putrefies, unless dried; n which state it may be preserved for any length f time. It is insoluble in alkohol and æther. Acids do not disssolve it, unless it be coagulated, nd heat employed. When mixed by agitation vith water, and alkalies are added, no apparent hange takes place; but if a concentrated solution of pure potash be triturated with the white f the egg for some time, and then allowed to e at rest, a coagulation gradually takes place. t then hardens; and, at a particular period of ts drying, it resembles very much the crystalline ens of the eye. When quite dry, it is brittle nd transparent.

According to the chemical analysis which has een made of the white of the egg, 100 parts f it contain 80 of water, 4·5 of uncoagulable natter, and 15·5 of pure albumen. By distillation it affords water, carbonate of ammonia, nd empyreumatic oil; a coal remaining in he retort, which yields soda and phosphate of me.

The white of the egg is well known to be oagulable by heat, acids, and alkohol.

b. The yolk, or yellow, is called *vitellus*. It s the spherical mass which occupies the centre f the egg, and is surrounded by the white. It s smaller in quantity than the white. It is sually of a bright yellow colour. The substances into which the yolk of eggs is resolvable re, water, oil, albumen, and gelatine. If, after eing boiled, the yolk be heated in a pan, it oftens; and when squeezed between the fingers, rops of oil exude: if put into linen in this tate and pressed, an oil will be forced out. This il is of a yellow colour, and insipid. Its properties are those of fixed oil, or rather of semiuid fat. The residue, after the separation of he oil, possesses properties of albumen.

The *vitellus ovi* is used in the preparation of ome medicines, to combine some of its articles, nd give a smoothness to the mixture: in this ay it is employed in the *Julepum vitæ Batenum* in emulsions, with resin, oil, camphire, nd various linctuses: but its principal use is s an article of diet, either alone, variously ressed, or entering into almost every pudding, ustard, forced meat, and a vast variety of other limentary articles.

II. *Of the Eggs of the Human Ovarium.*

The vesicles in the ovarium of females are called the eggs, *ova* or *ovula*. When fecundation takes place in one or more of these, they pass, after a short time, along the Fallopian tube into the uterus.

Development of the ovum in the uterus. — The ovum in the first moments of its abode in the uterus, is free and unattached; its volume is nearly that which it had in quitting the ovarium; but, in the course of the second month, its dimensions increase, it becomes covered with filaments of about a line in length, which ramify in the manner of blood-vessels, and are implanted into the *decidua*. In the third month they are seen only on one side of the ovum, the others have nearly disappeared; but those which remain have acquired a greater extent, thickness, and consistence, and are more deeply implanted into the deciduous membrane; taken together, they form the *placenta*. The ovum, in the rest of its surface, presents only a soft flocculent layer called *decidua reflexa*. The ovum continues to increase until the end of pregnancy, when its volume is nearly equal to that of the uterus; but its structure suffers important changes, which we will examine.

At first its two membranes have yielded to its enlargement, whilst becoming thicker or more resisting: the exterior is called *chorion*; the other *amnion*. The liquid contained by the latter augments in proportion to the volume of the ovum. In the second month of pregnancy there exists also a certain quantity of liquid between the chorion and amnion, but it disappears during the third month.

Up to the end of the third week, the ovum presents nothing indicative of the presence of the germ; the contained liquid is transparent, and partly coagulable as before. At this period there is seen, on the side where the ovum adheres to the uterus, something slightly opaque and gelatinous, all the parts of which appear homogeneous; in a short time, certain points become opaque, two distinct vesicles are formed, nearly equal in volume, and united by a pedicle, one of which adheres to the amnion by a small filament. Almost at the same time a red spot is seen in the midst of this last, from which yellowish filaments are seen to take their rise: this is the heart, and the principal sanguiferous vessels. At the beginning of the second month, the head is very visible, the eyes form two black points, very large in proportion to the volume of the head; small openings indicate the place of the ears and nostrils; the mouth, at first very large, is contracted afterwards by the development of the lips, which happens about the sixtieth day, with that of the ears, nose, extremities, &c.

The development of all the principal organs happens successively until about the middle of the fourth month; then the state of the *embryo* ceases, and that of the *fœtus* begins, which is continued till the termination of pregnancy. All the parts increase with more or less rapidity during this time, and draw towards the form which they must present after birth. Before the sixth month, the lungs are very small, the

heart large, but its four cavities are confounded, or at least difficult to distinguish: the liver is large, and occupies a great part of the abdomen: the gall-bladder is not full of bile, but of a colourless fluid, not bitter; the small intestine, in its lower part, contains a yellowish matter, in small quantity, called *meconium;* the testicles are placed upon the sides of the superior lumbar vertebræ; the ovaria occupy the same position. At the end of the seventh month, the lungs assume a reddish tint which they had not before; the cavities of the heart become distinct; the liver preserves its large dimensions, but removes a little from the umbilicus; the bile shows itself in the gall-bladder; the meconium is more abundant, and descends lower in the great intestine; the ovaria tend to the pelvis; the testicles are directed to the inguinal rings. At this period the fœtus is capable of life, that is, it could live and breathe if expelled from the uterus. Every thing becomes more perfect in the eighth and ninth months. We cannot here follow the interesting details of this increase of the organs; they belong to anatomy: we shall consider the physiological phænomena that relate to them.

Functions of the ovum, and of the fœtus. — The ovum begins to grow as soon as it arrives in the cavity of the uterus; its surface is covered with asperities that are quickly transformed into sanguiferous vessels; there is then life in the ovum. But we have no idea of this mode of existence; probably the surface of the ovum absorbs the fluids with which it is in contact, and these, after having undergone a particular elaboration by the membranes, are afterwards poured into the cavity of the amnion.

What was the germ before its appearance? Did it exist, or was it formed at that instant? Does the little almost opaque mass that composes it contain the rudiments of all the organs of the fœtus and the adult, or are these created the instant they begin to show themselves? What can be the nature of a nutrition so complicated, so important, performed without vessels, nerves, or apparent circulation? How does the heart move before the appearance of the nervous system? Whence comes the yellow blood that it contains at first? &c. &c. No reply can be given to any of these questions in the present state of science.

We know very little of what happens in the embryo, whose organs are only yet rudely delineated; nevertheless, there is a kind of circulation recognised. The heart sends blood into the large vessels, and into the rudimentary placenta; probably blood returns to the heart by veins, &c. — But when the new being has reached the fœtal state, as most of the organs are very apparent, then it is possible to recognise some of the functions peculiar to that state.

The circulation is the best known of the functions of the fœtus: it is more complicated than that of the adult, and is performed in a manner quite different.

In the first place, it cannot be divided into venous and arterial; for the fœtal blood has sensibly every where the same appearance, that is, a brownish red tint: in other respects, it is much the same as the blood of the adult; it coagulates, separates into clot and serum, &c. Some learned chemists have believed that it does not contain fibrin.

The placenta is the most singular, and one of the most important organs of the circulation of the fœtus; it succeeds to those filaments which cover the ovum during the first months of pregnancy. Very small at first, it soon acquires a considerable size. It adheres, by its exterior surface, to the uterus, presents irregular furrows, which indicate its division into several lobes or *cotyledons*, the number and form of which are not determined. Its fœtal surface is covered by the chorion and amnion, except at its centre, into which the umbilical cord is inserted. Its parenchyma is formed of sanguiferous vessels, divided and subdivided. They belong to the divisions of the umbilical arteries, and to the radicles of the vein of the same name. The vessels of one lobe do not communicate with those of the adjoining lobes: but those of the same *cotyledon* anastomose frequently, for nothing is more easy than to make injections pass from one to another.

The *umbilical cord* extends from near the centre of the placenta to the umbilicus of the child; its length is often near two feet; it is formed by the two umbilical arteries and the vein, connected by a very close cellular tissue, and it is covered by the two membranes of the ovum.

In the first months of pregnancy, a vesicle, which receives small vessels, being a prolongation of the mesenteric artery and the meseraic vein, is found in the body of the cord, between the chorion and the amnion, near the umbilicus. This vesicle is not analogous to the *allantoid;* it represents the membranes of the yolk of birds and reptiles, and the umbilical vesicle of the *mammalia*. It contains a yellowish fluid, which seems to be absorbed by the veins of its parietes.

The umbilical vein, arising from the placenta, and then arriving at the umbilicus, enters the abdomen, and reaches the inferior surface of the liver; there it divides into two large branches, one of which is distributed to the liver, along with the *vena porta*, whilst the other soon terminates in the *vena cava* under the name of *ductus venosus*. This vein has two valves, one at the place of its bifurcation, and the other at the junction with the vena cava.

The heart and large vessels of the fœtus capable of life, are very different from what they become after birth: the valve of the vena cava is large; the partition of the auricles presents a large opening, provided with a semilunar valve called *foramen ovale*. The pulmonary artery, after having sent two small branches to the lungs, terminates almost immediately in the aorta, in the concave aspect of the arch; it is called, in this place, *ductus arteriosus*.

The last character proper to the circulating organs of the fœtus, is the existence of the *umbilical arteries*, which arise from the internal iliacs, are directed over the sides of the bladder, attach themselves to the *urachus*, pass out of

e abdomen by the umbilicus, and go to the lacenta, where they are distributed as just entioned.

According to this disposition of the circuting apparatus of the fœtus, it is evident that ne motion of the blood ought to be different in from that in the adult. If we suppose that ne blood sets out from the placenta, it evidently passes through the umbilical vein as far s the liver; there one part of the blood passes nto the liver, and the other into the vena cava; nese two directions carry it to the heart by the nferior vena cava; being arrived at this organ, penetrates into the right auricle, and into the eft by the *foramen ovale*, at the instant in which the auricles are dilated. At this instant, he blood of the inferior vena cava is inevitably nixed with that of the superior. How, indeed, could two liquids of the same nature, or early so, remain isolated in a cavity in which ney arrive at the same time, and which contracts to expel them? However it may be, the ontraction of the auricles succeeds their dilatation; the blood is thrown into the two ventricles the instant they dilate; these, in their urn, contract, and drive out the blood, the eft into the aorta, and the right into the pulmonary artery; but as this artery terminates n the aorta, it is clear that all the blood of he two ventricles passes into the aorta, except very small portion that goes to the lungs. Jnder the influence of these two agents of mpulsion, the blood is made to flow through ll the divisions of the aorta, and returns to he heart by the venæ cavæ. Lastly, it is carried to the placenta by the umbilical arteries, nd returns to the fœtus by the vein of the ord.

It is easy to conceive the use of the foramen ovale, and the ductus arteriosus; the left auricle, receiving little or no blood from the lungs, ould not furnish any to the left ventricle, if it lid not receive it from the opening in the partition of the auricles. On the other hand, the ungs having no functions to fulfil, if all the lood of the pulmonary artery were distributed n them, the impulsive force of the right ventricle would have been vainly consumed; whilst, by means of the ductus arteriosus, the force of both ventricles is employed to move the blood of the aorta: without the joint action of both ventricles, probably the blood could not have reached the placenta, and returned again to he heart.

The motions of the heart are very rapid in the fœtus; they generally exceed 120 in a minute: he circulation possesses necessarily a proportionate rapidity.

A delicate question now presents itself for examination. What are the relations of the circulation of the mother with that of the fœtus? In order to arrive at some precise notion on this point, the mode of junction of the uterus and placenta must first be examined.

Anatomists differ in this respect. It was long believed that the uterine arteries anastomosed directly with the radicles of the umbilical vein, and that the last divisions of the arteries of the placenta opened into the veins of the uterus but the acknowledged impossibility of making matters injected into the uterine veins pass into the umbilical veins, and reciprocally to cause liquid matters injected into the umbilical arteries to reach the veins of the uterus, caused this idea to be renounced. It is at present generally admitted, that the vessels of the placenta and those of the uterus do not anastomose.

Notwithstanding the high authority of Boerhaave, it cannot be admitted that the fœtus continually swallows the water of the amnion, and digests it for its nourishment. Its stomach, indeed, contains a viscid matter in considerable quantity; but it has no resemblance to the *liquor amnii;* it is very acid and gelatinous; towards the pylorus, it is somewhat grey, and opake; it appears to be converted into chyme in the stomach, in order to pass into the small intestine, where, after having been acted upon by the bile, and perhaps by the pancreatic juice, it furnishes a peculiar chyle. The remainder descends afterwards into the large intestine, where it forms the meconium, which is evidently the result of digestion during gestation. Whence does the digested matter come? It is probably secreted by the stomach itself, or descends from the œsophagus; there is nothing, however, to prevent the fœtus from swallowing, in certain cases, a few mouthfuls of the liquor amnii; and this seems to be proved by certain hairs, like those of the skin, being found in the meconium. It is important to remark, that the meconium is a substance containing very little azote. Nothing is yet known regarding the use of this digestion of the fœtus; it is probably not essential to its growth, since infants have been born without a stomach, or any thing similar. Some persons say they have seen chyle in the thoracic duct of the former.

Exhalations seem to take place in the fœtus; for all its surfaces are lubricated nearly in the same manner as afterwards: fat is in abundance; the humours of the eye exist; cutaneous transpiration very probably takes place also, and mixes continually with the liquor amnii. With regard to this last liquor, it is difficult to say whence it derives its origin; no sanguiferous vessels appear to be directed to the amnion, and it is nevertheless probable that this membrane is its secreting organ.

The cutaneous and mucous follicles are developed, and seem to possess an energetic action, especially from the seventh month; the skin is then covered by a pretty thick layer of fatty matter, secreted by the follicles; several authors have improperly considered it as a deposit of the liquor amnii. The mucus is also abundant in the two last months of gestation.

All the glands employed in digestion have a considerable volume, and seem to possess some activity: the action of the others is little known. It is not known, for example, whether the kidneys form urine, or whether this fluid is injected by the urethra into the cavity of the amnion. The testicles and mammæ seem to form a fluid that resembles neither milk nor semen, and which is found in the *vesiculæ seminales* and lactiferous canals.

What can be said about the nutrition of the fœtus? Physiological works contain only vague conjectures on this point: it appears certain that the placenta draws from the mother the materials necessary for the development of the organs, but what these materials are, or how they are directed, we do not know. — *Magendie.*

Ovum philosophicum. *Ovum chymicum.* A cucurbit.

Ox. See *Bos taurus.*

Ox-eye daisy. See *Chrysanthemum.*

Ox's tongue. See *Picris echioides.*

O'XALATE. (*Oxalas, atis.* m.; so called, because formed with the oxalic acid.) A salt formed by the combination of the oxalic acid with a salifiable basis; thus, *oxalate of ammonia.*

OXA'LIC ACID. *Acidum oxalicum.* This acid abounds in wood-sorrel. Combined with a small portion of potash, as it exists in that plant, it has been sold under the name of *salt of lemons*, to be used as a substitute for the juice of that fruit, particularly for discharging ink-spots and iron-moulds, and was long supposed to be analogous to that of tartar. In the year 1776, however, Bergman discovered, that a powerful acid might be extracted from sugar by means of the nitric; and, a few years afterwards, Scheele found this to be identical with the acid existing naturally in sorrel. Hence the acid began to be distinguished by the name of *saccharine*, but has since been generally known by that of oxalic.

It may be obtained, readily and economically, from sugar, in the following way: — To six ounces of nitric acid in a stoppered retort, to which a large receiver is luted, add, by degrees, one ounce of lump sugar, coarsely powdered. A gentle heat may be applied during the solution, and nitric oxide will be evolved in abundance. When the whole of the sugar is dissolved, distil off a part of the acid, till what remains in the retort has a syrupy consistence; and this will form regular crystals, amounting to 58 parts from 100 of sugar. These crystals must be dissolved in water, recrystallised, and dried on blotting paper.

Oxalic acid crystallises in quadrilateral prisms, the sides of which are alternately broad and narrow, and summits dihedral; or, if crystallised rapidly, in small irregular needles. They are efflorescent in dry air, but attract a little humidity if it be damp; are soluble in one part of hot and two of cold water; and are decomposable by a red heat, leaving a small quantity of coaly residuum. 100 parts of alkohol take up near 56 at a boiling heat, but not above 40 cold. Their acidity is so great, that when dissolved in 3600 times their weight of water, the solution reddens litmus paper, and is perceptibly acid to the taste.

The oxalic acid is a good test for detecting lime, which it separates from all the other acids, unless they are present in excess. It has, likewise, a greater affinity for lime than for any other of the bases, and forms with it a pulverulent insoluble salt, not decomposable except by fire, and turning syrup of violets green.

Oxalic acid acts as a violent poison, when swallowed in the quantity of 2 or 3 drachms, and several fatal accidents have occurred in consequence of its being improperly sold instead of Epsom salts. Its vulgar name of *salts*, under which the acid is bought for the purpose of whitening boot-tops, has frequently occasioned these lamentable mistakes. But the powerfully acid taste of the latter substance, joined to its prismatic or needle-formed crystallisation, are sufficient to distinguish it from every thing else. The immediate rejection from the stomach of this acid by an emetic, aided by copious draughts of warm water containing bicarbonate of potash, or soda, chalk or carbonate of magnesia, are the proper remedies.

With *baryta* it forms an insoluble salt.

The *oxalate of strontia* and *magnesia* are also insoluble, unless the acid be in excess.

The *oxalate of potash* exists in two states, that of a neutral salt, and that of an acidule. The latter is generally obtained from the juice of the leaves of the *oxalis acetosella*, wood-sorrel, or from the *rumex acetosa*, or common sorrel. The expressed juice, bring diluted with water, should be set by for a few days, till the feculent parts have subsided, and the supernatant fluid is become clear; or it may be clarified, when expressed, with the whites of eggs. It is then to be strained off, evaporated to a pellicle, and set in a cool place to crystallise. The first product of crystals being taken out, the liquor may be further evaporated, and crystallised; and the same process repeated till no more can be obtained.

It unites with barytes, magnesia, soda, ammonia, and most of the metallic oxides, into triple salts. It attacks iron, lead, tin, zinc, and antimony.

This salt, besides its use in taking out ink-spots, and as a test of lime, forms with sugar and water a pleasant cooling beverage; and, according to Berthollet, it possesses considerable powers as an antiseptic.

The neutral oxalate of potash is very soluble, and assumes a gelatinous form, but may be brought to crystallise in hexahedral prisms with dihedral summits, by adding more potash to the liquor than is sufficient to saturate the acid.

Oxalate of soda likewise exists in two different states, those of an acidulous and a neutral salt, which, in their properties, are analogous to those of potash.

The *acidulous oxalate of ammonia* is crystallisable, not very soluble, and capable, like the preceding acidules, of combining with other bases, so as to form triple salts.

The oxalic acid readily dissolves *alumina*, and the solution gives, on evaporation, a yellowish transparent mass, sweet and a little astringent to the taste, deliquescent, and reddening tincture of litmus, but not syrup of violets. This salt swells up in the fire, loses its acid, and leaves the alumina a little coloured.

O'XALIS. (*is, is.* f.; from *ὀξυς*, sharp: so called from the sharpness of its juice.) The name of a genus of plants in the Linnæan system. Class, *Decandria*; Order, *Pentagynia.* Wood-sorrel.

Oxalis acetosella. The systematic name of the wood-sorrel; called also, *Lujula*, and *Alleluja*.

Oxalis — foliis ternatis, scapo unifloro, flore albo, capsulis pentagonis elasticis, radice squamoso-articulata, of Linnæus. This plant grows wild in the woods, and flowers in April and May. The leaves are shaped like a heart, standing three together on one stalk. The acetosella is totally inodorous, but has a grateful acid taste, on which account it is used in salads. Its taste is more agreeable than the common salad, and approaches nearly to that of the juice of lemons, or the acid of tartar, with which it corresponds in a great measure in its medical effects, being esteemed refrigerant, antiscorbutic, and diuretic.

Its sourness is derived from the presence of a quodroxalate of potash.

It is recommended by Bergius, in inflammatory, bilious, and putrid fevers. The principal use, however, of the acetosella, is to allay inordinate heat, and to quench thirst; for this purpose, a pleasant whey may be formed by boiling the plant in milk, which, under certain circumstances, may be preferable to the conserve which was formerly directed by the pharmacopœias, and much esteemed by practitioners. Many have employed the root of lujula, probably on account of its beautiful red colour rather than for its superior efficacy. A salt is prepared from this plant, known by the name of essential salt of lemons, which is an acidulous oxalate of potash, and commonly used for taking ink-stains out of linen. See *Oxalic acid*. The leaves of wood-sorrel are sometimes applied externally as a suppurative cataplasm, particularly in indolent scrofulous tumours.

Oxa'lme. (*e, es.* f.; from *οξυς*, sharp, and *ἁς*, salt.) A mixture of vinegar and salt.

OXIDA'TION. (*Oxidatio, onis.* f.) The process of converting metals and other substances into oxides, by combining with them a certain portion of oxygen. It differs from acidification in the addition of oxygen not forming an acid with the substance oxidated.

O'XIDE. (*Oxydum, i.* n.) A substance combined with oxygen, without being in the state of an acid. Many substances are susceptible of several stages of oxidisement, on which account chemists have employed various terms to express the characteristic distinctions of the several oxides. The specific name is often derived from some external character, chiefly the colour: thus we have the black and red oxides of iron, and of mercury; the white oxide of zinc: but, in most instances, the denominations proposed by Dr. Thompson are adopted. When there are several oxides of the same substance, he proposes the terms *protoxide, deutoxide, tritoxide*, signifying the first, second, and third stage of oxidisement. Or, if two oxides only are known, he proposes the appellation of *protoxide* for that at the minimum, and of *peroxide* for that at the maximum of oxidation.

Oxide of carbon, gaseous. See *Carbonic oxide.*

Oxide, nitric. See *Nitrogen.*

Oxide, nitrous. See *Nitrogen.*

Oxiodic acid. See *Iodic acid.*

Oxydum antimonii. See *Antimonii oxydum.*

Oxydum arsenici album. See *Arsenic.*

Oxydum cupri viride acetatum. Verdigris. See *Ærugo.*

Oxydum ferri luteum. See *Ferri sesquioxydum.*

Oxydum ferri nigrum. Black oxide of iron. The scales which fall from iron, when heated, consist of iron combined with oxygen. This oxide is found not to be a protoxide, as formerly supposed, but a mixture of variable proportions of the protoxide and peroxide. See *Iron.* These have been employed medicinally, producing the general effects of chalybeates, but not very powerfully.

Oxydum ferri rubrum. Red oxide of iron, which is the peroxide. Its properties in medicine are similar to those of the other oxides of iron, but it is less active.

Oxydum hydrargyri cinereum. See *Hydrargyri oxydum.*

Oxydum hydrargyri nigrum. See *Hydrargyri oxydum.*

Oxydum hydrargyri rubrum. See *Hydrargyri binoxidum.*

Oxydum plumbi album. See *Plumbi subcarbonas.*

Oxydum plumbi rubrum. See *Minium.*

Oxydum plumbi semivitreum. See *Lithargyrus.*

Oxydum stibii album. See *Antimonii oxydum.*

Oxydum stibii semivitreum. Glass of antimony. See *Antimonii vitrum.*

Oxydum stibii sulphuratum. Crocus of antimony. See *Antimony.*

Oxydum zinci. See *Zinci oxydum.*

Oxydum zinci sublimatum. See *Zinci oxydum.*

Oxyca'ntha. (*a, æ.* f.; from *οξυς*, sharp, and *ακανθα*, a thorn: so called from the acidity of its fruit.) See *Berberis.*

Oxycantha Galeni. See *Berberis.*

Oxyce'drus. (*us, i.* f.; from *οξυς*, sharp, and *κεδρος*, a cedar: so called from the sharp termination of its leaves.) 1. A kind of cedar.

2. Spanish juniper, a species of *juniperus.*

Oxychloric acid. See *Perchloric acid.*

Oxyco'ccos. (*os, i.* m.; from *οξυς*, acid, and *κοκκος*, a berry: so named from its acidity.) See *Vaccinium oxycoccos.*

OXY'CRATUM. (*um, i.* n.; from *οξυς*, acid, and *κερανυμι*, to mix.) Oxycrate: vinegar mixed with such a portion of water as is required, and rendered still milder by the addition of a little honey.

Oxycro'ceum empla'strum. (From *οξυς*, sharp, and *κροκος*, saffron.) An old plaster which consisted of wax, pitch, colophony, saffron, turpentine, galbanum, ammoniacum, myrrh, olibanum, and mastiche. It was used by surgeons as a strengthening and anodyne plaster.

Oxyde'rcicus. (From *οξυς*, acute, and *δερκω*, to see.) Having the property of strengthening the sight.

Oxyecoi'a. (From *οξυς*, sharp, and *ακοη*, the sense of hearing.) Preternatural acuteness of the sense of hearing. It is generally symptomatic of irritation of the brain.

OXY'GARUM. (*um, i.* n.; from οξυς, acid, and γαρον, garum.) A composition of garum and vinegar.

O'XYGEN. (*Oxygenium, ii.* n.; from οξυς, acid, and γενναω, to generate: because it is a generator of acidity.) This substance, although existing sometimes in a solid and sometimes in an aëriform state, is never distinctly perceptible to the human senses but in combination.

We know it only in combination by its effects. Nature never presents it solitary: chemists do not know how to insulate it. It is a principle which was long unknown. It is absorbable by combustible bodies, and converts them into oxides or acids. It exists universally dispersed through nature, and is a constituent part of atmospheric air, of water, acids, earths, and alkalis, and of all bodies of the animal and vegetable kingdoms.

One of the most remarkable combinations into which it is capable of entering, is that which it forms with light and caloric, in which state it constitutes *oxygen gas.*

Oxygen gas is an elastic invisible fluid. It has neither taste nor odour. According to Dulon and Berzelius, its specific gravity is 1·1026; and 100 cubic inches weigh 34·109 grains. It is not absorbed by water, but entirely absorbable by combustible bodies, which, at the same time, disengage its caloric and light, producing in consequence a strong heat and flame. Its power of refracting light is less than that of any other known substance. It is indispensable to respiration. It hastens germination. It is the great *supporter of combustion.* See *Combustion.* It combines with every combustible body, with all the metals, and with the greater number of vegetable and animal substances.

The act of its combining with bodies is called *oxidisement*, or *oxygenation;* and the bodies with which it is combined are either *oxides*, or *acids.* Lavoisier regarded oxygen as the sole acidifying principle, an opinion which is now known to be erroneous. See *Acid.*

There are a great number of bodies from which we may, by art, obtain oxygen gas. It is most amply obtained from the oxides of manganese, lead, or mercury; from nitrate of potash; from the green leaves of vegetables, and from chlorate of potash or soda. Besides these, there are a great many other substances from which oxygen gas may be procured.

1. In order to procure oxygen gas in a state of great purity, pure chloride of potash or soda must be made use of. With this view, put some of the salt into a small earthen or glass retort, the neck of which is placed under the shelf of the pneumatic trough, filled with water, and heat the retort by means of a lamp. The salt will begin to melt, and oxygen gas will be obtained in abundance, and of great purity, which may be collected and preserved over water.

Chlorate of potash consists of oxygen, chlorine, and potash. At an elevated temperature, a decomposition takes place, the oxygen unites with the caloric, and forms oxygen gas. The chlorate becomes therefore converted into chloride of potash.

2. Oxygen gas may likewise be obtained from the green leaves of vegetables.

For this purpose, fill a bell-glass with water, introduce fresh-gathered green leaves under it, and place the bell or receiver, inverted, in a vessel containing the same fluid; expose the apparatus to the rays of the sun, and very pure oxygen gas will be liberated.

The emission of oxygen gas is proportioned to the vigour of the plant and the vivacity of the light: the quantity differs in different plants and under different conditions.

It is an established fact that plants decompose carbonic acid, and probably water, which serve for their nourishment: they absorb the hydrogen and carbon of these fluids, disengaging a part of the oxygen in a state of purity. Light, however, favours this decomposition greatly: in proportion as the oxygen becomes disengaged, the hydrogen becomes fixed in the vegetable, and combines, partly with the carbon and partly with the oxygen, to form the oil, &c. of the vegetable.

3. Nitrate of potash is another substance frequently made use of for obtaining oxygen gas in the following manner: —

Take any quantity of this salt, introduce it into a coated earthen or glass retort, and fit to it a tube, which must be plunged into the pneumatic trough, under the receiver filled with water. When the apparatus has been properly adjusted, heat the retort gradually till it becomes red hot; the oxygen gas will then be disengaged rapidly.

Nitrate of potash consists of nitric acid and potash. Nitric acid consists again of oxygen and nitrogen. On exposing the salt to ignition a partial decomposition of the acid takes place: the greatest part of the oxygen of the nitric acid unites with caloric, and appears under the form of oxygen gas. The other part remains attached to the potash, forming a nitrate of potash.

If two much heat be applied, particularly towards the end of the process, a total decomposition of the nitric acid takes place: the oxygen gas, in that case, will therefore be mingled with nitrogen gas. The weight of the two gases, when collected, will be found to correspond very exactly with the weight of the acid which had been decomposed. The residue then left in the retort is potash.

4. Black oxide of manganese, however, is generally made use of for obtaining oxygen gas on account of its cheapness. This native oxide is reduced to a coarse powder: a stone, or rather an iron retort, is then charged with it and heated. As soon as the retort becomes ignited, oxygen gas is obtained plentifully.

Black oxide of manganese is the metal called manganese fully saturated with oxygen, together with many earthy impurities: on applying heat, part of the solid oxygen quits the metal and unites with caloric, to form oxygen gas; the remainder of the oxygen remains united to the metal with a forcible affinity. The metal, therefore, approaches to the metallic state, or is found in the state of a grey oxide of manganese.

One pound of the best manganese yields

vards of 1400 cubic inches of oxygen gas, nearly pure. If sulphuric acid be previously added to the manganese, the gas is produced by less heat, and in a larger quantity: a glass retort may then be used, and the heat of a lamp is sufficient.

5. Red oxide of mercury yields oxygen gas in a manner similar to that of manganese.

This oxide consists likewise of solid oxygen and mercury, the combination of which takes place on exposing mercury to a heat of about 510° Fahr. At this degree it attracts oxygen, and becomes converted into an oxide; but if the temperature be increased, the attraction of oxygen is changed. The oxygen then attracts caloric more strongly than it did the mercury; it therefore abandons the latter, and forms oxygen gas, while the mercury re-appears in its metallic state.

6. Red oxide of lead yields oxygen gas on the same principle.

Oxygenated muriatic acid. See *Chlorine.*

OXYGENA'TION. (*Oxygenatio, onis.* f.; from *oxygen*, and γενναω, to generate.) This word is often used synonymously with oxidation; but it is generally employed in a wider sense: every union with oxygen, whatever the product may be, is called an *oxygenation*; while the term *oxidation* is applied only when an oxide is formed.

Oxygenised muriatic acid. See *Chlorine.*

OXY'GLYCUM. (*um, i.* n. Οξυγλυκυ; from ὀξυς, acid, and γλυκυς, sweet.) A kind of apomel.

OXYIODE. A term applied by Sir H. Davy to the triple compounds of oxygen, iodine, and the metallic basis. Lussac calls them *iodates.*

OXYLA'PATHUM. (*um, i.* n.; from ὀξυς, acid, and λαπαθον, the dock: so named from its acidity.) See *Rumex acutus.*

O'XYMEL. (*el, elis.* n.; from ὀξυς, acid, and μελι, honey.) Honey and vinegar boiled to a syrup. Called also *Adipson*, and *Mel acetatum.* — Take of clarified honey, ten pounds; acetic acid, a pint and a half. Heat the honey, and add the acid to it. This preparation of honey and vinegar possesses expectorant virtues; and is given, with this intention, in humoral asthma and other diseases of the chest, in doses of one or two drachms. It is also employed in the form of gargle, when diluted with water.

Oxymel æruginis. See *Linimentum æruginis.*

OXYMEL CO'LCHICI. Oxymel of meadow saffron is an acrid medicine, but is nevertheless employed, for its diuretic virtues, in dropsies.

OXYMEL SCILLÆ. Take of clarified honey, three pounds; vinegar of squills, a pint and a half. Boil them in a glass vessel, with a slow fire, to the proper thickness. Oxymel is an excellent expectorant. In an over dose it acts as an emetic. The dose is from ʒss. to ʒij. It is a very frequent ingredient in cough mixtures.

Oxymel simplex. See *Oxymel.*

Oxymurias hydrargyri. See *Hydrargyri bichloridum.*

Oxymurias potassæ. See *Potassæ chloras.*

Oxymuriatic acid. See *Chlorine.*

OXYMY'RRHINE. (*e, es.* f.; from ὀξυς, acute, and μυρρινη, the myrtle: so called from its resemblance to myrtle, and its pointed leaves.) See *Myrtus communis.*

Oxymyrsine. See *Myrtus communis.*

OXYNI'TRUM. (From ὀξυς, acid, and νιτρον, nitre.) A plaster described by Aëtius, composed of cerusse, rock salt, nitre, oil, and vinegar.

Oxyodic. See *Iodic.*

OXYO'PIA. (*a, æ.* f.; from ὀξυς, acute, and ωψ, the eye.) The faculty of seeing more acutely than is usual. Thus there have been instances known of persons who could see the stars in the day-time. The proximate cause is a preternatural sensibility of the retina. It has been known to precede the gutta serena; and it has been asserted that prisoners who have been long detained in darkness have learned to read and write in darkened places.

OXYPHLEGMA'SIA. (*a, æ.* f.; from ὀξυς, acute, and φλεγω, to burn.) An acute inflammation.

OXYPHŒ'NIA FRUCTUS. (Οξυς, acid, and φοινιξ, reddish.) The tamarind has been so called, on account of its colour.

OXYPHO'NIA. (*a, æ.* f.; from ὀξυς, sharp, and φωνη, the voice.) An acuteness of voice. See *Paraphonia.*

OXYPRUSSIC ACID. The chloro-cyanic acid has been so called.

OXYRE'GMIA. (*a, æ.* f.; from ὀξυς, acid, and ερευγω, to break wind.) An acid eructation.

Oxyrinchus. See *Raia oxyrinchus.*

OXYRRHO'DINON. (From ὀξυς, acid, and ροδινον, oil of roses.) A composition of the oil of roses and vinegar.

OXYSA'CCHARUM. (*um, i.* n.; from ὀξυς, acid, and σακχαρον, sugar.) A composition of vinegar and sugar.

OXYSU'LPHURET. The sulphuret of a metallic oxide.

OXYTA'RTARUS. An old name of acetate of potash.

OXY'TOCUS. (Οξυτοκος; from ὀξυς, quick, and τικτω, to bring forth.) Expediting delivery.

OXYTRIPHY'LLUM. (*um, i.* n.; from ὀξυς, acid, and τριφυλλον, trefoil: so named from its acidity.) See *Oxalis acetosella.*

OXYU'RIS. (*is, is.* m.; from ὀξυς, sharp, pointed, and ουρα, the tail.) The name given by Rudolphi, and adopted by Bremser, to the thread-worm, or ascaris. See *Vermes.*

Oyster. See *Ostrea edulis.*

Oyster green laver. See *Ulva lactuca.*

Oyster-shell. See *Ostrea edulis.*

OZÆ'NA. (*a, æ.* f.; from οζη, a stench.) An ulcer situated in the nose, discharging a fetid purulent matter, and sometimes accompanied with caries of the bones. Some authors have signified by the term, an ill-conditioned ulcer in the antrum. The first meaning is the original one. The disease is described as coming on with a trifling tumefaction and redness about the ala nasi, accompanied with a discharge of mucus, with which the nostril becomes obstructed. The matter gradually as-

sumes the appearance of pus, is most copious in the morning, and is sometimes attended with sneezing, and a little bleeding. The ulceration occasionally extends round the ala nasi to the cheek, but seldom far from the nose, the ala of which also it rarely destroys. The ozæna is often connected with scrofulous and venereal complaints. In the latter cases, portions of the ossa spongiosa often come away. After the complete cure of all venereal complaints, an exfoliating dead piece of bone will often keep up symptoms similar to those of the ozæna, until it is detached. Mr. Pearson remarks that the ozæna frequently occurs as a symptom of the cachexia syphiloidea. It may perforate the septum nasi, destroy the ossa spongiosa, and even the ossa nasi. Such mischief is now more frequently the effect of the cachexia syphiloidea, than of lues venerea. The ozæna must not be confounded with abscesses in the upper jaw-bone.

O'zymum. See *Ocymum.*

P.

P. A contraction of *pugillus*, a pugil, or eighth part of a handful, and sometimes a contraction of *pars* or *partes*, a part or parts.

P. Æ. A contraction of *partes æquales.*

P. P. A contraction of *præparatus;* also of *pulvis patrum*, that is, powdered cinchona.

PA'BULUM. (*um*, *i.* n.; from *pasco*, to feed.) Food; aliment.

Pabulum vitæ. The food of life. Such are the different kinds of aliment. The animal heat and spirits were also so called.

PACHYDE'RMA. (Παχυδερμος; from παχυς, thick, and δερμα, the skin.) An order of mammiferous animals, characterised by the thickness of their hide, as the elephant, rhinoceros, &c. This term is sometimes improperly written *pachydermata.* Compare *Echinoderma.*

Pachy'ntica. (From παχυνω, to incrassate.) Medicines which have the property of incrassating or thickening the fluids.

PÆDA'NCHONE. (*e*, *es.* f.; from παις, a child, and αγχω, to strangle.) A fatal kind of angina peculiar to children, described by some old writers.

PÆDARTHRO'CACE. (*e*, *es.* f.; from παις, a boy, αρθρον, a joint, and κακον, an evil.) The joint evil. The scrofulous affection of the joints to which children are subject.

PÆDO-NOSO'LOGY. (*Pædonosologia.* From παις, a child, νοσος, a disease, and λογος, a discourse.) The study of the diseases of children.

Pænea. See *Penæa.*

PÆO'NIA. (*a*, *æ.* f.; from *Pæon*, who cured Pluto with it, when wounded by Hercules.) Pæony.

1. The name of a genus of plants in the Linnæan system. Class, *Polyandria;* Order, *Digynia.*

2. The pharmacopœial name of the common pæony. See *Pæonia officinalis.*

Pæonia officinalis. The systematic name of the common pæony; male and female pæony. This plant, *Pæonia, —foliis oblongis,* of Linnæus, has long been considered as a powerful medicine; and, till lately, had a place in the catalogue of the Materia Medica, in which the two common varieties of this plant are indiscriminately directed for use; and, on the authority of G. Bauhin, improperly distinguished into male and female pæony.

The roots and seeds of the pæony have, when fresh, a faint, unpleasant smell, somewhat of the narcotic kind, and a mucilaginous subacrid taste, with a slight degree of bitterness and astringency. In drying, they lose their smell and part of their taste. Extracts made from them by water are almost insipid, as well as inodorous: but extracts made by rectified spirits are manifestly bitterish, and considerably astringent. The flowers have rather more smell than any of the other parts of the plant, and a roughish sweetish taste, which they impart, together with their colour, both to water and spirit.

The roots, flowers, and seeds of pæony have been esteemed in the character of an anodyne and corroborant, but more especially the roots which, since the days of Galen, have been very commonly employed as a remedy for the epilepsy. For this purpose, it was usual to cut the root into thin slices, which were to be attached to a string, and suspended about the neck as an amulet: if this failed of success, the patient was to have recourse to the internal use of this root, which Willis directs to be given in the form of a powder, and in the quantity of a drachm, two or three times a day, by which, as we are informed, both infants and adults were cured of this disease. Other authors recommended the expressed juice to be given in wine and sweetened with sugar, as the most effectual way of administering this plant. Many writers, however, especially in modern times, from repeated trials of the pæony in epileptic cases have found it of no use whatever; though Professor Home, who gave the radix pæoniæ to two epileptics at the Edinburgh infirmary, declares that one received a temporary advantage from its use. Of the good effects of this plant in other disorders, we find no instances recorded.

PA'GINA. (*a*, *æ.* f.) The surface of a leaf.

Paigil. See *Primula veris.*

Pain. See *Dolor.*

Painter's colic. See *Colica pictonum.*

Pakfong. The white copper of the Chinese, said to be an alloy of copper, nickel, and zinc.

Palate. See *Palatum.*

Palati circumflexus. See *Circumflexus palati.*

Palati levator. See *Levator palati.*

PALA'TI OS. The palate bone. The palate is formed by two bones of very irregular figure. They are placed between the ossa maxillaria superiora and the os sphenoides, at the back part of the roof of the mouth, and extend from thence to the bottom of the orbit.

Each of these bones may be divided into four parts, viz. the inferior, or square portion, the pterygoid process, the nasal lamella, and orbitar process. The first of these, or the square part of the bone, helps to form the palate of the mouth. The upper part of its internal edge rises into a spine, which makes part of the septum narium. The *pterygoid* process, which is smaller above than below, is so named from its being united with the pterygoid process of the sphenoid bone, with which it helps to form the pterygoid fossæ. It is separated from the square part of the bone, and from the nasal lamella, by an oblique fossa, which, applied to such another in the os maxillare, forms a passage for a branch of the fifth pair of nerves. The *nasal* lamella is nothing more than a very thin bony plate, which arises from the upper side of the external edge of the square part of the bone. Its inner surface is concave, and furnished with a ridge, which supports the back part of the os spongiosum inferius. Externally it is convex, and firmly united to the maxillary bone. The *orbitar* process is more irregular than any other part of the bone. It has a smooth surface, when it helps to form the orbit; and when viewed in its place, we see it contiguous to that part of the orbit which is formed by the os maxillare, and appearing as a small triangle at the inner extremity of the orbitar process of this last-mentioned bone. This fourth part of the os palati likewise helps to form the zygomatic fossa on each side, and there its surface is concave. Between this orbitar process and the sphenoid bone a hole is formed, through which an artery, vein, and nerve are transmitted to the nostrils. This hole is called the posterior palatine foramen. The ossa palati are complete in the fœtus. They are joined to the ossa maxillaria superiora, os sphenoides, os ethmoides, ossa spongiosa inferiora, and vomer.

Palati tensor. See *Circumflexus palati.*

PA'LATINE. *Palatinus.* Appertaining to the palate.

PALATINE FORAMINA. There are two, the *anterior* and *posterior.* See *Foramen incisorium* and *Palati os.*

PALA'TO-PHARYNGE'US. (So called from its origin in the palate and insertion in the pharynx.) A muscle situated at the side of the entry of the fauces. *Thyro-staphilinus,* of Douglas. *Thyro-pharyngo-staphilinus,* of Winslow. It arises by a broad beginning from the middle of the velum pendulum palati, at the root of the uvula, posteriorly, and from the tendinous expansion of the circumflexus palati. The fibres are collected within the posterior arch behind the tonsils, and run backwards to the top and lateral part of the pharynx, where the fibres are scattered and mixed with those of the stylopharyngeus. It is inserted into the edge of the upper and back part of the thyroid cartilage. Its use is to draw the uvula and velum pendulum palati downwards, and backwards, and at the same time to pull the thyroid cartilage and pharynx upwards, and shorten it; with the *constrictor superior pharyngis* and tongue, it assists in shutting the passage into the nostrils; and in swallowing, it thrusts the food from the fauces into the pharynx.

PALA'TO-SALPINGE'US. (From *palatum,* the palate, and σαλπιγξ, a trumpet: so called from its origin in the palate, and its trumpet-like shape.) See *Circumflexus.*

Palato-staphilinus. See *Azygos uvulæ.*

PALA'TUM. (*um, i.* n.; from *palo,* to hedge in: because it is staked in, as it were, by the teeth.) 1. The palate, or roof of the mouth.

2. An eminence of the inferior lip in the inner part of the mouth of gaping blossoms, which closes them; as in *Antirrhinum.* See *Corolla.*

PALATUM DURUM. The hard palate, or that part which is the fore-part of the roof of the mouth, and has the bones of the palate to form it.

PALATUM MOLLE. The soft palate. This lies behind the bony palate; and from the middle of it the uvula hangs down.

PA'LEA. (*a, æ.* f.; chaff.) *Palæa.* Chaff. Applied, in the language of botany, to short, linear, obtuse, dry scales.

PALEA'CEUS. (From *palea,* chaff.) Paleaceous: chaffy, or covered with chaff. Applied, by botanists, to the receptacles of plants; as those of *Xeranthemum, Zinnia, Anthemis,* &c. See *Receptaculum.*

PALIMPI'SSA. (From παλιν, again, and πισσα, pitch.) Dioscorides says that dry pitch is thus named, because it is prepared of pitch twice boiled.

PALINDRO'MIA. (Παλιν, again, and δρομος, a course.) This term is used by Hippocrates for any regurgitation of humours to the more noble parts; and sometimes for the return of a distemper.

PALIU'RUS. (From παλλω, to move, and ουρον, urine: or from παλιν, again, and ουρον, urine, so called from its diuretic qualities.) The *Rhamnus paliurus.*

PALLA'DIUM. (*um, ii.* n.) A metal, discovered by Dr. Wollaston, associated with platina, among the ores of which he supposes its ores to exist, or an alloy of it with iridium and osmium; scarcely distinguishable from the crude platina, though it is harder and heavier.

PALLIATIVE. (*Palliativus;* from *pallio,* to dissemble.) Applied to any thing which is given with an intent to palliate or relieve a disease, but is not capable of effecting a cure.

Palm. See *Palma.*

Palm oil. See *Cocos butyracea.*

Palm tree. See *Palmæ.*

PA'LMA. (*a, æ.* f.; from παλλω, to move.) 1. The palm of the hand.

2. A palm tree. See *Palmæ.*

Palma ady. See *Ady.*

Palma Christi. See *Ricinus.*

Pa'lmæ. (From *palma*, the hand: so called because the leaves are extended from the top, like the fingers upon the hand.) Palms. One of the natural families of plants which have trunks similar to trees, but come under the term stipes, the tops being frondescent, that is, sending off leaves. Palms are the most lofty, and, in some instances, the most long-lived of plants, and are, therefore, commonly considered as trees. But they are, in reality, perennial herbaceous plants, having nothing in common with the growth of trees in general. Palms are formed of successive circular crowns of leaves, which spring directly from the root. These leaves, and their footstalks, are furnished with bundles of large sap-vessels, and returning vessels, like the leaves of trees: when one circle of them has performed its office, another is formed within it, which, being confined below, necessarily arises a little above the former. Thus, successive circles grow one above the other; by which the vertical increase of the plant is almost without end. Each circle of leaves is independent of its predecessor, and has its own cluster of vessels; so that there can be no aggregation of woody circles.

Palmar arch. The radial artery forms an arch in the palm of the hand, which is called the *deep palmar arch*, and the ulnar artery one which is called the *superficial palmar arch*. See *Radial artery* and *Ulnar artery*.

Palmar aponeurosis. See *Palmaris longus.*

PALMA'RIS. (From *palma*, the hand.) Belonging to the hand.

Palmaris brevis. *Palmaris brevis vel caro-quadrata*, of Douglas. A small, thin, cutaneous, flexor muscle of the hand, situated between the wrist and the little finger. Fallopius tells us that it was discovered by Cananus. Winslow names it *palmaris cutaneus*. It arises from a small part of the internal annular ligament and inner edge of the aponeurosis palmaris, and is inserted by small bundles of fleshy fibres into the os pisiforme, and into the skin and fat that cover the abductor minimi digiti. This muscle seems to assist in contracting the palm of the hand.

Palmaris cutaneus. See *Palmaris brevis.*

Palmaris longus. A flexor muscle of the arm, situated on the fore-arm, immediately under the integuments. *Ulnaris gracilis*, of Winslow. It arises tendinous from the inner condyle of the os humeri, but soon becomes fleshy; and, after continuing so about three inches, terminates in a long slender tendon, which, near the wrist, separates into two portions, one of which is inserted into the internal annular ligament, and the other loses itself in a tendinous membrane, that is nearly of a triangular shape, and extends over the palm of the hand, from the carpal ligament to the roots of the fingers, and is called *aponeurosis palmaris*. Some of the fibres of this expansion adhere strongly to the metacarpal bones, and separate the muscles and tendons of each finger. Several anatomical writers have considered this aponeurosis as a production of the tendon of this muscle, but seemingly without reason, because we now and then find the latter wholly inserted into the carpal ligament, in which case it is perfectly distinct from the aponeurosis in question; and, in some subjects, the palmaris longus is wanting, but the aponeurosis is always to be found. Rhodius, indeed, says that the latter is now and then deficient; but there is good reason to think that he was mistaken. This muscle bends the hand, and may assist in its pronation; it likewise serves to stretch the aponeurosis palmaris.

PALMA'TUS. Palmate: hand-shaped. Applied to leaves cut, as it were, into several oblong, nearly equal segments, about half-way, or rather more, towards the base, leaving an entire space like the palm of the hand; as in *Passiflora cærulea*.

PALMI'PIDES. (From *palma*, the palm of the hand, and *pes*, a foot.) An order of birds, including those which are web-footed.

Pa'lmos. (Παλμος; from παλλω, to beat.) A palpitation of the heart.

Pa'lmula. (*a*, *æ*. f.; diminutive of *palma*, the hand; so called from its shape.) 1. A date.

2. The broad and flat end of a rib. — *Newton.*

Palo de vaca. See *Galactodendron*, in the Supplement.

Palpa'tion. *Palpatio.* (From *palpo*, to feel.) Manual examination. See *Exploratio.*

PA'LPEBRA. (*a*, *æ*. f.; *à palpitando*, from their frequent motion.) The eyelid, distinguished into upper and under; at each end they unite and form the canthi.

Palpebræ superioris, levator. See *Levator palpebræ superioris.*

Palpebrarum aperiens rectus. See *Levator palpebræ superioris.*

Pa'lpebral. Appertaining to the palpebra or eyelid.

PALPITA'TION. (*Palpitatio, onis*. f.; from *palpito*, to beat, leap, or throb.) A throbbing motion of any part, particularly of the heart.

Pa'lpus. Palpitation of the heart. See *Heart diseases of the.*

Palsy. See *Paralysis.*

Palsy, mercurial. See *Diseases of artizans.*

Paluda'pium. (*um*, *ii*. n.; from *palus*, a lake, and *apium*, smallage: so named because it grows in and about rivulets.) A species of smallage.

Palus sanctus. Guaiacum wood.

Pamphi'lium. (*um*, *ii*. n.; from πας, all, and φιλος, grateful: so called from its extensive usefulness.) A plaster described by Galen.

PAMPI'NIFORM. (*Papiniformis*; from *pampinus*, a tendril, and *forma*, a likeness.) Resembling a tendril: applied to the spermatic chord, and the thoracic duct.

PANACE'A. (*a*, *æ*. f.; from παν, the neuter of πας, all, and ακεομαι, to cure.) An epithet given by the ancients to those remedies which they conceived would cure every disease. Unfortunately for men of the present day there are no such remedies.

Panacea anglica. Magnesia

Panacea dulcis holsatiæ. The sulphate of potash.

Panacea duplicata. Sulphate of potash.

PANACEA GLAUBERI. Sulphate of potash.

PANACEA HOLSATICA. Sulphate of potash.

PANACEA LAPSORUM. The *Arnica montana*.

PANACEA MERCURIALIS. Calomel.

PANACEA SOLUTIVA. Magnesia.

PANACEA VEGETABILIS. Saffron.

PANA'DA. (*a, æ.* f.; diminutive of *pane*, read, Ital.) *Panata. Panatella.* Bread boiled in water to the consistence of pap. Dry biscuits soaked are the best for this purpose.

PANALE'THES. (Παναληθες; from παν, all, and αληθης, true.) A name of a cephalic plaster, from its universal efficacy.

PA'NARIS. (Corrupted from *paronychia.*) See *Paronychia.*

PANARI'TIA. (Corrupted from *paronychia.*) See *Paronychia.*

PA'NAX. (*ax, acis.* f.; a name borrowed from the old Greek botanists, whose παναξ, or πανακης, was so denominated, from παν, all, and ακος, medicine, because of its universal virtues. The name being unoccupied, Linnæus adopted it for the Chinese ginseng, that famous restorative and panacea, the reputed virtues of which yield in no respect to the ancient panax.) 1. The name of a genus of plants in the Linnæan system. Class, *Polygamia;* Order *Dioecia.*

2. A name of the Hercules' all-heal. See *Laserpitium chironium.*

PANAX QUINQUEFOLIUM. The systematic name of the plant which affords the ginseng root.

Panax — foliis ternis quinatis, of Linnæus. The root is imported into this country scarcely the thickness of the little finger, about three or four inches long, frequently forked, transversely wrinkled, of a horny texture, and both internally and externally of a yellowish-white colour. To the taste it discovers a mucilaginous sweetness, approaching to that of liquorice, accompanied with some degree of bitterness, and a slight aromatic warmth. The Chinese ascribe extraordinary virtues to the root of ginseng, and have no confidence in any medicine, unless in combination with it. In Europe, however, it is very seldom employed.

PANCHRE'STOS. (*os, i.* m.; from παν, all, and χρηστος, useful: so named from its general usefulness.) *Panchreston.* An epithet of several Greek collyria.

PANCHYMAGO'GUS. (From παν, all, χυμος, humour, and αγω, to expel. A term anciently applied to medicines that were supposed to purge all humours alike.

PANCOE'NUS. (From παν, all, and κοινος, common.) Synonymous with *epidemic.*

PANCRA'TIUM. (*ium, ii.* n.; from παν, all, and κρατος, strength: and derived by some from τας, all, and κρατεω, to conquer; and applied to plants from their supposed power in overcoming all obstructions.) 1. An athletic exercise used by the Grecks.

2. The squill. See *Scilla maritima.*

PA'NCREAS. (*as, atis.* n.; from παν, all, and κρεας, flesh: so called from its fleshy consistence.) A glandular viscus of the abdomen, of a long figure, compared to a dog's tongue, situated in the epigastric region under the stomach. The prolonged portion at the right extremity has been called *Pancreas Asellii*, after Caspar Asselli the anatomist. It is composed of innumerable small glands, the excretory ducts of which unite and form one duct, called the pancreatic duct; which perforates the duodenum with the ductus communis choledochus, and conveys a fluid, in its nature similar to saliva, into the intestines. The pancreatic artery is a branch of the splenic. The veins evacuate themselves into the splenic vein. Its nerves are from the par vagum and great intercostal. The use of the pancreas is to secrete the pancreatic juice, which is to be mixed with the chyle in the duodenum. The quantity of the fluid secreted is uncertain; but it must be very considerable, if we compare it with the weight of the saliva, the pancreas being three times larger, and seated in a warmer place. It is expelled by the force of the circulating blood, and the pressure of the incumbent viscera in the full abdomen. Its great utility appears from its constancy, being found in almost all animals: nor is this refuted by the few experiments, in which a part of it was cut out from a robust animal, without occasioning death; because the whole pancreas cannot be removed without the duodenum; for even a part of the lungs may be cut out without producing death, but they are not therefore useless. It seems principally to dilute the viscid cystic bile, to mitigate its acrimony, and to mix it with the food. Hence it is poured into a place remote from the duct, from the liver, as often as there is no gall-bladder. Like the rest of the intestinal humours, it dilutes and resolves the mass of aliments, and performs every other office of the saliva.

Pancreas asellii. See *Pancreas.*

PANCREA'TIC. (*Pancreaticus;* from *pancreas*, the name of a viscus.) Of or belonging to the pancreas.

Pancreatic duct. See *Ductus pancreaticus.*

Pancreatic juice. See *Pancreas.*

PANCREATI'TIS. Inflammation of the pancreas.

PANCREATO'NCUS. (From παγκρεας, the pancreas, and ογκος, a tumour.) A hard tumour of the pancreas.

PANCRE'NE. (From παν, all, and κρηνη, a fountain.) A name that has been given to the pancreas.

PANDALI'TIUM. A whitlow.

PANDE'MIC. (*Pandemicus;* from παν, all, and δημος, the people.) Synonymous with epidemic.

PANDICULA'TION. (*Pandiculatio, onis.* f.; from *pandiculo*, to gape and stretch.) Yawning and stretching; such as often accompanies the cold fit of an ague.

PANDU'RIFORM. *Panduriformis.* Fiddle-shaped. Applied to a leaf which is oblong, broad at the two extremities, and contracted in the middle, as in the fiddle-dock, *Rumex pulcher.*

PANI'CULA. (*a, æ.* f.) A panicle. A species of compound inflorescence which bears the flowers in a sort of loose, subdivided bunch or cluster, without any order, appearing like a *branched* spike. The flowers of the *Æsculus hippocastanum*, *Rhus cotinus*, *Gypsophila paniculata*, and *Syringa vulgaris*, are good examples of a panicle: but this species of inflorescence

occurs most in grasses; as in *Poa aquatica.* A panicle is said to be,

1. *Patulous*, when the stalks are distant, lax, or spreading; as in *Panicula patula*, and *Campanula patula.*

2. *Coarctate*, when dense or crowded; as in *Campanula rapunculus.*

3. *Dichotomous*, forked; as in *Linum flavum.*

4. *Brachiate*, crossing each other in pairs; as in *Salvia paniculata.*

5. *Divaricate*, a more spreading one than the patulous; as in the *Prenanthes muralis.*

PANICULA'TUS. Paniculate: bunched like a panicle.

PA'NICUM. (*um, i.* n.; *à paniculis*, from its many panicles: the spike consisting of innumerable thick seeds, disposed in many panicles.) The name of a genus of plants in the Linnæan system. Class, *Triandria;* Order, *Digynia.*

PANICUM ITALICUM. The systematic name of the plant which affords the Indian millet-seed, which is much esteemed in Italy, being a constant ingredient in soups, and made into a variety of forms for the table.

PANICUM MILIACEUM. The systematic name of the plant which affords the millet-seed. They are esteemed as a nutritious article of diet, and are often made into puddings in this country.

PA'NIS. (*is, is.* m.) Bread. See *Bread.*

Panis cuculi. See *Oxalis acetosella.*

PANIS PORCI'NUS. A species of cyclamen.

PANNI'CULUS. (*us, i.* m.; a small piece of cloth; from *pannus*, cloth.) Applied, in *Anatomy*, to the adipose membrane — *panniculus adiposus;* and to the subcutaneous muscle of quadrupeds and birds — *panniculus carnosus.*

PANNO'NICA. (*a, æ.* f.; from *pannus*, a rag: so called because its stalk is divided into many uneven points, like the end of a piece of rag.) See *Hypochæris maculata.*

PA'NNUS. (*us, i.* m.; a piece of cloth.) 1. A tent for a wound.

2. A disease of the eye. See *Pterygium.*

3. An irregular mark upon the skin.

PANO'CHIA. A bubo in the groin.

PANOPHO'BIA. (*a, æ.* f.; from Παν, a Greek deity, and φοβος, fear.) That kind of melancholy which is principally characterised by groundless fears.

Pansy. See *Viola tricolor.*

PANTAGO'GUS. (From πας, all, and αγω, to drive out.) Expelling all morbid humours.

PANTO'LMIUS. (From πας, all, and τολμαω, to dare: so named from its general uses.) The name of a troch described by Ægineta.

Pantophobia. See *Panophobia.*

PA'NUS. (*us, i.* m.; a weaver's roll.) 1. A glandular tumour or bubo.

2. Synonymous with *phygethlon.*

PAPA'VER. (*er, eris.* n.; from *pappa*, pap: so called because nurses used to mix this plant in children's food to relieve the colic and make them sleep.) 1. The name of a genus of plants in the Linnæan system. Class, *Polyandria;* Order, *Monogynia.* The poppy.

2. The pharmacopœial name of the white poppy. See *Papaver somniferum.*

PAPAVER ALBUM. The white poppy. See *Papaver somniferum.*

Papaver erraticum. See *Papaver rhœas.*

PAPAVER NIGRUM. The black poppy. This is merely a variety of the white poppy producing black seeds. See *Papaver somniferum.*

PAPAVER RHŒAS. The systematic and pharmacopœial name of the red corn poppy: called also *Papaver erraticum.*

Papaver — capsulis glabris globosis, caule-piloso multifloro; foliis pennatifidis incisis, of Linnæus. The heads of this species, like those of the somniferum, contain a milky juice of a narcotic quality, from which an extract is prepared that has been successfully employed as a sedative. The flowers have somewhat of the smell of opium, and a mucilaginous taste, accompanied with a slight degree of bitterness. A syrup of these flowers is directed in the London Pharmacopœia, which has been thought useful as an anodyne and pectoral, and is prescribed in coughs and catarrhal affections. See *Syrupus rhœados.*

PAPAVER SOMNI'FERUM. The systematic name of the white poppy, from which opium is obtained.

Linnæus describes the plant: — *Papaver — calycibus, capsulisque glabris, foliis amplexicaulibus incisis.* This drug is also called *opium thebaicum*, from being anciently prepared chiefly at Thebes: *Opion*, and *manus Dei*, from its extensive medical virtues, &c. The Arabians called it *affion* and *afium.* It is the concreted milky juice of the capsule or head of the poppy. It is brought from Turkey, Egypt, the East Indies, and other parts of Asia, where poppies are cultivated for this use in fields, as corn among us. The manner in which it is collected has been described long ago by Kæmpfer and others; but the most circumstantial detail of the culture of the poppy, and the method of procuring the opium, is that given by Kerr, as practised in the province of Bahar. He says, "The field being well prepared by the plough and harrow, and reduced to an exact level superficies, it is then divided into quadrangular areas of seven feet long, and five feet in breadth, leaving two feet of interval, which is raised five or six inches, and excavated into an aqueduct for conveying water to every area, for which purpose they have a well in every cultivated field. The seeds are sown in October or November. The plants are allowed to grow six or eight inches distant from each other, and are plentifully supplied with water; when the young plants are six or eight inches high, they are watered more sparingly. But the cultivator spreads all over the areas a nourishing compost of ashes, human excrements, cow-dung, and a large portion of nitrous earths, scraped from the highways and old mud walls. When the plants are nigh flowering, they are watered profusely, to increase the juice. When the capsules are half grown, no more water is given, and they begin to collect the opium. At sunset they make two longitudinal double incisions upon each half-ripe capsule, passing from below upwards, and taking care not to penetrate the internal cavity of the capsule. The incisions

are repeated every evening until each capsule has received six or eight wounds; then they are allowed to ripen their seeds. The ripe capsules afford little or no juice. If the wound was made in the heat of the day, a cicatrix would be too soon formed. The night dews, by their moisture, favour the exstillation of the juice. Early in the morning, old women, boys, and girls collect the juice, by scraping it off the wounds with a small iron scoop, and deposit the whole in an earthern pot, where it is worked by the hand, in the open sunshine, until it becomes of a considerable spissitude. It is then formed into cakes of a globular shape, and about four pounds in weight, and laid into little earthern basins to be further exsiccated. These cakes are covered over with leaves, and dried until they are fit for sale. Opium is frequently adulterated with cow-dung, the extract of the poppy-plant procured by boiling, and various other substances which they keep in secrecy." This process, however, is now but rarely practised, the consumption of this drug being too great to be supplied by that method of collection.

It comes to the European market in flattish cakes, sprinkled with pieces of dried leaves, and with the seed capsules of some species of rumex. It should be of a rich brown colour, a tough consistency, and a tolerably smooth and uniform texture. Its peculiar narcotic smell should be strong and fresh, and unaccompanied by any burnt odour. Its taste is nauseously bitter, and slightly warm and acrid. Those pieces which are very soft, full of herbaceous impurities, containing patches of a very dark brown or black extract, of an empyreumatic odour, or not smelling duly narcotic, are in general adulterated; and it is not uncommon to find bullets concealed in masses even of the best opium. When good opium is carefully dried, it becomes brittle, and affords a yellow brown powder. It burns with flame, and exhales an odour in which may be traced some resemblance to that of animal matter. These are the characters of the most genuine opium which reaches this country, and which is imported from Turkey: an inferior article, of a much darker colour, a less narcotic odour, and more bitter in taste, is imported under the name of *East India opium*. It is frequently mixed with the Turkey opium, an article which, on account of its large consumption, and high price, is open to a great variety of adulterations, both abroad and at home: indeed, it is not probable that much unadulterated opium ever reaches this country. Opium of a very excellent quality has been grown in *England*; and in medicinal powers it has been found fully as effective as the foreign: but the coldness and changeable nature of our climate renders it unlikely that it should ever be produced here in any considerable quantity, so as even to supply a small part of the commercial demands for this drug.

The chemical nature of opium has long been matter of inquiry: but it is only lately that the subject has been at all satisfactorily investigated, and that, through the researches of Sertuerner, Robiquet, and several other chemists, we have been made acquainted with the existence of a peculiar salifiable base in opium, to which the name of *morphia* has been given, and to which its activity as a narcotic may probably be exclusively ascribed.

Morphia, not in a very pure state, is copiously precipitated by adding ammonia to a strong solution of opium; but a better mode of obtaining it is to triturate powdered opium into a thin paste with acetic acid, and afterwards to add six or eight parts of water. The liquor may be filtered off through coarse paper, and the residue treated with a small additional portion of acetic acid and water, as before. Add excess of ammonia to the filtered liquors, which will occasion a precipitate, to be collected in a filter: evaporate the filtered liquor to about one fifth its bulk; add a little more ammonia, and a second precipitate is obtained, which may be added to the former. These precipitates are impure morphia: they may be cleansed by digestion in small quantities of cold alkohol, which will remove the chief part of the colouring matter, and the residue being dissolved in boiling alkohol furnishes crystals of pure morphia, as the liquid cools. In this process the salt of morphia (*meconate of morphia?*), existing in opium, is decomposed by acetic acid, and a solution of acetate of morphia obtained, which the ammonia decomposes. Robiquet's process for obtaining morphia is as follows: — Boil a concentrated solution of opium for a quarter of an hour with a small quantity of magnesia (about two hundred grains of magnesia to a pound of opium is sufficient): filter, and wash the grey precipitate with cold water: dry it, and digest it in warm but weak alkohol, by which much colour is dissolved; then collect it upon a filter, boil it in highly rectified alkohol, and filter the solution while hot: as it cools, it deposits crystallised morphia. In this process, the meconate of morphia, originally existing in the opium, is decomposed by the magnesia, and the precipitate consists of morphia, mixed with meconate of magnesia and a portion of uncombined magnesia. The morphia is separated from the precipitate by boiling alkohol. It seems probable that, in opium, the morphia is combined with an acid, which, being in excess, gives to solutions of opium the property of reddening vegetable blues. This acid (the meconic?) may be obtained from the residuum of the magnesian precipitate, left undissolved by alkohol in the above process for procuring morphia. For this purpose, the magnesian residue is dissolved in very dilute sulphuric acid, and muriate of barytes added to the sulphuric solution: a red precipitate, consisting of sulphate and meconate of barytes, falls. This precipitate is to be boiled with very dilute sulphuric acid, by which the meconate of barytes is decomposed; and the meconate acid may be obtained from the filtered liquor by due evaporation. It may be purified by sublimation at a gentle heat. This acid has no narcotic effect.

By digesting opium in ether, and slowly evaporating the filtered etherial tincture, a crystallised substance, contaminated by a little oil and caoutchouc, is obtained, which is perfectly dis-

tinct from, and independent of, morphia. This is the substance which has been termed *narcotine*, and, from its discoverer, *salt of Derosne*. Upon this the exciting and stimulating power of opium, which usually precedes its sedative effects, is by some supposed to depend. It is insoluble in water, scarcely soluble in alkohol, and not alkaline.

Morphia is a colourless substance, of a bitter taste, and crystallises in quadrangular prisms. It is very little soluble, even in boiling water, but it dissolves in boiling alkohol, and the solution deposits crystals as it cools. It reddens turmeric, and converts vegetable blues to green, in the manner of an alkali: it also combines with the acids, forming with most of them crystallisable salts.

Pure morphia, in consequence of its difficult solubility, is uncertain in its operation as a narcotic; but some of its salts may probably be found useful substitutes for opium. The acetate of morphia is said to have been employed with advantage; and, indeed, acetic tincture of opium, which may be presumed to contain acetate of morphia, has long been used as a preparation less liable to stimulate and excite than most others of opium. It has also been supposed that some advantage may be derived by separating the narcotine from opium, which may be effected by washing the extract of opium, before it is sufficiently inspissated, with repeated portions of sulphuric ether. There is, however, no satisfactory evidence of any improvement in the medical effects of opium derived from such a process.

Exclusive of its active principles, opium contains inert extractive matter, gum, gluten, and a few saline substances: but these, as well as the morphia, vary extremely in their relative proportions, so that it is of little use to state those afforded by any individual sample of the drug. Dr. A. T. Thompson states in his Dispensatory, that fine Turkey opium contains nearly three times the quantity of morphia yielded by the same weight of East Indian opium. "From a very carefully prepared sample of English opium, I procured," says Professor Brande, "rather a larger quantity of morphia than from the same weight of Turkey opium." The average produce of morphia from a pound of good opium may be estimated at about five hundred grains, or one fourteenth its weight; but it is improbable that the whole is separated in any of our processes.

Morphia, according to its discoverer, melts in a gentle heat; and in that state has very much the appearance of melted sulphur. On cooling, it again crystallises. It burns easily; and, when heated in close vessels, leaves a solid resinous black matter, having a peculiar smell. Morphia acts with great energy on the animal economy. A grain and a half, taken at three different times, produced such violent symptoms upon three young men of seventeen years of age, that Sertuerner was alarmed lest the consequences should have proved fatal.

The use of opium, though not unknown to Hippocrates, can be clearly traced to Diagoras, who was nearly his contemporary; and its importance has ever since been gradually advanced by succeeding physicians of different nations. Its extensive practical utility, however, has not been long well understood; and in this country, perhaps, may be dated from the time of Sydenham. Opium is the chief narcotic now employed: it acts directly upon the nervous power, diminishing the sensibility, irritability, and mobility of the system; and, according to Cullen, in a certain manner suspending the motion of the nervous fluid to and from the brain, and thereby inducing sleep, one of its principal effects. From this sedative power of opium, by which it allays pain, inordinate action, and restlessness, it naturally follows that it may be employed with advantage in a great variety of diseases. Indeed, there is scarcely any disorder in which, under some circumstances, its use is not found proper; and though in many cases it fails of producing sleep, yet, if taken in a full dose, it occasions a pleasant tranquillity of mind, and a drowsiness which approaches to sleep, and which always refreshes the patient. Besides the sedative power of opium, it is known to act more or less as a stimulant, exciting the motion of the blood. By a certain conjoined effort of this sedative and stimulant effect, opium has been thought to produce intoxication, a quality for which it is much used in eastern countries.

The principal indications which opium is capable of fulfilling are, supporting the actions of the system, allaying pain and irritation, relieving spasmodic action, inducing sleep, and checking morbidly increased secretions. It is differently administered, as it is designed to fulfil one or other of these indications.

Where opium is given as a stimulus, it ought to be administered in small doses, frequently repeated, and slowly increased, as by this mode the excitement it produces is best kept up. But where the design is to mitigate pain or irritation, or the symptoms arising from these, it ought to be given in a full dose, and at distant intervals, by which the state of diminished power and sensibility is most completely induced.

One other general rule, with respect to the administration of opium, is, that it ought not to be given in any purely inflammatory affection, at least until evacuations have been used, or unless means are employed to determine it to the surface, and produce a diaphoresis.

In continued fevers, not of the pure inflammatory kind, opium is administered sometimes as a general stimulus, and at other times to allay irritation. The great practical rule in such cases is, that it ought to be given in such quantities only that the pulse becomes slower and fuller from its operation. Its exhibition is improper where local inflammation, especially of the brain or of its membranes, exists.

In intermittent fever, an opiate renders the paroxysms milder, and facilitates the cure. Dr. Cullen recommends the union of opium with bark, which enables the stomach to bear the latter in larger doses, and adds considerably to its efficacy.

In the profluvia and cholera, opium is employed to lessen the discharge, and is frequen

he principal remedy in effecting the cure. In passive hæmorrhage, it is useful by its stimulant power. In retrocedent gout it is used as a powerful stimulant.

In convulsive and spasmodic diseases it is advantageously administered, with the view of relieving symptoms, or even of effecting a cure; and in several of them it requires to be given to a very great extent.

In lues venerea it promotes the action of mercury, and relieves the irritation arising either from that remedy or the disease.

In the year 1779, opium was introduced into practice as a specific against the lues venerea. It was employed in several of the military hospitals, where it acquired the reputation of a most efficacious remedy; and Dr. Michaelis, physician of the Hessian forces, published an account of a great number of successful experiments made with it, in the first volume of the Medical Communications, in the year 1784. Opium was afterwards given as an antivenereal remedy in some foreign hospitals. Many trials were also made of its virtues in several of the London hospitals, and in the Royal Infirmary at Edinburgh. Very favourable reports of its efficacy in removing venereal complaints were published by different practitioners; but, at the same time, so many deductions were to be made, and so many exceptions were to be admitted, that it required little sagacity to discover that most of the advocates for this medicine reposed but a slender and fluctuating confidence in its antivenereal powers. Mr. Pearson made several experiments on the virtues of opium in lues venerea, at the Lock Hospital, in the years 1784 and 1785; and published a narrative of its effects, in the second volume of the Medical Communications. "The result of my experiments," says he, "was very unfavourable to the credit of this new remedy; and I believe that no surgeon in this country relies on opium as a specific against the venereal virus. I have been long accustomed to administer opium with great freedom during the mercurial course; and the experience of nearly twenty years has taught me that, when it is combined with mercury, the proper efficacy of the latter is not in any measure increased; that it would not be safe to rely upon a smaller quantity of the mineral specific, nor to contract the mercurial course within a shorter limit than where no opium has been employed. This representation will not, I presume, admit of controversy; yet we frequently hear people expressing themselves upon this head, as if opium manifested some peculiar qualities in venereal complaints, of a distinct nature from its well-known narcotic properties, and thus afforded an important aid to mercury in the removal of lues venerea." Perhaps it may not be useless to disentangle this subject from the perplexity in which such indefinite language necessarily involves it. Opium, when given in conjunction with mercury, by diminishing the sensibility of the stomach and bowels, prevents many of those inconveniences which this mineral is apt to excite in the primæ viæ; and thus its admission into the general system is facilitated. Mercury will likewise often produce a morbid irritability, accompanied with restlessness and insomnolescence; and it sometimes renders venereal sores painful, and disposed to spread. These accidental evils, not necessarily connected with venereal disease, may be commonly alleviated, and often entirely removed, by a judicious administration of opium; and the patient will consequently be enabled to persist in using the mineral specific. It, however, must be perfectly obvious that opium, in conferring this sort of relief, communicates no additional virtues to mercury; and that, in reality, it assists the constitution of the patient, not the operation of the medicine with which it is combined. The salutary effects of mercury as an antidote may be diminished or lost by the supervention of vomiting, dysentery, &c. Opium will often correct these morbid appearances, and so will spices, wine, and appropriate diet, &c.; yet it would be a strange use of words to urge, wherever these articles of food were beneficial to a venereal patient, that they concurred in augmenting the medicinal virtues of mercury. It may be supposed that the majority of medical men would understand by the terms, "to assist a medicine in curing a contagious disease," that the drug conjoined with the specific actually increased its medicinal efficacy: whereas, in the instances before us, it is the human body only which has been aided to resist the operation of certain noxious powers, which would render a perseverance in the antidote prejudicial or impossible. The soothing qualities of this admirable medicine can scarcely be estimated too highly. Yet we must beware of ascribing effects to them which have no existence; since a confidence in the antivenereal virtue of opium would be a source of greater mischief than its most valuable properties would be able to compensate.

Opium is employed with laxatives in colic, and often prevents ileus and inflammation, by relieving the spasm.

It is given also to promote healthy suppuration, and is a principal remedy in arresting the progress of gangrene.

The sudorific property of opium is justly considered of considerable power, more especially in combination with ipecacuan or antimony. The compound powder of ipecacuan, consisting of one part of ipecacuan, one part of opium, and eight of sulphate of potash, is a very powerful sudorific, given in a dose of from 15 to 25 grains. The combination of opium with antimony is generally made by adding 30 or 40 drops of antimonial wine to 25 or 30 drops of tincture of opium, and forming them into a draught.

Opium, taken into the stomach in immoderate doses, proves a narcotic poison, producing vertigo, tremors, convulsions, delirium, stupor, stertor, and, finally, fatal apoplexy.

Where opium has been taken so as to produce these dangerous consequences, the contents of the stomach are first to be evacuated by a powerful emetic, as a solution of the sulphate of zinc. Large draughts of vinegar, or any of the native vegetable acids, are then to be swallowed. Moderate doses of brandy, or a strong infusion of coffee, have also been found useful.

Respecting the external application of opium, authors seem not sufficiently agreed. Some allege that, when applied to the skin, it allays pain and spasm, procures sleep, and produces all the salutary or dangerous effects which result from its internal use; while others say that, thus applied, it has little or no effect whatever. It has also been asserted, that when mixed with caustic, it diminishes the pain which would otherwise ensue; and, if this be true, it is probably by decreasing the sensibility of the part. Injected by the rectum, it has all the effect of opium taken into the stomach; but, to answer this purpose, double the quantity is to be employed. Applied to the naked nerves of animals, it produces immediate torpor and loss of power in all the muscles with which the nerves communicate.

The requisite dose of opium varies in different persons, and in different states of the same person. A quarter of a grain will in one adult produce effects which ten times the quantity will not do in another; and a dose that might prove fatal in cholera or colic, would have no effect at all in many cases of tetanus, or mania. The lowest fatal dose to those unaccustomed to take it, seems to be about four grains; but a dangerous dose is so apt to produce vomiting, that its fatal consequences are often averted in this way. When given in too small a dose, it often produces disturbed sleep, and other disagreeable consequences; and, in some cases, it seems impossible to be made to agree in any dose or form. Often, on the other hand, from a small dose, sound sleep and alleviation of pain will be produced; while a larger one occasions vertigo and delirium. Some prefer the repetition of small doses; others the giving a full dose at once: its operation is supposed to last about eight hours. This, however, must depend upon circumstances. The usual dose is one grain.

The following are the officinal preparations of this drug: — *Opium purificatum; Confectio opii; Electuarium opii; Electuarium catechu comp.; Pilulæ opii; Pilulæ saponis cum opio; Pulvis opiatus; Pulvis cornu usti cum opio; Pulvis cretæ comp. cum opio; Pulvis ipecacuanhæ comp.; Tinctura opii; Tinctura camphoræ comp.; Tinctura opii ammoniata; Acetum opii; Vinum opii; Trochisci glycyrrhizæ cum opio; Emplastrum opii; Linimentum saponis cum opio; Enema opii*, &c. The capsules of the poppy are also directed for medicinal use in the form of fomentation; see *Decoctum papaveris*: and the *syrupus papaveris*, prepared from them, is an useful anodyne, which often succeeds in procuring sleep where opium fails: it is, however, more especially adapted to children. The seeds of this species of poppy contain a bland oil, and in many places are eaten as food: as a medicine, they have been usually given in the form of emulsion in catarrhs, stranguries, &c.

Papaw. The fruit of a species of *carica*. See *Carica papaya*.

PAPILIONA'CEOUS. (From *papilio*, a butterfly, which it resembles.) *Papilionaceus*. Butterfly-like. Applied to the corolla of plants when they are irregular and spreading, and thus resemble somewhat the butterfly. The various petals which compose such a flower are distinguished by appropriate names: *vexillum*, the standard, the large one at the back; *alæ*, the two side petals; and *carina*, the keel, consisting of two petals united or separate, embracing the internal organs.

PAPI'LLA. (*a, æ.* f.; from *pappus*, down.) 1. The nipple of the breast. See *Mamma*.

2. The fine termination of a nerve, &c.; as the nervous papillæ of the tongue, skin, &c.

Papillæ medullares. Small eminences on the medulla oblongata.

Papillaris alba. See *Lapsana*.

PAPILLO'SUS. (From *papilla*.) Papillose: pimpled. Applied to stalks connected with soft tubercles; as the ice plant, *Mesembryanthemum crystallinum*.

PAPPO'SUS. Pappose: furnished with a pappus of seed-down; as the seeds of the *Leontodon taraxacum*.

PA'PPUS. (*us, i.* m.; from *παππος*.) 1. In *Anatomy*, the hair on the middle of the chin. See *Capillus*.

2. In *Botany*, the *seed-down*. This is restrained by Gærtner to the chaffy, feathery, or bristly crown of many seeds that have no pericarpium, and which originates in a partial calyx crowning the summits of each of these seeds, and remaining after the flower is fallen; as in the seeds of dandelion, goat's-beard, &c.

The same term is used by the generality of botanists for the feathery crown of seeds furnished with a capsule, as well as for a similar appendage to the base or sides of any seeds; neither of which can originate from a calyx. For the former of these, Gærtner adopts the term *coma*; for the latter, *pubes*; which last also serves for any downiness or wool about the *testa* of a seed; as in the cotton-plant, and *Blandfordia nobilis*.

The varieties of the pappus are,

1. *Sessile*, on the apex of the seed, without any footstalk; as in *Asclepias, Syriaca, Nerium oleander*, and *Epilobium*.

2. *Stipitate*, elevated on a footstalk; as in *Leontodon taraxacum*.

3. *Plumose*, when the radii of the footstalked pappus are hairy laterally; as in *Tragopogon pratense*.

The *lana pappiformis* of authors is not a pappus, but hairs which only surround the seed; as in *Eriophorum*.

PA'PULA. (*a, æ.* f.; diminutive of *pappa*, a dug or nipple.) A very small and acuminated elevation of the cuticle, with an inflamed base, not containing a fluid, nor tending to suppuration. The duration of papulæ is uncertain, but they terminate for the most part in scurf.

Papulæ. Pimples. The name of an order in Dr. Willan's arrangement of cutaneous diseases, characterised by very small and acuminated elevations of the cuticle, with an inflamed base, very seldom containing a fluid, or suppurating, and commonly terminating in scurf. They appear to originate in an inflammation of the papillæ of the skin, by which these are enlarged, elevated, and indurated, and made

ssume more or less of a red colour. Sometimes even a slight effusion of lymph takes place, which gives a vesicular appearance to several of he papillæ; but the fluid is re-absorbed without breaking the cuticle, and they terminate, for the most part, in scurf. The order contains *strophulus*, *lichen*, and *prurigo*.

PA'R. (*ar, aris.* n.; a pair.) A pair.

PAR CUCULLARE. So Casserius calls the *Crico-arytænoid muscle.*

PAR VAGUM. The eighth pair of nerves. See *Pneumogastric nerve.*

PARABY'SMA. (*a, atis.* n.; Παραβυσμα; from παραβυω, to intrude, to cram in, to congest.) Turgescence. Dr. Good has applied his term to a genus of diseases comprehended by Cullen and others under that of physconia.

PARACELSISTS. The followers of Paracelsus. This enthusiast, whose real name was Philip Hochener, was born about 1403, and died in 1541. He may be regarded as the father of the sect of chemical physicians. His doctrines were derived from an extraordinary mixture of experimental chemistry, empirical medicine, astrological and alchemical dreams, and cabalistical superstitions; the whole forming a mass of imposing absurdity, the like of which has never been known before or since. The Paracelsists were a numerous sect till towards the close of the seventeeth century. However ridiculous many of their opinions may have been, we owe to their labours many important discoveries in chemistry, and the introduction of many active and useful substances into the *materia medica.*

PARACENTE'SIS. (*is, is.* f.; from παρακεντεω, to pierce through.) Tapping. The operation of evacuating the water in ascites, dropsy of the ovarium, &c.

PARACMA'STICOS. (From παρακμαζω, to decline.) See *Acmasticos.*

PARA'COE. (From παρα, diminutive, and ακουω, to hear.) Dulness of hearing.

PARACOLLE'TICUS. (From παρακολλαομαι, to glue together.) Agglutinant: causing the union of parts preternaturally separated.

PARA'COPE. (Παρακοπη; from παρακοπτω, to be delirious.) A slight delirium. — *Hippocrates.*

PARACORO'LLA. Link gives this name to the little second corolla that is found within the perigonium of the narcissus.

PARACRU'SIS. (Παρακρουσις; from παρακρουομαι, to be delirious.) A slight delirium.

PARACU'SIS. (*is, is.* f.; from παρα, wrong, and ακουω, to hear.) Depraved hearing. This may be occasioned by any thing that proves injurious to the ear, as loud noises from the firing of cannon, violent colds, particularly affecting the head, inflammation or ulceration of the membrane, hard wax, or other substances interrupting sounds, too great a dryness, or too much moisture in the parts; or by atony, debility, or paralysis of the auditory nerves. In some instances it ensues in consequence of preceding diseases, such as fever, syphilis, &c., and in others it depends upon an original defect in the structure or formation of the ear. In the last instance, the person is usually not only deaf, but likewise dumb. There are two species: —

1. *Paracusis imperfecta*, or deafness; when existing sounds are not heard as usual.

2. *Paracusis imaginaria*; when imaginary sounds are heard, not from without, but excited within the ear. In attempting the removal of deafness, the first thing to be done is to remove from the auditory canal every thing that may obstruct the ingress of the ear, as wax, tumours, &c., which will cause the person to hear. If the internal ear, or the immediate organ of hearing, be the seat of the cause of deafness, little can be done, because the cause is not known; but blisters behind the ear, stimulating applications to the auditory canal, and around the ear, are often useful.

PARACYE'SIS. (*is, is.* f.; from παρα, badly, and κυησις, pregnancy.) Extra uterine pregnancy.

PARACYNA'NCHE. (*e, es.* f.; from παρα, κυων, a dog, and αγχω, to strangle.) See *Cynanche.*

Paradise, grains of. See *Amomum granum paradisi.*

Paradisi grana. See *Amomum.*

PARAGEU'SIS. (*is, is.* f.; from παρα, badly, and γευω, *gustum præbeo.*) Morbid taste.

PARAGLO'SSA. (*a, æ.* f.; from παρα, and γλωσσα, the tongue.) A swelled tongue. A prolapsus or displacement of the tongue.

PARAGO'GE. (From παραγω, to adduce.) This term signifies that fitness of the bones to one another which is discernible in their articulation; and bones which are thereby easier of reduction, when dislocated, are by Hippocrates called παραγωγοτερα.

PARALA'MPSIS. (From παραλαμπω, to shine a little.) Some writers use this word to express a cicatrix in the transparent part of the cornea of the eye.

PARA'LIUS. (Παραλιος. Belonging to the sea.) The trivial name of a species of euphorbia. See *Euphorbia paralias.*

PARALLA'GMA. (From παραλλαττω, to transpose.) *Parallaxis.* The transposition of a solid part from its proper place; as where one part of a broken bone lies over another.

Parallaxis. See *Parallagma.*

PARALLE'LA. (From παραλληλος, parallel.) A scurfy syphilitic eruption affecting only the palms of the hands, and running down them in parallel lines.

PARALO'PHIA. (*a, æ.* f.; from παρα, near, and λοφια, the first vertebra of the back.) The lower and lateral part of the neck near the vertebræ, according to some anatomical writers, as Keil, &c.

PARA'LYSIS. (*is, is.* f.; from παραλυω, to loosen, or weaken.) *Catalysis. Attonitus morbus.* The palsy. A disease known by a loss or diminution of the power of voluntary motion, affecting any part of the body. The most usual form of palsy is when one side of the body is affected: it not uncommonly seizes the lower extremities, or all parts below the pelvis; sometimes the arms only; and occasionally a part, as one side of the face, one eyelid, the tongue, or the muscles of degluti-

tion; and hence the Cullenian arrangements into, —

1. *Paralysis partialis*, when partial, or palsy of some particular muscle.

2. *Paralysis hemiplegica*, when it affects one side longitudinally.

3. *Paralysis paraplegica*, palsy of one half of the body, taken transversely, as both legs and thighs.

4. *Paralysis venenata*, when it arises from the sedative effects of poison.

Paralysis is also symptomatic of several diseases; as worms, scrofula, syphilis, &c.

It may arise in consequence of an attack of apoplexy. It may likewise be occasioned by any thing that prevents the flow of the nervous power from the brain into the organs of motion; as tumours pressing on the spinal cord or on the nerves. It may also be occasioned by the metastasis of morbid actions to the head, by the suppression of usual evacuations, and by the pressure made on the nerves by luxations, fractures, wounds, or other external injuries. The long-continued application of sedatives will likewise produce palsy, as we find those whose occupations subject them to the constant handling of white lead, and those who are much exposed to the poisonous fumes of metals or minerals, are very apt to be attacked with it. Whatever tends to relax and enervate the system may likewise prove an occasional cause of this disease.

Palsy usually comes on with a sudden and immediate loss of the motion and sensibility of the parts; but, in a few instances, it is preceded by a numbness, coldness, and paleness, and sometimes by slight convulsive twitches. When the head is much affected, the eye and mouth are drawn on one side, the memory and judgment are much impaired, and the speech is indistinct and incoherent. If the disease affects the extremities, and has been of long duration, it not only produces a loss of motion and sensibility, but likewise a considerable flaccidity and wasting away in the muscles of the parts affected.

When palsy attacks any vital part, such as the brain, heart, or lungs, it soon terminates fatally. When it arises as a consequence of apoplexy, it generally proves very difficult to cure. Paralytic affections of the lower extremities, ensuing from any injury done to the spinal marrow, by blows and other accidents, usually prove incurable. Palsy, although a dangerous disease in every instance, particularly at an advanced period of life, is sometimes removed by the occurrence of a diarrhœa or fever.

The morbid appearances to be observed on dissections in palsy are various lesions of the brain and spinal cord, more frequently the former. Where hemiplegia is a consequence of apoplexy, sanguineous effusion is generally found to have taken place in the brain on the side opposite to that which is paralysed.

The general indications are, to remove, as far as possible, any compressing cause, and to rouse gradually the torpid portion of the nervous system. It will sometimes be proper, where the attack is sudden, the disease originating in the head, with great determination of blood to that part, particularly in a plethoric habit, to open the temporal artery or jugular vein, or apply cupping-glasses to the neck, and exhibit active purges, with the other means pointed out under apoplexy. But where the patient is advanced in life, of a debilitated constitution, and not too full of blood, the object should rather be to procure regular and healthy discharges from the bowels, obviate irritation in the brain by blisters in the neighbourhood, and procure a steady determination to the skin by gently stimulant diaphoretics, as ammonia, guaiacum, &c. in moderate doses regularly persevered in. Emetics have been sometimes very useful under these circumstances, but would be dangerous where congestion in the brain existed. Certain narcotic substances have been found occasionally successful, as aconite, arnica, toxicodendron, nux vomica, and opium: but the tendency of the latter to produce fulness of the vessels of the head must greatly limit its use. Various local means of increasing the circulation and nervous energy in the affected parts are resorted to in this complaint, often with decided benefit. In all cases it is proper to keep up sufficient warmth in the limb, or the disease may be rendered incurable. But in addition to this, in tedious cases, fomentations, the vapour bath, friction, electricity, and a variety of stimulant, rubefacient, or even vesicatory, embrocations, liniments, and plasters, may assist materially in the recovery of the patient. In the use of some of these it should be a rule to begin near the boundary of the disease, and carry them onward, as the amendment proceeds, not only as they will be more likely to answer a good purpose, but also because there would be some risk in stimulating too powerfully an extreme part. A suitable diet, according to the habit of the patient, warm clothing, the prudent use of the cold bath, and other means calculated to strengthen the system, must not be neglected.

Paralysis agitans. The shaking palsy. See *Synclonus ballismus*.

Paralysis herba. So called from its use in paralytic disorders. The cowslip and primrose have been so termed. See *Primula veris*, and *Primula vulgaris*.

PARAME'NIA. (*a*, *æ*. f.; from παρα, badly, and μην, the menses.) Disordered menstruation.

Parame'ria. (Παραμηρια; from παρα, near, and μηρος, the thigh.) The inner part of the thigh.

Para'mesus. (Παραμεσος; from παρα, near, and μεσος, the middle.) The ring-finger, or that which is between the middle and the little fingers.

Paramo'rphia. (From παρα, wrong, and μορφη, form.) Morbid structure. Applied to organic diseases.

Paraneuri'smus. (From παρα, wrong, and νευρον, a nerve.) A nervous disease.

Parance'a. (*a*, *æ*. f.; from παρα, diminutive, and νοεω, to understand.) *Paranoia*. Synonymous with *dementia*.

Parape'chyum. (*um*, *ii*. n. Παραπηχυον from παρα, near, and πηχυς, the cubit.) That part of the arm from the elbow to the wrist.

PARAPHIMO'SIS. (*is, is.* f. ; from παρα, about, and φιμοω, to bridle.) A disorder wherein the prepuce, being retracted towards the root of the penis, cannot be returned again over the glans, but makes a sort of ligature behind the corona. It is easily known: the glans is uncovered, the skin tumefied on the corona, and above it forms a circular collar or stricture, which, from the skin being unequally extended, becomes indented, and makes several rings round the part. This disease may proceed from three causes: —

1. From the imprudence of young people, and sometimes also of grown persons, who, having the end of their prepuce too straight, cannot uncover their glans without pain, and when they have done it, neglect returning it so soon as they ought; and thus the contracted part of the prepuce forms a constriction behind the glans. Soon after, the glans and penis swell, and the prepuce, being consequently very much distended, is affected in the same manner: an inflammation seizes upon both, and swellings quickly appear upon the stricture formed by the prepuce, so that the whole may be liable to a gangrene, if not speedily relieved.

2. It may arise from common inflammation of the prepuce, especially if there be a phymosis, in which state, if the foreskin be accidentally retracted, the glans penis swells, and cannot be drawn back, and a paraphymosis is the consequence.

3. It is often the result of the venereal virus. In adults, whose glans is uncovered, there frequently arise venereal chancres in the prepuce after impure coition, which are attended with inflammation more or less considerable. This inflammation is alone sufficient to render the prepuce too straight for the size of the penis, in consequence of which a swelling or inosculation may ensue like that before mentioned.

Cold lotions and leeches generally reduce the inflammation, and remove the constriction; but if it does not give way to these, and the glans is strangulated, it will be necessary to divide the prepuce in order to set it at liberty. When the inflammation is very violent, it has been known to produce a gangrene of the glans which has sloughed away; but this rarely happens when early recourse is had to surgical aid. See *Phymosis.*

PARAPHO'NIA. (*a, æ.* f. ; from παρα, wrong, and φωνη, sound.) Alteration of the voice. Dr. Cullen makes the following species: —

1. *Paraphonia puberum.* About the age of puberty the change of voice from an acute and soft to a grave and harsh tone.

2. *Paraphonia rauca.* The voice hoarse and rough, from dryness of flaccid tumour of the fauces.

3. *Paraphonia resonans.* Rough voice, from obstruction of the nares, with hissing sound in the nose.

4. *Paraphonia palatina.* From the uvula wanting, or divided, and commonly attended with hare-lip, the voice rough, obscure, and disagreeable.

5. *Paraphonia clangens.* An acute, shrill, and weak-toned voice.

6. *Paraphonia comatosa.* A sound emitted at inspiration, from relaxation of the velum palati, and of the glottis.

In all these instances the change of the voice is symptomatic, and the cure depends on the removal of the primary disease.

PARA'PHORA. (*a, æ.* f. ; from παραφερω, to transfer.) A slight kind of delirium, or light-headedness in a fever. Some use this word for a delirium in general.

PARAPHRENE'SIS. (*is, is.* f.) A delirium; also a paraphrenitis.

PARAPHRENI'TIS. (*is, idis.* f. ; from παρα, *malè*, not rightly, and *phrenitis*, inflammation of the brain: so called because its symptoms resemble those of phrenitis, or inflammation of the brain, which it is not.) See *Diaphragmatitis.*

PARAPHRO'SYNE. (From παραφρονεω, to be estranged in mind.) Mental derangement: used in the same sense as mania.

Paraphymosis. See *Paraphimosis.*

PARAPLE'GIA. (*a, æ.* f. ; from παραπλησσω, to strike inharmoniously.) Palsy of the upper or lower half of the body. See *Paralysis.*

PARAPOPLE'XIA. (*a, æ.* f. ; from παρα, diminutive, and αποπληξια, an apoplexy.) A slight apoplexy.

PARA'PSIS. (*is, is.* f. ; from παρα, *perperam*, and ἁπτομαι, *tango.*) Mason Good's generic name for disorders of the sense of touch. See *Dysæsthæsia.*

PARARTHRE'MA. (*a, atis.* n. ; from παρα, and αρθρον, a joint.) A subluxation or slight displacement of a bone from its articulation.

PARARRHY'THMOS. (From παρα, and ῥυθμος, rhythm.) The Greek epithet of a pulse not suitable to the age of the person.

PARASCEPA'STRA. (From παρα, and σκεπαζω, to cover.) A cap or bandage to go round the whole head. — *Galen.*

PARA'SCHIDE. (From παρα, and σχιζω, to cleave.) A fragment or splinter of a broken bone.

PARASI'TÆ. The name of an order of plants in Linnæus's Fragments of a Natural Method.

PARASI'TICAL. (*Parasiticus*; from παρασιτος, a parasite, or hanger on.) Parasitic. An animal is so termed that receives its nourishment in the bodies of others; as worms, polypi, hydatids, &c.

A plant is so called that does not take root in the earth, but sends its roots into other plants, from which it draws its nourishment; as the *Epidendrum vanilla.*

Parasiticus. See *Parasitic.*

PARASI'TA. Parasites. An order of the class *Insecta.* See *Animal kingdom.*

PARASI'TUS. (*us, i.* m. ; παρασιτος, a parasite.) A parasite: applied to animals and vegetables which draw their nourishment from others of the same kingdom, living within the interior of animals, or having their roots fixed in the bark of vegetables.

PARA'SPHAGIS. (Παρασφαγις; from παρα, near, and σφαγη, the throat.) The part of the neck contiguous to the clavicles.

PARA'STATES. (Παραστατης; from παριστημι, to stand near.) Any thing situated near another. Applied by the Greek anatomists to the epididymis, to the prostate gland, and to the commencement of the vas deferens.

PARASTRE'MMA. (From παραστρεφω, to distort.) A convulsive distortion of the mouth, or any part of the face.

Parasynanche. See *Cynanche.*

PARA'THENAR. (*ar, aris.* n.; from παρα, near, and θεναρ, the sole of the foot.) Winslow called a portion of the abductor of the little toe by the name of *parathenar major*, and the short flexor of the same toe he called *parathenar minor.*

PAREC'CRISIS. (*is, is.* f.; from παρα, wrong, and εκκρινω, to secern or secrete.) Disordered secretion.

PAREGO'RIC. (*Paregoricus;* from παραγορεω, to mitigate, to assuage.) Anodyne.

PAREGORIC ELIXIR. This name is given in England to the *Tinctura camphoræ composita*, but in Scotland it is applied to the *Tinctura opii ammoniata* of the Edinburgh pharmacopœia. These preparations are of very different strength, the English paregoric containing only a grain of opium in half an ounce; and the Scotch the same quantity in a drachm.

PAREI'A. Παρεια. That part of the face which is between the eye and chin. The cheek.

PAREI'RA BRAVA. (The Spanish name of the American wild vine.) See *Cissampelos parcira.*

PARENCE'PHALIS. (Παρεγκεφαλις; from παρα, near, and εγκεφαλος, the brain.) The cerebellum. See *Encephalos.*

PARE'NCHYMA. (*a, atis.* n.; from παρεγχυω, to strain through: because the ancients believed the blood was strained through it.) 1. The spongy and cellular substance or tissue that connects parts together. It is applied to the connecting medium of the substance of the viscera.

2. The green juicy layer of the bark which lies immediately under the epidermis of trees.

PA'RESIS. (*is, is.* f.; from παριημι, to relax.) An imperfect palsy.

PARI'ETAL. (*Parietalis;* from *paries*, a wall.) Appertaining to a wall.

PARIETA'LE OS. (So called because it defends the brain like a wall.) *Os verticis. Os sincipitis. Os verticale vel bregmatis.* The parietal bones are two arched and somewhat quadrangular bones, situated one on each side of the superior part of the cranium. Each of these bones forms an irregular square. They are thicker above than below; but are somewhat thinner, and at the same time more equal and smooth than the other bones of the cranium. The only foramen we observe in them is a small one towards the upper and posterior part of each. It has been named the parietal foramen, and serves for the transmission of a small vein to the longitudinal sinus. In many subjects this foramen is wanting. On the inner surface of these bones are the marks of the vessels of the dura mater, and of the convoluted surface of the brain. On the inside of their upper edge we may likewise observe a considerable furrow, which corresponds with the longitudinal sinus of the dura mater; and lower down, towards their posterior and inferior angle, is a smaller one for part of the lateral sinuses. These bones are joined to each other by the sagittal suture; to the os sphenoides and ossa temporum by the squamous suture; to the os occiptis by the lambdoidal suture; and to the os frontis by the coronal suture. Their connexion with this latter bone is well worthy our attention. We shall find that in the middle of the suture, where the os frontis from its size and flatness is the most in danger of being injured, it rests upon the arch formed by the parietal bones: whereas, at the sides, the parietal bones are found resting upon the os frontis, because this same arch is there in the greatest danger from pressure. In new-born infants, the ossa parietalia are separated from the middle of the divided os frontis by a portion of the cranium, then unossified. When the finger is applied to this part, the motion of the brain, and the pulsation of the arteries of the dura mater, may be easily distinguished. In general, the whole of this part is completely ossified before we are seven years of age.

PARIETA'RIA. (*a, æ.* f.; from *paries*, a wall: because it grows upon old walls, among rubbish.) 1. The name of a genus of plants in the Linnæan system. Class, *Polygamia;* Order, *Monœcia.*

2. The pharmacopœial name of the wall pellitory. See *Parietaria officinalis.*

PARIETARIA OFFICINALIS. The systematic name of the wall pellitory; called also, *Perdicium*, and *Helxine.*

Parietaria —foliis lanceolato-ovatis, pedunculis, dichotomis, calycibus diphyllis, of Linnæus. This plant has no smell, and its taste is simply herbaceous. In the practice of the present day it is wholly laid aside, although it was formerly in high estimation as a diuretic.

PARI'LLINE. An alkali recently discovered by Pallotta in the root of sarsaparilla.

PA'RIS. (Etymology uncertain; perhaps so called in reference to the youth of that name who adjudged the golden apple to Venus, the herb bearing but one seed.) 1. The name of a genus of plants in the Linnæan system. Class, *Octrandria;* Order, *Tetragynia.*

2. The pharmacopœial name of the herb Paris. See *Paris quadrifolia.*

PARIS QUADRIFOLIA. The systematic name of the herb Paris, or true love. The color and smell of this plant indicate its possessing narcotic powers. The leaves and berries are said to be efficacious in the cure of hooping cough, and to act like opium. Great caution is requisite in their exhibition, as convulsions and death are caused by an overdose. The root possesses emetic qualities.

PARI'STHMIA. (From παρα, and ισθμιον, the fauces.) 1. The parts constituting the fauces.

2. The term used by Hippocrates for inflammation of the fauces.

PARISTHMIO'TOMUS. (*us, i.* m.; from παρ

θμια, the tonsils, and τεμνω, to cut.) An old instrument with which the tonsils were scarified.

PARISTHMI'TIS. (*is, idis.* f. ; from παρισθμιον, the tonsil gland.) Inflammation of the fauces.

Park-leaves. See *Hypericum androsæmum.*

PARODO'NTIS. (From παρα, near, and οδους, a tooth.) A painful tubercle upon the gums.

PARONI'RIA. (*a, æ.* f. ; from παρα, and ονειρος, a dream.) Disturbance of the sleep by unpleasant dreams.

PARONY'CHIA. (*a, æ.* f. ; from παρα, about, and ονυξ, the nail.) A whitlow, or whitloe. Any collection of pus formed in the fingers is termed by authors *panaris*, or whitlow, and is an abscess of the same nature with those arising in other parts of the body. These abscesses are situated more or less deep, which has induced the writers upon the subject to divide them into several species: accordingly they have ranged them under four heads, agreeably to the places where they are formed. The first kind is formed under the cuticle, on one side of the nail, and sometimes all round it. The second is seated in the fat lying under the skin, between that and the sheath which involves the flexor tendons. The third is described by authors to be formed within the sheath; and they still add a fourth species, arising between the periosteum and the bone, which they call *felon.* Poultices are particularly useful in these several forms of whitlow, for their moisture is imbibed by the cuticle, which it softens, as it does also the skin, and even the nail, and thus lets out the pus from under the nail. When this does not result, and in all cases where the pus is deep seated, the abscess must be opened with the lancet.

PARO'PIÆ. (Παροπιαι; from παρα, near, and ωψ, the eye.) The external angles of the eyes.

PARO'PSIS. (*is, is.* f. ; from παρα, *badly*, and οψις, *visus*, sight.) Mason Good's generic term for disorders of the sense of vision.

PAROPTE'SIS. (From παρα, and οπταω, to roast.) A provocation of sweat, by making a patient approach the fire, or by placing him in a dry bath.

PARORA'SIS. (Παροραση; from παρα, and οραω, to see.) Weak or depraved sight. — *Galen.*

PARORCHI'DIUM. (*um, ii.* n. ; from παρα, and ορχιδιον, a testicle.) Malposition of the testicle, whether consisting in its detention in the abdomen or at the groin, or in a retraction of the organ into the groin.

PARO'STIA. (*a, æ.* f. ; from παρα, and οστεον, a bone.) Defective ossification.—*Mason Good.*

PAROTIDE'US. (From παρα, about, and ους, the ear.) 1. The epithet of a gland. See *Parotid gland.*

2. Appertaining to the gland so named. The trivial name of a species of sore throat, the *cynanche parotidea.*

PAROTID GLAND. *Glandula parotidea. Parotis.* A large conglomerate and salival gland, situated under the ear, between the mammillary process of the temple-bone and the angle of the lower jaw. The excretory duct of this gland perforates the buccinator muscle, and opens into the mouth opposite to the space between the second and third molar tooth of the upper jaw.

PARO'TIS. (*is, idis.* f. ; from παρα, near, and ους, the ear.) 1. The parotid gland.

2. An inflammatory swelling of the parotid gland.

PAROTI'TIS. (*is, idis.* f. ; from *parotis*, the parotid gland, the seat of the complaint, and *itis*, which imports inflammation.) The mumps. An inflammation of the parotid gland. As the inflammation takes place, the cheeks become swollen and painful, there is difficulty in opening the mouth, and in swallowing. Very little constitutional derangement attends this disease, which is mostly produced by a miasm in low and swampy situations. It is believed to be contagious; for when it makes its appearance in a school, and youths are the subjects of it, it generally goes through it. It seldom attacks the more aged and infants. It declines about the fourth or sixth day.

The disease is subject to a metastasis occasionally, in females to the mammæ, in males to the testes; and in a few instances, repelled from these parts, it has affected the brain, and even proved fatal. In general, however, the disease is without danger, and scarcely calls for medical aid. Keeping a flannel over the part, and the antiphlogistic regimen, with mild laxatives, will be sufficient. Should the mammæ or the testes be affected, more active evacuations may be necessary to prevent the destruction of those organs, bleeding general and topical, &c., but avoiding cold applications, lest it should be driven elsewhere.

PA'ROXYSM. (*Paroxysmus, i.* m. ; from παροξυνω, to aggravate.) 1. An obvious increase of the symptoms of a disease which lasts a certain time and then declines.

2. A periodical attack or fit of a disease, as that of an ague.

Parsley. See *Apium petroselium.*

Parsley, black mountain. See *Athamanta.*

Parsley, Macedonian. See *Bubon.*

Parsley, stone. See *Amomum verum.*

Parsnip. See *Pastinaca sativa.*

Parsnip, water. See *Sium nodiflorum.*

PARTHENIA'STRUM. (Diminutive of *parthenium*, tansy.) See *Matricaria.*

Parthenis. The same as *parthenium.*

PARTHE'NIUM. (*um, ii.* n. ; from παρθενος, a virgin: so called because of its uses in diseases of young women.) See *Matricaria parthenium.*

Parthenium mas. See *Tanacetum.*

PARTI'TUS. Partite: cut, as it were, almost to the base; and, according to the number of incisions, *bipartite* when two, *tripartite* when three, *quadripartite* when four, *quinque-partite* when five, &c.

PARTURI'TION. (*Parturitio, onis*, f. ; from *pario*, to bring forth young.) The expulsion of the fœtus from the uterus.

After seven months of pregnancy, the fœtus has all the conditions for breathing, and exercising its digestion; it may then be separated from its mother, and change its mode of existence: childbirth rarely, however, happens at this period: the fœtus remains two months longer in the uterus, and it does not pass out

of this organ till after the completion of nine months.

Examples are related of children being born after ten full months of gestation; but these cases are very doubtful, for it is very difficult to know exactly the period of conception. The legislation, in France, however, has fixed the principle, that childbirth may take place the 299th day of pregnancy.

Nothing is more curious than the mechanism by which the fœtus is expelled: every thing happens with wonderful precision: all seems to have been foreseen, and calculated to favour its passage through the pelvis, and the genital parts.

The physical causes that determine the exit of the fœtus are the contraction of the uterus, and that of the abdominal muscles: by their force the liquor amnii flows out, the head of the fœtus is engaged in the pelvis, it goes through it, and soon passes out by the vulva, the folds of which disappear. These different phænomena take place in succession, and continue a certain time: they are accompanied with pains more or less severe, with swelling and softening of the soft parts of the pelvis, and external genital parts, and with an abundant mucous secretion in the cavity of the vagina. All these circumstances, each in its own way, favour the passage of the fœtus.

To facilitate the study of this complicated action, it must be divided into several periods.

The first period of childbirth. — It is constituted by the precursory signs. Two or three days before childbirth, a flow of mucus takes place from the vagina, the external genital parts swell, and become softer: it is the same with the ligaments that unite the bones of the pelvis; the *cervix uteri* flattens, its opening is enlarged, its edges become thinner; slight pains, known by the name of *flying pains*, are felt in the loins and abdomen.

Second period. — Pains of a peculiar kind come on: they begin in the lumbar region, and seem to be propagated towards the *cervix uteri*, or the *rectum*; they are renewed only after considerable intervals, as a quarter, or half an hour. Each of them is accompanied with an evident contraction of the body of the uterus, with tension of its neck, and dilatation of the opening: the finger, directed into the vagina, discovers that the envelopes of the fœtus are pushed outward, and that there is a considerable tumour, which is called *the waters*: the pains very soon become stronger, and the contractions of the uterus more powerful; the membranes break, and a part of the liquid escapes; the uterus contracts on itself, and is applied to the surface of the fœtus.

Third period. — The pains and contractions of the uterus increase considerably; they are instinctively accompanied by the contraction of the abdominal muscles. The woman who is aware of their effect is inclined to favour them, in making all the muscular efforts of which she is capable: her pulse then becomes stronger and more frequent, her face is animated, her eyes shine, her whole body is in extreme agitation, and perspiration flows in abundance. The head is then engaged in the pelvis: the occiput, placed at first above the left acetabulum, is directed inward and downward, and comes below and behind the arch of the pubis.

Fourth period. — After some instants of repose, the pains and expulsive contractions resume all their activity: the head presents itself at the vulva, makes an effort to pass, and succeeds when there happens to be a contraction sufficiently strong to produce this effect. The head being once disengaged, the remaining parts of the body easily follow, on account of their smaller volume. The section of the umbilical cord is then made, and a ligature is put round it at a short distance from the umbilicus.

Fifth period. — If the accoucheur has not proceeded immediately to the extraction of the placenta after the birth of the child, slight pains are felt in a short time, the uterus contracts freely, but with force enough to throw off the placenta, and the membranes of the ovum: this expulsion bears the name of *delivery*. During the twelve or fifteen days that follow childbirth, the uterus contracts by degrees upon itself, the woman suffers abundant perspirations, her mammæ are distended by the milk that they secrete; a flow of matter, which takes place from the vagina, called *lochia*, first sanguiferous, then whitish, indicates that the organs of the woman resume, by degrees, the disposition that they had before conception.

Such is the course of a natural labour, the accomplishment of which implies the completion of the natural term of gestation — a proper conformation on the part of the mother — and a natural development and normal position on the part of the fœtus. Various deviations from these conditions give rise to different irregularities in the process of parturition, attended with greater or less danger to the mother and child. The subdivision of labours has been carried by many writers to a frivolous degree of minuteness, especially by some French authors. The classification adopted by Dr. Burns is perhaps the most practically useful. It is as follows: —

Class I. *Natural labour.* Labour taking place at the end of the ninth month of pregnancy, the child presenting the central portion of the sagittal suture, and the forehead being directed at first toward the sacro-iliac symphysis; a due proportion existing between the size of the head, and the capacity of the pelvis: the pains being regular and effective, the process not continuing beyond twenty-four hours, seldom above twelve, and very often not for six. No morbid affection supervening, capable of preventing delivery, or endangering the life of the woman.

This comprehends only one order.

Class II. *Premature labour*, or labour taking place considerably before the completion of the usual period of utero-gestation, but yet not so early as necessarily to prevent the child from surviving.

This comprehends only one order.

Class III. *Preternatural labours*, or those in which the presentation, or position of the child is different from that which occurs

natural labour; or in which the uterus contains a plurality of children, or monsters.

This comprehends seven orders.

Order 1. Presentation of the breech.

Order 2. Presentation of the inferior extremities.

Order 3. Presentation of the superior extremities.

Order 4. Presentation of the back, belly, or sides of the child.

Order 5. Malposition of the head.

Order 6. Presentation of the funis.

Order 7. Plurality of children, or monsters.

Class IV. *Tedious labour*, or labour protracted beyond the usual duration; the delay not caused by the malposition of the child, and the process capable of being finished safely, without the use of extracting instruments.

This comprehends two orders.

Order 1. Where the delay proceeds from some imperfection or irregularity of muscular action.

Order 2. Where it is dependent principally on some mechanical impediment.

Class V. *Laborious or instrumental labour;* labour which cannot be completed without the use of extracting instruments; or altering the proportion betwixt the size of the child, and the capacity of the pelvis.

This comprehends two orders.

Order 1. This case admitting the use of such instruments as do not necessarily destroy the child.

Order 2. The obstacle to delivery being so great, as to require that the life of the child should be sacrificed for the safety of the mother.

Class VI. *Impracticable labour;* labour in which the child, even when reduced in size, cannot pass through the pelvis.

This comprehends only one order.

Class VII. *Complicated labour;* labour attended with some dangerous or troublesome accident or disease, connected in particular instances with the process of parturition.

This comprehends six orders.

Order 1. Labour complicated with uterine hemorrhage.

Order 2. Labour complicated with hemorrhage from other organs.

Order 3. Labour complicated with syncope.

Order 4. Labour complicated with convulsions.

Order 5. Labour complicated with rupture of the uterus.

Order 6. Labour complicated with suppression of urine, or rupture of the bladder.

PA'RTUS. (*us*, *ûs*. m.; from *pario*, to bring forth young.) 1. Labour, or the act of bringing forth young.

2. The young when brought forth.

PARU'LIS. (*is*, *idis*. f.; from παρα, near, and ουλον, the gum.) An inflammation, boil, or abscess in the gums. A gum-boil is often a primary disease, depending on an inflammation of the gums from accidental and common causes, in which case the lancet, or leaving it to nature, soon restores the gum to a healthy state. But sometimes it arises from a carious tooth, or from cutting the dentes sapientiæ. From the first of these, the gum-boil frequently returns, and requires the removal of the tooth; from the latter, much irritation is often produced, and the jaw and face swell considerably. If there be constitutional disturbance with it, leeches and purgatives are to be resorted to.

PARU'RIA. (*a*, *æ*. f.; from παρω, *perperam*, and ουρεω, to make water.) Mismicturition.

PARY'GRON. (Παρυγρον; from παρα, and ὑγρος, humid.) A liquid or moist preparation for allaying a slight topical inflammation. — *Galen.*

PASI'PHILUS. (Πασιφιλος; from πας, all, and φιλος, grateful; from its general usefulness.) The name of a desiccative plaster, composed of equal parts of vitriol, sandarach, misy, and chalcitis.

PA'SMA. (From πασσω, to sprinkle over.) A dry powder to sprinkle over the body. See *Catapasma.*

PA'SSA. (*a*, *æ*. f.; from *pando*, to spread.) 1. A grape or raisin.

2. Paracelsus uses this word to signify a whitlow.

Passa minor. See *Uva passa minor.*

PASSAVA'NTICUS. (From πας, all, and αναινω, to dry up.) The epithet of an old purgative powder.

PASSIFLO'RA. (*a*, *æ*. f.; altered by Linnæus, from *flos passionis* of preceding botanists: a term applied to the beautiful genus in question, because the instruments of Christ's passion were thought to be represented in the parts of the fructification.) The name of a genus of plants in the Linnæan system. Class, *Gynandria;* Order, *Pentandria.*

PASSIFLORA LAURIFOLIA. Bay-leaved passion-flower. A native of Surinam. The fruit of this tree grows to the size of a small lemon, which it greatly resembles. It has a delicious smell and flavour, and is excellent for quenching thirst, abating heat of the stomach, increasing the appetite, recruiting the spirits, and allaying the heat in fevers.

PASSIFLORA MALIFORMIS. Apple-shaped granadilla. The fruit of this species of passion-flower is esteemed a delicacy in the West Indies, where it is served up at table in desserts. It is not unwholesome.

Passio hysterica. See *Hysteria.*

Passio ileaca. See *Ileac passion.*

PASSION. (Πάθημα. *Passio*, *onis*. f.; from *patior*, to suffer.) 1. By passion, is generally understood an instinctive feeling become extreme and exclusive. A man of strong passion neither hears, sees, nor exists, but through the feeling which agitates him; and as the violence of this feeling is such that it is extremely painful, it has been called *passion* or *suffering*. The passions have the same end as instinct; like them, they incline animals to act according to the general laws of animated nature. We see in man passions which he has in common

with the animals, and which consist of animal wants become excessive; but he has others which are displayed only in the social state. These are *social* wants grown to excess.

The *animal passions* have a twofold design, the preservation of the individual, and of the species. To the preservation of the individual belong fear, anger, sorrow, hatred, excessive hunger, &c. To the preservation of the species, excessive venereal desires, jealousy, the fury which is felt when the young ones are in danger, &c.

Nature has made this sort of passions very powerful, and they are equally so in a state of civilisation.

The passions which belong to the social state are only the social wants carried to an excess. Ambition is the inordinate love of power; avarice, the love of riches become excessive; hatred and revenge, the natural and impetuous desire to injure whoever hurts us; the passion of gaming, and almost all the vices, which are also passions, are violent inclinations to increase the feeling of existence; violent love is an elevation of the venereal desires, &c.

Some of the passions are allayed or extinguished by gratification; others become more irritated by it. The first sort is, therefore, often the cause of happiness, as is seen in philanthropy and love; whilst the latter sort necessarily causes misery. Misers, ambitious and envious people, are examples of the last.

If our necessities develop the intellect, the passions are the principle or the cause of every thing *great* which man performs, whether good or bad. Great poets, heroes, great criminals, and conquerors, are men of strong passions. — *Magendie.* The passions have a strong influence on the health of the individual. See *Pathemata animi.*

2. The disease named *ileus*, is called also *ileac passion*, and the paroxysm of hysteria has been called *hysteric passion.*

Passion, cœliac. See *Diarrhœa cœliaca.*

Passion, hair-brained. See *Pathemata animi.*

Passion, hysteric. See *Hysteria.*

Passion, ileac. See *Ileac passion.*

Passu'la. (*a, æ.* f.) A small raisin.

Passula major. See *Vitis vinifera.*

Passula'tus. (From *passula*, a fig, or raisin.) This epithet is applied, by the old pharmacologists, to some medicines in which raisins are the chief ingredient; as the *Electuarium passulatum*, &c.

Pa'ssum. (*um, i.* n.; from *passa*, a grape, or raisin.) Raisin wine.

PA'STA. (*a, æ.* f.) A cake or lozenge.

Pasta regia. See *Panis sancti marci*, in the Supplement.

PASTILLUM. (*um, i.* n.; diminutive of *pasta*, a lozenge.) *Pastillus.* A pastil or troch.

PASTINA'CA. (*a, æ.* f.; so called because its root resembles the *pastinum*, a forked instrument used by the Romans for planting seeds.) 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Digynia.* Parsnip.

2. The pharmacopœial name of the parsnip. See *Pastinaca sativa.*

Pastinaca opopanax. The plant which yields the opopanax of commerce, was formerly referred to the genus *pastinaca*, but it is now placed under a new genus *opoponax.* See *Opoponax chironium*, in the Supplement.

Pastinaca sativa. The systematic name of the parsnip; called also, *Banica*, and *Elaphoboscum.* The cultivated or garden parsnip is the *Pastinaca — foliolis simpliciter pinnatis*, of Linnæus. Its roots are sweet and nutritious, and in high esteem as an article of food. They possess an aromatic flavour, more especially those of the wild plant, and are exhibited in calculous complaints for their diuretic and sheathing qualities.

Pâte arsenicale. Arsenical paste. This consists of seventy parts of cinnabar, twenty-two of dragons' blood, and eight of white arsenic, made into a paste with saliva at the time of its application. It is much used in France as a caustic to destroy cancerous tumours; but is justly reprobated by English surgeons. See *Arsenious acid.*

PATE'LLA. (*a, æ.* f.; diminutive of *patina*, a dish: so named from its shape.) *Rotula.* The knee-pan. A small flat bone, which, in some measure, resembles the common figure of the heart, with its point downwards, and is placed at the fore-part of the joint of the knee. It is thicker in its middle part than at its edge. Anteriorly it is a little convex, and rough for the insertion of muscles and ligaments; posteriorly it is smooth, covered with cartilage, and divided by a middle longitudinal ridge, into two slightly concave surfaces, of which the external one is the largest and deepest. They are both exactly adapted to the pulley of the os femoris. The edges of this posterior surface are rough and prominent where the capsular ligament is attached, and below is a roughness at the point of the bone, where the upper extremity of a strong tendinous ligament is fixed, which joins this bone to the tuberosity at the upper end of the tibia. This ligament is of considerable thickness, about an inch in breadth, and upwards of two inches in length. The patella is composed internally of a cellular substance, covered by a thin bony plate; but its cells are so extremely minute, that the strength of the bone is, upon the whole, very considerable. In new-born children it is entirely cartilaginous. The use of this bone seems to be, to defend the articulation of the joint of the knee from external injury. It likewise tends to increase the power of the muscles which act in the extension of the leg, by removing their direction farther from the centre of motion, in the manner of a pulley. When we consider the manner in which it is connected with the tibia, we find that it may very properly be considered as an appendix to the latter, which it follows in all its motions so as to be to the tibia what the olecranon is to the ulna; with this difference, however, that the patella is moveable, whereas the olecranon is a fixed process. Without this mobility, the rotatory motion of the leg would have been prevented.

PA'TENS. Patent. Expanding. Spreading. Applied in botany to leaves which form a moderately acute angle, with the stem or branch *folia patentia.*

PATHE'MA. (*a, atis.* n.) Passion; emotion. See *Passion.*

Pathemata animi. Passions of the mind. These are divided into the exciting and depressing; and each of these again, in a medical point of view, into such as excite suddenly and with temporary violence, or more slowly and permanently.

Passions are either,

1. *Exciting.*

a. In a violent degree; as *rage, intense enthusiasm.*

b. More moderately; as *joy, emulation, desire, hope, benevolence, love.*

2. *Depressing.*

a. In a violent degree; as *terror, grief.*

b. More moderately; as *fear, jealousy, envy, resentment.*

3. *Calming;* as *veneration, admiration, contemplation.*

Persons of strong, active imaginations, sanguine in temperament, and eager in their pursuits and expectations, are most liable to, and suffer most from, the violently exciting passions. The effects are often apoplexy, palsy, hæmorrhage, jaundice. The depressing passions are, in different degrees, sedative. The more violent ones are sometimes fatal in a moment. The others slowly undermine the constitution, weaken every function, and produce indigestion and dropsy.

PATHE'TICUS. (*Pathetic;* from παθος, an affection.) Appertaining to the passions.

Pathetici. The fourth pair of nerves are so called, because they are distributed to the *musculus patheticus,* or superior oblique muscle of the eye.

Patheticus musculus. The superior oblique muscle of the eye is so called, on account of its instrumentality in expressing certain passions.

PATHOGNOMO'NIC. (*Pathognomonicus;* from παθος, a disease, and γινωσκω, to know.) A term given to those symptoms which are peculiar to a disease. They are also termed proper or characteristic symptoms.

PATHO'LOGY. (*Pathalogia, æ.* f.; from παθος, a disease, and λογος, a discourse.) The doctrine of diseases. That branch of medicine which treats of the nature of diseases. It is divided into *general pathology,* which regards what is common to a number of diseases taken as a class; and *special pathology,* which treats of individual diseases: thus, the consideration of fever, in a wide sense of the term, is a matter of general pathology; but the consideration of typhus, and the morbid states on which it more particularly depends, is a matter of special pathology. Pathology is subdivided into *medical* and *surgical.*

Patie'ntia. (*a. æ.* f.; from *patior,* to bear, or suffer.) A name of the herb monks' rhubarb. Why it is so called we know not. See *Rumex patientia.*

Patience. See *Rumex patientia.*

Pa'tor na'rium. (From *pateo,* to be open.) The sinus, cavity, or chasm of the nose.

Patrum cortex. (So called from the Jesuits, who first spread its use in Europe.) See *Cinchona.*

PA'TULUS. Open: a term frequently used in botany.

Patu'rsa. A barbarous name of the venereal disease.

Paul's betony. See *Veronica.*

Paulina confectio. See *Aristarchi antidolus paulina.*

Pavana. See *Croton tiglium.*

PA'VO. (*o, onis.* m. and f.) The name of a genus of birds, of the order *Gallinæ.* The peacock.

Pavo cristatus. The pea-fowl. The flesh of this bird is delicate when young; but it is more esteemed for its beauty than as an aliment.

PA'VOR. (*or, oris.* m.) 1. Fear. See *Pathemata animi.*

2. The itch, from the fear there is of catching it.

Pea. See *Pisum sativum.*

Pea-fowl. See *Pavo cristatus.*

Peach. See *Amygdalus persica.*

Peagle. See *Primula veris.*

Pear. See *Pyrus communis.*

Pearl. See *Margarita.*

Pearl-ash. An impure potash, obtained by lixiviation from the ashes of plants. See *Potassa.*

Pearl barley. See *Hordeum.*

Pearl white. The subnitrate of bismuth.

Peche'dion. Πηχεδιον. The perinæum.

Pechu'rim cortex. An highly aromatic bark, the produce of a species of *Laurus.* The odour is extremely fragrant, like unto that of cinnamon, which it greatly resembles in its properties. In Lisbon it is much esteemed in the cure of dysenteries, and for allaying obstinate vomitings.

Pechurim faba. See *Faba pechurim.*

Pechuris. See *Faba pechurim.*

Pechy'agra. (From πηχυς, the cubit, and αγρα, a seizure.) The gout in the elbow. The term is an incorrect one.

Pe'chys. Πηχυς. The cubit, or elbow.

Pechyty'rbe. An incomprehensible name for the scurvy. It is used by Forest.

Pecquet's duct. See *Thoracic duct.*

PE'CTEN. (*en, inis.* m.) The pubes.

PE'CTIC ACID. (*Acidum pecticum;* so called from πηκτις, a coagulum.) The name given by Braconnot to an acid, which he conceives to be universally diffused through vegetables, and analogous to, if not identical with, jelly. Eighty-five parts of this acid seem to neutralise 15 of potash, and afford a compound like gum arabic.

PECTINA'LIS. (So named from its arising at the *pecten,* or pubes.) *Pectinæus,* of authors. A small flat muscle, situated obliquely between the pubes and the little trochanter, at the upper and anterior part of the thigh. It arises broad and fleshy from the anterior edge of the os pectinis, or pubis, as it is more commonly called, as far as its spine; and, descending obliquely backwards and outwards, is inserted by a short and broad tendon, into the upper and anterior part of the linea aspera of the os femoris, a little below the lesser trochanter. This muscle serves to bend the thigh, by drawing it upwards and

inwards, and likewise assists in rolling it outwards.

PECTINA'TUS. (From *pecten*, a comb.) Pectinate: comb-like. 1. A term applied to a pinnatifid leaf, the segments of which are remarkably narrow and parallel, like the teeth of a comb; as the lower leaves of the *Hottonia palustris*, and *Meriophyllum verticillatum*.

2. The fasciculated muscular fibres of the right auricle of the heart are called *musculi pectinati*.

Pectinæus. See *Pectinalis*.

PE'CTORAL. (*Pectoralis*; from *pectus*, the breast.) Appertaining to the breast. Pectoral medicines are those which relieve diseases of the chest.

Pectoral moss. See *Lichin pulmonarius*.

PECTORALIS MAJOR. A broad, thick, fleshy, and radiated muscle, situated immediately under the integuments, and covering almost the whole anterior part of the breast. *Pectoralis*, of authors. Winslow calls it *pectoralis major*, to distinguish it from the serratus minor anticus, which he has named *pectoralis minor*. It arises from the cartilaginous extremities of the fifth and sixth ribs, from the last of which its tendinous fibres descend over the upper part of the obliquus externus and rectus abdominis, helping to form a part of the sheath in which the latter is included. It likewise springs from almost the whole length of the sternum by short tendinous fibres, which evidently decussate those on the other side; and tendinous and fleshy from more than a third of the anterior part of the clavicle. From these origins the fibres run in a folding manner towards the axilla, and are inserted by a broad tendon into the os humeri, above the insertion of the deltoid muscle, and at the outer side of the groove which lodges the tendon of the long head of the biceps. Some of its fibres likewise extend into that groove; and, from the lower part of this tendon, which is spread near two inches along the os humeri, we find it sending off other fibres, which help to form the fascia that covers the muscles of the arm. It often happens that that part of the pectoralis, which arises from the clavicle, is separated from the inferior portion, so as to appear like a distinct muscle. This has induced Winslow to divide it into parts, one of which he calls the *clavicular*, and the other the *thoracic* portion. Sometimes these two portions are inserted by separate tendons, which cross one another at the upper and inner part of the os humeri, the tendon of the thoracic portion being inserted at the outer edge of the bicipital groove, immediately behind the other. This muscle, and the latissimus dorsi, form the cavity of the axilla, or arm-pit. The use of the pectoralis is to move the arm forwards, or to raise it obliquely towards the sternum. It likewise occasionally assists in moving the trunk upon the arm; thus, when we exert any efforts with the hand, as in raising ourselves from an arm-chair, or in sealing a letter, the contraction of this muscle is particularly observable. To these uses Haller adds that of assisting in respiration, by raising the sternum and ribs. He tells us he well remembers, that when this muscle was affected by rheumatism, his breathing was incommoded; and that, when troubled with difficulty of respiration, he had often found himself greatly relieved by raising and drawing back his shoulders, keeping his arms at the same time firmly fixed. Winslow, however, has denied this use, and Albinus has omitted it, probably because it does not take place in a natural state.

PECTORALIS MINOR. *Serratus anticus*, of Albinus. A small fleshy and digitated muscle, situated at the anterior and lateral part of the thorax, immediately under the pectoralis major. Douglas and Cowper call this muscle *Serratus minor anticus*; and Winslow gives it the name of *Pectoralis minor*. It arises from the upper edges of the third, fourth, and fifth ribs, near where they join with their cartilages, by an equal number of tendinous and fleshy digitations, which have been compared to the teeth of a saw, whence this and some other muscles, from their having a similar origin, or insertion, have got the name of *serratus*. From these origins it becomes thicker and narrower as it ascends, and is inserted by a flat tendon into the upper part of the coracoid process of the scapula. The principal use of this muscle is to draw the scapula forwards and downwards; and when that is fixed, it may likewise serve to elevate the ribs.

PECTORI'LOQUY. (*Pectorilŏquium*; from *pectus*, the chest, and *loquor*, to speak: so called because the voice seems as if it proceeded directly from the chest of the patient.) When the stethoscope is applied over an excavation of the lungs which communicates with the bronchiæ, the voice appears to come direct through the tube of the instrument from the chest of the patient to the ear of the auscultator. This phenomenon is called *pectoriloquy*. It is distinguished into *perfect*, *imperfect*, and *doubtful*. The two latter are with difficulty distinguishable from bronchophony, and are not at all to be depended on unless in conjunction with the symptoms. Pectoriloquy is most frequently heard in the subclavicular and axillary regions because vomicæ are most frequently formed in the upper part of the lungs. Pectoriloquy may be suspended if the bronchial tubes, which communicate with the excavation, be obstructed. If the morbid cavity communicate with a great number of bronchia, or with the cavity of the pleura, the pectoriloquy is much diminished, or ceases altogether.

Pectoris os. See *Sternum*.

PE'CTUS. (*us*, *oris*. n.) The breast.

PECTU'SCULUM. (Diminutive of *pectus*, the breast: so named from its shape.) The metatarsus. — *Turton*.

PEDA'TUS. (From *pes*, a foot.) Pedate (bird-foot-like.) Applied to a particular kind of leaf, which is ternate, with its lateral leaflets compounded in their fore-part; as in *Helleborus niger* and *fœtidus*, and *Arum dracunculus*.

PEDE'THMUS. (*us*, *i*. m. Πηδηθμος; from πηδαω, to leap.) The pulsation of blood-vessels.

PEDICELLATE. *Pedicellatus*. (From *pedicellus*, a partial flower stalk.) Having a partial stalk. Applied to flowers which are

supported by partial stalks; also to glands, nectaries, &c., when placed at the top of a stalk.

PEDICE'LLUS. A partial flower-stalk. See *Pedunculus.*

PEDICULA'RIA. (*a, æ.* f.; from *pediculus*, a louse: so called from its use in destroying lice.) See *Delphinium staphisagria.*

PEDICULA'RIS. (From *pediculus*, a louse.) The name of a genus of plants of the Class, *Didynamia;* and Order, *Angiospermia.* Louse-wort. The *Pedicularis palustris*, Marsh louse-wort, is said to kill lice. It is somewhat acrid, and has been used in decoction as an application to indolent ulcers.

PEDICULA'TIO. *Morbus pedicularis.* That disease of the body in which lice are continually bred on the skin.

PEDI'CULUS. (*us, i.* m.; diminutive of *pes*, a foot: so named from its many small feet.) 1. A louse. The name of a genus of insects, of the order *Aptera.* Two species are found on the human body, the *pediculus humanus*, the common louse, infesting the head; and the *P. pubis*, or crab-louse, found chiefly on the pubes.

2. A pedicle or footstalk of a flower, or leaf. See *Pedunculus.*

Pedicus. See *Extensor brevis digitorum pedis.*

PEDILU'VIUM. (From *pes*, the foot, and *lavo*, to wash.) A bath for the feet.

PE'DION. (Πεδιον; from πους, the foot.) The sole of the foot.

PE'DORA. The sordes of the eyes, ears, and feet.

PEDUNCULA'TUS. Pedunculate: growing on a fruit-stalk: opposed to sitting.

PEDU'NCULUS. A peduncle, or a flower-stalk, or that which springs from the stem, and bears the flowers and fruit, and not the leaves.

Pedicellus, is a partial flower-stalk, the ultimate subdivision of a general one; as in the cowslip.

The pedunculus is,

1. *Cauline*, when it grows immediately out of the main stem, especially of a tree; as in *Averrhoa bilimbi.*

2. *Rameus*, growing out of the main branch; as in *Eugenia malaccensis.*

3. *Axillary*, growing either from the bosom of a leaf, that is, between it and the stem, as in *Anchusa sempervirens;* or between a branch and a stem; as in *Ruppia maritima.*

4. *Oppositifolius*, opposite to a leaf; as in *Geranium pyrenaicum.*

5. *Internodis*, proceeding from the intermediate part of a branch between two leaves; as in *Ehretia internodis.*

6. *Gemmaceous*, growing out of a leaf-bud; as in *Berberis vulgaris.*

7. *Terminal*, when it terminates a stem or branch; as in *Centaurea scabiosa.*

8. *Lateral*, when situated on the side of a term or branch; as in *Erica vagans.*

9. *Solitary*, either single on a plant, as in *Rubus chamæmorus;* or only one in the same place, as in *Antirrhinum spurium.*

10 *Aggregate*, clustered, when several grow together; as in *Verbascum nigrum.*

11. *Sparsus*, dispersed irregularly over the plant or branches; as in *Ranunculus sceleratus.*

12. *Uniflorus, biflorus, triflorus*, &c. bearing one, two, three, or more flowers.

13. *Multiflorus*, many-flowered; as in *Daphne laureola.*

When there is no flower-stalk, the flowers are said to be *sessile;* as in *Centaurea calcitrapa*, and the dodders.

PEGANELÆ'UM. (*um, i.* n.; Πηγανελαιον; from πηγανον, rue, and ελαιον, oil.) Oil of rue.

PEGANE'RUM. (*um, i.* n.; Πηγανηρον; from πηγανον, rue.) A plaster composed of rue and other ingredients.

PE'GANUM. (*um, i.* n. πεγανον, rue; from πηγνυμι, to compress: so called, because, by its dryness, it condenses the seed.) The name of a genus of plants. Class, *Dodecandria;* Order, *Monogynia.*

PEGANUM HA'RMALA. The Assyrian wild rue: much the same in its properties with the common rue, and as generally used in that part of the world as the latter with us.

PE'GE. (Πηγη, a fountain.) The internal angles of the eye were called *pegæ.*

PELADA. A species of baldness; a shedding of the hair from a venereal cause.

PELA'RIUM. (From πηλος, mud: so called from its muddy consistence.) A collyrium.

PELECA'NUS. (*us, i.* m.; from πελεκαω, to perforate.) 1. The bird called the pelican.

2. An instrument to draw teeth: so named from its curvature at the end resembling the beak of a pelican.

PELECI'NUM. (From πελεκυς, a hatchet: so called because its seeds are shaped like a two-edged hatchet.) The hatchet-vetch.

PELIO'MA. (Πελιωμα; from πελος, black.) An extravasation of blood of a livid colour.

PELLA'GRA. (*a, æ.* f.) *Pelagra.* This disease has been little noticed by nosologists. Dr. Good, however, has admitted it under the name of *Elephantiasis Italica;* and M. Alibert under that of *Ichthyosis pellagra.* The earliest description of it is that by Francesa Trapolli, a Milenese physician. Indeed, few accounts of it have hitherto been published, although the peculiar symptoms with which it is attended, and the fatal consequences which generally ensue from it, render it equally curious and important. In certain districts, as Milan and Padua, in Italy, where it is peculiarly prevalent, it is computed to attack five inhabitants out of every hundred.

About the month of March or April, when the season invites the farmers to cultivate their fields, a shining red spot suddenly arises on the back of the hand, or some part of the body, resembling the common erysipelas, but without much itching or pain, or indeed any other particular inconvenience. Both men and women, girls and boys, are equally subject to it. This red spot elevates the skin a little, producing numerous small tubercles of different colours; the skin becomes dry and cracks, and the epidermis sometimes assumes a fibrous appearance. At length it falls off in white furfuraceous scales; but the shining redness underneath still

continues, and, in some instances, remains through the following winter. In the mean time, excepting this mere local affection, the health is not the least impaired, the patient performs all his rural labours, as before, enjoys a good appetite, eats heartily, and digests well. And what is most surprising is, that in the month of September, when the heat of the summer is over, in some cases sooner, in others later, the disorder generally altogether disappears, and the skin resumes its natural healthy appearance. The patients, however, are not now to be considered as well: the disease hides itself, but is not eradicated: for no sooner does the following spring set in, but it quickly reappears, and generally is accompanied with severer symptoms. The spot grows larger, the skin becomes more unequal and hard, with deeper cracks. The patient now begins to feel uneasiness in the head, becomes fearful, dull, and less capable of labour; even when the pelagra has arrived at this stage, the returning winter, nevertheless, commonly restores the patient to apparent health: but the more severe the symptoms have been, and the deeper root the disease has taken, the more certainly does the return of spring produce it with additional violence. Sometimes the disease in the skin disappears, but the other symptoms remain notwithstanding. The powers both of the mind and body now become daily more enfeebled; peevishness, watchings, vertigo, and, at length, complete melancholy, supervene. Nor is there a more distressing kind of melancholy any where to be seen, than takes place in this disease. The patients now begin to grow emaciated, and delirious. A colliquative diarrhœa comes on, which no remedy can stop. Sometimes, in the pellagra, the diarrhœa comes on before the delirium, and the patient is alternately affected with delirium and stupor. The appetite often suddenly fails, so that the sick will sometimes go for near a week without tasting food. Not uncommonly it returns as suddenly, so that they eagerly devour whatever is offered them, and this even at times when they are horribly convulsed. The convulsions with which they are attacked are most shocking to see, and are of almost every kind, catalepsy excepted, which has been described by writers. The first stage of the pellagra, in which the local affection only takes place, continues in some instances for a great length of time; persons being occasionally met with in whom it has lasted six or eight, or even fifteen years, disappearing regularly every winter, and returning again in the spring. This occasions some of the inhabitants to pay little attention to it; although, in other cases, it reaches its greatest height after the second or third attack. It appears that this disease is not infectious, and that the causes producing it are yet unascertained. It has been supposed, by some, to arise from the heat of the sun's rays; and hence it is now and then called *mal de sol*; but this does not produce any similar disease in other parts of the world, where it is in an equal or even much greater degree than at Milan; no disease in any respect resembling it having hitherto been noticed in such regions, except the lepra asturiensis described by Thiery, and after him by Sauvages. Pure air, habitual cleanliness, warm bathing, and a nutritious diet, with such tonics as best agree with the constitution, have proved most useful in removing this disease, when not advanced beyond the reach of recovery.

Dr. Holland has lately published a valuable paper on pellagra, containing the results of his own observation, and to this we refer the reader for more ample information. See *London Medico-chirurgical Transactions*, vol. vii.

PELLI'CULA. (*a, æ.* f.; from *pellis*, the skin.) A pellicle, or slender skin. In *Medicine*, it is applied to such an appearance of the surface of urine, and to very delicate membraneous productions. In *Botany*, to the delicate skin which covers some seeds and other parts.

Pellitory. See *Parietaria.*

Pellitory, bastard. See *Achillea ptarmica.*

Pellitory of Spain. See *Anthemis.*

PE'LMA. (Πελμα; from πελω, to move forwards.) The sole of the foot, or a sock adapted to the sole of the foot.

PE'LTA. (*a, æ.* f.; a shield, buckler, or target.) A variety of the calyculus, called the shield, which is the fruit, of an oblong, flat, and obtuse form, observed in the lichen tribe.

PELTA'LIS CARTILA'GO. (From *pelta*, a buckler: so called from its shape.) The scutiform cartilage of the larynx.

PELTA'TUS. (From *pelta*, a shield.) Peltate, or target-shaped: applied to leaves which have the stalk inserted into their middle, like the arm of a man holding a shield; as in *Tropæolum majus*, and *Hydrocotyle vulgaris.*

PE'LVIC. (*Pelvicus*; from *pelvis*, the lower part of the trunk of the body.) Pertaining to the pelvis.

PE'LVIS. (*is, is.* f.; from πελυς, a basin: because it is shaped like a basin used in former times.) The cavity below the belly. It is composed of the two ossa innominata, the os sacrum, and os coccygis. It contains the rectum and urinary bladder, the internal organs of generation, and is lined and covered by muscles and common integuments.

It is wide and expanded at its upper part, and contracted at its inferior aperture. The upper part of the pelvis, properly so called, is bounded by an oval ring, which parts the cavity of the pelvis from the cavity of the abdomen. This circle is denominated the brim of the pelvis: it is formed by a continued and prominent line along the upper part of the sacrum, the middle of the ilium, and the upper part, or crest, of the os pubis. The circle of the brim supports the intestines and impregnated womb. The lower part of the pelvis is denominated the outlet. It is composed by the arch of the ossa pubis, and by the sciatic ligaments.

The office of the pelvis is to give a steady bearing to the trunk, and to connect it with the lower extremities, by a sure and firm joining, to form the centre of all the great motions of the body, to contain the internal organs of generation, the urinary bladder, the rectum, and

occasionally part of the small intestines, and to give support to the gravid uterus.

There is a considerable difference in the relative dimensions of the male and female pelvis. In the male, the antero-posterior diameter is greater than the transverse, and the brim of the pelvis is nearly circular. In the female, the transverse is the greater, and the brim of the pelvis is of an oval shape. The female pelvis is larger in all its dimensions than the male, except in height: the ossa ilia are more expanded, the sacrum and coccyx more curved, and broader, and the latter more movable. The ischiatic notch and the thyroid foramen are larger in the female, and the angle formed by the rami of the ossa pubis is more obtuse.

In a female pelvis of ordinary dimensions, the distance between the os sacrum and os pubis, at the *brim*, is found to be between four and five inches, that between the two ossa ilia between five and six inches; and the oblique diameter about four inches and five eighths. At the outlet the proportions are reversed, the distance between the symphysis pubis and os coccygis being longer than that between the ossa ilia. The depth of the fore-part of the pelvis, at the symphysis of the pubis, measures about an inch and a half, behind it is six inches, and at the sides three inches and a half. The pelvis may vary from the above dimensions according to the size and proportions of the body, which may differ somewhat in the different nations, yet be well formed; or it may vary from disease, either of the bones or viscera, and then it is considered as distorted.

The pelvis has two *axes*, the direction of which must be carefully attended to by the obstetrician. The *axis of the brim* is indicated by a straight line drawn from the umbilicus to the point of the coccyx; *the axis of the outlet* by a straight line drawn from the first bone of the sacrum to the orifice of the vagina.

Pelvis auris. The cochlea of the ear.

Pelvis cerebri. The infundibulum.

Pemphigoi'des. (From πεμφιξ, a vesicle, and ειδος, likeness.) The epithet of a fever accompanied with an eruption of vesicles.

PE'MPHIGUS. (*us, i.* m.; from πεμφιξ, a bubble, or vesicle.) An eruption, consisting of vesicles of various sizes, from a pea to a walnut, and mostly attended by fever. The disease has been described as *Febris bullosa*, *Exanthemata serosa*, *Morta*, *Pemphigus helveticus*, *Pemphigus major*, and *Pemphigus minor*. The eruption is transparent, like small bladders filled with a pellucid or slightly coloured fluid. The vesicle is mostly almond-shaped, and has an inflamed base, and when it breaks the part is disposed to ulcerate. The fever may be either synocha or typhus. The latest writers on this disease contend, that it is sometimes acute, and sometimes a chronic affection; that the former is constantly attended with fever, and the latter constantly without; that in neither case is an acrimonious or contagious matter thrown out by the constitution, but pure serum, secreted by the cutaneous exhalent arteries. So rare was the disease when Dr. Cullen wrote, that he never saw it but once, in a case which was shown to him by Dr. Home. Dr. David Stuart, then physician to the hospital of Aberdeen, published an account of it in the Edinburgh Medical Commentaries. It is ushered in by sickness at stomach, great oppression about the præcordia, headach, lassitude, and weariness on the least exertion, with stiffness and rigidity of the joints. The eruption comes out as very small, distinct, red spots, a little elevated above the surface of the skin, and much resembling the first appearance of the small-pox. The eruption gradually spreads itself over the whole body, and the vesicles daily increase in size. The patient complains of headach, sickness, oppression about the præcordia, thirst, sore throat, with difficulty of swallowing; the tongue is foul; the skin hot and feverish; the pulse from 100 to 120, rather depressed; the belly costive; the eyes dull and languid, but without delirium. The whole surface of the skin is now interspersed with vesicles of various sizes, many of them large, especially on the arms and breast. In the interstices, between the vesicles, the appearance of the skin is natural, nor is there any redness round their base; the distance from one to another is from half an inch to a handbreath, or more. In some places two or three are joined together, like the pustules in the confluent small-pox. If the vesicles burst of themselves, they form a whitish scab or crust. They are mostly on the neck and face; by far the greatest number are perfectly entire, turgid, and of a bluish colour. Upon opening them it is evident that the cuticle elevated above the cutis, and distended with a thin, yellowish, semipellucid serum, forms this appearance. Nor is the surface of the cutis ulcerated, or livid; but of a red florid colour, as when the cuticle is separated by a blister, or superficial burning.

Since the description of this disease by Dr. Stuart, observations on it have been published by Dr. Dickson of Dublin, by Mr. Gaitskell and Mr. Upton, in the Memoirs of the Medical Society of London. Some subsequent observations on pemphigus were published in the London Medical Journal, by Mr. Thomas Christie. From a case which Mr. Christie describes, he is disposed to agree with Dr. Dickson, in thinking that sometimes, at least, pemphigus is not contagious. He remarks, however, that the pemphigus described by some foreign writers was extremely infectious; circumstances which, he thinks, may lead to a division of the disease into two species, the pemphigus simplex, and complicatus, both of which, but especially the last, seem to vary much with respect to mildness and malignity. The fever in pemphigus is mostly a mild or malignant typhus, and requires the same remedies — port wine and bark, with mineral acids. The best application to the eruption, when the vesicles break, is finely powdered starch.

Pemphigus major. See *Pemphigus.*

Pemphigus minor. See *Pemphigus.*

PE'MPHIX. (*ix, igis.* f.; Πεμφιξ, a vesicle, or bubble.) See *Pemphigus.*

Pemptæ'us. (Πεμπταιος; from πεμπτος, the

fifth.) An ague, the paroxysm of which returns every fifth day.

PENÆ'A. (*a*, *æ*. f.; a name given by Linnæus in memory of the learned Peter Pena, a native of France, and an excellent botanist.) 1. A genus of plants in the Class *Tetrandria*; Order, *Monogynia*.

2. The name of a species of polygala.

PENÆA MUCRONATA. The systematic name of the plant which is said to afford the sarcocolla. This is brought from Persia and Arabia in small grains of a pale yellow colour, having also sometimes mixed with them a few of a deep red colour. Its taste is bitter, but followed with some degree of sweetness. It has been chiefly used for external purposes, and, as its name imports, has been thought to agglutinate wounds and ulcers; but this opinion now no longer exists.

PE'NDULUS. Pendant; pendulous; hanging: applied to roots, leaves, flowers, seeds, &c.; as the root of the *Spiræa filipendula*, and *Pæonia officinalis*, which consists of knobs connected by filaments; and the seeds of the *Magnolia grandiflora*, which are suspended by their filaments.

PE'NETRANS. (From *penetro*, to pierce through.) Penetrating. Applied to a medicine supposed to pass through the pores and stimulate.

PENICI'LLIFORM. (*Penicilliformis*; from *penicillus*, a pencil-brush, and *forma*, likeness.) Pencil-shaped: applied to the stigma of the *Milium paspalium*, and to the extremities of the arteries which secrete the bile.

PENICI'LLUS. (*us*, *i*. m.; diminutive of *peniculum*, a brush.) *Penicillum*. 1. A tent, or pledget.

2. The secreting extremities of the vena portæ are called *penicilli*. See *Liver*.

PENI'DIUM. A kind of clarified sugar, with a mixture of starch, made up into small rolls. The confectioners call it white barley-sugar.

PE'NIS. (*is*, *is*. m.; *a pendendo*, from its hanging down.) *Membrum virile*. The cylindrical part that hangs down, under the mons veneris, before the scrotum of males. It is divided by anatomists into the root, body, and head, or *glans penis*. It is composed of common integuments, two *corpora cavernosa*, and one *corpus spongiosum*, which surrounds a canal, the *urethra*, that proceeds from the bladder to the apex of the penis, where it opens by the *meatus urinarius*. See *Urethra*. The fold of the skin that covers the glans penis, is termed the prepuce, and the band which ties the prepuce to the under surface of the glans, is called the *frænum præputii*. The arteries of the penis are from the hypogastric and ischiatic. The veins of the penis form the *vena magna penis*, which empties itself into the hypogastric vein. The absorbents of this organ are very numerous, and run under the common integuments to the inguinal glands: absorbents also are found in great plenty in the urethra. The glands of the penis are, Cowper's glands, the prostate, muciparous, and odoriferous glands. The nerves of the penis are branches of the sacral and ischiatic.

PENIS CE'REBRI. The pineal gland.

Penis erector. See *Erector penis*.

PENIS MULIE'BRIS. The clitoris.

Pennyroyal. See *Mentha*.

Pennyroyal, hart's. See *Mentha cervina*.

PENTADA'CTYLON. (*um*, *i*. n.; from πεντε, five, and δακτυλος, a finger: so called because it has five leaves upon each stalk, like the fingers upon the hand.) 1. The herb cinquefoil.

2. A name for the ricinus, the leaf of which resembles a hand.

PENTA'GONUS. (From πεντε, five, and γωνια, an angle.) Pentagonal: five-sided. Applied to leaves synonymously with quinque-angular; as in *Geranium peltatum*.

PENTA'MYRUM. (Πενταμυρον; from πεντε, five, and μυρον, ointment.) An ointment composed of five ingredients.

PENTA'NDRIA. (*a*, *æ*. f.; from πεντε, five, and ανηρ, a husband.) The name of a class of plants in the sexual system of Linnæus, embracing those which have hermaphrodite flowers and five stamens.

PENTANEU'RON. (From πεντε, five, and νευρον, a string: so called because it has five-ribbed leaves.) A species of plantain. See *Plantago lanceolata*.

PENTAPHA'RMACON. (From πεντε, five, and φαρμακον, *remedium*, remedy.) Any medicine consisting of five ingredients.

PENTAPHYLLOI'DES. (From πενταφυλλον, cinquefoil, and ειδος, likeness: so called from its resemblance to cinquefoil.) Resembling the cinquefoil, or five-leaved plant. See *Fragaria sterilis*.

PENTAPHY'LLUM. (*um*, *i*. n.; from πεντε, five, and φυλλον, a leaf: so named because it has five leaves on each stalk.) Five-leaved. See *Potentilla reptans*.

PENTAPHY'LLUS. (From πεντε, five, and φυλλον, a leaf.) Pentaphyllous, or five-leaved: applied to leaves, calyces, &c.; as the flower-cup of the *Ranunculus bulbosus*.

PENTAPLEU'RUM. Five-ribbed wort. See *Plantago lanceolata*.

PENTASPE'RMOUS. (*Pentaspermus*. From πεντε, five, and σπερμα, a seed.) Having five seeds. Applied to the capsules, &c., of plants.

PENTA'TOMUM. (From πεντε, five, and τεμνω, to cut: so called because its leaves are divided into five segments.) Cinquefoil. The *Potentilla reptans*.

PENTO'ROBUS. (From πεντε, five, and οροβος, the wood-pea: so called because it has five seeds resembling the wood-pea.) The herb peony. See *Pæonia officinalis*.

Peony. See *Pæonia*.

PEPA'NSIS. (Πεπανσις. From πεπαινω, to concoct.) *Pepasmus*. Maturation or concoction. Applied by the humoral pathologists to the humours of the living body.

PEPA'SMUS. The same as *pepansis*.

PEPA'STICUS. (From πεπαινω, to concoct.) Applied formerly to medicines supposed to promote concoction.

PE'PITA NUX. St. Ignatius's bean.

PE'PLION. The same as *peplus*.

Peplos. See *Peplus*.

PE'PLUS. (Erom πεπλος, the herb devil's-milk.) A species of euphorbia. See *Euphorbia peplus.*

PE'PO. (From πεπτο, to ripen.) I. In botanical definitions, a fleshy, succulent seed-vessel, or pericarpium, the seeds of which are inserted into the sides of the fruit. — *Gærtner* and *Willdenow.*

From its figure, the pepo is said to be, —

1. *Globose;* as in *Cucumis colocynthis.*
2. *Oblong;* as in *Cucumis sativus.*
3. *Lagenæform;* as in *Cucurbita lagenaria.*
4. *Curvate;* as in *Cucumis flexuosus.*
5. *Nodose;* as in *Cucumis melopepo.*
6. *Fusiform;* as in *Cucumis chate.*
7. *Echinate;* as in *Cucumis anguria.*
8. *Verrucose;* as in *Cucurbita verrucosa.*
9. *Scabious;* as in *Cucumis sativus.*

II. The gourd. See *Cucurbita pepo.*

Pepper. See *Piper.*

Pepper, black. See *Piper nigrum.*

Pepper, dulce. See *Fucus pinnatifidus.*

Pepper, Guinea. See *Capsicum annuum.*

Pepper, Jamaica. See *Myrtus pimenta.*

Pepper, long. See *Piper longum.*

Pepper, poor man's. See *Polygonum.*

Pepper, wall. See *Sedum acre.*

Pepper, water. See *Polygonum.*

Pepperidge bush. See *Berberis.*

Peppermint, See *Mentha piperita.*

Pepperwort. See *Lepidium iberis.*

PE'PTIC. (*Pepticus;* πεπτικος, from πεπτω, to digest.) Digestive.

PERACU'TE. *Peracutus;* Very sharp: applied to diseases when very severe, or aggravated beyond measure; as subacute is applied to such as are not very acute, or so severe as they generally are.

PE'RCA. (*a, æ.* f.) The name of a genus of fishes, of the Order *Acanthopterygii.* The perch.

Perca fluvia'tilis. This species is common in the rivers of Europe. Its flesh is wholesome and well flavoured.

Perception. See *Mind.*

PERCHLO'RIC ACID. *Acidum perchloricum.* Oxychloric acid. An acid discovered by Count Stadion. It is obtained by distilling the perchlorate of potash with an equal weight of sulphuric acid, diluted with a fourth part of water. At the temperature of about 280 white fumes come over, which condense into a colourless liquid. Its specific gravity is 1·6. It is a very fixed compound, not boiling under 392°. By distillation with concentrated sulphuric acid, it may be obtained in the solid form, and crystallised. It consists of one equivalent of chlorine and seven of oxygen.

PERCOLA'TION. (*Percolatio, onis.* f.; strained through: from *percolo,* to strain or filter.) A term generally applied to animal secretion, from the office of the glands being thought to resemble that of a strainer in transmitting the liquors that pass through them.

PERCU'SSION. In medical language this term signifies the striking of any part of the surface of the body with the hand, in order to ascertain by the sound the healthy or diseased condition of the subjacent parts. This mode of exploration is applied principally to the chest, and affords very important indications with respect to the diseases of the thoracic viscera. This method of diagnosis was discovered by Dr. Leopold Avenbrugger, and published by him at Vienna in 1761. His work was translated into French by Corvisart, in 1808; and the great utility of percussion derived further illustration from the celebrated work of Laennec, on Auscultation, published eight years after.

In order for the proper performance of percussion, the patient should, if possible, be in a sitting posture, and the chest covered with a light linen garment, which prevents the clacking sound produced by the stroke of the hand upon the naked chest. In striking the chest, the fingers of the operator should be held with their extremities in one line, and kept firm in this position by the opposition of the thumb. The stroke should be made with the points of the fingers, and directed perpendicularly on the part; it should also be made with equal force in the different parts of the chest examined. Percussion is sometimes performed with the intervention of a piece of wood, ivory, or other sonorous body: it is then termed *mediate percussion.* The ivory instrument generally used for this purpose is called a *pleximeter.* (See *Pleximeter.*)

The thorax of a healthy individual gives out a clear sound on percussion in its anterior and lateral parts. The clearness of the sound is greater or less according to the density of the parts subjacent to that which is struck, and according to the thickness and tension of the parietes of the thorax: hence it varies greatly in the different regions of the thorax. (See *Thorax.*) Whenever, in the progress of disease, any denser substance takes the place of air within the thorax, there is a corresponding diminution of sonorousness: hence, hepatisation and tubercles of the lungs, hypertrophy of the heart, effusions of serum, lymph, or other matters, all occasion a diminution of sound in the regions which they respectively occupy; while in pulmonary emphysema, pneumothorax, and large empty excavations in the substance of the lungs, the sound on percussion is greater than natural. The application of percussion in different diseases is noticed under the heads of those diseases. For more minute information respecting percussion, we must refer the reader to the various treatises on the subject, especially that of M. Piorry, which is the latest and the most elaborate.

Perde'tum. In Paracelsus it means the root of skirret, or *Sium sisarum.*

Perdi'cium. (From περδιξ, a partridge: so called because partridges were said to feed upon it.) See *Parietaria officinalis.*

PERE'NNIAL. *Perennis.* Lasting naturally more than two years. Applied to plants, in opposition to those which live only one or two years; thus the elm, oak, fir, &c., are perennial.

Perennial worm-grass. See *Spigelia.*

Perete'rion. (Περητηριον; from περαω, to dig through.) The trepan.

PERFECT. A flower is said to be perfect

or complete that has both calyx and corols, and one or more stamens and pistils.

PERFOLIA'TA. (*a, æ.* f.; from *per*, and *folium*: so called because the leaves surround the stem, like those of a cabbage.) See *Bupleurum perfoliatum.*

PERFO'LIATE. (*Perfoliatus*; from *per*, through, and *folium*, a leaf.) Applied to plants the leaves of which surround the stem at their base, as in *Chlora perfoliata.*

Perforans. See *Flexor profundus forans.*

Perforans, seu flexor profundus. See *Flexor longus digitorum pedis profundus perforans.*

Perforans, seu flexor tertii internodii digitorum pedis. See *Flexor longus digitorum pedis profundus perforans.*

Perforans, vulgo profundus. See *Flexor profundus perforans.*

PERFORA'TA. (*a, æ.* f.; from *perforo*, to pierce through: so called because its leaves are full of holes.) See *Hypericum perforatum.*

PERFORA'TUS. 1. In *Anatomy*, applied to muscles. See *Flexor brevis digitorum pedis*, and *Flexor sublimis perforatus.*

2. In *Botany*, applied to leaves through which the stems pass, and to leaves or other parts which are penetrated with small holes.

Perforatus, seu flexor secundi internodii digitorum pedis. See *Flexor brevis digitorum pedis perforatus sublimis.*

PERIA'MMA. (From περιαπτω, to hang round.) An amulet. See *Amulet.*

PERIA'NTHIUM. (*um, ii.* n.; from περι, and ανθος, a flower.) The calyx properly and commonly so called, when it is contiguous to, and makes a part of, the flower; as the five green leaves which encompass a rose, including their urn-shaped base; the tubular part comprehending the scales in the pinks, or the globular scaly cup in *Centaurea.* The tulip is a naked flower, having no calyx at all. The perianth is of infinite variety of forms.

From its number of leaves, it is, —

1. *Monophyllous*, formed of one only; as in *Datura stramonium.*

2. *Diphyllous*; as in *Papaver rhœas.*

3. *Triphyllous*; as in *Canna Indica.*

4. *Tetraphyllous*; as *Lunaria annua.*

5. *Pentaphyllous*; as *Ranunculus.*

From the division of its edge, —

1. *Undivided*, without any irregularity; as in the female of the *Quercus robur.*

2. *Partite*, or divided almost to the base: hence *bipartite*, or *bilabiate*, in *Salvia officinalis*; *tripartite*, in *Stratiotes aloides*; *quadripartite*, in *Œnothera biennis*; *quinquepartite*, in *Nereum oleander*; *duodecempartite*, in *Sempervivum tectorum.*

3. *Cloven*, cut as it were to the middle only: hence, *bifid*, in *Adoxa moschatellina*; *trifid*, in *Asarum canadense*; *quinquefid*, in *Æsculus hippocastanum.*

4. *Dentate*, in *Marrubium vulgare*; *quinque dentate*, in *Cucumis* and *Cucurbita*, the female flowers.

5. *Serrate*, in *Centauria cyanus.*

From its *figure*, —

1. *Tubulosum*; as in *Datura stramonium.*

2. *Patens*, with spreading leaflets; as in *Borago officinalis.*

3. *Reflexum*, its laciniated portions turned backward; as in *Œnothera biennis.*

4. *Inflatum*, pouched and hollow; as in *Cucubalus behen*, and *Physalis alkekengi*, in fruit.

From its colour, —

Coloratum, when of any other than green; as in *Gomphrena globosa.*

From the disposition of the germen, —

1. *Superum*, when the perianth and corols are above. Hence the remains are visible on the fruit; as in roses, pears, &c.

2. *Inferum*, when below the germen; as in the poppy and water-lily.

From the number on each flower, —

1. *Simplex*, when one; as in *Nicotiana tabacum.*

2. *Duplex*, double; as in *Malva*, *Althæa*, *Hibiscus*, &c.

3. *Calyculatum*, or *auctum*, having a lesser one, or scales down to the base; as in *Dianthus caryophyllus.*

Nullum, when wanting; as in tulips.

From its situation with respect to the fructification, —

1. *Perianthium floris*, when belonging to the male.

2. *P. fructus*, when with the pistils.

3. *P. fructificationis*, containing both stamina and pistils in the flower.

From its duration, —

1. *Caducous*, falling off early; as in *Papaver.*

2. *Deciduous*, very late; as in *Tilia europæa.*

3. *Peristent*; as in *Hyosciamus.*

4. *Marcescent*, withered, but yet conspicuous on the fruit; as in *Pyrus*, *Mespilus*, &c.

PERIBLE'PSIS. (*is, is.* f.; from περιβλεπω, to stare about.) That kind of wild look which is observed in delirious persons.

PERI'BOLE. (From περιβαλλω, to surround.) A word used frequently by Hippocrates in different senses. Sometimes it signifies the dress of a person; at others, a translation of the morbific humours from the centre to the surface of the body.

PERIBRO'SIS. An ulceration or erosion at the corners or uniting parts of the eyelids. It most frequently affects the internal commissure. It arises from the acrimony of the tears or from ægylops, which sometimes extends to the corners of the eyelids.

PERICARDI'TIS. (*is, idis.* f.; from περι, καρδιον, the pericardium.) Inflammation of the pericardium. See *Heart, diseases of the.*

PERICA'RDIUM. (*um, ii.* n.; from περι, about, and καρδια, the heart.) The membranous bag that surrounds the heart, and the arterial and venous trunks connected with it. The pericardium consists of two layers, an external or fibrous, and an internal or serous. The serous membrane lines the fibrous one, and is reflected over the heart after the manner of serous membranes in general. Its use is to secrete and contain the vapour of the pericardium, which lubricates the heart, and thus prevents it from concreting with the pericardium.

PERICARPIA'LIS. Pericarpial. Belonging

the pericarpium of plants: thus the spines of the *Datura stramonium* on the fruit, are called pericarpial.

PERICA'RPIUM. I. (From περι, about, and *carpus*, the wrist.) This name was formerly given to medicines and plasters which were applied to the wrist.

II. In *Botany*, (from περι, about, and καρπος, a seed.) The seed-vessel or covering of the seed of plants which is mostly membraneous, leathery, woody, pulpy, or succulent. The membraneous are, —

1. *Capsula.*
2. *Siliqua.*
3. *Silicula.*
4. *Legumen.*
5. *Lomentum.*
6. *Folliculus.*
7. *Samara*

The woody seed-vessels are, —

8. *Strobilus.*
9. *Nux.*

The fleshy ones, —

10. *Pomum.*
11. *Pepo.*
12. *Drupa.*

The succulent, —

13. *Bacca.*

The seed-vessel is extremely various in different plants, and is formed of the germen enlarged. It is not an essential part of a plant, the seeds being frequently naked, and guarded only by the calyx, as is the case with the plants of the order *Gymnospermia*, also in the great class of compound flowers, *Syngenesia*.

The use of the seed-vessel is to protect the seeds till ripe, and then in some way or other to promote their dispersion, either scattering them by its elastic power, or serving for the food of animals, in the dung of which the seeds vegetate, or promoting the same end by various other means. The same organ which remains closed so long as it is juicy or moist, splits or flies asunder when dry, thus scattering the seeds in weather most favourable for their success. By an extraordinary provision of nature, however, in some annual species of Mesembryanthemum, natives of sandy deserts in Africa, the seed-vessels open only in rainy weather; otherwise the seeds might, in that country, lie long exposed before they met with sufficient moisture to vegetate.

PERICHÆ'TIUM. (*um, ii.* n.; from περι, about, and χαιτη, a hair, or bristle.) A scaly sheath, investing the fertile flower, and consequently the base of the fruit-stalk, of some mosses. In the genus *Hypnum* it is of great consequence, not only by its presence, constituting a part of the generic character, but by its differences in shape, proportion, and structure, serving frequently to discriminate species. Linnæus appears by his manuscripts, Sir James Smith informs us, to have intended adding this to the different kinds of calyx, though it is not one of the seven enumerated in his printed works.

PERICHO'NDRIUM. (*um, ii.* n.; from περι, about, and χονδρος, a cartilage.) The membrane that covers a cartilage.

PERICHRI'SIS. (From περι, about, and χριω, to anoint.) A liniment.

PERI'CLASIS. (From περι, about, and κλαω, to break.) It is a term used by Galen for such a fracture of the bone as quite divides it, and forces it through the flesh into sight. Or a fracture with a great wound, wherein the bone is laid bare.

PERICLY'MENUM. (*um, i.* n.; from περικλυζω, to roll round: so called because it twists itself round whatever is near it.) See *Lonicera periclimenum.*

PERICNE'MIA. (*a, æ.* f.; from περι, about, and κνημη, the tibia.) The parts about the tibia.

PERICRA'NIUM. (*um, ii.* n.; from περι, about, and κρανιον, the cranium.) The membrane that is closely connected to the bones of the cranium. It corresponds with what is called the *periosteum* of other bones.

PERI'DIUM. (*um, ii.* n.) The name given by Persoon to the round membraneous dry case of the seeds of some of the angiospermous mushrooms.

PERI'DROMOS. (Περιδρομος; from περι, about, and δρομος, a course.) The extreme circumference of the hairs of the head. — *Gorrhæus.*

PERI'GRAPHE. (From περιγραφω, to circumscribe.) Vesalius applies this term to the *lineæ transversæ* of the *rectus abdominis* muscle.

PE'RIN. Πηριν. A testicle. Some explain it the *perinæum*; others say it means the *anus.*

PERINÆOCE'LE. (*e, es.* f.; from περιναιον, the perinæum, and κηλη, a rupture.) A rupture in the perinæum.

PERINÆ'UM. (*um, i.* n.; from περινεω, to flow round, because that part is generally moist.) The space between the anus and organs of generation.

Perinæus transversus. See *Transversus perinæi.*

PERINY'CTIS. (*is, idis.* f.; from περι, and νυξ, the night.) The same as *epinyctis.* See *Epinyctides.*

PERIOD. (*Periodus, i.* m. περιοδος; from περι, about, and οδος, a way.) A stated time. 1. In medical language there are said to be five periods of a disease: the *invasion*, the *augment*, the *state* or full development of the disease, the *decline*, and the *termination*. With respect to intermittent diseases, the term *period* is sometimes applied synonymously with *interval*, that is, it means the time that elapses from the commencement of one paroxysm to the commencement of the next.

2. In *Physiology*, it has been applied to the circulation of the blood — *Periodus sanguinis.*

PERIODS OF LIFE. The living organism is not destined to be stationary or permanent; it passes rapidly through several stages of development to perfection, which it has scarcely reached when it begins to decline, and passes as rapidly towards dissolution. The most remarkable periods in the life of man after birth, are *Infancy*, *Dentition*, *Puberty*, the *Climacteric period*, and that of *Decay.*

PERIODICAL DISEASES. Diseases of which the symptoms recur at stated intervals.

PERIODI'CITY. The disposition of certain phenomena of living bodies to recur at stated times. Thus, the flow of the menses, the return of an ague, the budding of trees, and the fall of the leaf, are referable to what is called *periodicity.*

Periodus lunaris. The menstrual period.

Periodus sanguinis. The circulation of the blood.

PERIO'STEUM. (*um, i.* n.; from περι, about, and οστεον, a bone.) The membrane which invests the external surface of all the bones, except the crowns of the teeth. It is of a fibrous texture, and well supplied with arteries, veins, nerves, and absorbents. It is called *pericranium*, on the cranium; *periorbita*, on the orbits; *perichondrium*, when it covers cartilage; and *peridesmium*, when it covers ligament. Its use appears to be to distribute the vessels on the external surfaces of bones.

Periphimosis. See *Phimosis.*

Peripleumo'nia. See *Pneumonia.*

PERIPNEUMO'NIA. (*a, æ.* f.; from περι, and πνευμων, the lung.) Peripneumony, or inflammation of the lungs. See *Pneumonitis.*

Peripneumonia notha. Bastard or spurious peripneumony. See *Bronchitis.*

PERIPYE'MA. (*a, atis.* n.; from περι, about, and πυον, pus.) *Peripyesis.* A collection of matter about any part, as round a tooth, in the gums.

Perirrhœ'a. (From περιῤῥεω, to flow about.) A reflux of humours in a dropsical case to any of the larger emunctories for its excretion.

Periscyphismus. A false reading for *periscythismus.*

Periscythi'smus. (Περισκυθισμος; from περισκυθιζω, to scalp, as the Scythians (Σκυθαι) did their enemies.) A surgical operation, which consisted in making transverse incisions in the forehead, and triangular ones above the temples. — *Galen*, Isagoge, C. xix.

PERISTA'LTIC. (*Peristalticus;* from περιστελλω, to contract.) The vermicular motion of the intestines, by which they contract and propel their contents, is called the *peristaltic motion.*

PERISTAPHYLI'NUS. (From περι, about, and σταφυλη, the uvula.) Applied to two muscles connected with the uvula.

Peristaphylinus externus. The *Circumflexus palati.*

Peristaphylinus internus. The *Levator palati.*

Periste'rium. (From περιστερος, a pigeon: so called because pigeons covet it.) See *Verbena officinalis.*

Peristoma. See *Peristomium.*

PERISTO'MIUM. (*um, ii.* n.; from περι, around, and στομα, the mouth or opening of the capsule.) *Peristoma.* The fringe-like membraneous margin which, in many mosses, borders the orifice of the theca or capsule. It is either simple or double, and consists either of separate teeth, or of a plated or jagged membrane. The external fringe is mostly of the former kind; the inner, when present, of the latter. The number of teeth remarkably constant in each genus and species, is either four, eight, sixteen, thirty-two, or sixty-four. On these, Hedwig and his followers have placed great dependence.

PERISY'STOLE. (*e, es.* f.; from περιστελλω, to compress.) The pause or time between a contraction and dilatation of the heart.

Peritonæore'xis. (From περιτοναιον, the peritonæum, and ρησσω, to break.) A bursting of the peritonæum.

PERITONÆ'UM. (*um, i.* n.; from περιτεινω, to extend round.) A strong simple membrane, by which all the viscera of the abdomen are surrounded. It has an exceedingly smooth, exhaling, and moist internal surface. Outwardly, it is every where surrounded by cellular substance, which, towards the kidneys, is very loose and very fat, but is very short at the lower tendon of the transverse muscles. It begins from the diaphragm, which it completely lines, and at the last fleshy fibres of the ribs, and the external lumbar fibres, it completes the septum, in conjunction with the pleura, with which it is continuous through the various intervals of the diaphragm. Posteriorly, it descends before the kidneys; anteriorly, behind the abdominal muscles. It dips into the pelvis from the bones of the pubes, passes over the bladder, and descends behind; and being again carried backwards at the entrance of the ureters, in two lunar folds, it rejoins upon the intestinum rectum that part of itself which invests the loins, and in this situation lies before the rectum. The cellular texture, which covers the peritonæum on the outside, is continued into sheaths in very many places; of which, one receives the testicle on each side, another the iliac vessels of the pelvis, viz. the obturatoria, those of the penis and bladder, and the aorta, and, ascending to the breast, accompanies the œsophagus and vertebræ; by means of which there is a communication between the whole body and the peritonæum, well known in dropsical people. It has various prolongations for covering the viscera. The shorter productions of this membrane are called ligaments, and are formed by a continuous reduplication of the peritonæum receding from its inner surface, enclosing cellular substance, and extending to some viscus where its plates separate, and, having diverged, embrace the viscus; but the intermediate cellular substance always accompanies this membraneous coat, and joins it with the true substance of the viscus. Of this short kind of production, three belong to the liver, one or two to the spleen, and others to the kidneys, and to the sides of the uterus and vagina. By these means the tender substance of the viscera is defended from injury by any motion or concussion, and their whole mass is prevented from being misplaced by their own weight, and from injuring themselves, being securely connected with the firm sides of the peritonæum.

PERITONI'TIS. (*is, idis.* f.; from περιτοναιον, the peritonæum.) This term is applied to inflammation of the peritonæum, which covers the parietes of the abdomen. When inflammation takes place in the peritoneal covering of the viscera, the symptoms are similar to those which inflammation of the viscera produce, and the disease takes the name of the viscus in which the disease is: thus, inflammation of the peritoneal covering of the liver produces symptoms of hepatitis; that of the stomach, sym-

oms of gastritis; and so on. The symptoms
f peritonitis, when the viscera are not affected,
re, tenderness in the part when pressed, and
xed pain, accompanied by fever, and, generally,
onsiderable disturbance of the system. It may
e produced by any of the causes of inflamma-
on, and requires the free use of the lancet,
eches, blisters, the warm bath, and foment-
ions, and the same internal remedies as reduce
flammatory fever, and inflammation in other
arts.

There is a particular form of peritonitis in-
dent to lying-in women, which is sometimes
idemic, and which is very violent and fatal.
ee *Puerperal fever.*

There is a chronic form of peritonitis, which
ay either be primary or consecutive on the
cute. Its course is usually protracted, and
s symptoms obscure. It is generally fatal.

PERIZO'MA. (From περιζωννυμι, to gird
ound.) 1. This term strictly signifies a girdle.

2. Hildanus, and some other chirurgical wri-
rs, applied it to those instruments for support-
g ruptures which we commonly call trusses.

3. Some express by it the diaphragm.

Perkinism. See *Metallic tractors.*

PE'RLA. (Ital. and Span.; *perl*, Welch;
erl, Germ.) See *Margarita.*

Perlate acid. A name given by Bergman
the acidulous phosphate of soda.

Permanent. See *Persistens.*

PE'RNIO. (*o*, *onis.* m.) A kibe or chil-
lain. A chilblain is a painful inflammatory
velling, of a deep purple or leaden colour, to
hich the fingers, toes, heels, and other extreme
arts of the body are subject, on being exposed
a severe degree of cold. The pain is not
onstant, but rather pungent and shooting at
articular times, and an insupportable itching
tends it. In some instances, the skin remains
ntire, but in others it breaks and discharges a
in fluid. When the degree of cold has been
ery great, or the application long continued,
ie parts affected are apt to mortify and slough
F, leaving a foul ill-conditioned ulcer behind.
hildren and old people are more apt to be
oubled with chilblains than those of a middle
ge; and such as are of a scrofulous habit are
marked to suffer severely from them. Local
imulants are the best applications against
hilblains, and particularly those which serve at
ie same time to defend the weakened parts
om the severity of the external air: hence,
arm socks and gloves, worn day and night,
e useful, and warm diachylon and burgundy
tch plaster, spread upon leather, still more so.
or the same reason, embrocations of oil of tur-
entine, opodeldoc, equal parts of vinegar and
pirits of wine, the liquor ammoniæ acetatis,
ith dilute spirit, will be found serviceable.
innæus recommends bathing the part with
ery dilute muriatic acid: it should be so pro-
portioned as just to be felt. The weakened
essels should never be too much distended;
nd hence, though gentle warmth and stimu-
nts are indispensable, great heat, and espe-
ally a near approach to the fire, and more
articularly still when very cold, will always be
pund very injurious. When the inflamed part
becomes ulcerated, it is called a *kibe.* Warm
and stimulating dressings will alone succeed in
effecting a cure, as the unguentum resinæ,
elemi, and the like, so reduced with simple
cerate as not to irritate; and, if fungous gra-
nulations should appear, which they are very
apt to do, they must be removed by some mild
escharotic, as a solution of nitrate of silver, or
of sulphate of copper.

PE'RONE. (From πειρω, to fasten: so
called because it fastens together the tibia and
the muscles.) The fibula.

PERONE'US. (Περοναιος; from περονη,
the fibula.) Belonging to the fibula.

Peroneus anticus. See *Peroneus brevis.*

Peroneus brevis. This muscle is the *pero-
neus secundus, seu anticus*, of Douglas; the
peroneus medius, seu anticus, of Winslow; and
the *peronæus secundus*, of Cowper. It arises
by an acute, thin, and fleshy origin, from the
anterior and outer part of the fibula, its fibres
continuing to adhere to the lower half of that
bone. Its round tendon passes through the
groove in the malleolus externus, along with
that of the peroneus longus, after which it runs
in a separate groove to be inserted into the upper
and posterior part of the tubercle at the basis of
the metatarsal bone that supports the little toe.
Its use is to assist the peroneus longus.

Peroneus longus. This muscle, which is
the *peroneus primus, seu posticus*, of Douglas;
peroneus maximus, seu posterior, of Winslow;
and *peronæus primus*, of Cowper; is situated
somewhat anteriorly along the outer side of the
leg. It arises tendinous and fleshy from the
external lateral part of the head of the tibia,
and likewise from the upper anterior surface,
and outer side of the *perone* or fibula; its fibres
continuing to adhere to the outer surface of the
latter, to within three or four inches of the
malleolus externus. It terminates in a long
round tendon, which runs obliquely behind the
malleolus internus, where it passes through a
cartilaginous groove in common with the pero-
neus brevis, being bound down by an annular
ligament. When it has reached the os calcis,
it quits the tendon of the peroneus brevis, and
runs obliquely inwards along a groove in the
os cuboides, under the muscles on the sole of
the foot, to be inserted into the outside of the
posterior extremity of the metatarsal bone that
supports the great toe. Near the insertion of
this muscle we find a small *bursa mucosa.*
This muscle draws the foot outwards, and like-
wise assists in extending it.

Peroneus maximus. See *Peroneus longus.*

Peroneus medius. See *Peroneus brevis.*

Peroneus posticus. See *Peroneus longus.*

Peroneus primus. See *Peroneus longus.*

Peroneus secundus. See *Peroneus brevis.*

Peroneus tertius. This is the name given
by Albinus to a muscle, which by some writers
is called *nonus Vesalii*, or Vesalius's ninth
muscle of the foot; but by most considered in
the present day as a portion of the extensor
longus digitorum pedis. It is situated at the
anterior, inferior, and outer part of the leg,
along the outer edge of the last described mus-
cle, to which it is intimately united. It arises

fleshy from the anterior surface of the lower half of the fibula, and from the adjacent part of the interosseus ligament. Its fibres run obliquely downwards, towards a tendon which passes under the annular ligament, and then running obliquely outwards, it is inserted into the root of the metatarsal bone that supports the little toe. This muscle assists in bending the foot.

PERPENDICULAR. *Perpendicularis.* Applied to parts of plants; as the root of the *Daucus carota*, which goes straight down into the earth.

Perry. A vinous liquor made from pears in the same manner as cyder from apples.

Pe'rsica. (*a*, *æ*. f.; from *Persia*, its native soil.) The peach. See *Amygdalus*.

Persica'ria. (*a*, *æ*. f.; from *Persica*, the peach-tree: so called, because its blossoms are like those of the peach.) See *Polygonum*.

Persicaria mitis. See *Polygonum*.

Persicaria urens. See *Polygonum*.

PERSI'STENS. Permanent: applied to flower-cups remaining a long time after the flower; as that of the *Hyosciamus niger*.

Persistens febris. A regular intermitting fever, the paroxysms of which return at constant and stated periods.

Persona'ta. (*a*, *æ*. f.; from *persona*, a mask: because, says Pliny, the ancient actors used to mask themselves with the leaves of this plant.) See *Arctium lappa*.

PERSONA'TUS. Personate. A term applied to a gaping blossom, or monopetalous corolla, when irregular, and closed by a kind of palate; as in *Antirrhinum*.

PERSPIRA'TION. (*Perspiratio, onis.* f.) The vapour that is secreted by the extremities of the cutaneous arteries from the external surface of the body. It is distinguished into *sensible* and *insensible*: the former is separated in the form of an invisible vapour; the latter so as to be visible in the form of very little drops adhering to the epidermis. The *secretory organ* is composed of the extremities of the cutaneous arteries. The *smell* of the perspirable fluid, in a healthy man, is oleaginous and animal; its *taste* manifestly salt and ammoniacal. In *consistence* it is vaporous or aqueous; and its *specific gravity* in the latter state is greater than that of water. For the most part it is yellowish, from the passage of the subcutaneous oil, and sebaceous matter of the subcutaneous glands.

Whatever form it takes, the liquid that escapes from the skin is composed, according to Thénard, of a great deal of water, a small quantity of acetic acid, of muriate of soda and potash, a small quantity of earthy phosphate, an atom of oxide of iron, and a trace of animal matter. Berzelius considers the acid of sweat not the same as acetic acid, but like the lactic acid of Scheele. The skin exhales, besides, an oily matter, and some carbonic acid.

Many experiments have been made to determine the quantity of transpiration which is formed in a given time, and the variations that this quantity undergoes according to circumstances. The first attempts are due to Sanctorius, who, during thirty years, weighed every day, with extreme care and indefatigable patience, his food and his drink, his solid and liquid excretions, and even himself. Sanctorius, in spite of his zeal and perseverance, arrived at results that were not very exact. Since his time, several philosophers and physicians have been employed on the same subject, with more success; but the most remarkable labour in this way is that of Lavoisier and Seguin. These philosophers were the first who distinguished the loss that takes place by pulmonary transpiration from that of the skin. Seguin shut himself up in a bag of *gummed silk*, tied above his head, and presenting an opening, the edges of which were fixed round his mouth by a mixture of turpentine and pitch. In this manner only, the humour of the pulmonary transpiration passed into the air. In order to know the quantity, it was sufficient to weigh himself, with the bag, at the beginning and end of the experiment, in a very fine balance. By repeating the experiment out of the bag, he determined the whole quantity of humour transpired; so that by deducting from this the quantity he knew had passed out from the lungs, he had the quantity of humour exhaled by the skin. Besides, he took into account the food that he had used, his excretions, solid and liquid, and generally all the causes that could have any influence upon the transpiration. By following this plan, the results of Lavoisier and Seguin are these: —

1st, The greatest quantity of insensible transpiration (the pulmonary included) is 25·6 grains troy per minute; consequently, 3 ounces, 1 drachm, 36 grains per hour; and 6 pounds, 4 ounces, 6 drachms, 24 grains, in 24 hours.

2d, The least considerable loss is 8·8 grains per minute; consequently, 2 pounds, 2 ounces, 3 drachms, in 24 hours.

3d, It is during the digestion that the loss of weight occasioned by insensible transpiration is at its minimum.

4th, The transpiration is at its maximum immediately after dinner.

5th, The mean of the insensible transpiration is 14·4 grains per minute; in the mean 14·4 grains, 8·8 depend on cutaneous transpiration and 5·6 upon the pulmonary.

6th, The cutaneous transpiration alone varies during and after repasts.

7th, Whatever quantity of food is taken, or whatever are the variations of the atmosphere, the same individual, after having augmented in weight by all the food that he has taken, returns, in 24 hours, to the same weight nearly that he was the day before, provided he is not growing, or has not eaten to excess.

It is much to be wished that this interesting labour had been continued, and that authors had not limited their studies to insensible transpiration, but had extended their observations to the sweat.

Whenever the humour of transpiration is not evaporated, as soon as it is in contact with the air, it appears at the surface of the skin in the form of a layer of liquid, of variable thickness. Now, this effect may happen because the transpiration is too copious, or because of the dim

nution of the dissolvent force of the air. We perspire in an air hot and humid, by the influence of the two causes joined: we should perspire with more difficulty in an air of the same heat, but dry. Certain parts of the body transpire more copiously, and sweat with more facility than others; such are the hands and the feet, the arm-pits, the groins, the brow, &c. Generally the skin of these parts receives a greater proportional quantity of blood; and in some people, the arm-pit, the sole of the foot, and the intervals between the toes, do not come so easily in contact with the air.

The sweat does not appear to have every where the same composition: every one knows that its odour is variable, according to the different parts of the body. It is the same with its acidity, which appears much stronger in the arm-pits and feet than elsewhere.

The cutaneous transpiration has numerous uses in the animal economy, keeps up the suppleness of the epidermis, and thus favours the exercise of the tact and the touch. It is by evaporation along with that of the lungs, the principal means of cooling, by which the body maintains itself within certain limits of temperature; also its expulsion from the economy appears very important, for every time that it is diminished or suspended, derangements of more or less consequence follow, and many diseases are not arrested until a considerable quantity of sweat is expelled.

Besides water, it cannot be doubted that *carbon* is also emitted from the skin; but in what state, the experiments hitherto made do not enable us to decide. Cruickshanks found, that the air of the glass vessel in which his hand and foot had been confined for an hour, contained carbonic acid gas; for a candle burned dimly in it, and it rendered lime-water turbid. And Jurine found, that air which had remained for some time in contact with the skin, consisted almost entirely of carbonic acid gas. The same conclusion may be drawn from the experiments of Ingenhouz and Milly. Trousset has lately observed, that air was separated copiously from a patient of his, while bathing.

Besides water and carbon, or carbonic acid gas, the skin emits also a particular odorous substance. That every animal has a peculiar smell, is well known: the dog can discover his master, and even trace him to a distance, by the scent. A dog, chained up several hours after his master had set out a journey of some hundred miles, followed his footsteps by the smell. But it is needless to multiply instances of this fact; they are too well known to every one. Now, this smell must be owing to some peculiar matter which is constantly emitted; and this matter must differ somewhat, either in quantity or some other property, as we see that the dog easily distinguishes the individual by means of it. Cruickshanks has made it probable, that this matter is an oily substance, or at least that there is an oily substance emitted by the skin. He wore repeatedly, night and day, for a month, the same under waistcoat of fleecy hosiery, during the hottest part of the summer. At the end of this time he always found an oily substance accumulated in considerable masses on the nap of the inner surface of the waistcoat, in the form of black tears. When rubbed on paper, it rendered it transparent, and hardened on it like grease. It burned with a white flame, and left behind it a charry residuum.

Berthollet has observed the perspiration acid; and he has concluded that the acid which is present is the phosphoric: but this has not been proved. Fourcroy and Vauquelin have ascertained, that the scurf which collects upon the skins of horses consists chiefly of phosphate of lime, and urea is even sometimes mixed with it.

According to Thénard, however, who has endeavoured more particularly to ascertain this point, the acid contained in sweat is the acetous; which, he likewise observes, is the only free acid contained in urine and in milk, this acid existing in both of them when quite fresh. His account of his examination of it is as follows: —

The sweat is more or less copious in different individuals; and its quantity is perceptibly in the inverse ratio of that of the urine. All other circumstances being similar, much more is produced during digestion, than during repose. The maximum of its production appears to be twenty-six grains and two thirds in a minute; the minimum, nine grains, troy weight. It is much inferior, however, to the pulmonary transpiration; and there is likewise great difference between their nature and manner of formation. The one is the product of a particular secretion, similar in some sort to that of the urine; the other, composed of a great deal of water and carbonic acid, is the product of a combustion gradually effected by the atmospheric air.

The sweat, in a healthy state, very sensibly reddens litmus paper or infusion. In certain diseases, and particularly in putrid fevers, it is alkaline; yet its taste is always rather saline, and more similar to that of salt, than acid. Though colourless, it stains linen. Its smell is peculiar, and insupportable when it is concentrated, which is the case in particular during distillation. But before he speaks of the trials to which he subjected it, and of which he had occasion for a great quantity, he describes the method he adopted for procuring it, which was similar to that of Cruickshanks.

Human sweat, according to Thénard, is formed of a great deal of water, free acetous acid, muriate of soda, an atom of phosphate of lime and oxide of iron, and an inappreciable quantity of animal matter, which approaches much nearer to gelatine than to any other substance.

Perspiration varies in respect to, 1. The *temperature of the atmosphere*. Thus men have a more copious, viscid, and higher-coloured sweat in summer than in winter, and in warm countries than in colder regions. 2. *Sex*. The sweat of a man is said to smell more acrid than that of a woman. 3. *Age*. The young are more subject to sweat than the aged, who, during the excessive heat of the summer, scarcely

sweat at all. 4. *Ingesta.* An alliacious sweat is perceived from eating garlick; a leguminous, from peas; an acid, from acids; a fœtid, from animal food only; and a rancid sweat from fat foods, as is observed in Greenland. A long abstinence from drink causes a more acrid and coloured sweat; and the drinking a great quantity of cold water in summer, a limpid and thin sweat. 5. *Medicines.* The sweat of those who have taken musk, even moderately, and assafœtida, or sulphur, has the odour of these substances. 6. *Region of the body.* The sweat of the head is greasy; on the forehead it is more aqueous; under the axillæ, very unguinous; and in the interstices of the toes, it is very fœtid. 7. *Diseases.* In this respect it varies very much in regard to quantity, smell, and colour; for the sweat of gouty persons is said to turn blue vegetable juices to a red colour. Some men also have a lucid sweat, others a sweat tinging their linen of a cærulean colour.

The uses of the insensible perspiration are, 1. To *liberate* the blood from superfluous animal gas, azote, and water. 2. To eliminate the noxious and heterogeneous excrements: hence the acrid, rancid, or putrid perspiration of some men. 3. To *moisten* the external surface of the body, lest the epidermis, cutis, and its nervous papillæ, be dried up by the atmospheric air. 4. To *counter-balance* the suppressed pulmonary transpiration; for when this is suppressed, the cutaneous transpiration is increased.

The use of the sensible perspiration, or sweat, in a healthy man, is scarcely observable, unless from an error of the non-naturals. Its effects in the removal of disease are very important, and various inflammatory and febrile affections are often resolved by a copious sweat, which appears to relieve the vascular system, both by depletion and by a transfer of action from the deep seated to the superficial vessels. In some instances, however, it is believed that morbid matter may be excreted with the sweat. Where fluids are accumulated in a preternatural quantity, or the system is suffering from the retention of the natural excretions, a copious perspiration then affords relief.

Thus, dropsy is sometimes carried off by perspiration, and the bad effects of a suppression of urine are occasionally obviated by a copious sweat of an urinous smell.

PERTU'SSIS. (*is, is.* f.; from *per*, much, and *tussis*, cough.) The hooping-cough. A disease known by a convulsive strangulating cough, accompanied with a peculiar sonorous inspiration, returning by fits, that are usually terminated by vomiting; and by its being contagious. It is vulgarly called also *chin-cough* or *kin-cough*.

Children are most commonly the subjects of this disease; and it seems to depend on a specific contagion, which affects them but once in their life. The disease being once established, the fits of coughing are often repeated without any evident cause; but, in many cases, the contagion may be considered as only giving the predisposition, and the frequency of the fits may depend upon various exciting causes, such as violent exercise, a full meal, the having taken food of difficult digestion, and irritation of the lungs by dust, smoke, or disagreeable odours. Emotions of the mind may likewise prove an exciting cause. Very different opinions have been entertained as to the nature of hooping-cough: some contend that it is essentially a spasmodic disease, the seat of which is in the brain or some part of the nervous system; others maintain, that it is an inflammatory affection of the bronchial membrane; and others, that it is compounded of a primary bronchial inflammation, and a secondary irritation of the brain. The greater part of practitioners, however, regard hooping-cough as a spasmodic disease, extremely liable to become complicated with bronchial inflammation and frequently producing irritation of the brain and hydrocephalus, as a consequence of the disturbance of the cerebral circulation.

The hooping-cough usually comes on with a difficulty of breathing, some degree of thirst, a quick pulse, and other slight febrile symptoms, which are succeeded by a hoarseness, cough, and difficulty of expectoration. These symptoms continue perhaps for a fortnight or more, at the end of which time the disease puts on its peculiar and characteristic form, and is now evident, as the cough becomes convulsive, and is attended with a sound which has been called a hoop.

When the sonorous inspiration has happened, the coughing is again renewed, and continues in the same manner as before, till either a quantity of mucus is thrown up from the lungs, or the contents of the stomach are evacuated by vomiting. The fit is then terminated, and the patient remains free from any other for some time, and shortly afterwards returns to the amusements he was employed in before the fit, expresses a desire for food, and when it is given to him takes it greedily. In those cases however, where the attack has been severe, he often seems much fatigued, makes quick inspirations, and falls into a faint.

On the first coming on of the disease, there is little or no expectoration; or, if any, it consists only of thin mucus; and as long as this is the case the fits of coughing are frequent and of considerable duration; but on the expectoration becoming free and copious, the fits of coughing are less frequent, as well as of shorter duration.

By the violence of coughing, the free transmission of blood through the lungs is somewhat interrupted, as likewise the free return of the blood from the head, which produces that turgescence and suffusion of the face which commonly attend the attack, and in some cases brings on a bleeding either from the nose or ears. If the fits are put an end to by vomiting it may be regarded as a favourable symptom, as may likewise the taking place of a moderate and free expectoration, or a slight hæmorrhage from the nose.

The disease having arrived at its height usually continues for some weeks longer, and at length goes off gradually. In some cases it is, however, protracted for several months, or even a year.

Although the hooping-cough often proves tedious, and is liable to return with violence on any fresh exposure to cold, when not entirely removed, it nevertheless is seldom fatal in its simple form. The dangerous cases are those in which bronchitis supervenes, or irritation is set up in the head. When inflammation extends through the minute ramifications of the bronchial tubes, there is a similar danger to that in other cases of bronchitis similarly situated, namely, of the effects on the brain and the whole system, arising from the circulation of imperfectly arterialised blood, and accordingly, a large proportion of fatal cases of hooping-cough really terminate in asphyxia. Where tubercles pre-exist in the lungs, they are sometimes rapidly developed in the course of hooping cough, and the child dies of phthisis. In a few cases, a profuse suppuration takes place throughout the bronchial membrane, a state accompanied with great debility and emaciation, and liable to be confounded with phthisis. From this state, however, the child may recover if the strength be properly supported.

Where the disease is long protracted, the recovery is often imperfect. A disposition to chronic bronchitis may remain for many years or for life; a portion of the substance of the lungs may be hepatized, or a foundation laid for asthma or consumption.

In the treatment of this disease it must be borne in mind that, in the early period, palliative measures can only be employed; but when it continues merely from habit, a variety of means will often at once put a stop to it. In the first stage, in mild cases, very little is required, except obviating occasional irritation, keeping the bowels regular, &c. But where it puts on a more serious character, the plan will differ accordingly as it is attended with inflammatory symptoms, or exhibits a purely spasmodic form. In the former case, it may be sometimes proper, in plethoric habits, to begin by a full bleeding, or leeches to the chest if the patient be very young; then clear the bowels effectually, apply a blister, and exhibit ipecacuan, antimonials, or squill, in nauseating doses, to promote diaphoresis and expectoration. An occasional emetic, where the breathing is much oppressed with wheezing, in young children particularly, may afford material relief. When the disorder is more of the spasmodic character, some of these means may still be useful, as blisters, and nauseating medicines, so far as the strength will admit; but the remedies of greatest efficacy are the narcotics, as opium, conium, &c. exhibited in adequate doses. In the chronic or habitual stage of the disease, almost any thing which produces a considerable impression on the constitution, will occasionally succeed; but we chiefly rely on sedative and antispasmodic, or on tonic remedies, according as there are marks of irritability, or of mere debility in the system. Of the former description opium is perhaps the best, especially in conjunction with squill, given in a full dose at night, and in small quantities swallowed slowly from time to time during the day. Conium, assafœtida, &c. may, however, occasionally answer better in particular constitutions. Among the tonics the cinchona is often highly efficacious, where no appearances of local disease attend: some of the metallic preparations also, particularly sulphate of zinc, may be much relied upon. Sometimes stimulant applications to the chest, but still more certainly opiate frictions, will be found to cure this disorder. When hooping cough is tedious and protracted without the presence of any formidable complication, the great remedy is change of air, which will frequently do more in a few days than medicine in as many months. The cold bath also, where there is no local disease, may have an excellent effect; assisted by warm clothing, especially wearing some kind of fur over the chest.

Peruvian balsam. See *Myroxylon.*

Peruvian bark. See *Cinchona.*

Peruvianus cortex. See *Cinchona.*

Peruvianus cortex flavus. See *Cinchona cordifolia.*

Peruvianus cortex ruber. See *Cinchona oblongifolia.*

PERVIGI'LIUM. (*um, ii.* n.; from *per*, much, and *vigilo*, to watch.) Watching, or a want of sleep. See *Vigilance.*

PERVI'NCA. (*a, æ.* f.; from *per* and *vincio*, to bind.) So called because its stringy roots were used for binding substances together. See *Vinca minor.*

PES. (*es, edis.* m.; a foot.) The foot. It consists of the tarsus, metatarsus, and toes. It has its proper muscles and tendons, arteries, veins, and nerves.

Pes alexandrinus. See *Anthemis.*

PES ANSERI'NUS. A whimsical name given to the radiated expansion of the portio dura on the side of the face.

PES CAPRÆ. Goat's-foot, a species of *Oxalis;* also a species of *Convolvulus.*

Pes cati. See *Gnaphalium dioicum.*

Pes colombi'nus. See *Geranium.*

PES HIPPOCAMPI. The name of two columns at the end of the fornix of the brain, which diverge posteriorly. See *Encephalos.*

Pes leonis. See *Alchemilla.*

PES TIGRIDIS. A species of *Ipomœa.*

PE'SSARY. (*Pessarium, ii.* n.; from πεσσω, to soften.) An instrument made of wood, ivory, or other materials introduced into the vagina to support the uterus. Pessaries are of various forms; as the *globe pessary*, the *ring pessary*, the *conical pessary*, &c.

PESTILENCE. A plague.

PESTILENTIAL. (*Pestilentialis;* from *pestis*, the plague.) A disease which is epidemic and malignant, partaking of the nature of a plague, is called a pestilential disease.

Pestilentwort. See *Tussilago.*

Pestilochia. See *Aristolochia virginiana.*

PE'STIS. The plague: a disease characterised by typhoid fever, which is contagious in the extreme; prostration of strength, buboes, and carbuncles; petechiæ, hæmorrhage, and colliquative diarrhœa. The epidemic violence of the plague is restrained within certain limits of atmospheric temperature. When the thermometer rises above 80°, or sinks much below 60°,

the epidemy ceases, and the disease becomes sporadic and much more tractable.

By some writers the disease has been divided into three species: that attended with buboes; that attended with carbuncles; and that accompanied with petechiæ. This division appears wholly superfluous. Dr. Russel, in his elaborate treatise on the plague, makes mention of many varieties; but when these have arisen, they seem to have depended in a great measure on the temperament and constitution of the air at the time the disease became epidemical, as likewise on the patient's habit of body at the time of his being attacked.

The plague is by most writers considered as the consequence of a pestilential contagion, which is propagated from one person to another almost solely by *contact* with a diseased person, or with fomites embued with the specific poison.

It has been observed that it generally appears as early as the fourth or fifth day after infection; but it has not yet been ascertained how long a person who has laboured under the disease is capable of infecting others, nor how long the contagion may lurk in an insusceptible habit without producing the disease, and may yet be communicated, and the disease excited, in habits more susceptible of the infection. It has generally been supposed, however, that a quarantine of forty days is much longer than is necessary for persons, and probably for goods also. Experience has not yet determined how much of this term may be abated.

It sometimes happens, that after the application of the contagious miasm, the patient experiences only a considerable degree of languor and slight headach for many days previous to a perfect attack of the disease: but it more usually comes to pass, that he is very soon seized with great depression of strength, anxiety, palpitations, syncope, stupor, giddiness, violent headach, and delirium, the pulse becoming at the same time very weak and irregular.

These symptoms are shortly succeeded by nausea, and a vomiting of a dark bilious matter; and, in the further progress of the disease, carbuncles make their appearance; buboes arise in different glands, such as the parotid, maxillary, cervical, axillary, and inguinal; or petechiæ, hæmorrhages, and a colliquative diarrhœa, ensue, which denote a putrid tendency prevailing to a great degree in the mass of the blood.

Such are the characteristic symptoms of this malignant disease; but it seldom happens that they are all to be met with in the same person. Some, in the advanced state of the disease, labour under buboes, others under carbuncles, and others again are covered with petechiæ.

The plague in its severe form is always to be considered as attended with imminent danger, and when it prevailed in this country about 200 years ago, proved fatal to most of those who were attacked with it. It is probable, however, that many of them died from want of care and proper nourishment, as the infected were forsaken by their nearest friends; because in Turkey and other countries, where attention is paid to the sick, a great many recover. Much depends, however upon the particular epidemy, and the period of the epidemy: at the commencement of the more formidable visitations of this pestilence, almost all the cases are fatal.

When the disease is unattended by buboes, it runs its course more rapidly, and is more generally fatal, than when accompanied by such inflammations. The earlier they appear, the milder usually is the disease. When they proceed kindly to suppuration, they always prove critical, and ensure the patient's recovery. A gentle diaphoresis, arising spontaneously, has been known in many instances likewise to prove critical. When carbuncles show a disposition to gangrene, the event will be fatal. Petechiæ, hæmorrhages, and colliquative diarrhœa, denote the same termination.

There is a particular mild form of plague, cases of which are met with more frequently towards the end of an epidemic than at any other period. In this form the symptoms are similar to those of the severe, but infinitely less in degree — indeed, cases are observed in which the individual is scarcely ill, and can follow his usual occupations. This form is always attended with buboes, but never with carbuncles or petechiæ. In some cases the buboes only occur, without any constitutional affection.

Dissections of the plague have discovered the gall bladder full of black bile, the liver very considerably enlarged, the heart much increased in size, and the lungs, kidneys, and intestines beset with carbuncles. They have likewise discovered all the other appearances observed in typhus fever. The plague may be communicated by inoculation with the matter of the buboes. In 1801, Dr. Whyte tried the experiment on himself, and died on the fourth day of the disease; and in 1817, Mr. Van Rosenfeldt fell a victim to a similar rashness — he died on the second day. We need not here speak of the treatment of the plague which is of comparatively little interest to practitioners in this country. It appears moreover to be a disease very little under the control of medicine, and where recovery takes place it generally appears to be owing much more to the efforts of nature than to those of art.

PE'TAL. (*Petalum*, *i.* n.) The name of the coloured leaflets of the corolla of a flower. The great variety of form, duration, &c., of the petals, give rise to the following names: —

From their duration, —

1. *Patent*; as in *Rosa canina*.
2. *Patentissima*, very spreading.
3. *Erect*; as in *Allium nigrum*.
4. *Connivent*; as in *Rumex*.
5. *Distant*; as in *Cucubalus baccifera*.

From the figure of the border, —

6. *Acuminate*; as in *Saxifraga stellaris*.
7. *Setaceous*; as in *Tropæolum minus*.
8. *Apice cohærentia*; as in *Vitis*.
9. *Apice reflexa*; as in *Anemone*.
10. *Aristate*; as in *Galium aristatum*.
11. *Bifid*; as in *Silene nocturna*.
12. *Bipartite*; as in *Alsine media*.
13. *Bilobe*; as in *Geranium striatum*.
14. *Carinate*; as in *Carum carvi*.
15. *Concave*; as in *Ruta graveolens*.

16. *Cordate;* as in *Sium selinum.*
17. *Hirsute;* as in *Menyanthes.*
18. *Ciliate;* as in *Asclepias undulata.*
19. *Crenate;* as in *Linum usitatissimum.*
20. *Dentate;* as in *Silene Lusitanica.*
21. *Serrate;* as in *Dianthus arboreus.*
22. *Cuneiform;* as in *Epidendrum cordatum.*
23. *Emarginate;* as in *Allium roseum.*
24. *Inflex;* as in *Pimpinella.*
25. *Reflex;* as in *Pancratium Zelanicum.*
26. *Involute;* as in *Anethum.*
27. *Integer;* as in *Nigella arvensis.*
28. *Laciniate;* as in *Reseda.*
29. *Lanceolate;* as in *Narcissus minor.*
30. *Linear;* as in *Tussilago farfara.*
31. *Lineate;* as in *Scilla Lusitanica.*
32. *Punctate;* as in *Melanthium.*
33. *Maculate;* as in *Digitalis.*
34. *Oblong;* as in *Citrus* and *Hedera.*
35. *Obtuse;* as in *Tropæolum majus.*
36. *Ovate;* as in *Allium flavum.*
37. *Plane;* as in *Pancratium.*
38. *Subrotund;* as in *Rosa centifolia.*
39. *Truncate;* as in *Hura crepitans.*
40. *Coronate;* as in *Nerium oleander.*

The claw of the petal is very long in *Dianthus* and *Saponaria;* and *connate,* in *Malva sylvestris* and *Oxalis.*

PETA'LIFORM. *Petaliformis.* Like a petal: applied to the stigma of the *Iris germanica.*

PETALO'DES. (From πεταλον, a leaf, or thin scale.) This term is by Hippocrates applied to urine which has in it flaky substances resembling leaves.

PETASI'TES. (*es, is.* f.; from πετασος, a hat: so named because its leaves are large, and spread like a hat.) See *Tussilago petasites.*

PETE'CHIA. (*a, æ.* f.; a low Latin word.) *Peticula.* A red or purple spot, which resembles a flea-bite. It arises from a small extravasation of blood under the skin. When the extravasation is larger, so as to resemble a bruise, it is called a *vibex.* Petechiæ and vibices are common in malignant fevers.

PETECHIÆ SINE FEBRE. The simple form of purpura has been so called. See *Purpura simplex.*

PETI'OLAR. *Petiola'ris.* Fixed to the petiole or leafstalk.

PETI'OLATE. *Petiola'tus.* Applied to leaves which are formed with a stalk, whether long or short, simple or compound, as most leaves are; as in *Verbascum nigrum,* &c.

PETI'OLUS. (*us, i.* m.; from *petalum,* a leaf.) A petiole. The footstalk or leafstalk of a plant. The term is applied exclusively to the stalk of the leaf.

It is distinguished into the *apex,* which is inserted into the leaf, and the *base,* which comes from the stem.

From its figure it is called, —

1. *Linear,* equal in breadth throughout; as in *Citrus medica.*
2. *Alate;* as in *Citrus aurantium.*
3. *Appendiculate,* when furnished with leaflets at its base; as in *Dipsacus pilosus.*
4. *Round,* throughout; as in *Pisum sativum.*
5. *Half-round,* round on one side, and flat on the other.
6. *Triquetral,* three-sided.
7. *Angulate,* having angles.
8. *Canaliculate,* channelled to its very base, where it is sometimes greatly dilated and concave; as in *Angelica sylvestris.*
9. *Compressed,* compressed towards its base; as in *Populus tremula.*
10. *Clavate,* thicker towards the apex; as in *Cacalia suaveolens.*
11. *Spinescent,* becoming a spine after the fall of the leaf; as in *Rhamnus catharticus.*

From its insertion the petiolus is said to be, —

12. *Insertus;* as in the *Pyrus communis,* and most trees.
13. *Articulate;* as in *Oxalis acetosella.*
14. *Adnate,* adhering so to the stem, that it cannot be displaced without injuring the bark.
15. *Decurrent,* adhering at its base, and going some little way down the stem; as in *Pisum ochrus.*
16. *Amplexicaulis,* surrounding the stem at its base; as in *Senecio hastatus.*
17. *Vaginans,* surrounding the stem with a perfect tube; as in *Canna Indica.*

From its length with respect to the leaf, it is said to be *brevissimus* when much shorter, and *longissimus,* when longer; as in *Anemone hepatica,* and *Geranium terebinthinatum.*

It is distinguished also into *simple,* when not divided; as in most leaves: and *compound,* when divided into lateral branches; as in all compound leaves.

PETRA'PIUM. (From *petra,* a rock, and *apium,* parsley: so called because it grows in stony places.) See *Bubon macedonicum.*

PETRELÆ'UM. (From πετρα, a rock, and ελαιον, oil.) The liquid bitumen which distils from rocks.

PETRO'LEUM. (*um, i.* n.; from *petra,* a rock, and *oleum,* oil.) A liquid, bituminous substance which flows from the clefts of rocks, or in different places at the surface of the earth. See *Bitumen.*

PETROLEUM BARBADENSE. Barbadoes tar. A very dark coloured liquid bitumen brought from Trinidad and other places.

PETROLEUM RUBRUM. A species of rock-oil which abounds about the village of Gabian in Languedoc. See *Bitumen.*

Petroleum sulphuratum. See *Balsamum sulphuris Barbadense.*

PETROMYZON. (*on, i.* m.; from πετρον, a stone, and μυζαω, to suck: so called from being found adhering to the stones by sucking, and so keeping its place.) The name of a genus of fishes of the chondropterygious order. The lamprey.

PETROMYZON FLUVIATILIS. The lesser lamprey. This and the *bronchialis,* or lampern, are of easy digestion, equally well flavoured with the larger, but are seldom eaten.

PETROMIZON MARINUS. The true lamprey. This is an exquisite dainty when in season and well dressed. The death of King Henry I. was attributed to a too luxurious indulgence in this his favourite dish.

Petrous. See *Petrosus.*

Petropharyngæus. See *Constrictor pharyngis superior.*

Petro-salpingo staphylinus. See *Levator palati.*

PETROSELI'NUM. (*um, i.* n.; from πετρα, a rock, and σελινον, parsley.) See *Apium petroselinum.*

Petroselinum macedonicum. See *Bubon.*

Petroselinum vulgare. See *Apium.*

PETRO-SPHENOIDAL SUTURE. The small suture situated between the anterior margin of the os petrosum and the posterior margin of the sphenoid bone.

PETROSTAPHYLINUS. (Πετρον, and σταφυλη, the uvula.) The *levator palati mollis* muscle. — *Chaussier.*

PETRO'SUS. (From *petra*, a rock.) Petrous. A portion of the temporal bone is the *os petrosum*, or petrous portion, on account of its great hardness. See *Temporis os.*

PEUCE'DANUM. (*um, i.* n.; from πευκη, the pine-tree: so called from its leaves resembling those of the pine-tree.) 1. The name of a genus of plants. Class, *Pentandria;* Order, *Digynia.*

2. The pharmacopœial name of the hog's fennel. See *Peucedanum officinale.*

PEUCEDANUM OFFICINALE. The systematic name of the hog's fennel; called also, *Marathrum sylvestre, Marathrophyllum, Pinastellum,* and *Fœniculum porcinum.* The plant which bears these names in the pharmacopœias is the *Peucedanum — foliis quinquepartitis, filiformibus lincaribus,* of Linnæus. The root is the officinal part: it has a strong fœtid smell, somewhat resembling that of sulphureous solutions, and an acrid, unctuous, bitterish taste. Wounded when fresh, in the spring or autumn, particularly in the former season, in which the root is most vigorous, it yields a considerable quantity of yellow juice, which soon dries into a solid gummy resin, which retains the taste and strong smell of the root. This, as well as the root, is recommended as a nervine and anti-hysteric remedy.

PEUCEDANUM SI'LAUS. The systematic name of the English meadow saxifrage: called also, *Agrion, Agriophyllon, Saxifraga vulgaris, Saxifraga anglica, Hippomarathrum, Fœniculum erraticum,* and *Pinastellum.* The roots, leaves, and seeds of this plant have been commended as aperients, diuretics, and carminatives; and appear, from their aromatic smell, and moderately warm, pungent, bitterish taste, to have some claim to these virtues. They are rarely used.

PEWTER. A compound metal, the basis of which is tin. The best sort consists of tin alloyed with about a twentieth or less of copper or other metallic bodies which the experience of the workmen has shown to be the most conducive to the improvement of its hardness and colour, such as lead, zinc, bismuth, and antimony. There are three sorts of pewter, distinguished by the names of plate, trifle, and ley pewter. The first was formerly much used for plates and dishes; of the second are made the pints, quarts, and other measures of beer: and of the ley-pewter, wine measures and large vessels.

The best sort of pewter consists of 17 parts of antimony to 100 parts of tin; but the French add a little copper to this kind of pewter. A very fine silver-looking metal is composed of 100 parts of tin, eight of antimony, one of bismuth, and four of copper. On the contrary, the ley-pewter, by comparing its specific gravity with those of the mixtures of tin and lead, must contain more than a fifth part of its weight of lead.

PEYER'S GLANDS. *Peyeri glandulæ.* The clustered mucous glands of the small intestines are so called after Peyer, a Swiss anatomist who described them. See *Brunner's glands,* and *Intestines.*

PEZI'ZA. (*a, æ.* f.; somewhat altered from the Greek πεξικη, which is derived from πεζα, the sole of the foot. Piny speaks of the *peziæ*, as the Greek appellation of such fungi as grow without any stalk or apparent root.) The name of a genus of plants. Class, *Cryptogamia;* Order, *Fungi.*

PEZIZA AURI'CULA. Jew's ears. Called also, *Auricula Judæ, Fungus sambucinus,* and *Agaricus auriculæ forma.* A membranaceous fungus, *Peziza — concava rugosa auriformis,* of Linnæus, which resembles the human ear. Its virtues are astringent, and when employed (by some its internal use is not thought safe), it is made into a decoction, as a gargle, for relaxed sore throats.

PHA'CIA. (Φακια, a lentil.) A cutaneous spot or blemish, called by the Latins *lentigo,* and *lenticula.*

PHAGEDÆ'NA. (*a, æ.* f.; from φαγω, to eat.) A species of ulcer that spreads very rapidly.

PHAGEDÆNA GANGRENOSA. Hospital gangrene. See *Mortification.*

PHAGEDÆ'NIC. (*Phagedænicus;* from φαγω, to eat.) 1. Applied to an ulceration which spreads very rapidly.

2. To escharotics.

PHALACRO'SIS. (Φαλακρωσις; from φαλακρος, bald.) Baldness.

PHA'LACRUM. (From φαλακρος, bald.) A surgical instrument, with a blunt, smooth top, as a probe. — *Turton.*

PHALANGES. The plural of *phalanx.*

PHALANGO'SIS. (From φαλαγξ, a row of soldiers.) 1. An affection of the eyelids, when there are two or more rows of hairs upon them.

2. A prolapsus of the upper eyelid. See *Ptosis.*

PHA'LANX. (*x, gis.* f.; from φαλαγξ, a battalion.) The small bones of the fingers and toes, are distinguished into the first, second and third *phalanges.*

PHA'LARIS. (*is, idis.* f.; from φαλος, white, shining: so named from its white shining seed, supposed to be the φαλαρος of Dioscorides.) The name of a genus of plants. Class *Triandria;* Order, *Digynia.* Canary grass.

PHALARIS CANARIENSIS. Canary grass. The seed of this plant is well known to be the common food of the canary-birds. In the Canary islands, the inhabitants grind it into meal, and make a coarse sort of bread with it.

PHA'LLUS. (*us, i.* m.; after the φαλλος of the Greeks, to which it bears a great resemblance.) The name of a genus of the Order *Fungi;* Class, *Cryptogamia.*

PHALLUS ESCULENTUS. The systematic name of the morel fungus. It grows on moist ba-

and wet pastures, and springs up in May. It is used in the same manner as the truffle, for gravies and stewed dishes, but gives an inferior flavour.

PHALLUS IMPUDICUS. The stinkhorns. *Fungus phalloides.* A fungus which is, at a distance, intolerably fœtid, so that it is oftener smelt than seen, being supposed to be some carrion, and therefore avoided: when near, it has only the pungency of volatile alkali. It is applied to allay pain in the limbs.

PHANTA'SMA. (*a, atis.* n.; from *φανταζω*, to make appear.) The imaginary perception of some object which is not really present. It may arise from disease of the eye or of the sensorium.

PHA'RICUM. *Φαρικον.* The name of a substance which was violently poisonous. What it was is now unknown.

PHARMACEU'TIC. (*Pharmaceuticus*; from *φαρμακευω*, to exhibit medicines.) Belonging to pharmacy. See *Pharmacy.*

PHARMACIEN. The French for an apothecary. The French pharmacien, however, does not correspond with our apothecary; he is an educated druggist, who passes an examination, whose sole business is to dispense, not to prescribe, medicines. The regular medical practitioner never dispenses medicines, and the profession is thus judiciously kept apart from trade, while the practice of pharmacy is conducted by well informed, and often highly scientific, persons.

PHARMACOCHY'MIA. (*a, æ.* f.; from *φαρμακον*, a medicine, and *χυμια*, chemistry.) Pharmaceutic chemistry, or that part of chemistry which respects the preparation of medicines.

PHARMACOLOGY. (*Pharmacologia, a, æ.* f.; from *φαρμακον*, a medicine, and *λογος*, a discourse.) The study of *pharmacy.*

PHARMACOPŒ'IA. (*a, æ.* f.; from *φαρμακον*, a medicine, and *ποιεω*, to make.) 1. The art of preparing medicines.

2. A dispensatory, or book of directions for the composition of medicines approved of by medical practitioners, or published by authority.

PHARMACOPO'LA. (*a, æ.* f.; from *φαρμακον*, a medicine, and *πωλεω*, to sell.) An apothecary, or vender of medicines.

PHARMACOPO'LIUM. (*um, ii.* n.; from *φαρμακον*, a medicine, and *πωλεω*, to sell.) A druggist's or apothecary's shop.

PHARMACOPO'SIA. (From *φαρμακον*, a medicine, and *ποσις*, a potion.) A liquid medicine.

PHARMACOTHE'CA. (*a, æ.* f.; from *φαρμακον*, a medicine, and *τιθημι*, to place.) A medicine chest.

PHA'RMACY. (*Pharmacia, æ.* f.; from *φαρμακον*, a medicine.) The art of preparing remedies for the treatment of diseases.

The articles of the Materia Medica, being generally unfit for administration in their original state, are subjected to various operations, mechanical or chemical, by which they become adapted to this purpose. Herein consists the practice of pharmacy, which therefore requires a previous knowledge of the sensible and chemical properties of the substances operated on. The qualities of many bodies are materially changed by heat, especially in conjunction with air and other chemical agents; the virtues of others reside chiefly in certain parts, which may be separated by the action of various menstrua, particularly with the assistance of heat; and the joint operation of remedies on the human body is often very different from what would be anticipated, from that which they exert separately: hence, in the preparations and compositions of the pharmacopœias, we are furnished with many powerful as well as elegant forms of medicine.

PHARYNGE'TIRON. *Φαρυγγεθρον.* The pharynx, or fauces.

PHARYNGE'AL. (*Pharyngeus*; from *φαρυγξ*, the pharynx.) Belonging to, or affecting the pharynx.

PHARYNGI'TIS, (*is, idis.* f.; from *pharynx*, the seat of the disease, and *itis*, which imports inflammation.) An inflammation of the membrane which forms the pharynx: it is usually described under the genus cynanche, and is the cynanche pharyngea of Cullen's arrangement. It is known by the unnatural florid colour of the pharynx, especially about the lower part of the fauces; and this is accompanied by feverishness of the inflammatory kind, which is seldom considerable. In most cases of phlegmonous tonsillitis the pharynx is also affected; and so when phlegmonoid inflammation of the pharynx takes place, the disease mostly extends to the tonsils; so that what has been said of tonsillitis, of both its species, the malignant as well as the phlegmonoid, will apply to pharyngitis, the pharynx being as often the seat of the malignant disease as the tonsils. Dr. Cullen declares, indeed, that he never saw a case of true cynanche pharyngea; that is, a case in which the inflammation was confined to the pharynx: it constantly spreads in a greater or less degree to the tonsils and neighbouring parts. Besides, the mode of treatment is, in almost every instance, the same in both.

PHARYNGOSTAPHYLI'NUS. A muscle originating in the pharynx, and terminating in the uvula. More commonly called *palato-pharyngæus.*

PHARYNGOTO'MIA. (*a, æ.* f.; from *φαρυγξ*, the pharynx, and *τεμνω*, to cut.) The operation of cutting into the pharynx.

PHA'RYNX. (*x, gis.* f. *Απο του φερω*, because it conveys the food into the stomach.) The muscular bag at the back part of the mouth. It is shaped like a funnel, adheres to the fauces behind the larynx, and terminates in the œsophagus. Its use is to receive the masticated food, and to convey it into the œsophagus.

PHASE'OLUS. (*us, i.* m.; from *φασηλος*, a little ship, or galliot, which its pods were supposed to resemble.) The name of a genus of plants. Class, *Diadelphia*; Order, *Decandria.*

PHASEOLUS CRE'TICUS. A decoction of the leaves of this plant, called by the Americans Cajan, and Cayan, is said to restrain the bleeding from piles when excessive.

PHASEOLUS VULGARIS. The systematic name of the kidney-bean. This is often called the

French bean: when young and well boiled it is easy of digestion, and delicately flavoured, and less liable to produce flatulency than the pea.

PHASGA'NIUM. (From φασγανον, a sword, so called because its leaves are shaped like a sword.) The herb sword grass.

PHASIA'NUS. (*us*, *i.* m.) 1. The name of a genus of birds, of the order *Gallinæ*.

2. The pheasant.

PHASIANUS COLCHICUS. The common pheasant. The flesh of this bird is easy of digestion, and a great delicacy.

PHASIANUS GALLUS. The common or domestic fowl, of which there are many varieties, all highly useful to man.

PHA'TNIUM. (From φατνη, a stall.) The socket of a tooth.

PHELLA'NDRIUM. (*um*, *ii.* n.; from φελλος, the cork-tree, and ανδριος, male: so called because it floats upon the water like cork.) The name of a genus of plants. Class, *Pentandria*; Order, *Digynia*.

PHELLANDRIUM AQUATICUM. The systematic name of the water-fennel, or fine-leaved water-hemlock. *Fœniculum aquaticum. Cicutaria aquatica.* The plant which bears this name in the pharmacopœias is the *Phellandrium —foliorum ramificationibus divaricatis*, of Linnæus. It possesses narcotic and poisonous qualities, which are best counteracted by acids, after clearing the primæ viæ. The seeds have been recommended in conjunction with Peruvian bark, in the cure of pulmonary phthisis.

PHE'MOS. (Φημος.) A medicine used by the Greeks against a dysentery.

PHENECIN. A purple substance obtained by Mr. Crum, from indigo.

PHILADEL'PHUS. (*us*, *i.* m.; from φιλεω, to love, and αδελφος, a brother; so called because, by its roughness, it attaches itself to whatever is near it.) See *Galium aparine*.

PHILANTHRO'PUS. (*us*, *i.* m.; from φιλεω, to love, and ανθρωπος, a man: so called from its uses.) 1. A medicine employed by the Greeks in nephritic complaints.

2. (*us*, *i.* f.) The herb goose-grass, because it sticks to the garments of those who touch it. See *Galium aparine*.

PHILO'NIUM. (*um*, *i.* n.; from *Philo*, its inventor. The ancient name of an aromatic opiate invented by Philo; also the name of a collyrium which contained numerous ingredients.

PHILONIUM LONDINENSE. An old name of the *Confectii opii*.

Philosopher's stone. See *Lapis philosophorum*.

PHILLY'RIA. (*a*, *æ.* f. Φιλλυρια, of Dioscorides: supposed to be so called from *Philyra*, the mother of Chiron, who first applied it medicinally.) The name of a genus of plants. Class, *Diandria*; Order, *Monogynia*. Mock privet.

PHI'LTRUM. (*um*, *i.* n. from φιλεω, to love.) 1. A philtre, or medicine to excite love. The ancients had great faith in such medicines.

2. The groove between the nose and the upper lip.

PHIMO'SIS. (*is*, *is.* f.; from φιμοω, to tie or bind up.) A constriction or straightness of the extremity of the prepuce, which, preventing the glans from being uncovered, is often the occasion of many troublesome complaints. It may arise from different causes, both in children and grown persons. Children have naturally the prepuce very long; and as it exceeds the extremity of the glans, and is not liable to be distended, it is apt to contract its orifice. This often occasions a lodgment of a small quantity of urine between that and the glans, which, if it grows corrosive, may irritate the parts so as to produce an inflammation. In this case, the extremity of the prepuce becomes more contracted, and consequently the urine more confined. Hence the whole inside of the prepuce excoriates and suppurates; the end of it grows thick and swells, and in some months becomes callous. At other times it does not grow thick, but becomes so straight and contracted as hardly to allow the introduction of a probe. The only way to remove this disorder is by the operation of slitting it open. A phimosis may affect grown persons from the same cause as little children, though there are some grown persons who cannot uncover their glans, or at least not without pain, and yet have not the extremity of the prepuce so contracted as to confine the urine from passing, we notwithstanding find them sometimes troubled with a phimosis, which might be suspected to arise from a venereal taint, but has, in reality, a much more innocent cause. There are, we know, sebaceous glands situated in the prepuce round the corona, which secrete an unctuous humour, which sometimes becomes acrimonious, irritates the skin that covers the glans, and the irritation extending to the internal membrane of the prepuce, they both become inflamed, and yield a purulent serum, which cannot be discharged, because the glans is swelled, and the orifice of the prepuce contracted. We find also some grown persons, who, though they never uncovered the glans, have been subject to phimosis from a venereal cause. In some, it is owing to gonorrhœa, where the matter lodged between the prepuce and the glans occasioned the same excoriation as the discharge before mentioned from the sebaceous glans. In others it proceeds from venereal chancres on the prepuce, the glans, or the frænum; which producing an inflammation either on the prepuce or glans, or both, the extremity of the former skin contracts, and prevents the discharge of the matter. The parts, in a very little time, are greatly tumefied, and sometimes a gangrene comes on in less than two days. Lastly, it occasionally is produced by common inflammation, which causes a swelling and an imprisonment of the glans.

The cure of the primary disease requires leeches, cold lotions, and cataplasms. If the prepuce continues contracted, after the inflammation is subdued, it should be slit open with a knife. And so, also, if after the removal of the disease which may have given rise to the phimosis, it still remains, recourse must be had to the same operation.

PHLEBES AËTOI. Eagle veins. The veins of the temples. — *Rufus Ephesius.*

PHLEBI'TIS. Inflammation of a vein.

Phlebitis uterine. See *Puerperal fever.*

PHLEBORRHA'GIA. (*a, æ.* f.; from φλεψ, a vein, and ρηγνυμι, to break out.) A rupture of a vein.

PHLEBO'TOMY. (*Phlebotomia, æ.* f.; from φλεψ, a vein, and τεμνω, to cut.) The opening of a vein. See *Venesection.*

PHLEGM. (*Phlegma, atis.* n.; πλεγμα, from φλεγω, to burn, or to excite.) 1. One of the primary humours of the body according to the Greek physiologists. See *Cardinal humours.*

2. Inflammation. — *Hippocrates.*

3. The viscid mucus expectorated.

4. Aqueous matter obtained by distillation from the lungs.

PHLEGMAGO'GUS. (From φλεγμα, phlegm, and αγω, to drive out.) Applied to a medicine which promotes the discharge of phlegm.

PHLEGMA'SIA. (*a, æ.* f.; from φλεγω, to burn.) Inflammation. See *Inflammation.*

PHLEGMASIA DOLENS. A disease which mostly occurs to women soon after delivery: and hence it has been called the puerperal tumid leg. Dr. Hull gave it the name of *phlegmasia dolens;* and it has been described as *phlegmasia lactea, ecchymoma lymphatica;* and by Dr. Cullen, as *anasarca serosa;* and Dr. Good calls it *bucknemia sparganosis.* The swelling has been ascribed to a redundancy of milk, and a morbid deposition in consequence of such redundancy; whence the French call it *dépôt laiteux,* and *lait répandu;* and the Germans, *milch-streichen.* A minuter attention, however, will sufficiently prove that it has seldom any thing to do with the milk, perhaps never. It has occurred where the breasts have been long destitute of milk, and where they have overflowed; when suckling has been relinquished, and where it has been continued; and several instances have occurred in virgins and in men. It principally, however, affects women in the puerperal state; in a few instances it has been observed to attack pregnant women; and, in one or two cases, nurses, on losing their children, have been affected by it. Women of all descriptions are liable to be attacked by it during and soon after childbed; but those whose limbs have been pained or anasarcous during pregnancy, and who do not suckle their offspring, are more especially subject to it. It has rarely occurred oftener than once in the same female. It supervenes to easy and natural, as well as to difficult and preternatural births. It sometimes makes its appearance in twenty-four or forty-eight hours after delivery, and at other times, not till a month or six weeks after; but, in general, the attack takes place from the tenth to the sixteenth day of the lying-in. It has, in many instances, attacked women who were recovering from puerperal fever; and, in some cases, has supervened, or succeeded, to thoracic inflammation. It not uncommonly begins with coldness and rigors: these are succeeded by heat, thirst, and other symptoms of pyrexia; and then pain, stiffness, and other symptoms of topical inflammation, supervene. Sometimes the local affection is from the first accompanied with, but is not preceded by, febrile symptoms. Upon other occasions, the topical affection is not at first attended with feverish symptoms; but soon after it has taken place, the pulse becomes more frequent, the heat of the body is increased, and the patient is affected with thirst, head-ache, &c. The pyrexia is very various in degree in different patients, and sometimes assumes an irregular remittent or intermittent type. The complaint generally takes place on one side only at first, and the part where it commences is various; but it most commonly begins in the lumbar, hypogastric, or inguinal region, on one side, or in the hip, or top of the thigh, and corresponding labium pudendi. In this case, the patient first perceives a sense of pain, weight, and stiffness in some of the above-mentioned parts, which are increased by every attempt to move the pelvis or lower limb. If the part be carefully examined, it generally is found rather fuller or hotter than natural, and tender to the touch, but not discoloured. The pain increases, always becomes very severe, and, in some cases, is of the most excruciating kind. It extends along the thigh; and when it has subsisted for some time, longer or shorter in different patients, the top of the thigh and the labium pudendi become greatly swelled, and the pain is then sometimes alleviated, but accompanied with a greater sense of distension. The pain next extends down the thigh towards the ham in the direction of the crural blood-vessels, the course of which may generally be traced by an indurated cord which is perceptible to the touch; when it has continued for some time, the whole of the thigh becomes swelled, and the pain is somewhat relieved. The pain then extends down the leg to the foot, and is commonly the most severe in the direction of the posterior tibial vessels; after some time, the parts last attacked begin to swell, and the pain abates in violence, but is still very considerable, especially on any attempt to move the limb. The extremity being now swelled throughout its whole extent, appears perfectly or nearly uniform, and it is not perceptibly lessened by an horizontal position, like an œdematose limb. It is of the natural colour, or even whiter, is hotter than usual, excessively tense, and exquisitely tender when touched. When pressed by the finger in different parts, it is found to be elastic, little, if any, impression remaining, and that only for a very short time. If a puncture or incision be made into the limb, in some instances no fluid is discharged; in others, a small quantity only issues out, which coagulates soon after; and in others, a large quantity of fluid escapes, which does not coagulate; but the whole of the effused matter cannot be drawn off in this way. The swelling of the limb varies both in degree and in the space of time requisite for its full formation. In most instances it arrives at double the natural size, and in some cases at a much greater. In lax habits, and in patients whose legs have been very much affected with anasarca during pregnancy, the swelling takes place more rapidly than in those who are differently circumstanced; it sometimes arrives, in the former class of patients, at its greatest extent in twenty-four hours, or less, from the first attack.

Instead of beginning invariably at the upper part of the limb, and descending to the lower, this complaint has been known to begin in the foot, the middle of the leg, the ham, and the knee. In whichsoever of these parts it happens to begin, it is generally soon diffused over the whole of the limb; and when this has taken place, the limb presents the same phenomena exactly that have been stated above as observable when the groin, &c. are first affected.

After some days, generally from two to eight, the febrile symptoms diminish, and the swelling, heat, tension, weight, and tenderness of the lower extremity begin to abate, first about the upper part of the thigh, or about the knee, and afterwards in the leg and foot. Some inequalities are found in the limb, which, at first, feel like indurated glands; but, upon being more nicely examined, their edges are not so well defined as those of conglobate glands; and they appear to be occasioned by the effused matter being of different degrees of consistence in different points. The conglobate glands of the thigh and leg are sometimes felt distinctly, and are tender to the touch, but are seldom materially enlarged: and, as the swelling subsides, it has happened that an enlargement of the lymphatic vessels, in some part of the limb, has been felt, or been supposed to be felt.

The febrile symptoms having gradually disappeared, the pain and tenderness of the limb being much relieved, and the swelling and tension being considerably diminished, the patient is debilitated and much reduced, and the limb feels stiff, heavy, benumbed, and weak. When the finger is pressed strongly against it for some time, in different points, it is found to be less elastic than at first, in some places retaining the impression of the finger for a longer, in other places for a shorter time, or scarcely at all; and, if the limb be suffered to hang down, or if the patient walk much, it is found to be more swelled in the evening, and assumes more of an œdematose appearance. In this state the limb continues for a longer or shorter time, and is commonly at length reduced wholly, or nearly, to the natural size.

Hitherto the disease has been described as affecting only one of the inferior extremities, and as terminating by resolution, or the effusion of a fluid that is removed by the absorbents; but, unfortunately, it sometimes happens, that after it abates in one limb, the other is attacked in a similar way. It also happens, in some cases, that the swelling is not terminated by resolution; for sometimes a *suppuration* takes place in one or both legs, and ulcers are formed which are difficult to heal. In a few cases a gangrene has supervened. In some instances, the patient has been destroyed by the violence of the disease, before either suppuration or gangrene have happened.

The *predisposing causes* of this disease, when it occurs during the pregnant or puerperal state, or in a short time afterwards, appear to be, 1st, The increased irritability and disposition to inflammation which prevail during pregnancy, and in a still higher degree for some time after parturition. 2dly, The over-distended or relaxed state of the blood-vessels of the inferior part of the trunk, and of the lower extremities, produced during the latter months of utero-gestation.

Amongst the *exciting causes* of this disease may be enumerated, 1st, *Contusions*, or violent exertions of the lower portions of the abdominal and other muscles inserted in the pelvis or thighs, or other muscles of the inferior extremities, and contusions of the cellular texture connected with these muscles, during a tedious labour. 2dly, The *application of cold and moisture*, which are known to act very powerfully upon every system in changing the natural distribution of the circulating fluids, and consequently, in a system predisposed by parturition, may assist in producing the disease, by occasioning the fluids to be impelled, in unusual quantity, into the weakened vessels of the lumbar, hypogastric, and inguinal regions, and of the inferior extremities. 3dly, *Suppression* or diminution of the lochia, and of the secretion of milk, which, by inducing a plethoric state of the sanguiferous system, may occasion an inflammatory diathesis, may favour congestion, and the determination of an unusual quantity of blood to the vessels of the parts just mentioned, and thus contribute to the production of an inflammation of these parts. 4thly, *Food taken in too large quantity, and of a too stimulating quality*, especially when the patient does not give suck. This cause both favours the production of plethora, and stimulates the heart and arteries to more frequent and violent action; the effects of which may be expected to be particularly felt in the lumbar, hypogastric, or inguinal regions, and in the lower extremities, from the state of their blood-vessels. 5thly, *Standing or walking too much*, before the arteries and veins of the lower half of the body have recovered sufficiently from the effects of the distention which existed during the latter months of pregnancy. This must necessarily occasion too great a determination of blood to these parts, and consequently too great a congestion in them; whence they will be more stimulated than the upper parts of the body, and inflammation will sometimes be excited in them.

The opinions of authors as to the proximate cause of this affection have been very various. The first approach to what is generally believed to be the true pathology of it, was made some years since by Dr. D. Davis, who was led by his dissections to attribute it to inflammation of the iliac and crural veins. More recently, Dr. Robert Lee's investigations go to prove that the real origin of the inflammation is in the veins of the uterus. If the views of these pathologists are well founded, and they are generally thought to be so, the proper name of the disease under consideration is *crural phlebitis*.

The cure is to be attempted first by leeches applied down the course of the limb, popular head fomentations, and alvine evacuants; and afterwards, as soon as the inflammatory symptoms have abated, by local stimulants, so as to excite the torpid absorbents to increased action, of which the volatile liniment, with laudanum

may be advantageously used. Laudanum tends to take off the pain and irritation that still remains, and thus enables the tranquillised vessels the more easily to recover their tone. Yet, whatever application of this kind is employed, it should be accompanied with gentle friction, continued for half an hour or more, as the limb is able to bear it: for the friction itself is of essential service, and tends, perhaps, even more than any other local stimulant, to restore the limb to a healthy action. Mercurial liniment is occasionally beneficial. The chronic weakness is to be removed by a continuation of the friction, bathing with sea-water, or, which is much better, bathing in the sea itself; an elastic bandage round the limb; pure air; and, if necessary, bark, cascarilla, and a generous diet.

PHLEGMASIÆ. Inflammations. The name of the second order in the class *Pyrexiæ* of Cullen's nosological arrangement, characterised by pyrexia, with topical pain and inflammation, the blood, after venesection, exhibiting a buffy coat.

PHLEGMATORRHA'GIA. (*a*, *æ*. f.; from φλεγμα, mucus, and ῥηγνυμι, to break out.) An increased discharge of mucus from the nostrils.

PHLE'GMON. (*on*, *onis*. m.; from φλεγω, to burn.) *Phlegmone*. An inflammation of that kind which is otherwise called *healthy inflammation*. See *Inflammation*.

PHLE'GMONOID. Resembling phlegmon.

Phlegmonoid erysipelas. See *Erysipelas*.

PHLE'GMONOUS. Of the nature of phlegmon.

Phlegmonous inflammation. See *Inflammation*.

PHLOGI'STIC. (*Phlogisticus*; from φλογιζω, to burn.) 1. Appertaining to the imaginary principle called *phlogiston*.

2. Inflammatory. Thus we speak of phlogistic diathesis, meaning thereby the inflammatory diathesis.

PHLOGI'STON. (From φλογιζω, to burn.) The supposed general inflammable principle of Stahl, who imagined it was pure fire, or the matter of fire fixed in combustible bodies, as distinguished from fire in action, or in a state of liberty. See *Caloric*.

Phlogisticated air. See *Nitrogen*.

Phlogisticated alkali. See *Alkali*, *phlogisticated*.

Phlogisticated gas. See *Nitrogen*.

PHLOGO'SIS. (From φλογοω, to inflame.) Inflammation. See *Inflammation*.

PHLOGO'TIC. (*Phlogoticus*; from φλεγω, to burn.) Inflammatory: relating to inflammation.

PHLYCTÆ'NA. (*a*, *æ*. f. Φλυκταιναι, small bladders; from φλυζω, to boil.) A small pellucid vesicle, that contains a serous fluid.

PHLY'CTIS. (*is*, *idis*. f.; from φλυζω, to be hot.) A tumour with great heat.

PHLY'SIS. (*is*, *idis*. f.; from φλυζω, to boil.) 1. Synonymous with *phlyctæna*.

2. A whitlow. — *Mason Good*.

PHLYZA'CIUM. (*um*, *ii*. n.; from φλυζω, to be hot.) A pustule. The term is limited by Willan to a particular kind of pustule. See *Pustule*.

PHOBODI'PSIA. (*a*, *æ*. f.; from φοβεω, to fear, and διψη, thirst.) Fear of drinking. This accompanies many diseases of the throat and stomach. It is used by some synonymously with hydrophobia. It is an ill-devised term, which does not express the meaning.

PHOCE'NIC. (*Phocenicus*; from *phocæna*, the dolphin.) Appertaining to the dolphin.

PHOCENIC ACID. *Acidum phocenicum*. See *Phocenine*.

PHOCE'NINE. M. Chevreuil found in the oil of the porpoise (*delphinium phocæna*) a peculiar fatty matter mixed with eläine. This he named *phocenine*. When saponified it yields a volatile odoriferous acid, called the *phocenic acid*.

PHŒNI'CEUS. (Φοινικιος; from φοινιξ, red.) Crimson: applied to designate colour. See *Colour*.

PHŒNICI'SMUS. (Same etymon.) Plouquet gives this name to the measles.

PHŒNICI'TES LAPIS. The *Lapis judaicus*. See this title in the Supplement.

PHŒNI'CIUS. Phenician. Appertaining to the country named *Phœnicia*.

PHŒNICIUM EMPLASTRUM. The plaster otherwise named *diachalciteos*.

PHŒNICIUS MORBUS. The tubercular elephantiasis: so called either from its being prevalent in Phœnicia, or from the discolouration of the skin.

PHŒNI'GMUS. (From φοινιξ, red.) 1. A red eruption on the skin, without fever.

2. That which reddens the skin when applied to it; a rubefacient.

PHŒ'NIX. (*ix*, *icis*. f.; Φοινιξ of the ancient Greeks, the date palm-tree; from which, as a *primitive* word, *Phœnicia*, the land of palm-trees, seems to have derived its name, as likewise *the red colour* phœniceus.) The name of a genus of plants. Class, *Diœcia*; Order, *Triandria*. The date palm-tree.

PHŒNIX DACTYLI'FERA. The systematic name of the date-tree. *Phœnix — frondibus pinnatis; foliolis ensiformibus complicatis*, of Linnæus. The fruit is called dactylus or date. It is fleshy, of an oblong round form; about an inch and a half long, and one in diameter, and has in its centre a hard stone. Dates, before they are ripe, are rather rough and astringent; but when perfectly matured, they are much of the nature of the fig. Senegal dates are much esteemed, they having a more sugary agreeable flavour than those of Egypt and other places.

PHO'NICUS. (From φωνη, the voice.) Relating to the voice.

PHO'SGENE GAS. (From φως, light and γενναω, to produce.) So called by its discoverer, Dr. John Davy, from its mode of production, by the agency of the sun-beam. See *Chlorocarbonic acid*.

PHO'SPHATE. (*Phosphas*, *atis*. f.) A salt formed by the union of phosphoric acid with a salifiable base; thus, *phosphate of ammonia*, *phosphate of lime*, &c.

PHOSPHA'TIC ACID. *Acidum phosphaticum*.

When phosphorus is slowly oxydated in atmospheric air, an oily acid liquor results. This was supposed by M. Dulong to contain a distinct acid, but Sir H. Davy regarded it merely as a mixture of phosphoric and phosphorous acids, and this opinion is believed to be correct.

PHO'SPHITE. *Phosphis.* A salt formed by the combination of phosphorous acid with salifiable bases; thus, *phosphite of ammonia*, &c.

Phosphorated hydrogen. See *Phosphorus.*

PHOSPHORE'SCENCE. *Phosphorescentia.* The luminous appearance which is presented by phosphorescent bodies. See *Light.*

PHOSPHORE'SCENT. Resembling phosphorus in the property of being luminous in the dark.

PHOSPHO'RIC. (*Phosphoricus*; from *phosphorus.*) Appertaining to phosphorus.

Phosphoric acid. *Acidum phosphoricum.* The base of this acid, or the acid itself, abounds in the mineral, vegetable, and animal kingdoms. In the mineral kingdom it is found in combination with lead, iron, copper, manganese, and still more abundantly with lime.

The vegetable kingdom also abounds with phosphorus, or its acid.

In the animal kingdom it is found in almost every part of the bodies of animals which are not considerably volatile. There is not, in all probability, any part of these organised beings which is free from it. It has been obtained from blood, flesh, both of land and water animals; from cheese; and it exists in large quantities in bones, combined with calcareous earth. Urine contains it, not only in a free state, but also combined with ammonia, soda, and lime. It was by the evaporation and distillation of this fluid with charcoal that phosphorus was first obtained; the charcoal decomposing the disengaged acid and the ammoniacal salt. But it is more cheaply procured by the process of Scheele, from bones, by the application of an acid to their earthy residue after calcination.

For this purpose the sulphuric acid is to be the most convenient, because it forms a nearly insoluble compound with the lime of the bones. Bones of beef, mutton, or veal, being calcined to whiteness in an open fire, lose almost half of their weight. This must be pounded and sifted; or the trouble may be spared by buying the powder that is sold to make cupels for the assayers, and is, in fact, the powder of burned bones ready sifted. To three pounds of the powder there may be added about two pounds of concentrated sulphuric acid. Four or five pounds of water must be afterwards added to assist the action of the acid; and during the whole process the operator must remember to place himself and his vessels so that the fumes may be blown from him. The whole may be then left on a gentle sand-bath for twelve hours or more, taking care to supply the loss of water which happens by evaporation. The next day a large quantity of water must be added, the whole strained through a sieve, and the residual matter, which is sulphate of lime, must be edulcorated by repeated affusions of hot-water, till it passes tasteless. The waters contain phosphoric acid nearly free from lime; and by evaporation, first in glazed earthen, and then in glass vessels, or rather in vessels of platina or silver, for the hot acid acts upon glass, afford the acid in a concentrated state, which, by the force of a strong heat in a crucible, may be made to acquire the form of a transparent consistent glass, though indeed it is usually of a milky opake appearance.

For making phosphorus, it is not necessary to evaporate the water further than to bring it to the consistence of syrup; and the small portion of lime it contains is not an impediment worth the trouble of removing, as it affects the produce very little. But when the acid is required in a purer state, it is proper to add a quantity of carbonate of ammonia, which, by double elective attraction, precipitates the lime that was held in solution by the phosphoric acid. The fluid, being then evaporated, affords a crystallised ammoniacal salt, which may be melted in a silver vessel, as the acid acts upon glass or earthen vessels. The ammonia is driven off by the heat, and the acid acquires the form of a compact glass, as transparent as rock crystal, acid to the taste, soluble in water, and deliquescent in the air.

This acid is commonly pure, but nevertheless may contain a small quantity of soda, originally existing in the bones, and not capable of being taken away by this process, ingenious as it is. The only unequivocal method of obtaining a pure acid appears to consist in first converting it into phosphorus by distillation of the materials with charcoal, and then converting it again into acid by rapid combustion, at a high temperature, either in oxygen or atmospheric air, or some other equivalent process.

Phosphorus may also be converted into the acid state by treating it with nitric acid. In this operation, a tubulated retort with a ground stopper must be half filled with nitric acid, and a gentle heat applied. A small piece of phosphorus being then introduced through the tube, will be dissolved with effervescence, produced by the escape of a large quantity of nitric oxide. The addition of phosphorus must be continued until the last piece remains undissolved. The fire being then raised to drive over the remainder of the nitric acid, the phosphoric acid will be found in the retort, partly in the concrete and partly in the liquid form.

Sulphuric acid produces nearly the same effect as the nitric; a large quantity of sulphurous acid flying off. But as it requires a stronger heat to drive off the last portions of this acid, it is not so well adapted to the purpose. The liquid chlorine likewise acidifies it.

When phosphorus is burned by a strong heat, sufficient to cause it to flame rapidly, it is almost perfectly converted into dry acid, some of which is thrown up by the force of the combustion, and the rest remains upon the supporter.

This substance has also been acidified by the direct application of oxygen gas passed through hot water, in which the phosphorus was liquefied or fused.

The general characters of phosphoric acid are: 1. It is soluble in water in all proportions,

producing a specific gravity, which increases as the quantity of acid is greater, but does not exceed 2·687, which is that of the glacial acid. 2. It produces heat when mixed with water, though not very considerable. 3. It has no smell when pure, and its taste is sour, but not corrosive. 4. When perfectly dry, it sublimes in close vessels; but loses this property by the addition of water; in which circumstance it greatly differs from the boracic acid, which is fixed when dry, but rises by the help of water. 5. When considerably diluted with water, and evaporated, the aqueous vapour carries up a small portion of the acid. 6. With charcoal or inflammable matter, in a strong heat, it loses its oxygen, and becomes converted into phosphorus.

Phosphoric acid crystallises with difficulty.

Though the phosphoric acid is scarcely corrosive, yet, when concentrated, it acts upon oils, which it discolours, and at length blackens, producing heat, and a strong smell like that of æther and oil of turpentine; but does not form a true acid soap. It has most effect on essential oils, less on drying oils, and least of all on fat oils. — *Ure.*

It would appear from recent observations that two distinct acids have been confounded under the name of phosphoric, namely, the *phosphoric* and the *pyrophosphoric*. When phosphorus is burned in a dry vessel containing air or oxygen gas, an anhydrous pyrophosphoric acid is obtained in the form of white flakes. It absorbs moisture rapidly on exposure to the air, and when kept for a few days is converted into phosphoric acid. These two acids, the phosphoric and pyrophosphoric appear to be entirely isomeric, and, according to Dulong and Berzelius, consist of 15·7 parts, or one equivalent of phosphorus, and twenty parts, or two equivalents and a half of oxygen. In their properties they present the following differences. Phosphoric acid forms a yellow salt with oxide of silver, pyrophosphoric acid a white salt. Phosphoric acid has no effect on a solution of albumen, pyrophosphoric acid causes a precipitate. At a red heat phosphoric acid is converted into pyrophosphoric, and pyrophosphoric acid is converted into phosphoric by exposure, or to the action of cold water, for a few days; the same conversion is effected rapidly by hot water or acids. The *phosphates* or salts of phosphoric acid become pyrophosphates when exposed to a red heat, while the *pyrophosphates*, or salts of pyrophosphoric acid are converted into phosphates by boiling in water, acidulated with any of the strong acids.

PHOSPHOROUS ACID. *Acidum phosphorosum.* When phosphorus and corrosive sublimate act on each other at an elevated temperature, a liquid called *protochloride of phosphorus* is formed. Water, added to this, resolves into muriatic and phosphorous acids. A moderate heat suffices to expel the former, and the latter remains associated with water. It has a very sour taste, reddens vegetable blues, and neutralises bases.

PHOSPHORUS. (*us, i.* m.; from φως, light, and φερω, to bear.) A substance which is regarded as simple, having never yet been decomposed.

If phosphoric acid be mixed with a fourth of its weight of powdered charcoal, and distilled at a moderate red heat, in a coated earthen retort, the beak of which is partially immersed in a basin of water, drops of a reddish waxy-looking substance will pass over. This is phosphorus in an impure state. It must be purified, by straining it through a piece of chamois leather, under warm water. It is then yellow and semi-transparent; as soft as wax, but more cohesive and ductile. Its sp. gr. is 1·77. It melts at 90° F. and boils at 550°. In the atmosphere, at common temperatures, it emits a white smoke, which, in the dark, appears luminous. This smoke is acidulous, and results from the slow oxygenation of the phosphorus. In air perfectly dry, however, phosphorus does not smoke, because the acid which is formed is solid, and, closely incasing the combustible, screens it from the action of the air.

When phosphorus is heated in atmospheric air to about 148°, it inflames and burns with a brilliant white light, and a copious dense smoke. If the combustion take place within a large glass receiver, the smoke is condensed in the form of white flakes, which consist of *phosphoric acid.*

When phosphorus is inflamed in oxygen, the light and heat are much more intense; the former dazzling the eye, and the latter cracking a glass vessel. *Solid phosphoric acid* results, consisting of 1·5 phosphorus + 2·0 oxygen. See *Phosphoric acid.*

When phosphorus is heated in highly rarefied air, three products are formed from it: one is phosphoric acid; one is a volatile white powder; and the third is a red solid, of comparative fixity, requiring a heat above that of boiling water for its fusion. The volatile substance is soluble in water, imparting acid properties to it. It seems to be phosphorous acid. The red substance is probably an oxide of phosphorus, since for its conversion into phosphoric acid it requires less oxygen than phosphorus does. The nature of this substance, however, has not yet been perfectly ascertained.

Phosphorus and *chlorine* combine in two proportions. See *Chlorine.*

The compounds of iodine and phosphorus have been examined by Sir H. Davy and Gay Lussac.

Phosphorus unites with *iodine* in three proportions. When one part of phosphorus is fused with about twelve of iodine, a reddish brown and very fusible compound is obtained, which is considered as a sesquioxide. When one part of phosphorus is fused with about forty parts of iodine, the compound formed is black and less fusible. It is a periodide. The formation of these compounds is attended with the evolution of much heat, but no light. Both the iodides of phosphorus are decomposed by water, the sesquioxide being resolved into hydriodic and phosphorous acids, and the periodide into hydriodic and phosphorous acids.

With *hydrogen* phosphorus combines in several proportions, of which the best ascertained are two. 1. *Phosphuretted hydrogen, or hydroguret of phosphorus.* Phosphorus may be heated, and

even sublimed, in hydrogen gas, without the formation of any definite compound, although, under such circumstances, the gas retains a portion of the vapour of phosphorus, acquiring its peculiar odour, and becoming luminous in the dark when mixed with atmospheric air. When phosphorus is presented to *nascent* hydrogen, two gaseous compounds result. The one inflames spontaneously upon the contact of the atmosphere. This may be procured by heating phosphorus in a solution of caustic potassa, or by acting upon *phosphuret of lime* by dilute muriatic acid. In the former case about a quarter of an ounce of phosphorus should be introduced into a small retort, capable of holding about four ounces of water; it should then be completely filled with a moderately strong solution of potassa, and the beak being placed under the shelf of the pneumatic apparatus, the heat of an argand lamp carefully applied till it boils: gas will gradually be generated, so as to expel a portion of the alkaline solution, and ultimately to bubble up through the water. Upon coming into contact with the air, the bubbles inflame with a slight explosion; and if the atmosphere is still, each as it bursts produces a beautifully expanding ring of smoke, in consequence of the sudden formation of phosphoric acid and water. If the retort, in which the gas is generated, contain common air, the first bubbles burn within the vessel, and the retort is frequently broken by the percussion, or by the rush of cold water from the trough, caused by the sudden expansion and subsequent contraction of the air within, an accident prevented by filling the retort with the liquid.

For obtaining this gas by the second process, Dr. Thomson gives the following directions: — Fill a small retort with water, acidulated by muriatic acid, and then throw into it a quantity of phosphuret of lime in lumps. Plunge the beak of the retort under water, and place over it an inverted jar filled with that liquid. Phosphuretted hydrogen gas is extricated in considerable quantity, and soon fills the glass jar. Half an ounce of phosphuret of lime yields about seventy cubic inches of this gas.

This gas was discovered by Gengenbre in 1783; it is colourless, has a nauseous odour like onions, a very bitter taste, and inflames when mixed with air, a property which it loses by being kept over water: water takes up about two *per cent.* of this gas, and acquires a bitter taste, and the smell of onions; but the solution has no acid properties like that of sulphuretted hydrogen. When the gas is retained in dry vessels, or over mercury, and carefully excluded from light, it may be kept some time without alteration; but, in the contact of water, and exposed to light, it soon deposits a red film of phosphorus without changing its volume, and loses the property of spontaneous inflammability. It has been asserted, that in this case the gas deposits half of its phosphorus, and that a definite *subphosphuretted hydrogen* remains; but this statement requires further proof. Houton Labilladière has remarked that bubbles of phosphuretted hydrogen sent up into a portion of common air standing over mercury, do not inflame when the air is compressed, or when the mercury is at the same level within and without the vessel; but that explosion immediately ensues when the confined air is rarefied by lifting up the jar, so that the column of mercury within may be above that without. When bubbles of phosphuretted hydrogen are sent up into a jar of oxygen, they burn with greatly increased splendour; in chlorine, too, they burn with a beautiful pale blue light, forming muriatic acid and perchloride of phosphorus. In a narrow tube it may be mixed with oxygen, without exploding, in which case it is deprived of its phosphorus. It burns when thrown up into nitrous oxide.

The specific gravity of this gas, according to Dumas, is 1·761: according to Thomson, it is 1·77. When heated with corrosive sublimate, muriatic acid gas is formed, equal to three times the volume of the phosphuretted hydrogen decomposed, whence it appears to contain in the 100 measures, 150 measures of hydrogen; Dumas states the weight of the phosphorus to that of the hydrogen as 15·9 to 1, numbers which closely approximate to 16 and 1, or one equivalent of each of its components.

2. *Sesquihydroguret of phosphorus, or hydrophosphoric gas.* This compound of phosphorus and hydrogen was discovered by Sir H. Davy, in 1812. It is procured by heating the solid *hydrate of phosphorous acid* or *hydrophosphorous acid* in a small retort. The gas must be collected over mercury, for water absorbs one-eighth its volume. It is not spontaneously inflammable, but explodes when heated with oxygen. It inflames spontaneously in chlorine. Its smell is less disagreeable than the former.

Both this and the former gas frequently contain free hydrogen, the relative proportion of which may be ascertained by agitation with a cold saturated solution of persulphate of copper, which absorbs the phosphuretted hydrogen, and leaves the pure hydrogen. Dumas infers, from the action of perchloride of mercury on this gas, that 100 measures yield 150 of hydrogen. Dr. Turner, on the authority of Dumas and of Buff, considers 100 measures of this variety of phosphuretted hydrogen as constituted of 150 of hydrogen gas, and 25 of the vapour of phosphorus, and hence as

		Grains
150 cubic inches of	hydrogen weigh	3·197
25	phosphorous vapour	33·542
100	phosphuretted hydrogen gas should weigh	36·740

The calculated density of a gas so constituted should be 1·1853.

The chemistry of the combinations of phosphorus and hydrogen is still involved in considerable intricacy, and indeed the study of all the compounds of this substance is rendered theoretically difficult by the peculiarities of their atomic relations.

Grotthus has described a liquid compound of phosphorus and hydrogen, analogous probably to the corresponding combination of sulphur, and, if so, a *biphosphuret of hydrogen*, obtained by boiling phosphorus in alkoholic solution

potassa. The phosphorus liquefies and remains fluid when cold: if boiled in water, phosphuretted hydrogen is evolved, but no phosphoric acid is formed, nor is the water decomposed; and phosphorus, which concretes as usual, remains behind.

Common phosphorus always yields a trace of hydrogen or of phosphuretted hydrogen, which it evolves when in the act of combining with some of the metals, and Davy found that by acting on fused phosphorus by the voltaic spark, small portions of hydrogen were given off. — *Brande.*

Phosphorus and *sulphur* are capable of combining. They may be united by melting them together in a tube exhausted of air, or under water. In this last case, they must be used in small quantities; as, at the moment of their action, water is decomposed, sometimes with explosions. They unite in several proportions forming substances, of which little is yet known.

Phosphorus is soluble in *oils*, and communicates to them the property of appearing luminous in the dark. It is also dissolved in alkohol and ether, but more sparingly.

The earliest account we have concerning the medicinal use of phosphorus, is in the seventh volume of Haller's Collection of Theses relating to the history and cure of diseases. The original dissertation is entitled, *De Phosphori Loco Medicamenti adsumpti virtute medica, aliquot casibus singularibus confirmata Auctore J. Gabr. Mentz.* There are three cases of singular cures performed by means of phosphorus, narrated in this thesis. The first instance is of a man who laboured under a putrid fever. The second is that of a man who laboured under a bilious fever. The third case is entitled a malignant catarrhal fever, with petechiæ. Many experiments have since been made with phosphorus, the result of which is, that it is a very violent poison and can be safely administered as a medicine, only in extremely minute doses and with the utmost possible caution. It stimulates the nervous system generally, and appears to act especially on the generative organs.

At first, not more than $\frac{1}{8}$ of a grain should be given daily. This may be gradually increased to a grain. It should be administered in the form of emulsion.

PHO'SPHURET. *Phosphuretum.* A combination of phosphorus, with a combustible or metallic oxide.

Phosphuretted hydrogen. See *Phosphorus.*

PHOTO'METER. (From *φως*, light, and *μετρον*, a measure.) An instrument for measuring the intensity of light. Several photometers have been invented. Those of Count Rumford and Sir C. Leslie are the most used.

PHOTOPHO'BIA. (*a*, *æ.* f.; from *φως*, light, and *φοβεω*, to dread.) Such an intolerance of light, that the eye, or rather the retina, can scarcely bear its irritating rays. Such patients generally wink or close their eyes in light, which they cannot bear without exquisite pain, or confused vision. The proximate cause is too great a sensibility in the retina. It is a particular symptom of the internal opthalmia. It is caused also from the disuse of light, which happens to persons long confined in dark places or prisons, on the coming out of which into light the pupil contracts, and the persons cannot bear light. The depression of the cataract occasions this symptom, which appears as though fire and lightning entered the eye, not being able to bear the strong rays of light.

An increased sensibility of the nervous expansion and optic nerve also produces it; as does likewise too great light, as looking at the sun, or at the strong light of modern lamps. When a symptom of any disease, it requires the treatment of that disease; and when a mere nervous affection, cold bathing, cold applications to the eyes, and tonics are proper.

PHOTO'PSIA. (*a*, *æ.* f.; from *φως*, light, and *οψις*, vision.) Lucid vision. An affection of the eye in which the patient perceives luminous rays, ignited lines, or coruscations.

PHRAGMI'TES. (*es*, *æ.* m.; from *φραγμος*, a hedge or fence, because it is used in hedges or fences.) The specific name of a species of reed, the *Arundo phragmites.*

PHRA'GMUS. (*Φραγμος*, a fence; from *φρασσω*, to enclose.) The rows of teeth; so called because they are set round like a fence.

PHRE'NES. (From *φρην*, the mind: because the ancients imagined that the mind was seated there.) The præcordia, and, according to some writers, the diaphragm.

Phrenesis. See *Cephalitis.*

Phrenetiasis. See *Cephalitis.*

PHRE'NIC. (*Phrenicus*; *φρενικος*, belonging to the *mind* or to the *diaphragm.* It is now used only in the latter sense.

Phrenic arteries. See *Diaphragmatic arteries.*

PHRENIC NERVE. Diaphragmatic nerve. It arises from an union of the branches of the third, fourth, and fifth cervical pairs, on each side, passes between the clavicle and subclavian artery, and thence descends by the pericardium to the diaphragm.

Phrenic veins. See *Diaphragmatic veins.*

PHRENI'TIS. (*is*, *idis.* f. *Φρενιτις*; from *φρην*, the mind.) Phrensy. Inflammation of the brain. A very faulty term. See *Encephalitis.*

PHRENO'LOGY. (*Phrenologia æ*, f.; from *φρην*, the mind, and *λογος*, a discourse.) This term signifies the doctrine of the mind, and is therefore synonymous with mental philosophy. It is usually restricted however to that particular view of the constitution of the mind entertained by Drs. Gall and Spurzheim. The doctrine of phrenology owes its origin to some observations made by Gall at a very early age. While at school he remarked that those boys who had prominent eyes excelled in the memory of words, and this led to the observation of certain peculiarities in the shape of the head in connexion with varieties of mental power and moral disposition. These investigations, pursued with great ardour by Gall in after life, gave rise to a system, according to which, all the faculties, sentiments, and propensities are localised in some particular region of the brain, and indicated by a corresponding size and shape of the cranium. In this study Dr. Spurzheim became his associate, and subsequently gave to the new

science the name which it now bears. Gall began to deliver lectures at Vienna in 1796, and some years after an elaborate work was commenced at Paris, and came out in successive volumes, the first of which was published in the joint names of Gall and Spurzheim, but the rest in that of Gall alone, a misunderstanding and separation having occurred between Gall and his disciple.

The "Physiognomical system" of Dr. Spurzheim was published in English in 1815, and is principally an abstract of the large French work.

Phrenology began soon after to attract general attention, and was supported by Spurzheim, Combe, Sir George Mackenzie, and a number of other authors. Its opponents at first treated it as a mere piece of German quackery; but they soon found out that they had fallen into a great mistake, and that the authors of the phrenological system were men of no ordinary ability and learning.

A great variety of objections have been raised against phrenology as absurd in a metaphysical point of view — tending to materialism — and opposed to morals and religion. If, however, the facts be as they are stated, metaphysics cannot prevail against them, and if phrenology be true in natural science, it cannot possibly be opposed to any correct views of morals or religion. The right way to take the matter up, therefore, is simply to inquire whether the facts really be as they are stated, or, in other words, *whether there be an actual correspondence between the characters of men and the size and shape of their brains as indicated by a phrenological examination of their skulls.*

The observations of physiologists in general are unfavourable to the admission of such a correspondence; and hence phrenology, as it now stands, is not admitted into the circle of the true sciences: at the same time all candid inquirers will be ready to admit that there may be truth in its general principles — that the subject is worthy of further investigation — and that great credit is due to Gall for the ingenuity and originality of his ideas; and both to Gall and Spurzheim for their minute and careful examination of the structure of the brain, and their industrious accumulation of facts which, although they may not yet have led to any satisfactory conclusions, may nevertheless conduce eventually to the establishment of important truths.

Those portions of the encephalos which minister to the different faculties, propensities, or sentiments, are called respectively the *organs* of those faculties, propensities, or sentiments.

The following enumeration of the organs by M. Vimont, an eminent French writer on the subject, comprises all those recognised by Dr. Spurzheim and himself.

1. Conservation.
2. Alimentation.
3. Destruction.
4. Cunning.
5. Courage.
6. Choice of places.
7. Concentration.
8. Attachment for life, or marriage.
9. Attachment.
10. Reproduction.
11. Attachment to the produce of conception.
12. Property.
13. Circumspection.
14. Perception of substance or objects.
15. Configuration.
16. Size.
17. Distance.
18. Geometrical sense.
19. Resistance.
20. Localities.
21. Numbers.
22. Order.
23. Time.
24. Language.
25. Colouring.
26. Eventuality.
27. Talent for construction.
28. Musical talent.
29. Talent for imitation.
30. Comparison.
31. Causality.
32. Discrimination.
33. Vanity.
34. Self esteem.
35. Firmness, perseverance.
36. Conscience.
37. Veneration.
38. Hope.
39. Benevolence.
40. Sentiment of the marvellous.
41. Poetical sentiment.
42. Sentiment of the beautiful in arts.

It is but justice to the phrenologists to state that some of the organs are considered much better established than others, and that several are allowed to be little more than conjectural.

Phrensy. See *Phrenitis.*

Phtheiriasis. See *Phthiriasis.*

Phtheirium. See *Delphinium.*

PHTHEIRO'CTANUM. (From φθειρ, a louse, and κτεινω, to kill: because it destroys lice. See *Delphinium staphisagria.*

PHTHIRI'ASIS. (*is, is.* vel *eos.* f.; from φθειρ, a louse.) *Morbus pediculosus. Pediculatio. Phtheiriasis.* A disease in which several parts of the body generate lice, which often puncture the skin, and produce little sordid ulcers.

PHTHI'SIS. (*is, is.* or *eos.* f.; φθισις from φθιω to consume.) Wasting of the frame from whatever cause; but in the medical language of the present day the term is restricted to the disease commonly called *pulmonary consumption.*

The causes which predispose to this disease are very numerous. The following are, however, the most general: — Hereditary disposition; particular formation of body, obvious by a long neck, prominent shoulders, and narrow chest; scrofulous diathesis, indicated by a fine clear skin, fair hair, delicate rosy complexion, large veins, thick upper lip, a weak voice, and great sensibility; certain diseases, such as syphilis, scrofula, the small-pox, and measles; particular employments exposing artificers to dust, as in the case of needle-pointers, stone-cutters, millers, &c., or to the fumes of metals or minerals under a confined

and unwholesome air; violent passions, exertions, or affections of the mind, as grief, disappointment, anxiety, or close application to study, without using proper exercise; frequent and excessive debaucheries, late watching, and drinking freely of strong liquors; great evacuations, as diarrhœa, diabetes, excessive venery, fluor albus, immoderate discharge of the menstrual flux, and the continuing to suckle too long under a debilitated state; and, lastly, the application of cold, either by too sudden a change of apparel, keeping on wet clothes, lying in damp beds, or exposing the body too suddenly to cool air, when heated by exercise; in short, by any thing that gives a considerable check to the perspiration. The more immediate or occasional causes of pthisis are, hæmoptysis, pneumonic inflammation proceeding to suppuration, catarrh, asthma, and tubercles, the last of which is by far the most general. Dr. James Clarke, in his able work on pulmonary consumption, has entered very minutely into the characteristics of that state of constitution, which usually precedes the development of tubercles in the lungs or other organs, and has described in particular a primary affection of the digestive organs, in which the *tuberculous cachexia*, as he names it, has its origin. "The dyspepsia of the tuberculous constitution, says Dr. Clarke, has peculiar characters by which it may generally be known. These have been fully and accurately described by Dr. Todd, under the name of *Strumous Dyspepsia;* a condition of the digestive organs which is not only present in the hereditary strumous constitution, but is capable, I believe, of generating this constitution, and of leading ultimately to tuberculous cachexia. In Dr. Todd's opinion, 'it presents a more characteristic feature of this habit of body than any physiognomical portrait which has yet been drawn of it. In this respect it is more to be depended on than either the fine skin, the clear, delicate complexion, the light hair, large blue eyes, and dull sclerotica of one variety; or the foul, dull, swarthy-coloured skin, the sallow complexion and swollen countenance, the dark hair and tumid lip of the other. It betokens, indeed, little familiarity with scrofula to connect it with any particular temperament, for it belongs to all temperaments — to the sanguine as well as the phlegmatic, to the nervous as well as the melancholic, and to all their varieties and combinations. But upon whatever temperament the disordered habit, which we call scrofula, may engraft itself, we venture to say that this form of dyspepsia will also there be found; and, therefore, being constantly present with it, preceding and accompanying the various symptoms which issue from it, it would be contrary to all reason to refuse to it an important share in the development of this disordered habit, and in the production of the local affections which have hitherto too much engrossed the attention, to the exclusion of a proper consideration of the constitutional disease.' I have great pleasure and satisfaction in citing Dr. Todd's observations, because they are in accordance with my own, and because they cannot, in my opinion, be too strongly pressed upon the consideration of the profession; so much importance do I attach to this disordered state of the digestive organs as a source of tuberculous disease.

"I shall now notice the leading symptoms by which this affection of the digestive organs is characterised — more especially in children, in whom it is so important to attend to it. The tongue is redder than natural, especially towards the extremity and along the margins; the anterior part is thickly spotted with small red points of a still brighter colour, the central portion being more or less furred, in general, according to the duration of the disorder; sometimes the tongue is covered with a dirty whitish fur, through which the red papillæ project; in which case the central part of the tongue is often dry, and of a brownish colour in the morning. There is generally some thirst; the appetite is variable, more frequently craving than deficient, seldom natural; and the breath is fetid. The bowels are generally confined, though occasionally they are too loose; the evacuations are always unnatural, generally of a pale greyish colour, of the consistence and appearance of moist clay: and they are often mixed with mucous and partially digested food. The urine is often turbid, sometimes high-coloured, and at other times too abundant and pale. The skin is generally harsh and dry, or subject to cold perspirations, particularly the hands and feet, which are habitually cold; copious partial nightsweats are common. The sleep is seldom sound — the child is restless, and talks in his sleep, or grinds his teeth.

"When this disordered state has continued for some time, the complexion loses its natural colour, and the face has a pasty, faded aspect; the child is languid, disinclined for exercise or play, and generally fretful; a train of secondary disorders also soon appears, as a consequence of the irritation of the digestive organs. The internal fauces become full and red, inflammatory sore throats are common, and the tonsils often become permanently enlarged. The nose is generally dry, or discharges thick mucus in large quantity; and epistaxis occasionally occurs. The eye-lids are subject to chronic inflammation; and eruptions behind the ears and on the scalp, or other parts, are very frequent. Copious discharges of mucus, sometimes mixed with blood, take place from the bowels, and from the bronchial membrane; and are indeed common from all the mucous surfaces. The brain and spinal marrow frequently become the seat of secondary irritation, and hydrocephalus, epilepsy, and chorea, or paralysis may be the consequence; but the most frequent and most important of all the consequences of this disordered state of the digestive organs is tuberculous cachexia."

The incipient symptoms of phthisis usually vary with the cause of the disease; but when it arises from tubercles, it is usually thus marked: it begins with a short dry cough, that at length becomes habitual, but from which nothing is spit up for some time, except a frothy mucus, that seems to proceed from the fauces. The breathing is at the same time somewhat impeded, and upon the least bodily motion is much

hurried; a sense of straitness, with oppression at the chest, is experienced; the body becomes gradually leaner, and great langour, with indolence, dejection of spirits, and loss of appetite, prevail. In this state the patient frequently continues a considerable length of time, during which, he is, however, more readily affected than usual by slight colds, and upon one or other of these occasions the cough becomes more troublesome and severe, particularly by night, and it is at length attended with an expectoration, which towards morning is more free and copious. By degrees the matter which is expectorated becomes more viscid and opake, and now assumes a greenish colour and purulent appearance, being on many occasions streaked with blood. In some cases, a more severe degree of hæmoptysis attends, and the patient spits up a considerable quantity of florid, frothy blood. The breathing at length becomes more difficult, and the emaciation and weakness go on increasing. With these, the person begins to be sensible of pain in some part of the thorax, which, however, is usually felt at first under the sternum, particularly on coughing. At a more advanced period of the disease, a pain is sometimes felt on one side, and at times prevails in so high a degree as to prevent the person from lying easily on that side; but it more frequently happens, that it is felt only on making a full inspiration, or coughing. Even where no pain is felt, it often happens that those who labour under phthisis cannot easily lie on one or other of their sides, without a fit of coughing being excited, or the difficulty of breathing being much increased. At the first commencement of the disease, the pulse is often natural, or perhaps is soft, small, and a little quicker than usual; but when the symptoms which have been enumerated have subsisted for any length of time, it then becomes full, hard, and frequent. At the same time the face flushes, particularly after eating, the palms of the hands and soles of the feet are affected with burning heat; the respiration is difficult and laborious; evening exacerbations become obvious, and, by degrees, the fever assumes the hectic form. This species of fever is evidently of the remittent kind, and has exacerbations twice every day. The first occurs usually about noon, and a slight remission ensues about five in the afternoon. This last is, however, soon succeeded by another exacerbation, which increases gradually until after midnight; but about two o'clock in the morning a remission takes place, and this becomes more apparent as the morning advances. During the exacerbations the patient is very sensible to any coolness of the air, and often complains of a sense of cold when his skin is, at the same time, preternaturally warm. Of these exacerbations, that in the evening is by far the most considerable. From the first appearance of the hectic symptoms, the urine is high coloured, and deposits a copious brainy red sediment. The appetite, however, is not greatly impaired, the tongue appears clean, the mouth is usually moist, and the thirst is inconsiderable. As the disease advances the fauces put on rather an inflamed appearance, and are beset with aphthæ, and the red vessels of the tunica adnata become of a pearly white. During the exacerbations, a florid circumscribed redness appears on each cheek; but at other times the face is pale, and the countenance somewhat dejected. At the commencement of hectic fever, the belly is usually costive; but in the more advanced stages of it, a diarrhœa often comes on, and this continues to recur frequently during the remainder of the disease; colliquative sweats likewise break out, and these alternate with each other, and induce vast debility. In the last stage of the disease, the emaciation is so great, that the patient has the appearance of a walking skeleton: his countenance is altered, his cheeks are prominent, his eyes look hollow and languid, his hair falls off, his nails are of a livid colour and much incurvated, and his feet are affected with œdematous swellings. To the end of the disease the senses remain entire, and it is a singular and happy circumstance attendant on phthisis, that those who labour under it are frequently quite unconscious of their dangerous state, and keep in excellent spirits throughout the disease: it is indeed no uncommon occurrence to meet with persons labouring under its most advanced stage, flattering themselves with a speedy recovery, and forming distant projects under that vain hope. Some days before death the extremities become cold. In some cases a delirium precedes that event, and continues until life is extinguished. The ordinary duration of phthisis is from eight or nine months to a year and a half; but this varies greatly according to circumstances.

The diagnosis of pulmonary consumption, in its ordinary forms, is not generally difficult. The only disease which simulates it very closely is chronic bronchitis; and, doubtless, there are instances in which, without the aid of the stethoscope, it would be next to impossible to discriminate between the two. (See *Bronchitis.*) It used to be thought of great importance to determine whether the matter expectorated were mucus or pus, and several criteria were invented for this purpose. (See *Pus.*) But this is now little depended upon as a ground of diagnosis, because it is well ascertained that a copious secretion of pus may take place from the surface of the bronchial membrane without any solution of its continuity, or disease of the substance of the lungs. The use of auscultation and percussion have, however, tended greatly to remove all ambiguity from the diagnosis of phthisis. The presence of tubercles in an early stage is not detected by percussion, and if the surrounding portions of lung be emphysemetous, the sound on percussion instead of being dull, will be clearer than natural. Tubercles in the advanced stage when clustered together are always surrounded by hepatisation of the lung; the sound on percussion is dull, the respiratory murmur absent, and the bronchial respiration preternaturally distinct. When tubercles have begun resolved, vomicæ formed, and the matter discharged by ulceration into the bronchial tubes, the phenomenon called pectoriloquy (see *Pectoriloquy*) takes place; and, when distinct, and supported by the symptoms, and corroborated

the signs derived from percussion, may be considered as conclusive as to the nature of the case.

All the signs indicative of the presence of tubercles, more frequently present themselves in the subclavicular regions than elsewhere, because the upper part of the lung is the most frequent seat of tubercles: they may occur, however, in any part of the chest.

The phenomena of phthisis occasionally vary considerably from the general description given above. There is a rapidly fatal form, vulgarly called a *galloping consumption*, in which the patient is soon worn out by the extent of the suppuration and the violence of the hectic and other symptoms. This generally runs its course within three months, and sometimes in one. Consumption is sometimes as rapidly fatal under a very different aspect; the symptoms are by no means acute, but the constitution is too feeble to offer much resistance, and the patient sinks. On the other hand, tubercles will sometimes make a very slow progress, the patient being troubled with cough, debility, and emaciation, in winter and spring, and recovering his health in a great measure in summer; but constantly presenting indications of pulmonary disease, and subject to dyspnœa on slight exercise. Such a case may go on for years, and is generally at length terminated by an attack of inflammation from cold or any other cause, which occasions a more rapid development of the tubercles, and establishes the symptoms of confirmed phthisis.

There is a particular form of consumption, first described by Dr. Wilson Philip, under the name of *dyspeptic phthisis*. This, however, is merely an insidious case of tubercular phthisis combined with dyspepsia, and marked at its commencement by the predominance of dyspeptic symptoms.

Consumption, at a very early period of life, differs in its symptoms from the same disease in adults. The cough is of a different character, and often comes on in paroxysms resembling those of hooping-cough; the expectoration comes on later in the disease, and the hectic fever is less perfectly formed. In children, the bronchial glands are often tuberculated as well as the lungs; the disease frequently commences in the bronchial glands, the lungs being afterwards affected; occasionally, though rarely, the disease remains confined to the bronchial glands, and in this case the diagnosis is very obscure, nor can we derive any aid from auscultation.

Pulmonary consumption is in every case to be considered as attended with much danger; but it is more so when it proceeds from tubercles, than when it arises in consequence either of hæmoptysis, or pneumonic suppuration. In the last instance, the risk will be greater where the abscess breaks inwardly, and gives rise to empyema, than when its contents are discharged by the mouth. Even cases of this nature have, however, been known to terminate in immediate death. The impending danger is generally to be judged of by the hectic symptoms; but more particularly by the colour of the expectoration, the degree of emaciation and debility, the colliquative sweats, and the diarrhœa. The disease has, in many cases, been found to be considerably retarded in its progress by pregnancy; and in a few has been alleviated by an attack of mania. It may in general be said with truth, that tubercular phthisis is an incurable disease. The researches of Laennec and other pathologists have indeed proved that a few tubercles may be developed, undergo the softening process, discharge their contents, and leave a cavity which fills up and cicatrises, and, that the patient may survive this process; but there is not an instance on record of extensive tuberculous affection of the lungs from which the patient has recovered: and who ever has seen the lungs of a person who has died of phthisis, must be convinced that it would have been as easy to make a new pair as to restore them to a healthy state.

The morbid appearance most frequently to be met with on the dissection of those who die of phthisis, is the existence of tubercles in the cellular substance of the lungs. These are small tumours which have the appearance of indurated glands, are of different sizes, and are often found in clusters. Their firmness is usually in proportion to their size; and when laid open in this state they are of a white colour, and of a consistence nearly approaching to cartilage. Although indolent at first, they at length become inflamed, and lastly form little abscesses or *vomicæ*, which breaking and pouring their contents into the bronchia, give rise to a purulent expectoration, and to the symptoms of confirmed phthisis. Such tubercles or vomicæ are most usually situated at the upper and back part of the lungs; but in some instances they occupy the outer part, and then adhesions to the pleura are often formed. For a fuller description of tubercles, see the article *Tubercle*.

When the disease is partial, only about a fourth of the upper and posterior part of the lungs is usually found diseased; but in some cases life has been protracted till not one twentieth part of them appeared, on dissection, fit for performing their function. It is singular that the left lung is much more frequently affected with tubercles than the right.

The treatment of tubercular phthisis is directed to one of three ends. 1. To prevent the development of tubercles, or in other words to obviate the tubercular diathesis. 2. To allay the inflammatory state with which the formation of phthisis commences. 3. To palliate symptoms and support the strength of the patient in the advanced stage.

The treatment of the tubercular diathesis. — This depends much more on the regulation of diet and regimen than on the administration of medicines. The diet should be nourishing, but not stimulating, and consist chiefly of plain animal food with or without a moderate allowance of wine or fermented liquors according to circumstances. The clothing should be carefully adapted to the seasons, and all sudden vicissitudes of temperature avoided. The patient should take moderate exercise, and avoid too long an addiction to any sedentary occupation,

and above all any which occasions a bent position of the thorax. He should live in the country, in a mild and salubrious atmosphere; but allowance must be made, in this respect, for the general habit of the patient, since there are many persons of a lax fibre, in whom too mild an atmosphere produces a constant state of relaxation, very unfavourable to the general health: when such individuals, therefore, are the subjects of the tubercular diathesis, a more bracing, though by no means a bleak air will be preferable. It is in this dormant state of tubercular disease that change of climate is so eminently useful. Many a person dies of consumption in this country who, if he had emigrated when young to New South Wales or Madeira, would have had excellent health and lived to a good old age. Unfortunately change of climate is too often resorted to when, instead of being beneficial, it is in the highest degree injurious, namely, in the advanced stages of the disease; and many an exhausted patient is sent to incur the fatigues and discomforts of a long journey, and to die in a foreign country some months sooner than he would have done if he had stayed at home. The mode of living of patients predisposed to consumption, should be very regular, and late hours are destruction. It is needless to say that the bowels must be carefully attended to, and all the sources of dyspepsia sedulously avoided.

The treatment of the inflammatory stage of phthisis. — The development of pulmonary tubercles is attended with chronic inflammation of the surrounding pulmonary tissue, and frequently with attacks of pleurisy of a more or less active character. Such states are to be combated by the remedies applicable to inflammation in general; but these are to be cautiously employed, and with due reference to the symptomatic character of the inflammation, and the chronic and wasting nature of the disease which it accompanies. In young and plethoric subjects bleeding from the arm, to a small extent, may sometimes be required; but leeches are generally to be preferred. It will be found in most cases that the application of a very few leeches, as two or three, repeated every other day while the inflammatory symptoms continue, will be more effectual than a larger number applied at more distant intervals. The frequent use of blisters is very beneficial, and digitalis is useful both in diminishing the force of the pulse and allaying irritation of the air passages. The specific effects of digitalis, so much vaunted some years ago, are now acknowledged to be entirely imaginary.

In the suppurative stage of phthisis it is impossible, except under very particular circumstances, either to arrest or cure the disease; our attention must therefore be directed to supporting the patient's strength, allaying irritation and distress, and obviating urgent symptoms. The first indication is best fulfilled by a nourishing diet; although the vegetable and mineral tonics are useful where they do not aggravate febrile excitement — an effect which however precludes their use in a great many cases. Irritation is best allayed by opiates, particularly the acetate of morphia; and, where they produce a soothing effect, we need not hesitate to use them freely, and increase the dose as occasion may require. The cough may be allayed by demulcents, the night sweats diminished by the administration of the diluted sulphuric acid, and the colliquative diarrhœa restrained by the cretaceous mixture, with catechu, and the occasional use of mild doses of rhubarb with potash.

Phthisis dorsalis. See *Tabes dorsalis.*

Phthisis laryngea. The wasting and hectic occasioned by ulceration of the larynx.

Phthisis mesenterica. See *Tabes mesenterica.*

Phthoe. *Φθοη.* The same as *Phthisis.*

PHTHORE. (From *φθορα*, corruption.) A name given by some chemists to fluorine, on account of the corroding properties of the acid which it generates with hydrogen. See *Fluorine*, and *Hydro-fluoric acid.*

Phtho'rius. (*Φθοριος*; from *φθορα*, an abortion.) Promotive of abortion.

Phu. (n. indeclinable; from *phua*, Arabic.) The name of a plant. See *Valeriana phu.*

PHYGE'THLON. (*Φυγεθλον*; from *φυω*, to grow.) Inflammation of the subcutaneous lymphatic glands.

PHYLACTE'RIUM. (*um*, *i.* n.; *Φυλακτηριον*; from *φυλασσω*, to preserve.) An amulet or preservative against infection or disease.

PHYLLA'NTHUS. (*us*, *i.* f.; from *φυλλον*, a leaf, and *ανθος*, a flower: because the flowers in one of the original species, now a *Hylophylla*, grow out of the leaves.) The name of a genus of plants. Class, *Monœcia;* Order, *Monadelphia.*

Phyllanthus e'mblica. The systematic name of the Indian tree, from which the emblic myrobalan is obtained.

Phylli'tis. (From *φυλλον*, a leaf: so called because the leaves only appear.) See *Scolopendrium vulgare.*

PHY'MA. (*a*, *atis.* n.; from *φυω*, to produce. It appears that this term was used by the Greek and Roman physicians with great latitude and want of precision: sometimes, as by Hippocrates and Paulus Ægineta, being applied to scrofula, and other imperfectly suppurative tumours; sometimes, as by Celsus and Galen, to tumours perfectly and rapidly suppurative; and sometimes by other writers, as Celsus also informs us, to fleshy excrescences or warts on the glans penis.) 1 A tubercle on any external part of the body.

2. A genus of a cuticular disease in Dr. Willan's arrangement, in which he includes *terminthus, cpyictis, furunculus,* and *anthrax.*

PHY'SALIS. (*is*, *is.* f.; from *φυσαω*, to inflate: so called because its seed is contained in a bladder.) The name of a genus of plants. Class, *Pentandria;* Order, *Monogynia.*

Physalis alkekengi. The systematic name of the winter-cherry, or *Alkekengi:* called also *Halicacabum.* This plant, *Physalis — foliis ge minis integris acutis caule herbaceo, infernè subra mosa*, of Linnæus, is cultivated in our gardens. The berries are recommended as a diuretic in dropsical and calculous diseases. They were once in great repute, and supposed to produce speedy relief in the removal of strangury. It certainly possesses sedative and diuretic prope

ties, without heating or irritating, and seems to be worthy of further trial. As a sedative, Hoffmann employed it in hæmoptysis; and as a diuretic, it has been still more generally made use of in dropsy. About five or six cherries, or an ounce of the juice, forms a dose; the pericarp is bitter; yet the fruit within possesses little of this property, and has an acidulous and not unpleasant taste.

PHYSCO'NIA. (*a*, *æ*. f.; from *φυσκων*, a big-bellied fellow.) Enlargement of the abdomen: known by a tumour occupying chiefly one part of the abdomen, increasing slowly, and neither sonorous nor fluctuating.

The diseased conditions of the several viscera of the abdomen, which produce such an enlargement or protuberance as to come under this genus, are described by Dr. Good by the name of *Parabysma*, a term which he thinks more appropriate. The several species are denominated from the viscus in which the enlargement takes place.

1. *Physconia hepatica.* This may be produced from a variety of causes.

α. One very common cause is a morbid turgescence of the biliary ducts, from a want of due action in the vessels themselves, or from a torpid motion of the absorbents, from both of which causes a commorant motion of the bile results. Children are frequently subjects of this disease, and those adults who indulge in malt liquors and the luxuries of the table. It is attended with symptoms of dyspepsy and hypochondriacism. In children, it is relieved by those means which invigorate the system, with occasional mercurial purges; and, in adults, by small doses of the oxides of mercury, and aperients, and especially the purging waters of Cheltenham and Leamington. The cold bath, where it can be resorted to, is an excellent adjuvant.

β. Another cause of an enlargement of the liver is the acephalo-cyst, or headless bladder-worm: but, before it can produce a physconia, it must have acquired a great size. It is only to be known by a fluctuating tumour in the region of the liver, not preceded by inflammation, and not interfering with the health, except by its mere mechanical pressure. The fasciola hepatica, or fluke, so commonly found in the bile-ducts of sheep, is said to produce it; but this is very doubtful. There is no cure for this species of physconia, but by tapping, which lets out the fluid and kills the animal, and gives the person a chance of recovery. Dr. Douglas, now of Kelso, when practising at Reading, saw a case of this kind, and gave it as his opinion that the immense tumour of the hypochondrium was caused by hydatids. Mr. Bully, the surgeon, tapped, by his desire, in his presence, and a fluid with hydatids, escaped: the opening was enlarged, an immense number discharged, and the patient got well. Electricity will kill this animal; but it is a dangerous application, for the fluid will act as an extraneous body, as well as the cysts, and create much serious mischief.

γ. Scrofula in children produces an enlargement of the liver. The child is pot-bellied, and the liver is felt large and hard. It is accompanied mostly by rickets, or scrofula in other parts, and is removed by a steady course of chalybeates and aperients, with pure air, and sea-bathing.

δ. Another cause of physconia hepatica, is all morbid growths of that organ: these are various; as the deposition of fat in the liver, cephalomatous and other tumours, &c. Of the cure of these we are in ignorance.

2. *Physconia peritonei.* The only instance of this that I ever witnessed was from the acephalocyst, or headless bladder-worm. The subject was a female, about twenty-two, who had been supposed to be pregnant for more than two years. On opening her body, the cavity of the abdomen was occupied by an immense mass of hydatids, of various sizes, but most of them the size of pot oranges, and generally oval, though of various shapes. Every part of the abdomen was occupied by them, adhering to the peritonæum of the mesentery, intestines, omentum, and uterus: as much as filled an ordinary pail was removed before the viscera could be seen.

There is no cure for this disease.

3. *Physconia splenica.* The spleen becomes enlarged, occasionally to so great an extent as to cause an obvious increase of the size of the belly.

α. The most frequent cause is intermittent fever or ague, when the tumour is termed the ague cake. It is known by a large and hard swelling in the region of the spleen, verging towards the spine. The enlargement produced from this cause consists in a deposition of a morbid secretion into the parenchyma of the spleen, either from a morbid action of its secreting arteries, or a deficient action of the absorbents, but most probably the former, because the deposition is a morbid one. This disease gives way to tonics, such as cure the ague, in combination with mild mercurial alteratives, good pure air, and nourishing diet.

β. Another cause is, morbid growths, — as chondromatous, cephalomatous, and other tumours. These are beyond the reach of medicines.

4. *Physconia omentalis.* There are many morbid conditions of the omentum which cause the belly to become physconical, and these are morbid growths or depositions in the cellular tissue, which have accumulated so as to weigh from five to twenty pounds. They are lypomatous, cephalomatous, cartilaginous, bony, or other tumours. Dr. Hooper has in his collection an omentum that contains some thousands of soft tumours, which caused a physconia for near three years. The cure of these diseased conditions of the omentum is never effected, even if the disease were known.

5. *Physconia renalis.* When any enlargement of the kidney produces a swelling of the belly, it is from a growth of a morbid material. Dr. Hooper removed a kidney from the body of an officer, which, when put into a very large wash-hand basin so over-filled it, that it was with difficulty held in it. The disease was fungus hæmatodes.

6. *Physconia uterina.* This is, perhaps, the most frequent cause of physconia. The uterus itself, and its appendages, are often diseased,

and so enlarged as to cause a great swelling of the belly, and often at a period and under circumstances to favour the opinion of the female being pregnant. The swelling may be caused by coacervated menses, from obstruction in the vagina; by other secretions into the uterus, or its appendages; by depositions of morbid substances, either cartilaginous, cephalomatous, or of other natures; by many diseased states of the ovaria, by ovarial, tubal, or extra-uterine fœtation, &c.

Medicines are of little avail against these morbid states.

7. *Physconia mesenterica.* Many cases are recorded of glandular enlargements of the mesentery causing this disease, but they are rare.

Children have protuberant bellies when labouring under mesenteric obstruction, but with such obstruction the abdomen is seldom much swollen. Mercurial alteratives, aperients, mild tonics, and especially chalybeates, are the best remedies, and with pure air and regulated diet, they mostly effect a cure. Tumours of a scrofulous, hæmatomatous, cephalomatous, and other natures, are now and then found to produce an enlargement of the belly.

Should the nature of the swelling be known, a cure for it could not be effected when caused by one of the just-mentioned diseases.

8. *Physconia intestinalis.* A laxity of the intestinal canal produces an enlargement of the belly, which is cured by tonics, dry diet, and exercise. Morbid growths of the intestines also occasionally cause physconia.

PHYSE'MA. (*a, atis.* n.; from φυσαω, to inflate.) *Physesis.* A windy tumour.

PHYSE'TER (*er, eris.* m.; from φυσαω, to blow: so named from its action of blowing and discharging water from its nostrils.) The name of a genus of whale-fish in the Linnæan system.

PHYSETER MACROCE'PHALUS. The spermaceti whale. Spermaceti, called in the pharmacopœia, *Cetaceum*, is an oily, concrete, crystalline, semi-transparent matter, obtained from the cavity of the cranium of several species of whales, but principally from the *Physeter macrocephalus*, or spermaceti whale. It was formerly very highly esteemed, and many virtues were attributed to it; but it is now chiefly employed in affections of the lungs, primæ viæ, kidneys, &c as a softening remedy, mixed with mucilages. It is also employed by surgeons as an emollient, in form of cerates, ointments, &c. See also *Ambergris.*

PHYSIC. (Φυσικη from φυσις, nature.) A term originally signifying natural philosophy, but in modern language restricted to that branch of medicine which forms the province of the physician, as opposed to that of the surgeon. It is vain to attempt a definition of physic in this point of view, because, although an arbitrary division is useful in practice, physic and surgery are, as a science, inseparable, and the study of both is essential to the knowledge of either.

PHYSIO'GNOMY. (*Physiognomia, æ.* f.; φυσιογνωμονια; from φυσιογνωμονεω, to judge of the disposition by the countenance; from φυσις, nature, and γινωσκω, to know.) The art of judging of the characters of individuals by their countenances, gestures, and other external peculiarities. What is called *expression* in the countenance exists in man in a much higher degree than in any other animal, and there are several muscles in the human face which are not found in brutes, and the sole use of which appears to be to convey the mute language of expression: such are the *corrugator supercilii;* the anterior portion of the *occipito-frontalis;* the *triangularis oris;* the *depressor alæ nasi;* the *nasalis labii superioris.* For many original and interesting observations on this subject, see Sir Charles Bell's *Anatomy and Philosophy of Expression.* The expression of the eye in men and animals depends on the direction given to the ball by the muscles which act upon it, and the degree of tension caused by the muscles which retract the eyelids. Physiognomy, therefore, when properly pursued, is a real science, founded on the observation of nature, and a study of no small utility in our intercourse with mankind. There is, however, a spurious kind of physiognomy with which the term is frequently associated. This consists in the attempt to trace a correspondence between the size and contour of particular parts of the head and face, and the disposition of the individual. Such is the physiognomy of Lavater — a fanciful system in which there is little truth, and that little probably residing in the predominance of certain casts of feature in individuals of a certain temperament. There is a kind of physiognomy which is of great importance in the practice of medicine, and which embraces the expression of the countenance as affected by certain diseased states — the complexion of the face and of the whole surface of the body — the attitude of the patient, and his manner of speaking and moving. The practitioner, who has a discerning and experienced eye in medical physiognomy, will attain, in many cases, to a readiness of diagnosis, and a certainty of prognosis, which will astonish those who have neglected this study. The reader will find many accurate remarks on the physiognomy of disease in Dr. Marshall Hall's admirable work on *Diagnosis.*

PHYSIO'LOGY. (*Physiologia, æ.* f. φυσιολογια; from φυσις, nature, and λογος, a discourse.) This term, in its original meaning is synonymous with natural philosophy, and in this sense it was used by the Greeks. It is now restricted, however, to that branch of natural knowledge which relates to the laws of life and the functions of living beings. Physiology is divided into *general* and *special*, the former having for its object the general laws of life, the latter the functions of particular organs. It is also divided, like anatomy, into *human*, which relates to man, and *comparative*, which relates to the inferior animals and to vegetables.

PHY'SIS. (Φυσις, nature.) A term applied by Hippocrates to the instinctive power of the living body. See *Life.*

PHYSOCE'LE. (*e, es.* f.; from φυσα, wind and κηλη, a tumour.) The same as *Pneumatocele.*

PHYSOCE'PHALUS. (*us, i.* m.; from φυσα, wind, and κεφαλη, the head.) Emphysema of the head.

PHYSOME'TRA. (*a*, *æ*. f.; from φυσαω, to inflate, and μητρα, the womb.) *Hysterophyse.* A windy swelling of the uterus. A tympany of the womb, characterised by a permanent elastic swelling of the hypogastrium, from flatulent distension of the womb. It is a rare disease, and seldom admits of a cure.

PHYTE'LEPHAS. (From φυτον, a plant, and ελεφας, an elephant: so called because its fruit is of great size, and contains a milk which hardens into a substance resembling ivory.) A genus of plants inhabiting America. The Tagua plant. *Caleza de Negro.* Buttons are made of the hardened albumen of the fruit.

PHYTEU'MA. (*a*, *atis.* n.; from φυτευω, to plant or sow: so called from its great increase and growth.) The name of a genus of plants. Class, *Pentandria;* Order, *Monogynia.*

Phyteuma orbiculare. *Rapunculus corniculatus.* Horned rampions. By some supposed efficacious in the cure of syphilis.

PHYTOLA'CCA. (*a*, *æ*. f.; from φυτον, a plant, and λακκα, gum-lac: so called because it is of the colour of lacca.) The name of a genus of plants. Class, *Decandria;* Order, *Decagynia.*

Phytolacca decandria. The systematic name of the Pork-physic; called also, Pork-weed, Poke-weed, Red-weed of Virginia, Red nightshade, and American nightshade. *Solanum racemosum Americanum. Solanum magnum Virginianum rubrum.* In Virginia and other parts of America, the inhabitants boil the leaves, and eat them in the manner of spinach. They are said to have an anodyne quality, and the juice of the root is violently cathartic. The Portuguese had formerly a trick of mixing the juice of the berries with their red wines, in order to give them a deeper colour; but it was found to debase the flavour. This was represented to the king of Portugal, who ordered all the stems to be cut down yearly before they produced flowers, thereby to prevent any further adulteration. This plant has been used as a cure for cancers, but to no purpose.

PHYTO'LOGY. (*Phytologia*, *æ*. f.; from φυτον, an herb, and λογος, a discourse.) That part of natural history which treats of plants. Botany.

Pi'a ma'ter. *Localis membrana. Meninx tenuis.* A thin membrane, almost wholly vascular, that is firmly accreted to the convolutions of the cerebrum, cerebellum, medulla oblongata, and medulla spinalis. Its use appears to be, to distribute the vessels to, and contain the substance of, the cerebrum.

PI'CA. (*a*, *æ*. f.; the magpie: so named because it is said the magpie is subject to this affection.) Depraved appetite, with strong desire for unnatural food. It is very common as a symptom of disease in pregnancy, dyspepsy, and chlorosis.

In infants it occurs from improper management and direction, for nothing is more tractable in infancy than the organ of taste; and hence it is that different nations of the world are brought by early habit to prefer such kinds of food as their respective climates produce in greatest abundance: thus the Hindoos live almost entirely on grain; the Tonguses, on berries, and the refuse lichen found undigested in the stomach of the reindeer; the Californians on snakes, rats, lizards, &c.

It also exists in an idiopathic affection or disease, being brought on occasionally by a desire to improve the beauty of the person, or giving graceful slenderness to the form, or a fairness to the skin, from which the Greek physicians called it μαλακια, softness, or effeminacy. When this morbid propensity has once taken place, the substances for which it excites a desire are often not only of the most indigestible, but disgusting quality, as dirt, cinders, ordure, rank tallow, chalk, wood, hair, paper, stones, glass, &c.

Emetics and purgatives are useful in removing this morbid action of the stomach, Rhubarb, in combination with bark and steel, generally destroy it. The *Cachexia Africana*, called also, *Mal d'estomac*, which is the desire of dirt-eating amongst the negroes generally, depends on glandular disease and dropsy, and requires their remedies.

Picatio. See *Pica.*

Pi'cea. (*a*, *æ*. f. Πευκη, the pitch-tree.) The common or red fir or pitch-tree is so named. The cones, branches, and every part of the tree, afford the common resin called frankincense. See *Pinus abies.*

Pichu'rim. See *Pechurim.*

PI'CRIS. (*is*, *idis.* f.: from πικρος, bitter.) The name of a genus of plants. Class, *Syngenesia;* Order, *Polygamia æquales.*

Picris echoides. The name of the common ox-tongue. The leaves are frequently used as a pot-herb by the country people, who esteem them good to relax the bowels.

PI'CROMEL. (*el*, *ellis.* n.; from πικρος, bitter, and μελι, honey: so called from its taste.) The bitter principle of bile. See *Bilis.*

PICROTO'XIA. (*a*, *æ*. f.) Picrotoxine. The poisonous principle of the cocculus indicus. It is obtained in the following way: — "To the filtered decoction of these berries add acetate of lead, while any precipitate falls. Filter and evaporate the liquid cautiously, to the consistence of an extract. Dissolve in alkohol of 0·817, and evaporate the solution to dryness. By repeating the solutions and evaporations, we at last obtain a substance equally soluble in water and alkohol. The colouring matter may be removed by agitating it with a little water. Crystals of pure picrotoxia now fall, which may be washed with a little alkohol.

It acts as an intoxicating poison. The sulphate, nitrate, acetate, &c. have been formed, but not yet applied to any medicinal use.

Piedmont truffle. See *Lycoperdon tuber.*

Pie'strum. (From πιεζω, to compress.) An instrument to compress the head of a dead fœtus, for its more easy extraction from the womb.

Pig-nut. The bulbous root of the *Bunium bulbocastanum*, of Linnæus: so called because pigs are very fond of them, and will dig with their snouts to some depth for them. See *Bunium bulbocastanum.*

PIGME'NTUM. (*um*, *i.* n.; from *pingo*, to paint.) A pigment. This name is given by anatomists to a mucous substance found in the

eye, which is, 1. The *pigment of the iris*, which covers the posterior surface of the iris, and is called also *uvea* from the resemblance of its colour to that of the grape. 2. *The pigment of the choroid membrane*, a black or brownish mucus, which covers the anterior surface of the choroid membrane, and is called *pigmentum nigrum*. The depth of its shade varies with the colour of the hair and skin.

Pike. See *Esox lucius.*

Pi'la hy'stricis. The bezoar hystricis.

Pi'la mari'na. A globular mass composed of the fibres of marine plants, and principally of the *Zostera marina*. It abounds on the shores of the Mediterranean. It was formerly esteemed in scrofula and as an anthelmintic; but is not now in use.

Pilchard. See *Clupea pilchardus.*

PILES. *Hæmorrhoides.* The seat of this disease is the extremity of the great gut or rectum, upon the side of it, around the anus or fundament. The rectum, like the other intestines, is composed of several membranes connected to each other by an intervening cellular substance; and as the muscular fibres of this intestine always tend, by their contraction, to lessen its cavity, the internal membrane, which is very lax, forms itself into several rugæ, or folds. In this construction nature respects the use of the part, which occasionally gives passage to or allows the retention of the excrements, the hardness and bulk of which might produce considerable lacerations, if this intestine were not capable of dilatation. The arteries and veins subservient to this part, are called hæmorrhoidal, and the blood that returns from it is carried to the meseraic veins. The rectum is particularly subject to the piles, from its situation, structure, and use; for whilst the course of the blood is assisted in almost all the other veins of the body, by the distension of the adjacent muscles, and the pressure of the neighbouring parts, the blood in the hæmorrhoidal veins, which is to ascend against the natural tendency of its own weight, is not only destitute of these assistances, but is impeded in its passage: for, first, the large excrements which lodge in this intestine dilate its sides, and the different resistances which they form there are so many impediments obstructing the return of the blood; not in the large veins, for they are placed along the external surface of the intestine, but in all the capillaries which enter into its composition. Secondly, as often as these large excrements, protruded by others, approached near the anus, their successive pressure upon the internal coats of the intestine, which they dilate, drives back the blood into the veins, and for so long suspends its course; the necessary consequence of which is, a distension of the veins in proportion to the quantity of blood that fills them. Thirdly, in every effort we make, either in going to stool, or upon any other occasion, the contraction of the abdominal muscles, and the diaphragm pressing the contents of the abdomen downwards, and these pressing upon the parts contained in the pelvis, another obstruction is thereby opposed to the return of the blood, not only in the large veins, but also in the capillaries, which, being of too weak a texture to resist the impulse of the blood that always tends to dilate them, may hereby become varicose.

The dilatation of all these vessels is the *primary cause* of the piles; for the internal coat of the intestine, and the cellular membrane which connects that to the muscular coat, are enlarged in proportion to the distension of the vessels of which they are composed. This distension, not being equal in every part, produces separate tumours in the gut, or at the verge of the anus, which increases according as the venal blood is obstructed in them, or circulates there more slowly.

Whatever, then, is capable of retarding the course of the blood in the hæmorrhoidal veins, may occasion this disease. Thus, persons that are generally costive, who are accustomed to sit long at stool, and strain hard; pregnant women, or such as have had difficult labours; and likewise persons who have an obstruction in their liver, are for the most part afflicted with the piles; yet every one has not the hæmorrhoids, the different causes which are mentioned above being not common to all, or at least not having in all the same effects. When the piles are once formed, they seldom disappear entirely; and we may judge of those within the rectum by those which, being at the verge of the anus, are plainly to be seen. A small pile, that has been painful for some days, may cease to be so, and dry up; but the skin does not afterwards retain its former firmness, being more lax and wrinkled, like the empty skin of a grape. If this external pile swells and sinks again several times, we may perceive, after each return, the remains of each pile, though shrivelled and decayed, yet still left larger than before. The case is the same with those that are situated within the rectum: they may happen, indeed, never to return again, if the cause that produced them is removed; but it is probable that the excrements, in passing out, occasion a return of the swelling, to which the external ones are less liable: for the internal piles make a sort of knots or tumours in the intestine, which, straitening the passage, the excrements, in passing out, occasion irritations there that are more or less painful in proportion to the efforts which the person makes in going to stool; and it is thus these tumours become gradually larger. The piles are subject to many variations: they may become inflamed from the above irritations to which they are exposed; and this inflammation cannot always be removed by art. In some, the inflammation terminates in an abscess, which arises in the middle of the tumour, and degenerates into a fistula. These piles are very painful till the abscess is formed. In others, the inflammation terminates by induration of the pile. These never lessen, but often grow larger. These hardened piles sometimes ulcerate, and continually discharge a sanies, which the patient perceives by stains on his shirt, and by its occasioning a very troublesome itching about the verge of the anus. There are some, and those of different sizes, which are covered with so fine a skin as frequently to admit blood to pass through. This fine skin is only the internal coat of the rectum, greatly a

tenuated by the varicose distension of its vessels. The haemorrhage may proceed from two causes; namely, either from an excoriation produced by the hardness of the excrements, or from the rupture of the tumefied vessels, which break by their too great distension. In some of these, the patient voids blood almost every time he goes to stool; in others not so constantly. We sometimes meet with men who have a periodical bleeding by the piles, not unlike the menses in women; and as this evacuation, if moderate, does not weaken the constitution, we may infer that it supplies some other evacuation which nature either ceases to carry on, or does not furnish in due quantity; and hence, also, we may explain why the suppression of this discharge, to which nature had been accustomed, is frequently attended with dangerous diseases. The piles are sometimes distended to that degree as to fill the rectum, so that if the excrements are at all hard they cannot pass. In this case the excrements force the piles out of the anus to procure a free passage: consequently the internal coat of the rectum, to which they are connected, yields to extension; and upon examining these patients immediately after having been at stool, a part of the internal coat of that gut is perceived. A difficulty will occur in the return of these, in proportion to their size, and as the verge of the anus is more or less contracted. If the piles come out in the same manner upon going to stool, it is then they void most blood, because the verge of the anus forms a kind of ligature above them.

The most common arrangement of piles, is into,—

1. The *blind piles;* as they exist in their simplest state, consisting of nothing more than a varicose state of the veins, with more or less of thickening of the internal membrane of the bowel.

2. The *mucous piles;* in which the varicose veins or tumours and the mucous follicles are excoriated, and pour out a quantity of mucus, which mixes with some pus or sanies, and is constantly discharged by the anus.

3. The *bleeding piles;* which are attended with bleeding.

4. The *excrescential;* in which there are fleshy excrescences about the verge of the anus, or within the gut. These are mostly large, loose, and flabby within the bowel, and of great size; and externally they are of various shapes, resembling, as it was supposed, figs, on which account they have been denominated *fici, condylomata,* &c.

The treatment of this complaint will vary much, according to circumstances. When the loss of blood is considerable, we should endeavour to stop it by applying cold water, or ice; or some astringent, as a solution of alum, or sulphate of zinc: but a more certain way is, making continued pressure on the part. At the same time, internal astringents may be given, joined with opium, if much pain or irritation attend. Care must be taken, however, to avoid constipation: and in all cases patients find benefit from the steady use of some mild cathartic, procuring regular loose motions. Sulphur is mostly resorted to for this purpose; and, especially in combination with supertartrate of potash, tamarinds, &c. in the form of electuary, usually answers very well; likewise castor oil is an excellent remedy in these cases. Should the parts be much inflamed, leeches may be applied near the anus, and cold saturine lotions used; sometimes, however, fomenting with the decoction of poppy will give more relief: where symptomatic fever attends, the antiphlogistic regimen must be strictly observed, and, besides clearing the bowels, antimonials may be given to promote diaphoresis. Where the tumours are considerable and flaccid, without inflammation, powerful astringent or even stimulant applications will be proper, together with similar internal medicines; and the part should be supported by a compress kept on by a proper bandage. An ointment of galls is often very useful, with opium, to relieve pain; and some of the liquor plumbi acetatis may be farther added, if there be a tendency to inflammation. In these cases of relaxed piles of some standing, the copaiba frequently does much good, both applied locally and taken internally, usually keeping the bowels regular; also the celebrated Ward's Paste, a medicine of which the active ingredient is black pepper. When a portion of the internal membrane of the rectum is constantly protruded, and when tumours and excrescences form, which from their shape have been called *fici, condylomata,* &c., &c., their removal is alone to be effected by ligature or the knife.

PI'LEUS. A hat. The cap, or that part of a gymnosperm fungus or mushroom, which forms the upper round part or head; as in *Boletus,* and *Agaricus.*

Pilewort. See *Ranunculus ficaria.*

Pill. See *Pilula.*

Pill, aloëtic, with myrrh. See *Pilulæ aloës cum myrrha.*

Pill, compound aloëtic. See *Pilulæ aloës compositæ.*

Pill, compound calomel. See *Pilulæ hydrargyri chloridi compositæ.*

Pill, compound galbanum. See *Pilulæ galbani compositæ.*

Pill, compound gamboge. See *Pilulæ cambogiæ compositæ.*

Pill, compound squill. See *Pilulæ scillæ compositæ.*

Pill of iron with myrrh. See *Pilulæ ferri compositæ.*

Pill, mercurial. See *Pilulæ hydrargyri.*

Pill, soap, with opium. See *Pilulæ saponis cum opio.*

PILOSE'LLA. (*a. æ.* f.; from *pilus,* because its leaves are hairy.) See *Hieracium.*

Pilosella major. See *Hypochæris.*

PILO'SUS. (From *pilus,* hair.) Hairy. Applied very generally in *Natural History,* &c. to the stems, leaves, and receptacles of plants, as that of the *Cerastium alpinum;* to the nectary of the *Parnassus palustris,* which is in form of five hairy fascicules at the base of the stamina; and to the receptacle of the *Carthamus tinctorius.*

Pilous. See *Pilosus.*

PI'LULA. (*a*, *æ*. f.; diminutive of *pila*, a ball.) καττοτιον, and σφαιριον, of the Greeks. A pill. A medicine in the shape of a small globe, the size of a pea, which can be swallowed whole, so as to cover the taste of bitter or ungrateful ingredients: hence the proverb, — *Pilulæ et injuriæ non masticandæ, sed deglutiendæ sunt.* The consistence of pills is best preserved by keeping the mass in bladders, and occasionally moistening it. In the formation of masses to be thus divided, the proper consistence is to be looked for at first, as well as its preservation afterwards; for if the mass then become hard and dry, it is unfit for that division for which it was originally intended; and this is, in many instances, such an objection to the form, that it is doubtful whether, for the purposes of the pharmacopœia, the greater number of articles had not better be kept in powder, and their application to the formation of pills left to extemporaneous direction.

Pilulæ alepha'nginæ. *Pilulæ aloephanginæ.* Pills composed of aloes and aromatics. The name *alephanginæ* is Arabic, according to Lemery, and signifies odorous.

Pilulæ aloes compositæ. Compound aloëtic pills. Take of aloes powdered, an ounce; extract of gentian, half an ounce; oil of caraway, forty minims; simple syrup, as much as is sufficient. Beat them together, until they form an uniform mass. From fifteen to twenty-five grains prove moderately purgative and stomachic.

Pilulæ aloes cum myrrha. Aloëtic pills with myrrh. Take of aloes, two ounces; saffron, myrrh, of each an ounce; simple syrup, as much as is sufficient. Powder the aloes and myrrh separately; then beat them all together until they form an uniform mass. From ten grains to a scruple of this pill, which is a substitute for the *pilulæ Rufi*, prove stomachic and laxative, and are calculated for delicate females, especially where there is uterine obstruction.

Pilulæ cambogiæ compositæ. Compound gamboge pills. Take of gamboge, powdered, a drachm; aloes, powdered, a drachm and a half; ginger, powdered, half a drachm; soap, two drachms. Mix the powders together: then having added the soap, beat the whole together until they are thoroughly incorporated. These pills were introduced into the London Pharmacopœia, as forming a more active purgative pill than the pil. aloes cum myrrhâ, and in this way supplying an article very commonly necessary in practice. The dose is from ten grains to one scruple.

Pilulæ de caccio'nde. Astringent pills containing catechu.

Pilulæ ferri compositæ. Compound iron pills. Pills of iron and myrrh. Take of myrrh, powdered, two drachms; carbonate of soda, sulphate of iron, treacle, of each a drachm. Rub the myrrh with the carbonate of soda; add the sulphate of iron, and rub them again; then beat the whole together until they are thoroughly incorporated. These pills answer the same purpose as the mistura ferri composita. The dose is from ten grains to one scruple.

Pilulæ ga'lbani compositæ. Compound galbanum pills; formerly called *pilulæ gummosæ.* Take of galbanum, an ounce; myrrh, sagapenum, of each an ounce and a half; assafœtida, half an ounce; simple syrup, as much as may be sufficient. Beat them together, until they form an uniform mass. A stimulating antispasmodic and emmenagogue. From half a scruple to half a drachm may be given three times a day in nervous disorders of the stomach and intestines, in hysterical affections and hypochondriasis.

Pilulæ hydrargyri. Mercurial pills. Often, from its colour, called the blue pill. Take of mercury, two drachms; confection of red roses, three drachms; liquorice-root, powdered, a drachm. Rub the mercury with the confection, until the globules disappear; then add the liquorice-root, and beat the whole together until they are thoroughly incorporated. An alterative and anti-venereal pill, which mostly acts on the bowels if given in sufficient quantity to attempt the removal of the venereal disease, and therefore requires the addition of opium. The dose is from five grains to a scruple. Three grains of the mass contain one of mercury. Joined with the squill pill, it forms an excellent expectorant and alterative in asthmas attended with viseeral obstruction, and an efficacious diuretic in dropsy.

Pilulæ hydrargyri chloridi compositæ. Compound pills of chloride of mercury. Take of chloride of mercury, oxy-sulphuret of antimony, of each two drachms; guaiacum resin, powdered, half an ounce; treacle, two drachms. Rub the chloride of mercury, first with the oxy-sulphuret of antimony, and then with the guaiacum resin and treacle, until they are incorporated. This is intended as a substitute for the famed Plummer's pill. It is exhibited as an alterative in a variety of diseases, especially cutaneous eruptions, pains of the venereal or rheumatic kind, cancerous and scirrhous affections, and chronic ophthalmia. The dose is from five to ten grains. In about five grains of the mass there is one grain of the submuriate of mercury.

Pilulæ hydrargyri iodidi. Pills of iodide of mercury. Take of iodide of mercury a drachm; confection of dog-roses, three drachms; powdered ginger, a drachm. Beat them together till they are incorporated. The dose is from five grains to ten. For the virtues. See *Hydrargyri iodidum.*

Pilulæ ipecacuanhæ compositæ. Compound pills of ipecacuanha. Take of compound powder of ipecacuanha three drachms; squill fresh-dried, ammoniacum, each a drachm; mixture of acacia as much as may be sufficient. Beat them together until incorporated. These pills are anodyne, diaphoretic, and expectorant. The dose is from five to ten grains.

Pilulæ rhei compositæ. Compound pill of rhubarb. Take of rhubarb, powdered, an ounce; aloes, powdered, six drachms; myrrh powdered, half an ounce; soap a drachm; oil of carraway half a fluid drachm; syrup as much as may be sufficient; mix the powders together, then beat the whole together until incorporated. These pills form a good stomachic laxative. Dose, gr. x. to gr. xx.

Pilulæ sagape'ni compositæ. Compound pills of sagapenum. Take of sagapenum an ounce; aloes half a drachm; syrup of ginger as much as may be sufficient. Beat them together until incorporated. These are laxative and antispasmodic. Dose, five to ten grains.

Pilulæ saponis cum opio. Pills of soap and opium; formerly called *pilulæ saponaceæ*. Take of hard opium, powdered, half an ounce; hard soap, two ounces. Beat them together until they are thoroughly incorporated. The dose is from three to ten grains. Five grains of the mass contain one of opium.

Pilulæ scillæ compositæ. Compound squill pills. Take of squill-root, fresh dried and powdered, a drachm; ginger-root, powdered, ammoniacum powdered, of each two drachms; syrup as much as may be sufficient. Mix the powders together, then beat them with the soap, and add the syrup, so as to give a proper consistence. An expectorant and diuretic pill, mostly administered in the cure of asthma and dropsy. The dose is from ten grains to a scruple.

Pilulæ styracis compositæ. Compound pills of storax. *Pilulæ e Styrace.* Take of purified storax three drachms; hard opium, powdered, saffron, each a drachm. Beat them together until incorporated. These pills are balsamic, stimulant, and slightly expectorant. They are used in chronic pulmonary affections. Dose from gr. iii. to gr. x.

PI'LUS. (Πίλος, wool carded.)

I. In *Anatomy*, the short hair which is found all over the body. The hair of the head, eyebrows, and eyelids, are termed *pili congeniti*, because they grow *in utero*; and that which grows from the surface of the body after birth, *pili postgeniti*. See *Capillus*.

II. In *Botany*, a hair: which, according to Linnæus, is an excretory duct of a bristle-like form. They are fine, slender, cylindrical, flexible bodies, found on the surface of the herbaceous parts of plants. Some of them are the excretory ducts of glands, but many of them are not; and it is not easy to conceive any satisfactory opinion of their use to the plant. When placed under the microscope they appear to be membraneous tubes, articulated in the majority of instances, often punctured, and in some plants, as the *Borago laxiflora*, covered with warts. They are either *simple* or undivided, *compound* or branched.

1. *Pili simplices.* The most common form of the simple hair is that of a jointed thread, generally too flexible to support itself, and thus most commonly found bent and waved. According to its degree of firmness, its quantity, and the mode of its application to the surfaces of stems and leaves, it constitutes the characteristic of surfaces: thus the surface is termed *pilosus*, or hairy, when the hairs are few and scattered, but conspicuous, as in *Hieracium pilosella*; — *lanatus*, woolly, when they are complicated, but nevertheless the single hairs are distinguishable, as in *Verbascum*; — *tomentosus*, shaggy, when they are so thickly matted that the individual hairs cannot be distinguished, and when the position of the hair is nearly parallel with the disk, being at the same time straight, or very slightly curved, and thick, although unmatted: it constitutes the *silky* surface, as is seen on the leaves of *Potentilla anserina*, and *Achemilla alpina*. In some instances the simple hair is firm enough to support itself erect; in which case it is usually awl-shaped, and the articulations are shorter towards the base, as in *Bryonia alba*. It does not always, however, terminate in a point, but sometimes in a small knob, as in the newly-evolved succulent shoots of ligneous plants, *Belladonna*, &c. In some instances also, as on the under disk of the leaves of the *Symphytum officinale*, the simple hair is hooked towards its apex, which occasions the velvety feeling when the finger is passed over the surface of these leaves, the convex part of the curve of the hair being that only which comes in contact with the finger. Another variety of the simple hair is that which has given rise to the term *glandulosociliata*: it is a slender hollow thread, supporting a small, cup-shaped, glandular body, and is rather to be regarded as a stipate gland.

2. *Pili compositi* are either *plumosus*, feathery, which is a simple hair with other hairs attached to it laterally, as in *Hieracium undulatum*; or it is *ramosus*, branched, that is lateral hairs are given off from common stalks, as on the petiole of the gooseberry leaf, or it consists of an erect firm stem, from the summit of which smaller hairs diverge in every direction, as in *Marrubium peregrinum*; or it is *stellatus*, star-like, being composed of a number of simple diverging awl-shaped hairs, springing from a common centre, which is a small knob sunk in the cutis, as on the leaves of marsh mallow. Some authors have applied the term *ramenta* to small, flat, or strop-like hairs which are found on the leaves of some of the genus *Begonia*. — *Thomson*. See *Pubescence*.

Pime'nta. (*a*, *æ*. f.; from *pimienta*, the Spanish for pepper.) See *Myrtus pimenta*.

Pime'nto. See *Myrtus pimenta*.

Pimpernel. See *Anagallis arvensis*.

Pimpernel, water. See *Veronica beccabunga*.

PIMPINE'LLA. (*a*, *æ*. f.; *quasi bipinella*, or *bipennula*, from the double pennate order of its leaves.) 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Digynia*. Pimpinella.

2. The pharmacopœial name of the *Pimpinella alba* and *magna*.

Pimpinella alba. A variety of the *pimpinella magna*, the root of which is indifferently used with that of the greater pimpinella. The *pimpinella saxifraga* was also so called.

Pimpinella ani'sum. The systematic name of the anise plant; called in the pharmacopœias, *Anisum*, and *Anisum vulgare*. *Pimpinella — foliis radicalibus trifidis incisis*, of Linnæus. A native of Egypt. Anise-seeds have an aromatic smell, and a pleasant, warm, and sweetish taste. An essential oil and distilled water are prepared from them, which are employed in flatulencies and gripes, to which children are more especially subject: also in weakness of the stomach, diarrhœas, and loss of tone in the primæ viæ.

Pimpinella italica. See *Sanguisorbæ*.

Pimpinella magna. The systematic name of the greater pimpinella; called also *Pimpi-*

nella nigra. The root has been extolled by some in the cure of erysipelatous ulcerations, tinea capitis, rheumatism, and other diseases.

Pimpinella nigra. See *Pimpinella magna.*

Pimpinella saxifraga. The systematic name of the Burnet saxifrage: formerly called *Tragoselinum.* Several species of pimpinella were formerly used officinally; but the roots which obtain a place in the Materia Medica of the Edinburgh Pharmacopœia, are those of this species of saxifrage, the *Pimpinella — foliis pinnatis, foliolis radicalibus subrotundis, summis linearibus,* of Linnæus. They have an unpleasant smell, and a hot, pungent, bitterish, taste: they are recommended by several writers as a stomachic: in the way of gargle, they have been employed for dissolving viscid mucus, and to stimulate the tongue, when that organ becomes paralytic.

Pin and web. An old English vernacular name for an opacity of the cornea.

"The tunicle called *cornea* sometimes loseth its colour and brightness, sometimes it grows thick by dryness, as in old men, and is incurable; sometimes gross humours are fastened to it by reason of inflammation, sometimes by resolving medicines, the thinner humours are dissolved, and the thicker remain; or, by the use of cold medicines, the humours are thickened and a white humour is contracted, which is called by some *Leucoma,* by others *Albugo,* commonly a Pin and Web." — *Tanner's Hidden Treasures of the Art of Physick.*

Pinaste'llum. (From *pinus,* the pine-tree: so called, because its leaves resemble those of the pine-tree.) See *Peucedanum silaus.*

Pine. See *Pinus.*

Pine-apple. See *Bromelia ananas.*

Pine-thistle. See *Atractylis gummifera.*

Pinea. See *Pinus pinea.*

PI'NEAL. (*Pinealis;* from *pinea,* a pine-apple: from its supposed resemblance to that fruit.) Formed like the fruit of the pine.

Pineal gland. *Glandula pinealis. Conarium.* A small heart-shaped boor, about the size of a pea, situated immediately over the corpora quadrigemina in the brain. See *Encephalos.* It was whimsically imagined by Descartes to be the seat of the soul.

Pineus purgans. See *Jatropha curcas.*

PINGUE'DINOUS. (*Pinguedinosus;* from *pinguis,* fat.) Fatty; greasy.

Pingue'do. (*o, onis.* f.; from *pinguis,* fat.) See *Fat.*

PINGUI'CULA. (*a, æ.* f.: from *pinguis,* fat: so called because its leaves are fat to the touch.) 1. The name of a genus of plants. Class, *Diandria;* Order *Monogynia.*

2. The name of a form of pterygium. See *Pterygium.*

Pinguicula vulgaris. *Sanicula montana. Sanicula eboracensis. Viola palustris. Liparis. Cucullata. Dodecatheon Plinii.* Butterwort, or Yorkshire sanicle. The remarkable unctuosity of this plant has caused it to be applied to chaps, and as a pomatum to the hair. Decoctions of the leaves in broths are used by the common people in Wales as a cathartic.

Pinhones indici. See *Jatropha curcas.*

PI'NIC. (*Pinicus;* from *pinus,* the fir.) Appertaining to the fir.

Pinic acid. *Acidum pinicum.* In the colophony of France, or resin, which is obtained in all probability from the *Pinaster* or *Pinus maritima,* Mons. Baup has found a substance which crystallises in triangular plates, soluble in about four parts of alkohol, but insoluble in water. It reacts like an acid, and neutralises alkaline matter.

Pink, Indian. See *Spigelia.*

PI'NNA. (*a, æ.* f. Πτερνα, a wing.) 1. The name of the latter and inferior part of the nose, and the broad part of the ear.

2. The leaflet of a pinnate leaf. See *Leaf.*

Pinna'culum. (Dim. of *pinna,* a wing.) A pinnacle: applied formerly to the uvula, from its shape.

PINNATI'FID. *Pinnatifidus.* Leaves which are cut transversely into several oblong parallel segments; as in *Ipomosis,* and *Myriophyllum verticillatum.*

PINNA'TUS. Pinnate. Applied to a leaf which has several leaflets proceeding laterally from one stalk. It refers especially to the leaf; whereas *alatus* relates to the stem or leaf-stalk. There are several kinds: —

1. *Folium pinnatum cum impari,* with an odd or terminal leaflet; as in roses.

2. *Cirrosum,* with a tendril, when furnished with a tendril instead of the odd leaflet; as in the pea and vetch tribe.

3. *Abruptè pinnatum,* abruptly, without either a terminal leaflet or a tendril; as in the genus *Mimosa.*

4. *Oppositè pinnatum,* oppositely, when the leaflets are opposite or in pairs; as in saintfoin, roses, and *Sium angustifolium.*

5. *Alternatim pinnatum,* alternately, when they are alternate; as in *Amorpha fruticosa.*

6. *Interruptè pinnatum,* interruptedly, when the principal leaflets are ranged alternately with an intermediate series of smaller ones; as in *Spiræa filipendula,* and *ulmaria.*

7. *Articulatè pinnatum,* jointedly, with apparent joints in the common foot-stalk; as in *Weinmannia pinnata.*

8. *Decursivè pinnatum,* decurrently, when the leaflets are decurrent; as in *Eryngium campestre.*

9. *Lyrato-pinnatum,* in a lyrate manner, having the terminal leaflet largest, and the rest gradually smaller as they approach the base, as in *Erysimum præcox;* and with intermediate smaller leaflets, as in *Geum rivale,* and the common turnip.

10. *Verticillato-pinnatum,* in a whorled manner, the leaflets cut into five divaricated segments, embracing the footstalk; as in *Sium verticillatum.*

PI'NNULA. (*a, æ.* f.) The leaflet of bipinnate and tripinnate leaves.

PINNULA'TUS. Pinnulate: applied to the leaflet of a winged leaf when it is again subdivided.

PI'NUS. (*us, i.* and *ûs.* f.) The name of a genus of plants in the Linnæan system. Class, *Monœcia;* Order, *Monadelphia.* The pine tree.

Pinus abies. The fir, called formerly *El*

theleia. The Norway spruce fir, which affords the Burgundy pitch and common frankincense.

1. *Pix burgundica*, from the place it was made at. *Pix arida*. The prepared resin of the *Pinus abies — foliis solitariis, subtetragonis acutiusculis distichis, ramis infra nudis conis cylindraceis*, of Linnæus. It is obtained by incision through the bark. The different portions are collected, fused in boiling water, and cleansed by pressing through canvass cloths. When genuine it has a very peculiar odour; and, although brittle in cold weather, it assumes a tenacious viscidity when gently heated or kneaded in the warm hand. It therefore forms an excellent adhesive and gently stimulating plaster, exciting some degree of irritation, and often a slight serous exudation from the parts to which it is applied. It will remain adherent to the cuticle for a long time; and is beneficially applied to the thorax in catarrhal affections, and to the loins in rheumatism and lumbago. These plasters, independently of the irritation of the skin which they excite, are useful merely as keeping the part warm and supported. It is customary with apothecaries to keep Burgundy pitch in a small ladle, or old saucepan, and to remelt the same portion repeatedly, by which it loses its characteristic adhesiveness and irritating quality, and is little more active than common resin. It should always be applied fresh, and spread upon the leather with the aid of as little heat as possible. Upon some skins, a Burgundy pitch plaster, or any similar application, creates incessant itching, and excites a pimply eruption, attended by almost intolerable irritation, so that it is frequently necessary to remove it within a few hours after its application: in these instances, however, it often does great service, especially in chronic rheumatism, where it may thus prove almost as effectual as a blister.

2. *Abietis resina*: called also, *Thus*. Common frankincense. This is a spontaneous exudation, and is brought in small masses or tears, chiefly from Germany, but partly and purest from France. It is applicable to the same purposes as Burgundy pitch.

Pinus balsamea. The systematic name of the balsam of Gilead fir-tree, which affords the Canada balsam. The Canada balsam is one of the purest turpentines. For its properties, see *Turpentine*.

Pinus cedrus. The wood of this species, cedar wood, is very odorous, more fragrant than that of the fir, and it possesses similar virtues.

Pinus cembra. This affords the Carpathian balsam, and Briançon turpentine, and the shoots the Riga balsam, by distillation. This balsam, called *Oleum germanis*, and *Oleum carpathicum*, is obtained both by wounding the young branches of the *Pinus — foliis quinis, levibus*, of Linnæus, and by boiling them. It is mostly diluted with turpentine, and comes to us in a very liquid and pellucid state, rather white.

Pinus larix. The tree which gives us the agaric and Venice turpentine. The larch tree. *Larix. Pinus — foliis fasciculatis mollibus obtusiusculis bracteis extra squamas strobilorum extantibus*. Hort. Kew. The Venice turpentine issues spontaneously through the bark. It is usually thinner than any of the other sorts; of a clear whitish or pale yellowish colour; a hot, pungent, bitterish, disagreeable taste; and a strong smell, without any thing of the aromatic flavour of the Chian kind. Orenburgh gum, and Briançon manna, exude from the bark of this tree. See *Turpentine*.

Pinus picea. The systematic name of the silver fir, or common fir. From it is obtained the Strasburgh turpentine, by puncturing the small vesicles of the bark in which it is contained, and common turpentine by larger incisions.

Pinus pinea. The systematic name of the stone pine-tree. The young and fresh fruit of this plant are eaten in some countries in the same manner as almonds are here, either alone or with sugar. They are nutritive, aperient, and diuretic.

Pinus pumi'lio. Mountain pine. Mugho pine. The turpentine called Hungarian balsam exudes from this tree, and it is also procured by pressing the cones.

Pinus sylvestris. The systematic name of the Scotch fir. *Pinus — foliis germinis rigidis, conis ovato-conicis longitudine foliorum subgeminis basi rotundatis*, of Linnæus, which affords the following officinals: —

1. *Common turpentine* is the juice which flows out on the tree being wounded in hot weather. See *Turpentine*.

2. An oil is obtained from this tree by distillation, mostly with water, in which case yellow resin is left; but if without addition, the residuum is common resin, or colophony. The oil is ordered to be purified in the pharmacopœia. See *Oleum terebinthinæ rectificatum*

3. When the cold begins to check the exudation of the juice from the tree, a part concretes in the wounds; which is collected and termed *galipot*, in Provence, *barras* in Guienne, sometimes also *white resin*, when thoroughly hardened by long exposure to the air. See *Resina flava* and *alba*.

4. The *Pix liquida*, or tar, is produced by cutting the wood into pieces, which are enclosed in a large oven constructed for the purpose. It is well known for its economical uses. Tar-water, or water impregnated with the more soluble parts of tar, was some time ago a very fashionable remedy in a variety of complaints, but in the present practice it is not much used.

5. Common pitch is tar inspissated; it is now termed in the pharmacopœia, *Pix nigra*.

PI'PER. (*er, eris.* n. Πεπερι; from πεπτω, to concoct: because by its heat it assists digestion.) Pepper. The name of a genus of plants in the Linnæan system. Class, *Diandria*; Order, *Trigynia*.

Piper album. See *Piper nigrum*.

Piper brasilianum. See *Capsicum*.

Piper calecuticum. See *Capsicum*.

Piper caryophyllatum. See *Myrtus*.

Piper caudatum, See *Piper cubeba*.

Piper cube'ba. The plant, the berries of which are called cubebs. *Piper caudatum. Cumamus. Piper — foliis oblique ovatis, seu oblongis venosis acutis, spica solitaria pedunculata oppositifolia, fructibus pedicellatis*, of Linnæus.

The dried berries are of an ash-brown colour, generally wrinkled, and resembling pepper, but furnished each with a slender stalk. They are a warm spice, of a pleasant smell, and moderately pungent taste, imported from Java, and may be exhibited in all cases where warm spicy medicines are indicated, but they are inferior to pepper. Of late they have been successfully given internally in the cure of the common gleet and clap. Mr. Crawford informs us that they are the common remedy in Bengal and Java, where it yields very soon to their use. Well pounded, about half a drachm, or a dessert spoonful, is given three times a day; during which time, all heating aliments are to be abstained from.

Piper decorticatum. White pepper.

Piper favasci. The clove berry tree.

Piper Guineense. See *Capsicum.*

Piper Hispanicum. See *Capsicum.*

Piper Indicum. See *Capsicum annuum.*

Piper Jamaicense. See *Myrtus pimenta.*

Piper longum. *Macropiper. Acapatli. Catu tripali. Pimpilim.* Long pepper. *Piper — foliis cordatis petiolatis sessilibusque*, of Linnæus. The berries or grains of this plant are gathered while green, and dried in the heat of the sun, when they change to a blackish or dark grey colour. They possess precisely the same qualities as the Cayenne pepper, only in a weaker degree.

Piper Lusitanicum. See *Capsicum.*

Piper murale. See *Sedum acre.*

Piper nigrum. *Melanopiper. Molagocodi. Lada. Piper aromaticum.* Black pepper. This species of pepper is obtained in the East Indies from the *Piper — foliis ovatis septemnerviis glabris, petiolis simplicissimis*, of Linnæus. Its virtues are similar to those of the other peppers. The black and white pepper are both obtained from the same tree, the difference depending on their preparation and degrees of maturity. Pelletier has extracted a new vegetable principle from black pepper, in which the active part of the grain resides, to which the name of *piperine* is given. To obtain it, black pepper was digested repeatedly in alkohol, and the solution evaporated until a fatty resinous matter was left. This, on being washed in warm water, became of a good green colour. It had a hot and burning taste; dissolved readily in alkohol, less so in ether. Concentrated sulphuric acid gave it a fine scarlet colour. The alkoholic solution after some days deposited crystals, which were purified by repeated crystallisation in alkohol and ether. They then formed colourless four-sided prisms, with single inclined terminations. They have scarcely any taste. Boiling water dissolves a small portion; but not cold water. They are soluble in acetic acid, from which combination feather-formed crystals are obtained. This substance fuses at 212° F. The fatty matter left after extracting the piperine, is solid at a temperature near 32°, but liquefies at a slight heat. It has an extremely bitter and acrid taste, is very slightly volatile, tending rather to decompose than to rise in vapour. It may be considered as composed of two oils, one volatile and balsamic, the other more fixed, and containing the acrimony of the pepper.

PI'PERINE. The active principle of pepper. See *Piper nigrum.*

Piperi'tis. (*is, idis.* f.; from *piper*, pepper: so called because its leaves and roots are biting like pepper to the taste.) The herb dittany, also lepidium and peppermint.

PIPERI'TUS. (From *piper*, pepper.) Peppered.

Piperitæ. The name of an order of plants in Linnæus's Fragments of a natural Method, consisting of the *Piper*, and such as, like it, have flowers in a thick spike.

PI'SIFORM. (*Pisiformis*; from *pisum*, a pea, and *forma*, likeness.) Pea-like.

Pisifo'rme os. The fourth bone of the first row of the carpus.

Pismire. See *Formica rufa.*

Pis-a-bed. See *Leontodon taraxacum.*

Pissasphal'tus. (From πισσα, pitch, and ασφαλτος, bitumen.) The thicker kind of rock-oil.

PISTA'CIA. (*a, æ.* f. Πιστακια, supposed to be a Syrian word.) The name of a genus of plants in the Linnæan system. Class, *Dioecia*; Order, *Pentandria.*

Pistacia lentiscus. The systematic name of the tree which affords the mastich. *Mastiche. Mastix. Pistacia — foliis abruptè pinnatis, foliolis lanceolatis*, of Linnæus. A native of the south of Europe. In the island of Chio, the officinal mastich is obtained most abundantly; and, according to Tournefort, by making transverse incisions in the bark of the tree, from whence the mastich exudes in drops, which are suffered to run down to the ground, when, after sufficient time is allowed for their concretion, they are collected for use. Mastich is brought to us in small, yellowish, transparent, brittle tears, or grains: it has a light agreeable smell, especially when rubbed or heated; on being chewed, it first crumbles, soon after sticks together, and becomes soft and white, like wax, without impressing any considerable taste. No volatile oil is obtained from this substance when distilled with water. Pure alkohol and oil of turpentine dissolve it; water scarcely acts upon it; though by mastication it becomes soft and tough, like wax. When chewed a little while, however, it is white, opake, and brittle, so as not to be softened again by chewing. The part insoluble in alkohol much resembles in its properties caoutchouc. It is considered to be a mild corroborant and astringent; and as possessing a balsamic power; it has been recommended in hæmoptysis, proceeding from ulceration, leucorrhœa, debility of the stomach, and in diarrhœas and internal ulcerations. Chewing this drug has likewise been said to have been of use in pains of the teeth and gums, and in some catarrhal complaints: it is, however, in the present day, seldom used either externally or internally. The wood abounds with the resinous principle; and a tincture may be obtained from it, which is esteemed in some countries in the cure of hæmorrhages, dysenteries, and gout.

Pistacia nux. See *Pistacia vera.*

PISTACIA TEREBINTHUS. The systematic name of the tree which gives out the Cyprus, Chio, or Chian turpentine. *Terebinthina de Chio.* This substance is classed among the resins. It is procured by wounding the bark of the trunk of the tree. The best Chio turpentine is about the consistence of honey, very tenacious, clear, and almost transparent; of a white colour, inclining to yellow, and a fragrant smell, moderately warm to the taste, but free from acrimony and bitterness. Its medicinal qualities are similar to those of the other turpentines. See *Turpentine.*

PISTACIA VERA. The systematic name of a large tree, which affords the pistachio nut. *Pistacia vera — foliis impari pinnatis — foliolis subovatis recurvis,* of Linnæus. An oblong pointed nut, about the size and shape of a filbert, including a kernel of a pale greenish colour, covered with a yellow or greenish skin. Pistachio nuts have a sweetish unctuous taste, resembling that of sweet almonds, and, like the latter, afford an oil, and may be formed into an emulsion.

Pistachio nut. See *Pistacia vera.*

Pistil. See *Pistillum.*

PISTILLI'FEROUS. (*Pistilliferus;* from *pistillum,* a pistil, and *fero,* to bear.) Pistil-bearing: applied to flowers or florets which contain one or more pistils, but no stamens.

PISTI'LLUM. (*um, i.* n.; a pestle, from its likeness.) A pistil or pointal: the female genital organ of a flower, which, being no less essential than the male, stands within them in the centre of the flower. Linnæus believed the pistil to originate from the pith, and the stamens from the wood; and hence constructed an ingenious hypothesis relative to the propagation of vegetables, which is not destitute of observations and analogies to support it, but not countenanced by the anatomy and physiology of the parts:

A pistil consists of three parts: —

1. The *germen,* or rudiment of the young fruit and seed, which of course is essential.

2. The *stylus,* or style, various in length and thickness, sometimes wanting, and, when present, serving merely to elevate the third part.

3. The *stigma,* which is indispensable. The *Nicotiana tabacum* has these organs well displayed.

PISTOLO'CHIA. (From πιστος, faithful, and λοχεια, parturition: so called, because it was thought to promote delivery.) Birthwort. See *Aristolochia.*

PI'SUM. (*um, i.* n.; Πισον.) The name of a genus of plants. Class, *Diadelphia;* Order, *Decandria.* The pea.

PISUM SATIVUM. The common pea. A very nutritious, but somewhat flatulent article of food, of which there are very many varieties.

Pitch. See *Pinus sylvestris.*

Pitch, Burgundy. See *Pinus abies.*

Pitch, Jews'. See *Bitumen judaicum.*

Pitch-tree. See *Pinus abies.*

Pitcher-shaped. *Urceolatus.* See *Ascidiatus.*

PITTA'CIUM. (Πιττακιον; from πιττα, pitch.) A pitch plaster.

PITTO'TA. (Πιττωτα; from πιττα, pitch.) Medicines in which pitch was the principal ingredient.

PITUI'TA. (*a, æ.* f.) Phlegm; that is, viscid mucus.

PITUI'TARY. *Pituitarius.* Of or belonging to phlegm.

Pituitary body. See *Pituitary gland.*

PITUITARY GLAND. *Glandula pituitaria. Corpus pituitarium.* A process of the brain situated in a duplicature of the dura mater, in the sella turcica of the sphenoid bone. See *Encephalos.*

PITUITARY MEMBRANE. *Membrana pituitaria.* Schneiderian membrane. The mucous membrane that lines the nostrils, and sinuses communicating with the nose, is so called, because it secretes the mucus of those parts, to which the ancients assigned the name of *pituita.*

PITYRI'ASIS. (*is, is.* f.; from πιτυρον, bran: so named from its bran-like appearance.) A genus in the second order, or scaly diseases, of Dr. Willan's cutaneous diseases. The pityriasis consists of irregular patches of small thin scales, which repeatedly form and separate, but never collect into crusts, nor are attended with redness or inflammation, as in the lepra and scaly tetter. Dr. Willan distinguishes pityriasis from the porrigo of the Latins, which has a more extensive signification, and comprehends a disease of the scalp, terminating in ulceration; whereas the former is, by the best Greek authors, represented as always dry and scaly. Thus, according to Alexander and Paulus, pityriasis is characterised by "the separation of slight furfuraceous substances from the surface of the head, or other parts of the body, without ulceration." Their account of this appearance is conformable to experience; and the two varieties of it which they have pointed out may be denominated, *Pityriasis capitis,* and *Pityriasis versicolor.*

1. *Pityriasis capitis,* when it affects very young infants, is termed by nurses the dandriff. It appears at the upper edge of the forehead and temples, as a slight whitish scurf set in the form of a horse-shoe; on other parts of the head there are large scales, at a distance from each other, flat, and semipellucid. Sometimes, however, they nearly cover the whole of the hairy scalp, being close together and imbricated. A similar appearance may take place in adults; but it is usually the effect of lepra, scaly tetter, or some general disease of the skin.

Elderly persons have the pityriasis capitis in nearly the same form as infants; the only difference is that this complaint in old people occasions larger exfoliations of the cuticle. The remedies are, a regular ablution of the scalp with soap and water, or an alkaline or weak spirituous lotion, for which purpose the hair must be removed if not thin.

2. The *Pityriasis rubra* occurs most frequently in advanced life, and is the result of a slight inflammation of the portions of the skin affected, somewhat resembling in this respect the psoriasis diffusa. The cuticle is at first only red and rough, but soon becomes mealy or scurfy, and exfoliates, leaving a similar red cuticle underneath, which undergoes the like process;

the scaliness becoming greater as the exfoliation is repeated. This complaint is attended with a dry and unperspiring surface, a troublesome itching, and a feeling of stiffness. There is also a general langour and restlessness. When the redness and scales disappear, the patches are left of a yellowish or a sallow hue. But the whole process is liable to be repeated at short intervals, and the disease to be thus greatly prolonged.

This form of the disease is removed by a combination of antimonials with the decoction of woods, and the warm sea-water bath. It is also materially relieved by small doses of the tinctura veratri. Where the irritability of the skin is not very great, a gently restringent lotion or ointment, containing a portion of borax or alum, and super-acetate of lead, may be applied to the parts affected with advantage.

3. The *Pityriasis versicolor* chiefly affects the arms, breast, and abdomen. It is diffused very irregularly; and being of a different colour from the usual skin colour, it exhibits a singular chequered appearance. These irregular patches, which are at first small, and of a brown or yellow hue, appear at the scrobiculus cordis, about the mammæ, clavicles, &c. Enlarging gradually, they assume a tesselated form; in other cases they are branched, so as to resemble the foliaceous lichens growing on the bark of trees; and sometimes, when the discolouration is not continuous, they suggest the idea of a map being distributed on the skin like islands, continents, peninsulas, &c. All the discoloured parts are slightly rough, with minute scales, which soon fall off, but are constantly replaced by others. This scurf, or scaliness, is most conspicuous on the sides and epigastric region. The cuticular lines are somewhat deeper in the patches than on the contiguous parts; but there is no elevated border, or distinguishing boundary between the discoloured part of the skin, and that which retains its natural colour. The discolouration rarely extends over the whole body. It is strongest and fullest round the umbilicus, on the breasts, and sides; it seldom appears in the skin over the sternum, or along the spine of the back. Interstices of proper skin colour, are more numerous, and largest at the lower part of the abdomen and back, where the scales are often small, distinct, and a little depressed. The face, nates, and lower extremities are least affected; the patches are found upon the arms, but mostly on the inside, where they are distinct and of different sizes. The pityriasis versicolor is not a cuticular disease; for when the cuticle is abraded from any of the patches, the sallow colour remains as before in the skin or rete mucosum. This singular appearance is not attended with any internal disorder, nor with any troublesome symptom, except a little itching or irritation felt on getting into bed, and after strong exercise, or drinking warm liquors. There is in some cases a slight exanthema, partially distributed among the discoloured patches; and sometimes an appearance like the lichen pilaris; but eruptions of this kind are not permanent, neither do they produce any change in the original form of the complaint. The duration of the pityriasis versicolor is always considerable. Dr. Willan has observed its continuance in some persons for four, five, or six years. It is not limited to any age or sex. Its causes are not pointed out with certainty. Several patients have referred it to fruit taken in too great quantities; some have thought it was produced by eating mushrooms, others by exposure to sudden alternations of cold and heat. In some individuals, who had an irritable skin, and occasionally used violent exercise, the complaint has been produced, or at least much aggravated, by wearing flannel next to the skin. It is likewise often observed in persons who have resided for a length of time in a tropical climate.

PIX. (*ix, icis.* f.; from πισσα.) Pitch. See *Pinus sylvestris.*

Pix arida. See *Pinus abies.*

PIX BRU'TIA. A thick and resinous kind of pitch used by the ancients.

Pix Burgundica. See *Pinus abies.*

Pix liquida. See *Pinus sylvestris.*

PLACE'BO. (I will please.) An epithet given to any medicine adapted rather to please than benefit the patient.

PLACE'NTA. (*a, æ.* f.; a cake; from πλακους, a cake.) The afterbirth. The afterbirth is so called from its resemblance in shape to a cake. The membranes of the ovum have usually been mentioned as two, the amnion and the chorion; and the latter has again been divided into the true and the false. The third membrane (which, from its appearance, has likewise been called the villous or spongy, and from the consideration of it as the inner lamina of the uterus, cast off like the exuviæ of some animals, the decidua,) has been described by Harvey, not as one of the membranes of the ovum, but as a production of the uterus. The following is the order of the membranes of the ovum, at the full period of gestation:—1st, There is the outer or connecting, which is flocculent, spongy, and extremely vascular, completely investing the whole ovum, and lining the uterus. 2dly, The middle membrane, which is nearly pellucid, with a very few small blood-vessels scattered over it, and which forms a covering to the placenta and funis, but does not pass between the placenta and uterus. 3dly, The inner membrane, which is transparent, of a firmer texture than the others, and lines the whole ovum, making, like the middle membrane, a covering for the placenta and funis with the two last. The ovum is clothed when it passes from the ovarium into the uterus, where the first is provided for its reception.

These membranes, in the advanced state of pregnancy, cohere slightly to each other, though in some ova, there is a considerable quantity of fluid collected between them, which, being discharged when one of the outer membranes is broken, forms one of the circumstances which have been distinguished by the name of false waters.

Between the middle and inner membrane upon or near the funis, there is a small, flat and oblong body, which, in the early part of pregnancy, seems to be a vesicle containing milk or lymph, which afterwards becomes of a firm, ar-

apparently fatty texture. This is called the *vesicula umbilicalis;* but its use is not known.

The placenta is a circular, flat, vascular, and apparently fleshy substance, different in its diameter in different subjects, but usually extending about six inches, or upwards, over about one fourth part of the outside of the ovum in pregnant women. It is more than one inch in thickness in the middle, and becomes gradually thinner towards the circumference, from which the membranes are continued. The placenta is the principal medium by which the communication between the parent and child is preserved; but though all have allowed the importance of the office which it performs, there has been a variety of opinions on the nature of that office, and of the manner in which it is executed.

The surface of the placenta, which is attached to the uterus by the intervention of the connecting membrane, is lobulated and convex; but the other, which is covered with the amnion and chorion, is concave and smooth, except the little eminence made by the blood-vessels. It is seldom found attached to the same part of the uterus in two successive births; and, though it most frequently adheres to the anterior part, it is occasionally fixed to any other, even to the os uteri, in which state it becomes a cause of a dangerous hæmorrhage at the time of parturition. The placenta is composed of arteries and veins, with a mixture of pulpy or cellular substance. Of these vessels there are two orders, very curiously interwoven with each other. The first is a continuation of those from the funis, which ramify on the internal surface of the placenta, the arteries running over the veins, which is a circumstance peculiar to the placenta; and then, sinking into its substance, anastomose and divide into innumerable small branches. The second order proceeds from the uterus; and these ramify in a similar manner with those from the funis, as appears when a placenta is injected from those of the parent. The veins, in their ramifications, accompany the arteries as in other parts. There have been many different opinions with respect to the manner in which the blood circulates between the parent and child, during its continuance in the uterus. For a long time it was believed that the intercourse between the them was uninterrupted, and that the blood, propelled by the powers of the parent, pervaded, by a continuance of the same force, the vascular system of the fœtus; but repeated attempts having been made, without success, to inject the whole placenta, funis, and fœtus, from the vessels of the parent, or any part of the uterus, from the vessels of the funis, it is now generally allowed, that the two systems of vessels in the placenta, one of which may be called maternal, the other fœtal, are distinct. It is also admitted, that the blood of the fœtus is, with regard to its formation, increase, and circulation, unconnected with and totally independent of the parent; except that the matter by which the blood of the fœtus is formed must be derived from the parent. It is thought that which has probably undergone some preparatory changes in its passage through the uterus, is conducted by the uterine or maternal arteries of the placenta to some cells or small cavities, in which it is deposited; and that some part of it, or something secreted from it, is absorbed by the fœtal veins of the placenta, and by them conveyed to the fœtus for its nutriment. When the blood which circulates in the fœtus requires any alteration in its qualities, or when it has gone through the course of the circulation, it is carried by the arteries of the funis to the placenta, in the cells of which it is deposited, and then absorbed by the maternal veins of the placenta, and conducted to the uterus, whence it may enter the common circulation of the parent. Thus it appears, according to the opinion of Harvey, that the placenta performs the office of a gland, conveying air, or secreting the nutritious juices from the blood brought from the parent by the arteries of the uterus, and carried to the fœtus by the veins of the funis, in a manner probably not unlike to that in which milk is secreted and absorbed from the breasts. The veins in the placenta are mentioned as the absorbents, because no lymphatic vessels have yet been found in the placenta or funis; nor are there any nerves in these parts; so that the only communication hitherto discovered between the parent and child, is by the sanguineous system. The proofs of the manner in which the blood circulates between the parent and child are chiefly drawn from observations made upon the funis. When it was supposed that the child was supplied with blood in a direct stream from the parent, it was asserted that, on the division of the funis, if that part next to the placenta was not secured by a ligature, the parent would be brought into extreme danger by the hæmorrhage which must necessarily follow. But this opinion, which laid the foundation of several peculiarities in the management of the funis and placenta, is proved not to be true: for, if the funis be compressed immmediately after the birth of the child, and whilst the circulation in it is going on, the arteries between the part compressed and the child throb violently, but those between the compression and the placenta have no pulsation; but the vein between the part compressed and the placenta swells, and that part next to the fœtus becomes flaccid; but if, under the same circumstances, the funis be divided, and that part next the child be not secured, the child would be in danger of losing its life by the hæmorrhage; yet the mother would suffer no inconvenience if the other part was neglected. It is, moreover, proved, that a woman may die of an hæmorrhage occasioned by a separation of the placenta, and the child be nevertheless born, after her death, in perfect health. But if the placenta be injured, without separation, either by a rupture of the vessels which pass upon its inner surface, or in any other way, the child being deprived of its proper blood, would perish, yet the parent might escape without injury.

II. The receptacle of the fructification of plants has been called placenta. See *Receptaculum.*

Placenta febrilis. The ague cake. See *Ague.*

Plada'rotes. (Πλαδαρωτης; from πλαδαρος, moist, flaccid.) A soft discoloured tumour within the eyelid.

Plague. See *Pestis.*

Plague, black. See *Pestis nigra*, in the Supplement.

Plaice. See *Pleuronectes platessa.*

Plaited. See *Plicatus.*

PLANT. (*Planta, æ.* f.) An organised body belonging to the vegetable kingdom. See *Body*, and *Vegetable.*

PLA'NTA. 1. A plant.

2. The lower part or sole of the foot, comprehended between the tarsus and toes.

PLANTA'GO. (*o, inis.* f.; from *planta*, the sole of the foot: so called from the shape of its leaves, or because its leaves lie upon the ground and are trodden upon.) 1. The name of a genus of plants in the Linnæan system. Class, *Tetrandria;* Order, *Monogynia.* The plantain.

2. The pharmacopœial name of the *Plantago major.*

Plantago coro'nopus. The systematic name of the buck's-horn plantain. *Coronopodium. Cornu cervinum. Stella terræ. Herba stella.* Its medicinal virtues are the same as those of the other plantains.

Plantago latifolia. See *Plantago major.*

Plantago major. The systematic name of the broad-leaved plaintain; called also, *Centinervia, Heptapleurum, Polyneuron*, and *Plantago latifolia. Plantago — foliis ovatis glabris, scapo tereti, spica fusculis imbricatis*, of Linnæus. This plant was retained until of late years in the materia medica of the Edinburgh College, in which the leaves are mentioned as the pharmaceutical part of the plant: they have a weak herbaceous smell; an austere, bitterish, subsaline taste; and their qualities are said to be refrigerant, attenuating, astringent, and diuretic.

Plantago psy'llium. The systematic name of the branching plantain, or flea-wort. *Psyllium, Pulicaris herba, Crystallion*, and *Cynomoia* of Oribasius. The seeds of this plant, *Plantago — caule ramoso herbaceo, foliis subdentatis, recurvatis; capitulis aphyllis*, of Linnæus, have a nauseous mucilaginous taste, and no remarkable smell. The decoction of the seeds is recommended in hoarseness and asperity of the fauces.

Plantain. See *Plantago.*

Plantain-tree. See *Musa.*

Plantain, water. See *Alisma plantago.*

PLA'NTAR. *Plantaris.* Appertaining to the sole of the foot.

Plantar aponeurosis. The strong tendinous expansion which lies under the integuments in the sole of the foot.

Plantar arteries. Two branches of the posterior tibial.

PLANTA'RIS. (From *planta*, the sole of the foot.) *Tibialis gracilis*, vulgo *plantaris*, of Winslow. *Extensor tarsi minor*, vulgo *plantaris*, of Douglas. A muscle of the foot, situated on the leg, that assists the soleus, and pulls the capsular ligament of the knee from between the bones. It is sometimes, though seldom, found wanting on both sides. This long and slender muscle, which is situated under the gastrocnemius externus, arises, by a thin fleshy origin, from the upper and back part of the outer condyle of the os femoris. It adheres to the capsular ligament of the joint; and after running obliquely downwards and outwards, for the space of three or four inches, along the second origin of the gastrocnemius internus, and under the gastrocnemius externus, terminates in a long thin and slender tendon, which adheres to the inside of the tendo Achillis, and is inserted into the inside of the posterior part of the os calcis. This tendon sometimes sends off an aponeurosis that loses itself in the capsular ligament, but it does not at all contribute to form the aponeurosis that is spread over the sole of the foot, as was formerly supposed, and as its name would seem to imply. Its use is to assist the gastrocnemii in extending the foot. It likewise serves to prevent the capsular ligament of the knee from being pinched.

PLANTI'GRADA. (From *planta*, the sole of the foot, and *gradior*, to walk.) Plantigrade animals. A tribe of mammiferous animals, which walk on the sole of the foot, as opposed to the *Digitigrada*, or those which walk on the extremities of the toes.

Plants, sexual system of. See *Vegetable kingdom.*

Planum os. The orbitary plate of the ethmoid bone is so called from its plane surface.

PLA'NUS. Flat; smooth. Applied to parts of animals, as *os planum*; and to the receptacle of the fruit of plants, as that of the *Helianthus annuus.*

Plaster. See *Emplastrum.*

Plaster of Paris. See *Gypsum.*

Pla'ta. (From πλατυς, broad.) The shoulder-blade.

PLATI'NUM. (*um, i.* n.; the name given to this metal by the Spaniards, from the word *plata*, which signifies silver in their language, by way of comparison with that metal, whose colour it imitates; or from the river *Plata*, near which it is found.) *Platina.* A metal which exists in nature only in a metallic state. Its ore has recently been found to contain, likewise, four new metals, *palladium, iridium, osmium*, and *rhodium*, besides iron and chrome. The largest mass of which we have heard, is one of the size of a pigeon's egg, in the possession of the Royal Society of Bergara.

The crude platinum is to be dissolved in nitro-muriatic acid, precipitated by muriate of ammonia, and exposed to a very violent heat. Then the acid and alkali are expelled, and the metal reduced in an agglutinated state, which is rendered more compact by pressure while red hot.

Pure or refined platinum is by much the heaviest body in nature. Its sp. gr. is 21·5. It is very malleable, though considerably harder than either gold or silver; and it hardens much under the hammer. Its colour on the touch-stone is not distinguishable from that of silver. Pure platinum requires a very strong heat to melt it; and, when urged by a white heat, its parts will adhere together by hammering.

Platinum is not altered by exposure to air, neither is it acted upon by the most concentrated simple acids, even when boiling or distilled

from it. Its only solvent is chlorine, which acts on it with more difficulty than on gold.

Platinum is now hammered in Paris into leaves of extreme thinness. By enclosing a wire of it in a little tube of silver, and drawing this through a steel plate in the usual way, Dr. Wollaston succeeded in producing platinum wire not exceeding 1-3000th of an inch in diameter.

There are only two *oxides* of platinum distinctly known, though four are supposed to exist.

1. When 100 parts of the protochloride, or muriate of platinum, are calcined, they leave 73·3 of metal; 26·7 of chlorine escape. Hence the prime equivalent of the metal would seem to be 12·3. When the above protochloride is treated with caustic potash, it is resolved into a *black oxide* of platinum and chloride of potassium. This oxide should consist of 12·3 metal + 1 oxygen.

2. The *peroxide* appears to contain three prime proportions. Berzelius obtained it by treating the muriate of platinum with sulphuric acid, at a distilling heat, and decomposing the sulphate by aqueous potash. The precipitated oxide is a yellowish brown powder, easily reducible by a red heat to the metallic state. None of its compounds are used in medicine.

Ammonia forms a detonating compound with the oxide of platinum, analogous to fulminating gold and silver.

Platyco'ria. (*a*, *æ*. f.; from πλατυς, broad, and κορη, the pupil of the eye.) An enlarged pupil.

Platyophtha'lmum. (From πλατυς, broad, and οφθαλμος, the eye: so called because it is used by eastern women to make the eye look large and bright.) Antimony.

PLATY'SMA-MYOI'DES. (From πλατυς, broad, μυς, a muscle, and ειδος, resemblance.) *Musculus cutaneus*, of Winslow. *Quadratus genæ vel latissimus colli*, of Douglas. *Latissimus colli*, of Albinus. *Quadratus genæ, seu tetragonus*, of Winslow. A thin muscle on the side of the neck, immediately under the skin, that assists in drawing the skin of the cheek downwards; and when the mouth is shut, it draws all that part of the skin to which it is connected below the lower jaw upwards.

Ple'ctanæ. (From πλεκω, to fold.) The horns of the uterus.

Ple'ctrum. (Πληκτρον, a bow for striking on the strings of a musical instrument. So named from some fancied resemblance.) The styloid process of the temporal bone; also the uvula.

Ple'res archo'nticum. (Πληρες αχοντικον, full of power or efficacy.) The name of an old cephalic powder mentioned by Lemery.

Plero'sis. See *Plethora.*

Ple'smone. See *Plethora.*

PLETHO'RA. (*a*, *æ*. f. Πληθωρα; from πληθω, to fill.) *Plerosis. Plesmone.* An excessive fulness of the blood-vessels. This may be conceived to arise from an increased quantity of blood, or a diminished capacity of the vessels. In the former case it is called *plethora ad modem*; in the latter *plethora ad spatium.* When the quantity of blood is too great for the strength of the vessels, it is called *plethora ad vires.* Plethora may arise from a highly entonic state of the arterial system, and a thick crasis of the blood; and it is then called *sanguine plethora*; or it may arise from a lax and weak state of the arterial system with a redundance of serum in the blood; in which case it is called *serous plethora* or *atonic plethora.*

Pleumonia. See *Pneumonitis.*

PLEU'RA. (*a*, *æ*. f. Πλευρα.) The Greek word for a rib, or the side of the thorax formed by the ribs, but now applied by anatomists to the membrane which lines the internal surface of the thorax, and covers its viscera. It forms a great process, the mediastinum, which divides the thorax into two cavities. Its use is to render the surface of the thorax moist by the vapour it exhales. The cavity of the thorax is every where lined by this smooth and glistening membrane, which in reality consists of two distinct portions or bags, which, by being applied to each other laterally, form the septum called mediastinum: this divides the cavity into two parts, and is attached posteriorly to the vertebræ of the back, and anteriorly to the sternum. But the two laminæ of which this septum is formed, do not every where adhere to each other: for at the lower part of the thorax they are separated, to afford a lodgment to the heart; and at the upper part of the cavity they receive between them the thymus gland. The pleura is plentifully supplied with arteries and veins from the internal mammary, and the intercostals. Its nerves, which are very inconsiderable, are derived chiefly from the dorsal and intercostal nerves. The surface of the pleura, like that of the peritonæum and other membranes lining cavities, is constantly bedewed with a serous moisture, which prevents adhesions of the viscera. The mediastinum, by dividing the chest into two cavities, obviates many inconveniences to which we should otherwise be liable. It prevents the right and left lungs from compressing each other when we lie on one side, and consequently contributes to the freedom of respiration, which is disturbed by the least pressure on the lungs. If the point of a sword penetrates between the ribs into the cavity of the thorax, the lung on that side ceases to perform its office, because the air being admitted through the wound, prevents the dilatation of that lung; while the other lung, which is separated from it by the mediastinum, remains unhurt, and continues to perform its functions as usual.

Pleura'lgia. (*a*, *æ*. f.; from πλευρα, and αλγος, pain.) The same as pleurodynia.

PLEURI'TIS. (*is*, *idis*. f.; from πλευρα, the pleura.) Pleurisy or inflammation of the membrane which lines the cavity of the chest, and is reflected over the lungs. It assumes an *acute* and a *chronic* form.

1. *Acute pleurisy.* — In some instances the inflammation is partial, or affects one place in particular, which is commonly on the right side; but, in general, the morbid action is communicated throughout its whole extent. The disease is occasioned by exposure to cold, and by all the causes which usually give rise to other inflam-

matory complaints; and it attacks chiefly those of a vigorous constitution and plethoric habit. In consequence of the previous inflammation, it is apt, at its departure, to leave behind a thickening of the pleura, or adhesions to the ribs and intercostal muscles, which either lay the foundation of future pneumonic complaints or render the patient more susceptible of the changes of the atmosphere than before.

It comes on with an acute pain in the side, which is much increased by making a full inspiration, and is accompanied by flushing in the face, increased heat over the whole body, rigors, difficulty of lying on the side affected, together with a cough and nausea, and the pulse is hard, strong, and frequent, and vibrates under the finger when pressed upon, not unlike the tense string of a musical instrument. If blood is drawn and allowed to stand for a short time, it will exhibit a thick sizy or buffy coat on its surface. If the disease be neglected at its onset, and the inflammation proceeds with great violence and rapidity, the lungs themselves become affected, the passage of the blood through them is stopped, and the patient is suffocated; or, the inflammation goes on to suppuration, and an abscess is formed. When the substance of the lungs as well as the pleura is affected, the case is called *pleuro-peripneumony*. The prognosis in pleurisy must be drawn from the severity of the symptoms. If the fever and inflammation have run high, and the pain should cease suddenly, with a change of countenance, and a sinking of the pulse, great danger may be apprehended; but if the heat and other febrile symptoms abate gradually, if respiration is performed with greater ease and less pain, and a free and copious expectoration ensues, a speedy recovery may be expected. If the case come early under treatment, and vigorous practice be used, the prognosis in pleurisy may almost always be favourable, as it is more under the control of the lancet than any other case of inflammation.

If pleurisy be not checked, it may terminate in the effusion of lymph and the formation of adhesions between the pulmonary and costal pleura. These adhesions often exist during life, causing no other inconvenience than an occasional pain or sense of dragging. Another termination is by the effusion of serum, of pus, or a mixture of the two. In the latter event the patient generally sinks rapidly, but occasionally the case becomes chronic, and is then to be considered one of *hydrothorax* or *empyema*. (See these titles.)

The treatment of pleurisy consists in large bleeding from the arm, repeated if necessary, with the application of leeches or cupping-glasses; purgatives, diaphoretics, blisters, and a strict antiphlogistic regimen.

2. *Chronic pleurisy.* — This is principally a disease of advanced life, and seems most frequent in those addicted to the use of ardent spirits. It is very obscure in its symptoms, and is generally fatal, bronchitis supervening towards the termination. Chronic inflammation of the pleura gives rise to the thickening of the membrane, extensive adhesions, hydrothorax, and empyema. Occasional leeching and counter irritation by blisters, form the only treatment likely to do any good.

PLEUROCOLLE'SIS. (*is, is.* f.; from πλευρα, the pleura, and κολλαω, to glue.) An adhesion of the pleura to the lungs, or some neighbouring part.

PLEURODY'NIA. (*a, æ.* f.; from πλευρα, and οδυνη, pain.) A pain in the side, from whatever cause; but generally applied to those pains not arising from inflammation.

PLEURONE'CTES. (From πλευρα, the side, and νεω to swim, because they swim on their side.) The name of a genus of thoracic fishes.

PLEURONECTES HIPPOGLOSSUS. The holibut or holybut. This is not only one of the largest of the flat fish, but the largest of fishes properly so called, having been found of the weight of 300 or 400 pounds.

PLEURONECTES LIMANDA. The dab. Very like to the sole, but not so fine in flavour.

PLEURONECTES MAXIMUS. The turbot. By many this is esteemed the best of all fishes. It is a finely flavoured fish when in season, and inhabits the European and Mediterranean seas, and grows sometimes to thirty pounds weight. The flesh is firm, and easy of digestion.

PLEURONECTES PLATESSA. The plaice. A large flat fish, found in considerable quantity about our own and the Dutch coasts. The flesh is good, especially when large, but more watery than the sole. It is of easy digestion.

PLEURONECTES PLESSUS. The flounder. Extremely common about our coasts, and found in the rivers at a considerable distance from the salt water. It is a much esteemed fish, being easy of digestion, and proper for weak stomachs.

PLEURONECTES ROSEUS. The rose-coloured flounder. This is frequently found in the river Thames, and is considered as the finest of all flounders.

PLEURONECTES SOLEA. The sole. More frequently eaten than any of the flat fish, and perhaps inferior to none in delicacy and flavour. It is in season the greater part of the year.

PLEURONECTES ZEBRA. An elegant flat fish rather larger than our sole, a native of the Indian seas, and much esteemed as a wholesome and good fish.

PLEU'RO-PNEUMO'NIA. (*a, æ.* f.; from πλευρα and πνευμων, the lung.) The same as *pleuro-peripneumonia*.

PLEU'ROPERIPNEUMO'NIA. (From πλευρα, and περιπνευμονια, inflammation of the lungs.) An inflammation of the pleura and substance of the lungs.

PLEURORTHOPNE'A. (*a, æ.* f.; from πλευρα, the pleura, ορθος, upright, and πνεω, breathe.) A pleurisy in which the patient cannot breathe without keeping his body upright.

PLEUROSTHO'TONOS. Improperly written for *pleurothotonos*.

PLEUROTHO'TONOS. (From πλευρα, θεν, to one side, and τεινω, to bend.) The form of tetanus in which the body is bent to one side.

PLEXI'METER. (From πληξις, percussion, and μετρον, a measure.) The name given

by M. Piorry to the ivory plate which he uses in mediate percussion. The word ought to be *plexometer*.

PLEX'US. (*us, ûs.* m.; from *plecto*, to twine or knit.) A network: applied to blood-vessels, absorbents, and nerves, when many are near together, the branches crossing and intertwining in the form of a net.

Plexus cardi'acus. The cardiac plexus of nerves which is formed by the union of the eighth pair of nerves and great sympathetic.

Plexus choroi'des. Choroid plexus. A plexus of vessels situated in the lateral ventricle of the brain. See *Encephalos*.

Plexus pampinifo'rmis. The plexus of blood-vessels about the spermatic chord.

Plexus pulmo'nicus. The pulmonic plexus of nerves which is formed by the union of the eighth pair of nerves with the great sympathetic.

Plexus reticula'ris. The network of vessels under the fornix of the brain.

PLI'CA. (*a, æ.* f.; from *plico*, to entangle.) *Helotis. Kolto. Rhopalosis. Trichiasis. Trichoma. Plica Polonica.* Plaited hair. A disease of the hairs, in which they become long and coarse, and matted and glued into inextricable tangles. It is peculiar to Poland, Lithuania, and Tartary, and generally appears during the autumnal season. It has been asserted that the hair is acutely sensible, and cannot be cut off without danger. But this appears to be a fable.

Plica'ria. (*a, æ.* f.; from *plico*, to entangle: so called because its leaves are entangled together in one mass.) Wolf's-claw, or club moss. See *Lycopodium*.

PLICA'TUS. Plaited; folded. Applied to leaves when the disk, especially towards the margin, is acutely folded up and down; as in *Malva crispa*.

Plin'thius. Πλινθιος. The fourfold bandage.

Plum. See *Prunus*.

Plum, Malabar. See *Eugenia jambos*.

Plumba'gin. A principle detected by Duong in the root of the *plumbago europæa*.

PLUMBA'GO. (*o, inis.* f.; from *plumum*, lead.) 1. The name of a genus of plants so called from their being covered with lead-coloured spots. Class, *Pentandria*; Order, *Monogynia*.

2. Lead-wort. See *Polygonum persicaria*.

3. Black-lead. An iron ore of a shining blue-black colour, a greasy feel, and tuberculated when fractured. It is a pretty abundant mineral, and is called *graphite*. It may also be artificially prepared by exposing iron with an excess of charcoal to an intense and long continued heat. Graphite has generally passed for a carburet of iron, but according to Dr. Karsten, of Berlin, it is only a mechanical mixture of charcoal and iron, while the artificial black lead is a real carburet.

Plumbago europæa. The systematic name of the tooth-wort. *Dentaria. Dentillaria.* This plant is to be distinguished from the pellitory of Spain, which is also called dentaria. It is the *Plumbago — foliis amplexicaulibus, lanceolatis, scabris*, of Linnæus. The root was formerly esteemed, prepared in a variety of ways, as a cure for the toothach, arising from caries.

Plumbi acetas. *Cerussa acetata. Saccharum saturni.* Sugar of lead: so called from its sweet taste. It possesses sedative and astringent qualities in a very high degree. It is constantly used in lotions, and is perhaps the most powerful internal medicine in profuse hæmorrhages, especially combined with opium: but its use is not entirely without hazard, as it has sometimes produced violent colic and palsy; wherefore it is better not to continue it unnecessarily. The dose may be from one to three grains. It has been also recommended to check the expectoration and colliquative discharges in phthisis, but will probably be only of temporary service. According to Dr. A. T. Thompson it is poisonous only when it is decomposed and deposits the carbonate, which latter is the only deleterious salt of lead.

Plumbi diacetatis liquor. *Plumbi acetatis liquor.* Solution of diacetate of lead; formerly called *aqua lithargyri acetati.* Goulard's extract. Take of acetate of lead, two pounds and three ounces: oxide of lead, powdered, a pound and four ounces; water, six pints. Boil for half an hour, agitating frequently, and when the liquor is cool, add as much distilled water as will make it up to six pints, and strain. This has long been a celebrated refrigerant application in cases of local inflammation. It is to be mixed with distilled water in the proportion of from one to two drachms to a pint of water.

Plumbi diacetatis liquor dilutus. *Liquor plumbi acetatis dilutus. Aqua vegeto mineralis.* Diluted solution of diacetate of lead. *Aqua lithargyri acetati composita.* Take of solution of diacetate of lead, a fluid drachm and a half; distilled water, a pint; weak spirit, two fluid drachms. Mix. This is an unnecessary formula, as every surgeon dilutes the Goulard's extract with water, according to his own discretion.

Plumbi chlo'ridum. Chloride of lead. Take of acetate of lead nineteen ounces, boiling distilled water, three pints: chloride of sodium, six ounces. Dissolve the acetate of lead and chloride of sodium separately, the former in three pints of distilled water, and the latter in one pint. The liquors being then mixed together, wash the precipitate, when cold, with distilled water, and dry it. It is only used for preparing the hydrochlorate of morphia.

Plumbi iodi'dum. Iodide of lead. Take of acetate of lead, nine ounces; iodide of potassium, seven ounces; distilled water, a gallon. Dissolve the acetate of lead in six pints of the water, and filter. Add to the solution, the iodide of potassium dissolved in two pints of the water, wash the precipitate and dry it. The iodide of lead, as obtained by the above process, is a bright yellow powder, little soluble in cold water, but readily so in boiling water, from which, it is again deposited on cooling, in the form of crystalline scales.

This medicine has been found very effectual in resolving scrofulous tumours, and in the hands of M. Velpeau, has succeeded when iodine and its other compounds have failed. The dose

is from half a grain to four grains. An officinal ointment is now prepared from it. See *Unguentum plumbi iodidi.*

PLUMBI OXYDUM HYDRA'TUM. Hydrated oxide of lead. Take of solution of diacetate of lead, six pints; distilled water, three gallons; solution of potash, six pints; or as much as may be sufficient to precipitate the oxide. Mix. Wash the precipitate with water until nothing alkaline remains. This is used for preparing the disulphate of quinine.

Plumbi oxidum semivitreum. See *Lithargyrum.*

PLUMBI CARBO'NAS. *Plumbi subcarbonas.* Subcarbonate of lead; commonly called cerusse, or white-lead. This article is made in the large way in white-lead manufactories, by exposing thin sheets of lead to the vapour of vinegar. The lead is curled up and put into pots of earthenware, in which the vinegar is, in such a way as to rest just above the vinegar. Hundreds of these are arranged together, and surrounded with dung, the heat from which volatilises the acetic acid, which is decomposed by the lead, and an imperfect carbonate of lead is formed, which is of a white colour. This preparation is seldom used in medicine or surgery but for the purpose of making other preparations, as the acetate. It is sometimes employed medicinally in form of powder and ointment, to children whose skin is fretted. It should, however, be cautiously used, as there is great reason to believe that complaints of the bowels of children originate from its absorption.

Plumbi subcarbonas. See *Plumbi carbonas.*

PLU'MBUM. (*um, i.* n.) See *Lead.*

PLUMBUM CANDIDUM. Tin.

PLUMBUM CINEREUM. Bismuth.

PLUMBUM NIGRUM. Black-lead.

PLUMBUM RUBEUM. The philosopher's stone is so called in some old books.

PLUMBUM USTUM. Burnt lead.

PLUMME'RI PILULÆ. Plummer's pills. See *Pilulæ hydrargyri chloridi compositæ.*

PLUMO'SUS. (From *pluma*, a feather.) Plumose: feathered. In general use in *Natural History;* and applied, in *Botany*, to the down of seeds, which sometimes consists of fine, simple, or undivided hairs; in others it sends out lateral hairs, and then it is said to be feathered.

PLU'MULA. (*a, æ.* f.; a diminutive of *pluma*, a feather.) A little feather. The expanding embryo or germ of a plant within the seed, resembling a little feather. It soon becomes a tuft of young leaves, with which the young stem, if there be any, ascends. See *Corculum*, and *Cotyledon.*

PLUNKET'S CANCER REMEDY.—Take crow's foot, which grows in low grounds, one handful; dog's fennel, three sprigs, both well pounded; crude brimstone, in powder, three middling thimbles-full; white arsenic, the same quantity: incorporated all in a mortar, and made into small balls the size of a nutmeg, and dried in the sun. These balls must be powdered and mixed with the yolk of an egg, and laid over the sore or cancer upon a piece of pig's bladder, or stripping of a calf when dropped, which must be cut to the size of the sore, and smeared with the yolk of an egg. This must be applied cautiously to the lips or nose, lest any part of it get down; nor is to be laid on too broad on the face, or too near the heart, nor to exceed the breadth of half-a-crown; but elsewhere as far as the sore goes. The plaster must not be stirred until it drops off of itself, which will be in a week. Clean bandages are often to be put on.

PNEUMA'TIC. (*Pneumaticus;* from πνευμα, wind, relating to air.) Of or belonging to air or gas.

Pneumatic apparatus. See *Apparatus, pneumatic.*

Pneumatic trough. See *Apparatus, pneumatic.*

PNEUMATOCE'LE. (*e, es.* f.; πνευμα, wind, and κηλη, a tumour.) A tumour distended with gas. It has been applied especially to a distension of the scrotum with gas, which may happen when there is a scrotal hernia, and the intestine is distended with gas, or when the scrotum is emphysematous.

PNEUMATO'METER. (*Pneumatometrum, i.* n.; from πνευμα, air, and μετρον, a measure.) A graduated gasometer, by which the quantity of inspired air can be meausused.

PNEUMATO'MPHALUS. (From πνευμα, wind, and ομφαλος, the navel.) A hernia distended with gas.

PNEUMATO'SIS. (From πνευματοω, to inflate.) *Emphysema.* Windy swelling. A genus of disease in the Class *Cachexiæ*, and Order *Intumescentiæ*, of Cullen.

His species are,—

1. *Pneumatosis spontanea*, without any manifest cause.
2. *Pneumatosis traumatica*, from a wound.
3. *Pneumatosis venenata*, from poisons.
4. *Pneumatosis hysterica*, with hysteria.

Pneumatosis is known by a collection of air in the cellular texture under the skin, rendering it tense, elastic, and crepitating. Air in the cellular membrane is confined to one place but, in a few cases, it spreads universally over the body, and occasions a considerable degree of swelling. It sometimes arises spontaneously, which is however, a very rare occurrence, or comes on immediately after child-birth, in consequence of rupture of the lungs; but it is most generally induced by some wound or injury done to the thorax, and which affects the lungs; in which case the air passes from these, through the wound, into a surrounding cellular membrane and from thence spreads over the whole body.

Pneumatosis is attended with an evident crackling noise, and elasticity upon pressure, and sometimes with much difficulty of breathing, oppression, and anxiety.

We are to consider it as a disease by no means unattended with danger; but more probably from the causes which give rise to it, than any hazard from the complaint itself. In every species the air may be let out by very small punctures with a lancet; and a bandage applied where it can be used. The poisonous species requires the internal administration of the antidote for the particular poison; and the

other species is cured by anti-hysterical remedies.

PNEUMOGA'STRIC NERVE. (Πνευμων, the lung, and γαστηρ, the belly, so named from its distribution.) *Nervus vagus. Par vagum.* A nerve which arises on each side by many filaments, from the lateral part of the medulla oblongata, immediately below the origin of the glosso-pharyngeal nerve. It passes out of the cranium along with the glosso-pharyngeal nerve, through the foramen lacerum posterius. Immediately after quitting the cranium, it is slightly enlarged for about an inch of its course, forming what is called its *ganglionic* enlargement. It descends in the neck at the outer and back part of the common carotid artery, in the cellular sheath of which it is included. In the neck it gives off the *pharyngeal* branch, the *superior laryngeal*, and twigs which contribute to form the *cardiac plexus*. It passes into the chest between the subclavian artery and vein, giving off the *inferior laryngeal* or *recurrent nerve* which twines round the subclavian artery on the right side, and the aorta on the left. In the chest it sends twigs contributing to the formation of the *pulmonary* and *œsophageal plexuses*. Lastly, entering the abdomen, it is finally dispersed on the stomach, sending twigs to the omentum and to the neighbouring abdominal plexuses.

PNEU'MO-HÆMORRHA'GIA. The name given by Andral to hæmorrhage from the lungs, as opposed to *broncho-hæmorrhagia*, or hæmorrhage from the bronchia.

PNEUMO'NIA. (*a, æ.* f.; from πνευμων, a lung.) See *Pneumonitis.*

PNEUMONI'TIS. (*is, idis.* f.; from πνευμων, the lung, and *itis*, inflammation.) Inflammation of the lung. This disease has also been called *Pneumonia*, *Peripneumonia*, and *Peripneumonia vera.* It is characterised by fever, difficulty of breathing, cough, and a sense of weight and pain in the thorax. It is mostly produced by the application of cold to the body, which gives a check to the perspiration, and determines a great flow of blood to the lungs. It attacks principally those of a robust constitution and plethoric habit, and occurs most frequently in the winter season and spring of the year; but it may arise in either of the other seasons, when there are sudden vicissitudes from heat to cold.

Other causes, such as violent exertions in singing, speaking, or playing on wind instruments, by producing an increased action of the lungs, have been known to occasion peripneumony. Those who have laboured under a former attack of this complaint, are much predisposed to returns of it.

The true peripneumony comes on with an obtuse pain in the chest or side, great difficulty of breathing (particularly in a recumbent position, or when lying on the side affected), together with a cough, dryness of the skin, heat, anxiety, and thirst. At the commencement of the disease the pulse is usually full, strong, hard, and frequent; but in a more advanced stage it is commonly weak, soft, and often irregular. In the beginning, the cough is frequently dry and without expectoration; but in some cases it is moist, even from the first, and the matter spit up is various both in colour and consistence, and is often streaked with blood.

If relief is not afforded in time, and the inflammation proceeds with such violence as to endanger suffocation, the vessels of the neck will become turgid and swelled; the face will alter to a purple colour; an effusion of blood will take place into the cellular substance of the lungs, so as to impede the circulation through that organ, and the patient will soon be deprived of life.

If these violent symptoms do not arise, and the proper means for carrying off the inflammation have either been neglected, or have proved ineffectual, although adopted at an early period of the disease, a suppuration may ensue, which event is to be known by frequent slight shiverings, and an abatement of the pain and sense of fulness in the part, and by the patient being able to lie on the side which was effected, without experiencing great uneasiness.

When peripneumony is not resolved, an effusion of blood takes place into the pulmonary substance, which becomes dark coloured, ceases to crepitate, and emits a bloody serum when cut into, which is the *engoument du poumon* of the French pathologists: or coagulable lymph, is thrown out, and the lung becomes solid and of the appearance of liver; whence this state is called *hepatisation:* or lastly, inflammation of the lung may terminate in abscess more or less extensive. From the first of these three states, that of *engoument*, the affected part may recover so as to resume its former functions; but a hepatised portion of lung never recovers its natural texture. Large portions of the lung, however, may be hepatised, and yet the remaining healthy portions may be sufficient to carry on respiration; and the patient may live, though the breathing can never be free. An abscess of the lungs may break into the bronchial tubes; the matter may be expectorated, and the patient may recover. Where pneumonia is very intense, the whole substance of the lungs becomes infiltrated with purulent matter, a state which is necessarily and speedily fatal. Gangrene of the lungs is not common, but sometimes occurs, and chiefly in exhausted constitutions. It is indicated by the peculiar fœtor of the expectoration. Portions of the lungs have sloughed away, and yet the patient has recovered; but this is very uncommon. Generally speaking, when acute inflammation of the lungs produces the state of engoument, hepatisation, or abscess, to any extent, the case is fatal.

When it goes off by resolution, some very evident evacuation almost always attends it; such as a great flow of urine, with a copious sediment, diarrhœa, a sweat diffused over the whole body, or a hæmorrhage from the nose; but the evacuation which most frequently terminates the complaint, and which does it with the greatest effect, is a free and copious expectoration of thick white or yellow matter, slightly streaked with blood; and by this the disease is carried off generally in the course of ten or twelve days.

Our opinion as to the event is to be drawn from the symptoms which are present. A high degree of fever, attended with delirium, great difficulty of breathing, acute pain, and dry cough, denote great danger; on the contrary, an abatement of the febrile symptoms, and of the difficulty of breathing, and pain, taking place on the coming on of a free expectoration, or the occurrence of any other critical evacuation, promise fair for the recovery of the patient.

In the early period of this disease we may hope, by active measures, to bring about immediate resolution; but when it is more advanced, we must look for a discharge by expectoration, as the means of restoring the part to a healthy state. We should begin by large and free bleeding, not deterred by the obscure pulse sometimes found in peripneumony; carrying this evacuation to faintness, or to the manifest relief of the breathing. In the subsequent use of this measure, we must be guided by the violence of the disease on the one hand, and the strength of the patient on the other: the scrofulous, in particular, cannot bear it to any extent; and it is more especially in the early part of the complaint, that it produces a full and decisive effect. Under doubtful circumstances it will be better to take blood locally, particularly when there are pleuritic symptoms: blisters may be used at the same time. The bowels must be well evacuated in the first instance, and subsequently kept regular; and antimonials may be given with great advantage, to promote the discharges from the skin and lungs. Peripneumony is one of the cases in which the use of very large doses of emetic tartar has been especially advocated. It is a much less certain remedy however than blood-letting, and more permanently debilitating in its effects. See *Antimonium tartarizatum* and *Inflammation*. Digitalis is proper also, as lessening the activity of the circulation. The antiphlogistic regimen is to be observed, except that the patient will not bear too free exposure to cold. To quiet the cough, demulcents may be of some use, or cooling sialagogues; but where the urgency of the symptoms is lessened by copious depletion, opiates are more to be relied upon: a little syrup of poppy, for instance, swallowed slowly, from time to time: or a full dose of opium may be given at night to procure sleep, joined with calomel and antimony, that it may not heat the system, but, on the contrary, assist them in promoting the secretions. Inhaling steam will occasionally assist in bringing about expectoration; or, where there is a wheezing respiration, squill in nauseating, or sometimes even emetic, doses may relieve the patient from the viscid matter collected in the air passages. When the expectoration is copious in the decline of the complaint, tonic medicines, particularly myrrh, with a more nutritious diet, become necessary to support the strength; and the same means will be proper, if it should go on to suppuration. Where there is a pthisical disposition, inflammation of the lungs frequently occasions the rapid development of tubercles, and consumption ensues.

PNEUMO'NIC. (*Pneumonicus*; from πνευμων, the lung.) Appertaining to th lungs.

PNEUMOPLEURI'TIS. (*is, idis.* f.; from πνευμων, the lung, and πλευρα, the pleura.) An inflammation of the lungs and pleura.

PNIGA'LIUM. (*um, i.* n.; from πνιγω, to suffocate.) The nightmare. A disorder in which the patient appears to be suffocated.

PNIX. (From πνιγω, to suffocate.) A sense of suffocation.

Pod. See *Siliqua.*

PO'DAGRA. (*a, æ.* f.; from πους, the foot, and αγρα, a taking, or seizure.) See *Gout.*

PODAGRA'RIA. (*a, æ.* f.; from *podagra*, the gout: so called because it was thought to expel the gout.) See *Ægopodium.*

PODE'CIUM. (*um, ii.* n.; from πους, a foot.) The name given by Acharus to the peculiar footstalk of the tubercles in the cup lichens.

PODONI'PTRUM. (*um, i.* n.; from πους, a foot, and νιπτω, to wash.) A bath for the feet.

PODOPHY'LLUM. (*um, i.* n.; from πους, a foot, and φυλλον, a leaf: so named from the shape of the leaf.) A genus of North American plants.

PODOPHYLLUM PELTA'TUM. May apple. The fruit of this plant is edible. The root is cathartic in the dose of a scruple. The leaves are said to be poisonous.

PODOTHE'CA. (*a, æ.* f.; from πους, a foot, and τιθημι, to put.) A shoe or stocking. An anatomical preparation, consisting of a kind of shoe of the scarf-skin, with the nails adhering to it, taken from a dead subject.

POECI'LIA. (*a, æ.* f. Ποικιλια; from ποικιλος, *versicolor.*) The piebald skin, or that affection found among negroes, in which it is marbled with alternate spots, or patches of black and white.

POISON. *Venenum. Toxicum.* That which, when applied externally, or taken into the human body, uniformly effects such a derangement in the animal economy as to produce disease, may be defined a poison. It is extremely difficult, however, to give a definition of a poison; and the above is subject to great inaccuracy.

Poisons are divided, with respect to the kingdom to which they belong, into animal, vegetable, mineral, and halituous, or aërial.

Poisons, in general, are only deleterious in certain doses; for the most active, in small doses form the most valuable medicines. There are, nevertheless, certain poisons, which are really such in the smallest quantity, and which are never administered medicinally; as the poison of hydrophobia or the plague. There are likewise substances which are innocent when taken into the stomach, but which prove deleterious when taken into the lungs, or when applied to an abraded surface: thus carbonic acid is continually swallowed with fermented liquors, and thus the poison of the viper may be taken with impunity; whilst inspiring carbonic acid kills, and the poison of the viper, inserted into the flesh, often proves fatal.

Several substances also act as poisonous when applied either externally or internally; as arsenic.

When a substance produces disease, not only in mankind, but in all animals, it is distinguished

by the term *common poison;* as arsenic, sublimate, &c.; whilst that which is poisonous to man only, or to animals, and often to one genus merely, is said to be a *relative poison;* thus aloes are poisonous to dogs and wolves; the *phellandrium aquaticum* kills horses, whilst oxen devour it greedily, and with impunity. It appears, then, that substances act as poisons only in regard to their *dose, the part of the body they are applied to,* and the *subject.*

Poisons enter the body in the following ways: —

1. Through the œsophagus by deglutition.
2. Through the anus, by clysters.
3. Through the lungs, by inhalation.
4. Through the absorbents of the skin with or without lesion of the cuticle.

The manner in which poisons enter the system, and act upon the textures or organs peculiarly liable to their influence, has been matter of much discussion. It is evident that every poison must act in one of two ways, either by being absorbed into the blood, and conveyed by the circulation to the parts which they especially affect, or by an impression made on the nerves of the part to which they are applied and communicated to distant parts by sympathy. The discoveries of M. Magendie on venous absorption, have induced many to believe that all poisons act through the blood; but the extraordinary rapidity of the action of several poisons, as prussic acid, and the poison of several highly venomous serpents, appears almost conclusive against such a supposition, as far as these poisons are concerned. With reference to others of slower operation, it is unquestionable that they are absorbed into the circulation, whether this be the sole condition of their operation or not. On the whole it seems probable, that in this, as in most other cases, truth lies between the extremes, and that some poisons act solely through nervous sympathy, and that others act chiefly, if not entirely, through the medium of the circulation.

Poisons have been arranged by Orfila, into four classes, namely, *irritant, narcotic, narcotico-acrid,* and *septic* or putrefiant. Dr. Christison, with apparent propriety, excludes the last or septic class, thus reducing poisons to three classes. The following enumeration of poisons is taken from his excellent treatise on poisons.

I. Irritant Poisons.

The characteristic operation of these is to excite inflammation of the alimentary canal in some part, or throughout the whole of its course. To this class belong

The three Mineral Acids.
Phosphorus.
Sulphur.
Chlorine.
Iodine.
Hydriodate of potash.
Bromine.
Oxalic acid.
The fixed alkalis.
Nitre.
Alkaline and earthy chlorides.
Lime.
Ammonia and its salts.
Alkaline sulphurets.
The compounds of arsenic.
The compounds of mercury.
The compounds of copper.
The compounds of antimony.
The compounds of tin, silver, gold, bismuth, chrome, and zinc.
The compounds of lead.
Baryta.
Euphorbia.
Castor oil seeds.
Physic nut.
Bitter cassada.
Manchineel.
Croton.
Bryony.
Colocynth.
Elaterium.
Ranunculus.
Anemone.
Caltha.
Clematis.
Trollius.
Mezereon.
Cuckoo-pint.
Gamboge.
Daffodil.
Jalap.
Savin.
Cantharides.
Poisonous fish.
Venomous serpents and insects.
Diseased and decayed animal matter.
Mechanical irritants.

II. Narcotic Poisons.

These are such as produce chiefly, or solely, symptoms of disorder of the nervous system. To this class belong

Opium.
Hyoscyamus.
Lactuca.
Solanum.
Hydrocyanic acid.
The vegetable substances which contain hydrocyanic acid — Bitter almonds — Cherry-laurel — Peach — Cluster cherry — Mountain ash.
Carbazotic acid.
Nitric oxide gas.
Chlorine gas.
Ammoniacal gas.
Muriatic acid gas.
Sulphuretted hydrogen.
Carburetted hydrogen.
Carbonic acid.
Carbonic oxide.
Nitrous oxide.
Cyanogen.
Oxygen.

III. Narcotico-acrid Poisons.

These possess a double action, being both local irritants, like those of the first class, and producing a remote effect on the nervous system, like those of the second. To this class belong

Nightshade.
Thornapple.
Tobacco.
Hemlock.
Water hemlock.
Hemlock dropwort.
Fool's parsley.

Monk's-hood.
Black hellebore.
Ipecacuan.
Squill.
White hellebore.
Meadow saffron.
Fox-glove.
Strychnia.
Nux vomica.
St. Ignatius's bean.
False angustura.
Camphor.
Cocculus indicus.
Upas antiar.
Coriaria myrtifolia.
Poisonous fungi.
Poisonous mosses.
Secale cornutum.
Mouldy bread.
Darnel grass.
Seeds of lathyrus cicera.
Seeds of the bitter vetch.
Seeds of the common laburnum.
Alkohol.
Ether.
Some empyreumatic oils.

Method of detecting Poisons.

When sudden death is suspected to have been occasioned by the administration of poison, either willfully or by accident, the testimony of the physician is occasionally required to confirm or invalidate this suspicion. He may also be sometimes called upon to ascertain the cause of the noxious effects arising from the presence of poisonous substances in articles of diet; and it may, therefore, serve an important purpose, to point out concisely the simplest and most practicable modes of obtaining, by experiment, the necessary information.

The only poisons, however, that can be clearly and decisively detected by chemical means, are those of the mineral kingdom. Arsenic and corrosive sublimate are most likely to be exhibited with the view of producing death; and lead and copper may be introduced undesignedly, in several ways, into our food and drink. The continued and unsuspected operation of the two last may often produce effects less sudden and violent, but not less baneful to health and life, than the more active poisons; and their operation generally involves, in the pernicious consequences, a greater number of sufferers.

Method of detecting arsenic. This is detailed under the head *Arsenious acid.*

Method of detecting corrosive sublimate, baryta, &c. — Corrosive sublimate (the bichloride or oxymuriate of mercury), next to arsenic, is the most virulent of the metallic poisons. It may be collected by treating the contents of the stomach in the manner already described; but as it is more soluble than arsenic, viz. in about nineteen times its weight of water, no more water must be employed than is barely sufficient, and the washings must be carefully preserved for examination.

If a powder should be collected by this operation, which proves, on examination, not to be arsenic, it may be known to be corrosive sublimate by the following characters: —

A. Expose a small quantity of it, without any admixture, to heat in a coated glass tube, as directed in the treatment of arsenic. Corrosive sublimate will be ascertained by its rising to the top of the tube, lining the inner surface in the form of a shining white crust.

B. Dissolve another portion in distilled water; and it may be proper to observe how much of the salt the water is capable of taking up.

C. To the watery solution add a little lime-water. A precipitate of an orange-yellow colour will instantly appear.

D. To another portion of the solution add a single drop of a dilute solution of subcarbonate of potash (salt of tartar). A white precipitate will appear: but, on a still further addition of alkali, an orange-coloured sediment will be formed.

E. The carbonate of soda has similar effects.

F. Sulphuretted water throws down a dark-coloured sediment, which, when dried and strongly heated, is wholly volatilised, without any odour of garlic.

For the detection of corrosive sublimate, Sylvester has recommended the application of galvanism, which exhibits the mercury in a metallic state. A piece of zinc wire, or, if that cannot be had, of iron wire about three inches long, is to be twice bent at right angles, so as to resemble the Greek letter Π. The two legs of this figure should be distant about the diameter of a common gold wedding ring from each other, and the two ends of the bent wire must afterwards be tied to a ring of this description. Let a plate of glass, not less than three inches square, be laid as nearly horizontal as possible, and on one side drop some sulphuric acid, diluted with about six times its weight of water, till it spreads to the size of a halfpenny. At a little distance from this, towards the other side, next drop some of the solution supposed to contain corrosive sublimate, till the edges of the two liquids join together; and let the wire and ring prepared as above be laid in such a way that the wire may touch the acid, while the gold ring is in contact with the suspected liquid. If the minutest quantity of corrosive sublimate be present, the ring in a few minutes will be covered with mercury on the part which touched the fluid.

Smithson remarks, that all the oxides and saline compounds of mercury, if laid in a drop of marine acid on gold, with a bit of tin, quickly amalgamate the gold. In this way, a very minute quantity of corrosive sublimate, or a drop of its solution, may be tried, and no addition of muriatic acid is then required. Quantities of mercury may thus be rendered evident, which could not be so by any other means. Even the mercury of cinnabar may be exhibited; but it must previously be boiled with a little sulphuric acid in a platinum spoon, to convert it into sulphate. An exceedingly minute quantity of metallic mercury in any powder may be discovered by placing it in nitric acid on gold, drying, and adding muriatic acid and tin.

The only mineral poison of great virulence that has not been mentioned, and which, from its being little known to act as such, it is very

improbable we should meet with, is the carbonate of baryta. This, in the country where it is found, is employed as a poison for rats, and there can be no doubt would be equally destructive to human life. It may be discovered by dissolving it in muriatic acid, and by the insolubility of the precipitate which this solution yields on adding sulphuric acid, or sulphate of soda. Soluble barytic salts, if these have been the means of poison, will be contained in the water employed to wash the contents of the stomach, and will be detected, on adding sulphuric acid, by a copious precipitate.

It may be proper to observe, that the failure of attempts to discover poisonous substances in the alimentary canal after death, is by no means a sufficient proof that death has not been occasioned by poison. For it has been clearly established, by experiments made on animals, that a poison may be so completely evacuated, that no traces of it shall be found, and yet that death may ensue from the morbid changes which it has occasioned in the alimentary canal, or in the general system.

Method of detecting copper or lead. — Copper and lead sometimes gain admission into articles of food, in consequence of the employment of kitchen utensils of these materials.

1. If copper be suspected in any liquor, its presence will be ascertained by adding a solution of pure ammonia, which will strike a beautiful blue colour. If the solution be very dilute, it may be concentrated by evaporation; and if the liquor contain a considerable excess of acid, like that used to preserve pickles, as much of the alkali must be added as is more than sufficient to saturate the acid. In this, and all other experiments of the same kind, the fluid should be viewed by reflected, and not by transmitted light.

If into a newly preparedt incture of guaiacum wood we drop a concentrated solution of a salt of copper, the mixture instantly assumes a blue colour. This effect does not take place when the solution is very weak, for example, when there is not above half a grain of the salt to an ounce of water; but then, by the addition of a few drops of prussic acid, the blue colour is instantly developed of great purity and intensity. This colour is not permanent, but soon passes to a green, and at length totally disappears. For want of prussic acid, distilled laurel water may be employed. The test produces its effect, even when the proportion of the salt of copper to the water does not exceed 1-45000th. In this minute proportion no other test, whether the prussiate of potash, soda, or ammonia, gives the least indication of copper. — *Quart. Journ.* x. 182.

2. Lead is occasionally found, in sufficient quantity to be injurious to health, in water that has passed through leaden pipes, or been kept in leaden vessels, and sometimes even in pump water, in consequence of that metal having been used in the construction of the pump. Acetate of lead has also been known to be fraudulently added to bad wines, with the view of concealing their defects.

Lead may be discovered by adding, to a portion of the suspected water, about half its bulk of water impregnated with sulphuretted hydrogen gas. If lead be present, it will be manifested by a dark brown or blackish tinge. This test is so delicate, that water condensed by the leaden worm of a still-tub, is sensibly affected by it. Lead is also detected by a similar effect ensuing on the addition of sulphuret of ammonia, or potash.

The adequacy of this method, however, to the discovery of very minute quantities of lead, has been set aside by the experiments of Dr. Lambe, the author of a skilful analysis of the springs of Leamington Priors, near Warwick. By new methods of examination, he has detected the presence of lead in several spring waters that manifest no change on the addition of the sulphuretted test; and has found that metal in the precipitate separated from such waters by the carbonate of potash, or of soda. In operating on these waters, Dr. Lambe noticed the following appearances: —

a. The test forms sometimes a dark cloud, with the precipitate affected by alkalies, which has been re-dissolved in nitric acid.

b. Though it forms, in other cases, no cloud, the precipitate itself becomes darkened by the sulphuretted test.

c. The test forms a white cloud, treated with the precipitate as in *a*. These two appearances may be united.

d. The test neither forms a cloud, nor darkens the precipitate.

e. In the cases *b*, *c*, *d*, heat the precipitate, in contact with an alkaline carbonate, to redness; dissolve out the carbonate by water, and treat the precipitate as in *a*. The sulphuretted test then forms a dark cloud with the solution of the precipitate. In these experiments, it is essential that the acid, used to re-dissolve the precipitate, shall not be in excess; and if it should so happen, that excess must be saturated before the test is applied. It is better to use so little acid, that some of the precipitate may remain undissolved.

f. Instead of the process *e*, the precipitate may be exposed, without addition, to a red heat, and then treated as in *a*. In this case, the test will detect the metallic matter; but with less certainty than the foregoing one.

The nitric acid used in these experiments should be perfectly pure; and the test should be recently prepared by saturating water with sulphuretted hydrogen gas. A few drops of nitric acid, added to a water containing lead, which has been reduced to 1-8th or 1-10th its bulk by evaporation, and then followed by the addition of a few drops of hydriodate of potash, produces a yellow insoluble precipitate.

Another mode of analysis, employed by Dr. Lambe, consists in precipitating the lead by solution of common salt; but as muriate of lead is partly soluble in water, this test cannot be applied to small portions of suspected water. The precipitate must be, therefore, collected from two or three gallons, and heated to redness with twice its weight of carbonate of soda. Dissolve out the soda; add nitric acid, saturating any superfluity, and then apply the sulphuretted test. Sulphate of soda would be

found more effectual in this process than the muriate, on account of the greater insolubility of sulphate of lead. This property, indeed, renders sulphate of soda an excellent test of the presence of lead, when held in solution by acids, for it throws down that metal, even when present in very small quantity, in the form of a heavy white precipitate, which is not soluble by acetic acid.

The third process, which is the most satisfactory of all, and is very easy, except for the trouble of collecting a large quantity of precipitate, is the actual reduction of the metal, and its exhibition in a separate form. The precipitate may be mixed with its own weight of alkaline carbonate, and exposed either with or without the addition of a small proportion of charcoal, to a heat sufficient to melt the alkali. On breaking the crucible, a small globule of lead will be found reduced at the bottom. The precipitate from about fifty gallons of water yielded Dr. Lambe, in one instance, about two grains of lead.

For discovering the presence of lead in wine, a test invented by Dr. Hahnemann, and known by the title of Hahnemann's wine test, may be employed. This test is prepared by putting together, into a small phial, sixteen grains of sulphuret of lime, prepared in the dry way (by exposing to a red heat, in a covered crucible, equal weights of powdered lime and sulphur, accurately mixed), and twenty grains of bitartrate of potash (cream of tartar). The phial is to be filled with water, well corked, and occasionally shaken for the space of ten minutes. When the powder has subsided, decant the clear liquor, and preserve it in a well-stopped bottle for use. The liquor, when fresh prepared, discovers lead by a dark-coloured precipitate. A farther proof of the presence of lead in wines is the occurrence of a precipitate on adding a solution of the sulphate of soda.

Sylvester has proposed the gallic acid as an excellent test of the presence of lead.

The quantity of lead which has been detected in sophisticated wine may be estimated at forty grains of the metal in every fifty gallons.

When a considerable quantity of acetate of lead has been taken into the stomach (as sometimes, owing to its sweet taste, happens to children), after the exhibition of an active emetic, the hydro-sulphuret of potash or of ammonia may be given; or probably a solution of sulphate of soda (Glauber's salt) would render it innoxious. — *Henry's Chemistry.*

Treatment of Poisoning.

In the instance of internal poisoning, the great object of the physician is to administer an antidote or counterpoison. Antidotes are of two kinds. One kind takes away the deleterious qualities of the poison before it comes within its sphere of action, by altering its chemical nature. The other controls its poisonous action after it has begun, by exciting a contrary action in the system. In the early ages of medicine almost all antidotes were believed to be of the latter description, but in fact very few antidotes of the kind are known.

The chemical antidotes operate in several ways, according to the mode of action of the poison for which they are given. If the poison is a pure corrosive, such as a mineral acid, it will be sufficient that the antidote destroy its corrosive quality: thus the addition of an alkali or earth will neutralize sulphuric acid, and destroy, or at least prodigiously lessen its poisonous properties. In applying this rule care must be taken to choose an antidote which is either inert, or, if poisonous, is, like the poison for which it is given, a pure corrosive or local irritant, and one whose properties are reciprocally neutralized.

If the poison, on the other hand, besides possessing a local action, likewise acts remotely through absorption, or by an impression on the inner coat of the vessels, mere neutralization of its chemical properties is not sufficient; for we have seen above that such poisons act throughout all their chemical combinations which are soluble. Here, therefore, it is necessary that the chemical antidote render the poison insoluble or nearly so; and insoluble not only in water, but likewise in the animal fluids, more particularly the juices of the stomach. The same quality is desirable even in the antidotes for the pure corrosives; for it often happens that in their soluble combinations these substances retain some irritating, though not any corrosive power. When we try by the foregoing criterions many of the antidotes which have been proposed for various poisons, they will be found defective, as precise experiments have in recent times actually proved them to be.

The other kind of antidote operates not by altering the form of the poison, but by exciting in the system an action contrary to that established by the poison. On considering attentively, however, the phenomena of the action of individual poisons, it will be found exceedingly difficult to say what is the essence of a contrary action, and still more how that counter action is to be brought about. Accordingly, few antidotes of the kind are known. Neither physiology nor experience has yet brought to light any mode of inducing an action counter to that caused by arsenic and most of the irritant class of poisons. It appears probable that the remote operation of lead may be sometimes corrected by mercury given to salivation, and that the violent salivation caused by mercury may be occasionally corrected by nauseating doses of antimony. But these are the only instances which occur to me at present of antidotes for irritant poisoning which operate by counter action, unless we choose to designate by the name of antidote the conjunction of remedial means which constitute the antiphlogistic method of cure. In the class of narcotics we are acquainted with equally few constitutional antidotes, although the nature of the action of these poisons seems better to admit of them. Ammonia is to a certain extent an antidote for hydrocyanic acid, but by no means so powerful as some persons believe; and it is doubtful whether in this class of poisons we can with any propriety mention another antidote of the constitutional kind.

On the whole, then, it is chiefly among the changes induced by chemical affinities that the practitioner must look for counter-poisons; and the ingenuity of the toxicologist has thence supplied the materia medica with many of singular efficacy. When given in time, magnesia or chalk is a complete antidote for the mineral acids and oxalic acid, albumen for corrosive sublimate and verdigris, bark for tartar emetic, common salt for lunar caustic, sulphate of soda or magnesia for sugar of lead and muriate of baryta, chloride of lime or soda for liver of sulphur, vinegar, or oil for the fixed alkalis; and these substances act either by neutralizing the corrosive power of the poison, or by forming with it an insoluble compound.

In the instance of external poisoning the main object of the practitioner is to prevent the poison from entering the blood, or to remove it from the local vessels which it has entered.

One mode which has been known to the profession from early times, and after being long in disuse was lately revived by Dr. Barry, and applied with success to man, is the application of cupping glasses to the part where the poison has been introduced. This method may act in various ways. It certainly prevents the farther absorption of the poison by suspending for a time the absorbing power of the vessels of the part covered by the cup. It also sucks the blood out of the wound, and consequently washes the poison away with it. But it possibly it likewise compresses the nerves around, and prevents the impression made by the poison on their sentient extremities from being transmitted along their filaments.

Another mode is by the application of a ligature between the injured part and the trunk, so as to check the circulation. This is a very ancient practice in the case of poisoned wounds, and is known even to savages. But as usually practised it is only a temporary cure. As soon as the ligature is removed the effects of the poison begin. It may be employed, however, for many kinds of poisoning through wounds, so as to effect a radical cure. We have seen that most poisons of the organic kingdom are in no long time either thrown off by the system or decomposed in the blood; hence, if the quantity given has not been too large, recovery will take place. Now, by means of a ligature, which is removed for a short time at moderately distant intervals, a poison, which has been introduced into a wound beyond the reach of extraction, may be gradually admitted into the system in successive quantities, each too small to cause death or serious mischief, and be thus in the end entirely removed and destroyed. Such is a practical application which may be made of some ingenious experiments performed not long ago by M. Bouillaud with strychnia, the poisonous principle of nux vomica.

The last mode to be mentioned is by a combination of the ligature with venesection, deduced by M. Vernière from his experimental researches. Suppose a fatal dose of extract of nux vomica has been thrust into the paw of a dog; M. Vernière applies a tight ligature round the limb, next injects slowly as much warm water into the jugular vein as the animal can safely bear, and then slackens the ligature. The state of venous *plethora* thus induced completely suspends absorption. The ligature is next tied so as to compress the veins without compressing the arteries of the limb, and a vein is opened between the wound and the ligature in such a situation, that the blood which flows out must previously pass through, or at least near, the poisonous wound. When a moderate quantity has been withdrawn, the ligature may be removed with safety; and the extraction of the poison may be farther proved by the blood that has been drawn being injected into the veins of another animal; for rapid death by tetanus will be the result. It is not improbable that in this plan the preliminary production of venous plethora may be dispensed with; and then the treatment may be easily and safely applied to the human subject. — *Christison.*

The following is a brief sketch of the treatment, in cases of the effects of some of the principal poisons.

Arsenic. For the treatment of poisoning by arsenic, see *Arsenious acid.*

Bismuth. No specific antidote is known for the oxide, or for the subnitrate of this metal. Milk and mucilaginous diluents should be given along with purgatives.

Salts of copper. The sulphurets of the alkalis, sugar, and albumen, have all gained reputation as antidotes to these poisons: the alkaline sulphurets are now entirely disregarded; albumen and sugar have each been made the subject of recent experiments, and both appear to be of some utility, though neither have any claim to rank as specifics.

Emetic tartar. See *Antimonium tartarizatum.*

Preparations of lead. The antidote to these is Epsom or Glauber's salts, the acid of which forms an insoluble and harmless sulphate.

Preparations of mercury. The only one of these much known as a poison is the corrosive sublimate. Its antidote is albumen: as soon, therefore, as it is known to have been swallowed, the white of eggs should be given, mixed with water, every two or three minutes. If eggs cannot be obtained, large draughts of milk may be useful as a substitute. Inflammation is to be combated by the ordinary means, as also the ptyalism occasioned by this in common with the other preparations of mercury.

Preparations of silver. Of these the nitrate only requires to be noticed. It is decomposed by muriate of soda. A table-spoonful of common salt may be dissolved in a pint of water, and a wine glassful given every five minutes. This may be followed by mucilaginous drinks.

Preparations of tin. These are decomposed by all vegetable infusions and animal fluids. Milk is as good an antidote as any.

Zinc. The sulphate of zinc or white vitriol will generally prove an antidote to itself, being one of the most powerful emetics known. The vomiting should be encouraged by diluents, and any bad consequences that may ensue, treated on ordinary principles.

Little is known of the effects of the oxide; it is however poisonous.

The mineral acids. When the sulphuric, nitric, or muriatic acid has been swallowed, calcined magnesia mixed with water should be immediately administered; or if this be not at hand, chalk, which can almost always be procured in one form or another, may be substituted for it. Neither chalk nor the alkaline carbonates are to be preferred, on account of the great extrication of gas occasioned by their decomposition; but either these or soap may be given in the absence of the more appropriate antidote. Water alone should not be given in the case of poisoning by sulphuric acid, on account of the strong heat generated by their mixture. Bland diluents are to be used when the acid is neutralised. Inflammation is to be obviated by the ordinary means.

Oxalic acid. The antidote for this is calcined magnesia or chalk, which give rise to the formation of insoluble salts. Alkalis are little better than useless, as they form with soluble salts, which are themselves irritant poisons, though in a less degree than the acid.

Hydrocyanic acid. In any considerable dose this is almost immediately fatal. The exhibition of strong stimuli, as brandy, ammonia, &c., form the only treatment likely to be useful. Emetics promise little on account of the highly diffusible nature of the poison.

Alkalis and their carbonates. These are best neutralised by vinegar.

Nitre. Mucilaginous diluents and opium are most serviceable: bleeding may also be required.

Lime. For this also the best antidote is vinegar.

Baryta and its salts. Sulphate of magnesia causes the formation of an insoluble sulphate, and should therefore be given largely, diluted with water.

Muriate of ammonia. Vomiting is to be encouraged by large draughts of warm water, and inflammatory or nervous symptoms to be treated in the ordinary way.

Phosphorus. No antidote is known for this. Large draughts of water are naturally indicated.

Alkohol. The effects of excessive intoxication from alkoholic liquors, are best counteracted by the immediate use of a strong emetic, as the sulphate of zinc or copper. Vomiting should be encouraged by draughts of warm water, and the intestines stimulated by saline enemata. Should there appear to be great determination of blood to the head, venesection and the application of cold to the head are indicated.

Acrid vegetable poisons. For these we have no specific antidote. The fruit of the *Fevillea cordifolia*, has indeed been recommended by M. Drapier, on the strength of numerous experiments, as possessed of great power; but these experiments require confirmation. The same general treatment is applicable in all cases of poisoning by acrid vegetable substances. If the poison has occasioned vomiting, it is to be encouraged by large draughts of warm water; and if the sensibility of the stomach has been over powered, vomiting is to be excited by the sulphate of zinc or other active emetic (not antimony), and the intestines stimulated by purgatives which are not of an acrid character. Inflammation of particular textures is to be treated on the usual principles.

Narcotic and narcotico-acrid vegetable poisons. The first indication is to evacuate the stomach by the sulphate of zinc, copper, or other active emetic, and to clear the bowels by strong cathartics administered by the mouth and rectum. When the poison is evacuated, a strong infusion of coffee or vinegar, diluted with water, may be given with advantage. Determination of blood to the head, and inflammation of particular textures are to be obviated by the usual means, but with due reference to the depressed state of the nervous power. If the surface become cold, friction, and the application of warmth are indicated, and the internal use of ammonia may sometimes be useful.

Poison of fish. The symptoms arising from eating poisonous fish, are so anomalous and variable, that general rules for their treatment can hardly be given, and the practitioner is thrown on his individual judgment in each particular case; vomiting and purging, and diluents, are indicated to get rid of the offending matter, and weak alkaline solutions have been thought useful. Spasm is to be allayed by opium, and inflammation by the ordinary means.

Cantharides. Sweet oil should be given in large quantity to excite vomiting, and linseed tea or milk, as a demulcent. Emollient enemata are to be administered. Inflammation of the intestinal canal or urinary passages is to be treated on ordinary principles.

Bite of venomous serpents. The first indication is to prevent the absorption of the poison, which is fulfilled by the instantaneous application of a tight ligature above the wound. The bitten part is then to be cut out, or destroyed by caustic. The application of a dry cupping-glass may suspend the absorption of the poison but such an apparatus is seldom at hand, under circumstances in which persons are liable to be bitten by serpents, and it also requires to be removed before the knife or caustic can be applied to the part; the ligature is, therefore every way preferable. Immediately sucking the wound is an efficacious mode of extracting at least some of the poison, and it may be done with impunity, if the cuticle of the lips and lining membrane of the mouth be every where entire. The second indication is to support the system against the effect of the virus, if absorbed: this is to be attempted by the use of powerful stimulants, especially ammoni combined with diaphoretics. The Tanjore pil so celebrated in India as an antidote to the bites of serpents, is said to consist of arseni pepper, mercury, and the juice of the *Asclepia gigantea*. The inflammation of the surrounding parts, which follows the bite of some serpents, is of the unhealthy kind, tending to gangrene, and is to be treated accordingly.

Venomous insects. Hartshorn and oil may be gently rubbed on the injured part; and much inflammation ensue, an emollient poultice may be applied.

Poison-oak. See *Rhus toxicodendron.*

POLEMO'NIUM. (*um, ii.* n.; an a

ient name derived from πολεμος, war, because, ccording to Pliny, kings had contended for he honour of its discovery.) 1. The name of a enus of plants in the Linnæan system. Class, *Pentandria*; Order, *Monogynia*.

2. Wild sage, or *Teucrium scorodonia* of Linæus.

POLEMONIUM CÆRULEUM. The systematic ame of the Greek valerian, or Jacob's ladder, he root of which is esteemed by some as a good stringent against diarrhœas and dysentery.

Poley-mountain. See *Teucrium*.

POLIO'SIS. (*is, is.* f.; from πολος, *canidus*, white or hoary.) A disease of the hairs, which they are prematurely gray or hoary.

PO'LIUM. (*um, ii.* n.; from πολιος, white: called from its white capillaments.) Poley. *Teucrium* of Linnæus.

Polium creticum. See *Teucrium*.

Polium montanum. See *Teucrium*.

Pollack. See *Gadus pollacius*.

PO'LLEN. (*en. inis.* n.; fine flour or ust.) Farina of flowers. The powder which lheres to the anthers of the flowers of plants, nd which is contained in the anther, and is rown out chiefly in warm dry weather, when he coat of the latter contracts and bursts. The ollen, though to the naked eye a fine powder, nd light enough to be wafted along by the air, so curiously formed, and so various in different plants, as to be an interesting and popular bject for the microscope. It is so minute, hat the naked eye cannot see its beauty; but, y the assistance of a glass, it is found to be ery different in different plants. Each grain it is commonly a membranous bag, round, angular, rough or smooth, which remains ntire till it meets with any moisture, being ontrary in this respect to the nature of the ather; then it bursts with great force, discharging its subtile and vivifying vapour. It is,

1. *Echinate* in the *Helianthus annuus*.
2. *Perforate* in *Geraniums*.
3. *Didymous* in *Symphytum*.
4. *Dentate* in *Mallow*.
5. *Angulate* in *Viola odorata*.
6. *Reniforme* in *Narcissus*; and,
7. *Convolute* in *Borago*.

PO'LLENIN. The pollen of tulips has been certained by professor John to contain a peliar substance, insoluble in alkohol, ether, ater, oil of turpentine, naphtha, carbonated d pure alkalis; extremely combustible, rning with great rapidity and flame; and nce used at the theatres to imitate lightning.

PO'LLEX. (*ex, icis.* m.; so called, *quod el potestate inter ceteros digitus plurimum pot-t.*) The thumb, or great toe.

POLYADE'LPHIA. (*a, æ.* f.; from πολυς, any, and αδελφος, a brother.) The name a class of plants in the sexual system of nnæus, embracing plants with hermaphrodite owers, in which several stamina are united their filaments into three or more distinct ndles.

POLYA'NDRIA. (*a, æ.* f.; from πολυς, any, and ανηρ, a husband.) The name of a ass of plants in the sexual system of Linnæus. consists of plants with hermaphrodite flowers, furnished with several stamina, that are inserted into the common receptacle of the flower; by which circumstance this class is distinguished from *Icosandria*, in which the striking character is the situation of the stamina on the calyx or petals.

POLYCHRE'STUS. (From πολυς, much, and χρηστος, useful.) Polychrest. Having many virtues, or uses. An epithet formerly applied to several medicines, especially sulphate of potash. See *Sal polychrestus*.

POLY'CHROITE. (From πολυς, many, and χροα, colour: so called because it is susceptible of so many changes of colour.) The colouring matter of saffron. Its solution in water or alkohol is bright yellow. Sulphuric acid turns it first blue, and then lilac. Nitric acid gives it a green tint.

POLYDI'PSIA. (*a, æ.* f.; from πολυς, much, and διψη, thirst.) Excessive thirst. It is mostly symptomatic of fever, dropsy, excessive discharges, or poisons. See *Thirst*.

POLY'GALA. (*a, æ.* f.; from πολυς, much, and γαλα, milk: so named from the abundance of its milky juice.) 1. The name of a genus of plants in the Linnæan system. Class, *Diadelphia*; Order, *Octandria*.

2. The pharmacopœial name of the common milk-wort. See *Polygala vulgaris*.

POLYGALA AMARA. This is a remarkably bitter plant, and, though not used in this country, promises to be as efficacious as those in greater repute. It has been given freely in phthisis pulmonalis, and, like other remedies, failed in producing a cure; yet, as a palliative, it claims attention. Its virtues are balsamic, demulcent, and corroborant.

POLYGALA SENEGA. The systematic name of the rattlesnake milk-wort. *Seneka. Polygala —floribus imperbibus spicatis, caule erecto herbaceo simplicissimo, foliis ovato-lanceolatis*, of Linnæus. The root of this plant was formerly much esteemed as a specific against the poison of the rattlesnake, and as an antiphlogistic in pleurisy, pneumonia, &c.; but it is now very little employed. Its dose is from ten to twenty grains; but when employed, it is generally used in the form of decoction, which, when prepared according to the formula of the Edinburgh Pharmacopœia, may be given every second or third hour.

POLYGALA VULGARIS. The systematic name of the common milk-wort. The root of this plant is somewhat similar in taste to that of the seneka, but much weaker. The leaves are very bitter, and a handful of them, infused in wine, is said to be a safe and gentle purge.

POLYGALIC ACID. An acid lately found by Peschier in the *Polygala senega*, and other species.

POLY'GALINE. A bitter alkaline principle found in several species of polygala.

POLYGA'MIA. (*a, æ.* f.; from πολυς, many, and γαμος, a marriage. Polygamy.) The name of a class of plants in the sexual system of Linnæus, consisting of polygamous plants, or plants having hermaphrodite flowers, and likewise male and female flowers, or both. The orders of this division are, according to the

beautiful uniformity or plan which runs through this ingenious system, distinguished upon the principles of the Classes *Monœcia*, *Diœcia*, and *Triœcia*. It has the five following orders: —

1. *Polygamia æqualis.* The name of an order of Class *Syngenesia*, of the sexual system of plants. The florets are all perfect or united; that is, each furnished with perfect stamens.

2. *Polygamia frustranea.* Florets of the disk, with stamens and pistil: those of the radius with merely an abortive pistil, or with not even the rudiments of any.

3. *Polygamia necessaria.* Florets of the disk, with stamens only: those of the radius, with pistils only.

4. *Polygamia segregata.* Several flowers, either simple or compound, but with united anthers, and with a proper calyx, included in one common calyx.

5. *Polygamia superflua.* Florets of the disk, with stamens and pistil: those of the radius with pistil only; but each, of both kinds, forming perfect seed.

POLYGO'NATUM. (*um*, *i.* n.; from πολυς, many, and γονυ, a joint: so named from its numerous joints or knots.) Solomon's seal. See *Convallaria polygonatum.*

POLY'GONUM. (*um*, *i.* n.; from πολυς, many, and γονυ, a joint: so named from its numerous joints.) The name of a genus of plants in the Linnæan system. Class, *Octandria*; Order, *Trigynia*. Knot-grass.

Polygonum aviculare. The systematic name of the knot-grass. *Centumnodia. Polygonum latifolium. Polygonum mas. Sanguinaria.* This plant is never used in this country: it is said to be useful in stopping hæmorrhages, diarrhœas, &c; but little credit is to be given to this account.

Polygonum bacci'ferum. A species of equisetum, or horse-tail.

Polygonum bistorta. The systematic name of the officinal bistort, called *bistorta* in the pharmacopœias. *Polygonum — caule simplicissimo monostachio, foliis ovatis in petiolum decurrentibus,* of Linnæus. This plant is a native of Britain. Every part manifests a degree of stypticity to the taste, and the root is esteemed to be one of the most powerful of the vegetable astringents, and frequently made use of as such in disorders proceeding from a laxity and debility of the solids, for restraining alvine fluxes, after due evacuations, and other preternatural discharges both serous and sanguineous. It has been sometimes given in intermittent fevers; and sometimes, also, in small doses, as a corroborant and antiseptic, in acute malignant and colliquative fevers; in which intentions Peruvian bark has now deservedly superseded both these and all other astringents. The common dose of bistort root, in substance, is fifteen or twenty grains: in urgent cases it is extended to a drachm. Its astringent matter is totally dissolved both by water and rectified spirits.

Polygonum divaricatum. The systematic name of the eastern buck-wheat plant. The roots, reduced to a coarse meal, are an ordinary food of the Siberians.

Polygonum fago'pyrum. The systematic name of the buck-wheat, the grain of which is in common use for making bread in Russia, Germany, and Switzerland.

Polygonum hydro'piper. The systematic name of the poor man's pepper: called also, biting arsmart, lake-weed, and water-pepper; and *Hydropiper* in the pharmacopœias. This plant is very common by the sides of our ditches and on waste lands: the leaves have an acrid burning taste, and seem to be nearly of the same nature with those of the arum. They have been recommended as possessing antiseptic, aperient, diuretic virtues; and given in scurvies and cachexies, asthmas, hypocondriacal and nephritic complaints, and wandering gout. A decoction of the leaves is used in Persia as a gargle against ulcerated sore throat with fever (our malignant sore throat). The first leaves have been applied externally, as a stimulating cataplasm.

Polygonum latifolium. Common knot-grass. See *Polygonum aviculare.*

Polygonum mas. See *Polygonum aviculare.*

Polygonum minus. Rupture-wort. See *Herniaria glabra.*

Polygonum persicaria. The systematic name of the *Persicaria* of the old pharmacopœias. *Persicaria mitis. Plumbago.* This plant is said to possess vulnerary and antiseptic properties; with which intentions it is given in wine to restrain the progress of gangrene.

Polygonum selenoides. Parsley break-stone.

POLYPE'TALOUS. (*Polypetalus*; from πολυς, many, and πεταλον, a leaf.) Many-petaled.

POLYPHY'LLOUS. (*Polyphyllus*; from πολυς, many, and φυλλον, a leaf.) Many-leaved.

POLYPO'DIUM. (*um*, *ii.* n.; from πολυς, many, and πους, a foot: so called because it has many roots.) The name of a genus of plants in the Linnæan system. Class, *Cryptogamia*; Order, *Filices.* Fern, or polypody.

Polypodium aculeatum. Spear-pointed fern. Fallen into disuse.

Polypodium barometz. This singular fern is commonly called the Tartarean or Scythian lamb; having more or less resemblance to a lamb. It is now referred to the genus *Aspidium.*

Polypodium calaguala. The root of this plant, called in the shops *radix calaluallæ*, has been exhibited internally, with success, in dropsy; and it is said to be efficacious in pleurisy, contusions, abscesses, &c. It was first used in America, where it is obtained; and Italian physicians have since written concerning it, in terms of approbation.

Polypodium filix mas. See *Aspidium.*

Polypodium quercinum. See *Polypodium vulgare.*

Polypodium vulgare. Polypody of the oak. *Polypodium quercinum.* The root has a sweetish taste: a decoction of it was formerly used as a purgative.

Polypody of the oak. See *Polypodium vulgare.*

PO'LYPUS. (*us*, *i.* m.; from πολυς, many, and πους, a foot: from its sending off many ramifications, like legs.) 1. The name of a genus of zoophytes.

2. A tumour, most commonly met with in the nose, uterus, or vagina, which has received its name from an erroneous idea that it usually had several roots or feet, like zoophyte polypi.

Polypi vary from each other, according to the different causes that produce them, and the alterations that happen in them. Sometimes a polypus of the nose is owing to a swelling of the pituitary membrane, which swelling may possess a greater or less space of the membrane, as also its cellular substance, and may affect either one or both nostrils. At other times it arises from an ulcer produced by a caries of some of the bones which form the internal surface of the nostrils. Polypi are sometimes so soft, that upon the least touch they are lacerated and bleed; at other times they are very compact, and even schirrhous. Some continue small a great while; others increase so fast as, in a short time, to push out at the nostrils, or extend backwards towards the throat. Le Dran mentions, that he has known them fill up the space behind the uvula, and, turning towards the mouth, have protruded the fleshy arch of the palate so far forwards as to make it parallel with the third *dentes molares*. There are others which, though at first free from any malignant disposition, become afterwards carcinomatous, and even highly cancerous. Of whatever nature the polypus is, it intercepts the passage of the air through the nostril, and, when large, forces *septum narium* into the other nostril, so that the patient is unable to breathe, unless through the mouth. A large polypus, pressing in like manner upon the spongy bones, gradually forces them down upon the maxillary bones, and thus compresses and stops up the orifice of the *ductus lachrymalis;* nor is it impossible for the sides of the *canalis nasalis* to be pressed together. In which case the tears, having no passage through the nose, the eye is kept constantly watering, and the *sacchus lachrymalis*, not being able to discharge its contents, is sometimes so much dilated as to form what is called a flat *fistula*. The above writer has seen instances of polypi so much enlarged as to force down the fossa palati.

The polypus of the uterus is of three kinds, in respect to situation. It either grows from the fundus, the inside of the cervix, or from the lower edge of the os uteri. The first case is the most frequent, the last most uncommon. Polypi of the uterus are always shaped like a pear, and have a thin pedicle. They are almost invariably of that species which is denominated fleshy, hardly ever being schirrous, cancerous, or ulcerated.

3. The coagulated substance which is found in the cavities of the heart of those who are some time *in articulo mortis*, is improperly called a polypus.

POLYSA'RCIA. (*a*, *æ*. f.; from πολυς, much, and σαρξ, flesh.) Troublesome corpulency, obesity, or fatness. It is an increased bulk of the body, beyond what is sightly and healthy, from a superabundant accumulation of fat in the adipose membrane. In these cases the animal oil is secreted very rapidly, almost as much so as water in anasarca; on which account some writers have called obesity a dropsy of fat. Those who have been accustomed to hard exercise of body or mind, and suddenly relinquish it, and more especially if they indulge in strong ale, are apt to become obese, especially if the mind be tranquil and the disposition cheerful; but where the disposition to form fat is great, it matters not what food is taken. In some cases of polysarcia the bulk of the body has been enormous. Bright, of Maldon, weighed seven hundred and twenty-eight pounds; Lambert of Leicester, seven hundred and thirty-nine pounds, a little before his death, which was in the fortieth year of his age. In the Philosophical Transactions for 1813, there is an account of a girl who weighed two hundred and fifty-six pounds, though only four years old.

In attempting the cure, the first step is to avoid all the common and more obvious causes, —as indolence, indulgence at the table; and to take severe, regular, and habitual exercise. The plan cannot be better illustrated than in the case of Mr. Wood, the noted miller of Billericay, in Essex, related in the second volume of the Medical Transactions. Born of intemperate parents, he was accustomed to indulge himself in excessive eating, drinking, and indolence, till, in the forty-fourth year of his age, he became unwieldy from his bulk, was almost suffocated, laboured under very ill health from indigestion, and was subject to fits of gout and epilepsy. Fortunately, a friend pointed out to him the Life of Cornaro, and he instantly determined to take Cornaro for his model, and, if necessary, to surpass his abridgments. With great prudence, however, he made his change from a highly superfluous to a very spare diet, gradually; first, diminishing his ale to a pint a day, and using a much smaller portion of animal food, till at length, finding the plan work wonders, as well in his renewed vigour of mind as of body, he limited himself to a diet of simple pudding, made of sea-biscuit, flour, and skimmed milk, of which he allowed himself a pound and a half, about four or five o'clock in the morning, for his breakfast, and the same quantity at noon for his dinner. Besides this he took nothing, either of solids or fluids; for he had at length brought himself to abstain even from water, and found himself easier without it. He went to bed about eight or nine o'clock, rarely slept for more than five or six hours, and hence rose usually at one or two in the morning, and employed himself in laborious exercise, of some kind or other, till the time of his breakfast. By this regimen he reduced himself to the condition of a middle-sized man, of firm flesh, well-coloured complexion, and sound health.

It sometimes happens that obesity takes place only, or principally, in the belly; forming what is called the Falstaff, or pot-belly. This is from an accumulation of fat in the omentum, and requires, in addition to the above plan, the use of strong purgatives.

POLYSOMA'TIA. (From πολυς, much, and σωμα, a body.) Corpulency. See *Polysarcia*.

POLYSPA'STEM. (From πολυς, much, and σπαω, to draw.) A forcible instrument for reducing luxations.

POLYSPE'RMAL. (*Polysperma*; from πολυς, many, and σπερμα, a seed.) The same as *polyspermous*.

POLYSPE'RMOUS. (*Polyspermus*; from πολυς, many, and σπερμα, a seed.) Having many seeds.

POLY'STOMA. (*a, atos.* n.; from πολυς, many, and στομα, a mouth.) A genus of worms in Rudolphi's classification.

POLYSTOMA PINGUICULA. This species has been found by Treutler in a fatty tumour covering the ovary of a female who died in labour.

POLY'TRICHUM. (*um, i.* n.; from πολυς, many, and θριξ, hair: so called from its resemblance to a woman's hair, or because, in ancient times, women used to dye the hair with it, to keep it from shedding.) *Polytrycon.* 1. The name of a genus of plants in the Linnæan system. Class, *Cryptogamia*; Order, *Musci.*

2. The pharmacopœial name of the golden maidenhair. See *Polytrichum commune.*

POLYTRICHUM COMMUNE. The systematic name of the golden maidenhair. *Adianthum aureum.* It possesses, in an inferior degree, astringent virtues; and was formerly given in diseases of the lungs and calculous complaints.

POMA'CEÆ. (From *pomum*, an apple.) The name of an order of plants in Linnæus's Fragments of a Natural Method, consisting of those which have a fruit of an esculent, pulpy, apple, berry, or cherry kind.

POMA'CEUM. (*um, i.* n.; from *pomum*, an apple.) Cider, or the fermented juice of apples.

POMA'MBRA. *Pomum ambræ.* An odoriferous ball made of ambergris, musk, civet, aromatics, &c. It was used by embalmers to put into the orbits, after taking out the eyes.

POMA'TUM. A fragrant ointment made with lard and apples, was formerly so called. The term is applied now only to solid greasy substances, used in dressing the hair.

Pomegranate. See *Punica.*

POMPHOLYGO'DES. (From πομφολυξ, a bubble, and ειδος, resemblance.) Applied to urine, with bubbles on the surface.

PO'MPHOLYX. (*yx, ygis.* f.; from πομφος, a bladder.) I. A small vesicle or bubble.

II. A cutaneous disease described by Dr. Willan as an eruption of bullæ, appearing without any inflammation round them, and without fever, and therefore differing most materially from the pemphigus described by nosologists. Dr. Willan applied to it the appellation of pompholyx, of which he has described three varieties: —

1. The *pompholyx benignus* exhibits a succession of transparent bullæ, about the size of a pea, or sometimes of a hazel-nut, which break in three or four days, discharge their lymph, and soon heal. They appear chiefly on the face, neck, and extremities; and occur in boys in hot weather, in infants during dentition, and in young persons of irritable habit from eating acrid vegetable substances, or from swallowing a few grains of mercury.

2. The *pompholyx diutinus* is a tedious and painful disorder, and is usually preceded for some weeks by languor and lassitude, headach, sickness, and pains in the limbs. Numerous red pimple-like elevations of the cuticle appear, with a sensation of tingling, which are presently raised into transparent vesications, that become as large as a pea within twenty-four hours, and, if not broken, afterwards attain the size of a walnut. If they are rubbed off prematurely, the excoriated surface is sore and inflamed, and does not readily heal. The bullæ continue to arise in succession on different parts of the body, and even reappear on the parts first affected, in some cases for several weeks, so that the whole number of bullæ is very great; and when the excoriations are thus multiplied, a slight febrile paroxysm occurs every night, and the patient suffers much from the irritation and from want of sleep.

This disease chiefly affects persons of debilitated habits, and is very severe in the aged. It seems to originate under different conditions of the body, but often after continued fatigue and anxiety, with low diet; sometimes from intemperance; and not unfrequently it is connected with anasarca, or general dropsy, with scurvy, purpura, and other states of the constitution, in which the powers of the cutaneous circulation are feeble. It has in some instances appeared after profuse sweating, during which cold liquors were copiously swallowed, in common with several other forms of chronic cutaneous disease. In the fevers in which it has been observed, it was obviously symptomatic, for it has not only occurred at various periods and varied much in its duration, but has accompanied fevers of the continued, remittent, and intermittent type, as well as arthritic and other secondary fevers.

It is sufficiently clear, from the statements of the writers just referred to, that the pompholyx is never communicated by contagion; and that the fluid contained in the vesicles is not ichorous, but a bland lymph, resembling that which is poured into the ventricles of the brain in hydrocephalus. In several of the persons who cases are recorded, the disease occurred more than once. The pompholyx is most troublesome and obstinate in old persons, in whom the transparent bullæ sometimes equal the size of a turkey's egg, while others of a smaller size are intermixed with them, which appear dark and livid. When broken, they leave a black excoriated surface, which sometimes ulcerates.

The warm-bath, used every second day, was considered by Dr. Willan as the most active palliative, and the best remedy. The decoction of cinchona, with cordials and diuretics, has been found of considerable advantage in these cases, especially when the eruption was combined with anasarca. In young persons, in whom the pompholyx is seldom severe, these remedies are affirmed by Dr. Willan to be successful within two or three weeks; but the warm bath seems to increase both the tingling in the skin and the number of the vesications in these patients.

3. The *pompholyx solitarius* is a rare form of the disease, which seems to affect only women. One large vesication appears usually in the night, after a sensation of tingling in the skin

and rapidly distends itself, so as to contain sometimes a teacupful of lymph: within forty-eight hours it breaks, discharging its fluid, and leaving a superficial ulceration. Near this another bulla arises in a day or two, and goes through the same course; and it is sometimes followed, in like manner, by two or three others in succession; so that the whole duration shall be eight or ten days. Cinchona internally, and linseed poultices, followed by light dressings to the sores externally, were employed with advantage in three cases seen by Dr. Willan.

III. The whitish oxide of zinc which adheres to the covers of crucibles, in making brass, in the form of small bubbles.

Po'MPHOS. (*Pomphus, i.* m.; from πεμπω, to put forth.) A bladder of air or watery fluid.

PO'MUM. (*um, i.* n.) 1. An apple.

2. In botanical language it is a fleshy pericarpium or seed-vessel, containing a capsule within it, with several seeds. Its species are,—

1. *Oblong;* as in *Pyrus communis.*
2. *Baccate;* as in *Pyrus baccata.*
3. *Muricate;* as in *Momordica trifoliata.*
4. *Hispid;* as in *Momordica elaterium.*

The navel-like remains are part of the calyx.

The pomum is comprehended by Gærtner under the different kinds of bacca, it being sometimes scarcely possible to draw the line between them.

Pomum adami. (Adam's apple: so called in consequence of a whimsical supposition that part of the forbidden apple which Adam ate stuck in the throat, and caused the prominence.) Adam's apple. The protuberance in the anterior part of the neck, formed by the forepart of the thyroid gland.

Pomum amoris. See *Solanum.*

PO'NS. (*s, tis.* m.) A bridge.

Pons varo'lii. (So termed because it was first described by Varolius.) Varolius's bridge: called also *Tuber annulare, Corpus annulare, Processus annularis,* and *Eminentia annularis.* An eminence of the medulla oblongata, first described by Varolius: called *pons* from its arched appearance. See *Encephalos.*

Ponticum mel. A poisonous kind of honey found in Heraclea, which was said to produce the same effects as aconite.

Poor man's pepper. See *Polygonum hydropiper,* and *Lepidium.*

Poplar. See *Populus.*

PO'PLES. (*es, itis.* m.) The ham, or back part of the knee-joint.

POPLITE'AL. (*Popliteus;* from *poples,* the ham.) Appertaining to the ham or back part of the knee-joint.

Popliteal aneurism. Aneurism in the ham. See *Aneurism.*

Popliteal artery. *Arteria poplitea.* The continuation of the crural artery, through the hollow of the ham.

POPLITÆ'US. A small muscle which rises from the external condyle of the femur, and back part of the capsular ligament of the knee-joint, and is inserted into the ridge at the upper and inner part of the tibia, a little below the head. The use of the popliteus is to assist in bending the leg, and to rotate it inwards when bent; also to prevent the capsular ligament from being pinched in the motions of the knee-joint.

Poppy. See *Papaver.*

Poppy, red corn. See *Papaver rhœas.*

Poppy, white. See *Papaver somniferum.*

Popula'go. (*o, inis.* f.; from *populus,* the poplar: because its leaves resemble those of the poplar.) See *Caltha.*

Populine. See *Populus tremula.*

PO'PULUS. (*us, i.* f.; from πολυς, many; because of the multitude of its shoots.) 1. The name of a genus of plants in the Linnæan system. Class, *Diœcia;* Order, *Octandria.*

2. The pharmacopœial name of the black poplar. See *Populus nigra.*

Populus balsamifera. One of the trees supposed to produce *tacamahaca.*

Populus nigra. The systematic name of the black poplar. *Ægeiros.* The young buds, *oculi,* or rudiments of the leaves, which appear in the beginning of the spring, were formerly employed in an officinal ointment. At present they are almost entirely disregarded, though they have been recommended in chronic pulmonary complaints. They have a yellow, unctuous, odorous, balsamic juice.

Populus tremula. The aspen. The properties of this are similar to those of the preceding species. Braconnot has found an alkali in the bark, which he names *populine.*

PORCE'LLIO. A genus of apterous insects, or, more properly, of isopodous annelides.

Porcellio scaber. The animal called in Scotland *Sclater.* The same virtues have been ascribed to it as to the other millepedes. See *Millepes.*

Po'rcus. (*us, i.* m.) A hog. See *Sus scrofa.*

Po'ri bilia'rii. The biliary pores or ducts that receive the bile from the penicilli of the liver, and convey it to the hepatic duct. See *Liver.*

PORIFO'RMIS. Poriform: resembling a pore. Applied to a nectary, when of that appearance; as that of the hyacinth, which has three similar pores in the germen.

Pork. See *Sus scrofa.*

Poroce'le. (Πωροκηλη; *e. es.* f.; from πωρος, a callus, and κηλη, a tumour.) A hard tumour of the scrotum.

Poro'mphalum. (From πωρος, a callus, and ομφαλος, the navel.) A hard tumour of the navel.

Porphyra. See *Scorbutus.*

Porret. See *Allium porrum.*

PORRI'GO. (*o, inis.* f.; *à porrigendo:* from its spreading abroad.) Ringworm of the scalp. Scald head. A genus of disease in Dr. Willan's arrangement, which is contagious, and principally characterised by an eruption of the pustules called *favi* and *achores,* unaccompanied by fever.

The several appearances which it assumes are reducible to the following species: —

1. *Porrigo larvalis.* This is the *crusta lactea* of writers, which is almost exclusively a disease

of infancy. It commonly appears first on the forehead and cheeks, in an eruption of numerous minute and whitish achorous pustules, which are crowded together upon a red surface. These soon break, and discharge a viscid fluid, which concretes into thin yellowish scabs. As the pustular patches spread, the discharge is renewed, and continues also from beneath the scabs, increasing their thickness and extent, until the forehead, cheeks, and even the whole face, become enveloped as by a mask, whence the epithet *larvalis*, the eyelids and nose alone remaining exempt from the incrustation. The eruption is liable, however, to considerable variation in its course; the discharge being sometimes profuse, and the surface red and excoriated; and at other times scarcely perceptible, so that the surface remains covered with a dry and brown scab. When the scab ultimately falls off, and ceases to be renewed, a red, elevated, and tender cuticle, marked with deep lines, and exfoliating several times, is left behind; differing from that which succeeds to impetigo, inasmuch as it does not crack into deep fissures.

Smaller patches of the disease not unfrequently appear about the neck and breast, and sometimes on the extremities; and the ears and scalp are usually affected in the course of its progress. In general the health of the child is not materially affected, especially when the eruption does not appear in the early period of lactation; but it is always accompanied with considerable itching and irritation, which, in young infants, often greatly diminish the natural sleep and disturb the digestion. Whence much debility sometimes ensues; the eyes and eyelids become inflamed, and purulent discharges take place from them and from the ears; the parotid, and subsequently the mesenteric glands, become inflamed; and marasmus, with diarrhœa and hectic, cut off the patient.

Most commonly, however, the disease terminates favourably, though its duration is often long and uncertain. It sometimes suddenly puts on the appearance of cessation, and afterwards returns with severity. Sometimes it disappears spontaneously soon after weaning, or after the cutting of the first teeth; and sometimes it will continue from two or three months to a year and a half, or even longer. It is remarkable, however, that whatever excoriation may be produced, no permanent deformity ensues.

In the commencement, while the discharge is copious and acrid, it is necessary to clear the surface two or three times a day by careful ablution with some tepid and mild fluid, as milk and water, thin gruel, or a decoction of bran; and to apply a mild ointment, such as the unguentum zinci, or a combination of this with a saturnine cerate. The latter will be useful to obviate excoriation, while the surface remains red and tender, after the discharge has ceased.

The removal of the disease is much accelerated by the use of alterative doses of mercurial purgatives, especially where the biliary secretion is defective, the abdomen tumid, or the mesenteric glands enlarged, which should be continued for three weeks longer, according to circumstances. Small doses of the submuriate may be given twice a day, alone, or in combination with soda and a testaceous powder; or, if the bowels are very irritable, the hydrargyrus cum cretâ, or the cinereous oxide, may be substituted. But if the general health appear sound, the inflammatory condition of the skin, and the profuse exudation, may be alleviated by the internal use of soda, with precipitated sulphur, or with the testacea.

When the state of irritation is removed, and the crusts are dry and falling off, the unguentum hydrargyri nitrati, much diluted, may be applied with advantage. And now some gentle tonic should be administered; such as the decoction of cinchona, or the chalybeates, which are more readily taken by children, especially the saturated solution of the tartrite, or the vinum ferri.

2. *Porrigo furfurans.* In this form of the disease, which commences with the eruption of small *achores*, the discharge from the pustules is small in quantity, and the excoriation slight; the humour, therefore, soon concretes, and separates in innumerable thin laminated scabs, or scale-like exfoliations. At irregular periods the pustules reappear, and the discharge being renewed, the eruption becomes moist; but it soon dries again and exfoliates. It is attended with a good deal of itching, and some soreness of the scalp, to which the disease is confined; and the hair, which partially falls off, becomes then, less strong in its texture, and sometimes lighter in its colour. Occasionally the glands of the neck are swelled and painful.

This species occurs principally in adults, especially in females, in whom it is not always easily distinguished from the scaly disease, pityriasis, psoriasis, or lepra, affecting the hairy scalp. The circumstances just enumerated, however, will serve to establish the diagnosis; as, in those diseases, no pustules appear in the beginning, there is no moisture or ulceration, and the hair is not detached, nor changed in texture and colour; neither are they communicable by contact.

In the treatment, it is absolutely necessary to keep the scalp closely shaven. The brann scabs should then be removed by gentle washing, with some mild soap and water, twice a day; and an oil silk cap should be worn, partly for the purpose of keeping the surface moist as well as warm, and partly for the convenience of retaining an ointment in contact with it.

The nature of the ointments employed in this, as in the other species, must be varied, according to the period of the disease, and the irritability of the part affected. In the commencement of the eruption, when the surface is moist, tender, and somewhat inflamed, the zinc ointment should be applied; or, what is more beneficial, an ointment prepared with the cocculus indicus in the proportion of two drachms of the powdered berry to an ounce of lard. But when the scalp becomes dry and inirritable, in the progress of the complaint, it may be washed with the common soft soap and water; or with a lath

made by mixing equal portions of soft soap and unguentum sulphuris in warm water. More stimulant ointments will then be requisite, such as the unguentum hydrargyri nitrati, unguentum hydrargyri nitrico-oxidi, the tar and sulphur ointments, or the unguentum acidi nitrosi of the Edinburgh Pharmacopœia. These, and other stimulant applications, succeed in different individuals, in the inert state of the disease; but they must be intermitted, in case the inflammation and discharge return.

3. The *Porrigo lupinosa* is characterised by the formation of dry, circular scabs, of a yellowish-white colour, set deeply in the skin, with elevated edges and a central indentation or depression, sometimes containing a white scaly powder, and resembling, on the whole, the seeds of lupines. These scabs are formed upon small separate clusters of *achores*, by the concretion of the fluid, which exudes when they break; and they acquire, when seated on the scalp, the size of a sixpence. Frequently there is also a thin white incrustation, covering the intervening parts of the scalp, which commonly exfoliates; but, if allowed to accumulate through inattention to cleanliness, it forms an elevated crustaceous cap. The disease, however, is not exclusively confined to the head; but sometimes appears on the extremities, where the little white and indented scabs do not exceed two lines in diameter. This variety of porrigo is liable to increase much, if neglected; and is usually tedious, and of long duration.

The first object in the management of this species, is to remove the crusts and little indented scabs, by a diligent application of soap and water, or other emollient applications. If the scalp be the seat of the disease, the previous removal of the hair will be necessary. If the scabs are not penetrable by these ablutions or by ointments, or if any thick intervening incrustation is present, a lotion of the liquor potassæ, or of the muriatic acid in a diluted state may be employed. When the surface is cleared, the ointment of cocculus indicus may be applied to the red and shining cuticle; and afterwards the more stimulant unguents, as in the case of porrigo, furfurans, with regular daily ablution, will complete the cure.

4. The *Porrigo scutulata*, popularly termed the *ringworm of the scalp*, appears in distinct and even distant patches, of an irregular circular figure, upon the scalp, forehead, and neck. It commences with clusters of small light-yellow pustules, which soon break, and form thin scabs over each patch, which, if neglected, become thick and hard by accumulation. If the scabs are removed, however, the surface of the patches is left red and shining, but studded with slight elevated points, or papulæ, in some of which minute globules of pus again appear in a few days. By these repetitions of the eruption of *achores*, the incrustations become thicker, and the areas of the patches extend, often becoming confluent, if the progress of the disease be unimpeded, so as to affect the whole head. As the patches extend, the hair covering them becomes lighter in its colour, and sometimes breaks off short; and, as the process of pustulation and scabbing is repeated, the roots of the hair are destroyed, and at length there remains uninjured only a narrow border of hair round the head.

This very unmanageable form of porrigo generally occurs in children of three or four years old and upwards, and often continues for several years. Whether the circles remain red, smooth, and shining, or become dry and scurfy, the prospect of a cure is still distant; for the pustules will return, and the ulceration and scabbing will be repeated. It can only be considered as about to terminate, when the redness and exfoliations disappear together, and the hair begins to grow of its natural colour and texture.

The disease seems to originate spontaneously in children of feeble and flabby habit, or in a state approaching to marasmus, who are ill-fed, uncleanly, and not sufficiently exercised: but it is principally propagated by contagion; *i. e.* by the actual conveyance of the matter from the diseased to the healthy, by the frequent contact of the heads of children, but more generally by the use of the same towels, combs, caps, and hats. Whence the multiplication of boarding schools appears to have given rise to an increased prevalence of this disease, among the more cleanly classes of the community, at the present time: for such is the anxiety of parents to regain the lost years of education, that they too often send their children to these schools, when capable of communicating the infection, although supposed to be cured; against which no vigilance on the part of the superintendents can afford a sufficient security.

The principles of local treatment already laid down, are particularly applicable in this species of porrigo. While the patches are in an inflamed and irritable condition, it is necessary to limit the local applications to regular ablution, or sponging, with warm water, or some emollient fomentation. Even the operation of shaving, which is necessary to be repeated at intervals of eight or ten days, produces a temporary increase of irritation. At this time, the patient should wear a light linen cap, which should be frequently changed; and all stimulant lotions and ointments, which tend only to aggravate the disease, should be proscribed.

In the progress of the disorder, various changes take place, which require corresponding variations of the method of treatment. By degrees the inflammatory state is diminished, and a dry exfoliation and scabbing ensue: but again the pustular eruption breaks out, and the patches become again red and tender: or, in some cases, without much redness, there is an acrimonious exudation, with considerable irritability of the scalp. In other instances, the surface becomes inert, and in some degree torpid, while a dry scaly scab constantly appears, and active stimulants are requisite to effect any change in the disorder. It is very obvious, as Dr. Willan used to remark, that the adoption of any one mode of practice, or of any single pretended *specific*, under these varying circumstances of the disease, must be unavailing, and often extremely injurious.

In the more irritative states, the milder ointments, such as those prepared with cocculus indicus, with the submuriate of mercury, the oxide of zinc, the superacetate of lead, or with opium or tobacco, should be employed; or sedative lotions, such as decoctions or infusion of poppy heads, or of tobacco, may be substituted. Where there is an acrimonious discharge, the zinc and saturnine ointments, with the milder mercurial ones, — such as the unguentum hydrargyri præcipitati, or the ointment of calomel, or a lotion of lime-water with calomel, — are advantageous.

According to the different degrees of inertness which ensue, various well-known stimulants must be resorted to, and may be diluted, or strengthened, and combined, according to the circumstances. The mercurial ointments, as the unguentum hydrargyri præcipitati, hydrargyri nitrico-oxidi, and especially of the hydrargyrus nitratus, are often effectual remedies: and those prepared with sulphur, tar, hellebore, and turpentine, the unguentum elemi, &c., separately or in combination, occasionally succeed; as well as preparations of mustard, staves-acre, black pepper, capsicum, rue, and other acrid vegetable substances. Lotions containing the sulphates of zinc and copper, or the oxymuriate of mercury, in solution, are likewise occasionally beneficial.

In the very dry and inert state of the patches, the more caustic substances are often extremely successful. A lotion, containing from three to six grains of the nitrate of silver in an ounce of distilled water, has effectually removed the disease in this condition. Touching the patches with the muriated tincture of iron, or with the sulphuric or muriatic acids, slightly diluted, in some cases removes the morbid cuticle, and the new one assumes a healthy action. The application of a blister, in like manner, sometimes effectually accomplishes the same end. But, in many instances, the effect of these renovations of the cuticle is merely temporary, and the disease returns, in a week or two, upon the new surface.

Professor Hamilton, of Edinburgh, who considers the ringworm of the scalp, as "quite different from the scald head," affirms, in a late publication, that he has seldom failed to cure the former, by the use of the unguentum and scabiem of Banyer. For delicate children, he dilutes this ointment with an equal portion of simple cerate, and sometimes alternates the use of it with that of the common basilicon.

These various applications are enumerated, because not one of them is always successful, singly, even under circumstances apparently the same. They must be varied, and combined; and the best criterion in the choice and combination of them, is the degree of existing irritation in the morbid parts, or in the general habit. The rude and severe employment of depilatories, which some practitioners have recommended, is to be deprecated, as often inflicting great injury to the scalp, and retarding, rather than expediting, the progress to recovery.

Nothing has been said respecting the administration of internal medicine in the porrigo scutulata; because it is often merely local, being communicated by contagion to children in other respects healthy. But in those in whom it appears in combination with cachectic symptoms, chalybeate medicines, or the decoction of cinchona, and alteratives, must be prescribed, according to the particular indications; and the diet, clothing, and exercise of the patient, must be carefully regulated.

5. *Porrigo decalvans.* This singular variety of the disease presents no appearance whatever, except patches of simple baldness, of a more or less circular form, on which not a single hair remains, while that which surrounds the patches is as thick as usual. The surface of the scalp, within these areæ, is smooth, shining, and remarkably white. It is probable, though not ascertained, that there may be an eruption of minute achores about the roots of the hair, in the first instance, which are not permanent, and do not discharge any fluid. The disease, however, has been seen to occur, in one or two instances, in a large assemblage of children, among whom the other forms of the porrigo prevailed. But in other cases, and also in adults, it has appeared where no communication could be traced or conjectured. The areæ gradually enlarge, and sometimes become confluent, producing extensive baldness, in which condition the scalp remains many weeks, especially if no curative measures are adopted. The hair, which begins to grow, is of a softer texture, and lighter colour than the rest; and, in persons beyond the middle age, it is grey.

If the scalp is cleared by constant shaving, and at the same time some stimulant liniment be steadily applied to it, this obstinate affection may be at length overcome, and the hair will regain its usual strength and colour. In fact, until this change takes place, the means of cure must not be intermitted. Some of the more active ointments, mentioned under the preceding head, may be employed, with friction; but liniments containing an essential oil dissolved in spirit (for instance, two drachms of the oil of mace, in three or four ounces of alkohol), or prepared with oil of tar, petroleum Barbadense, camphire, turpentine, &c., are more efficacious.

6. *Porrigo favosa.* This species of the disorder consists of an eruption of the large, soft, straw-coloured pustules, denominated *favi*. These are not in general globular, with a regularly circular margin; but somewhat flattened, with an irregular edge, and surrounded by a slight inflammation. They occur on all parts of the body; sometimes on the scalp alone, and sometimes on the face, or on the trunk and extremities only; but most commonly they spread from the scalp, especially from behind the ears, to the face, or from the lips and chin to the scalp, and occasionally from the extremities to the trunk and head. They are usually accompanied with considerable itching. Children from six months to four years of age are most liable to this eruption; but adults are not unfrequently affected with it.

The pustules, especially on the scalp, appear at first distinct, though near together; but on the face and extremities they generally rise in

irregular clusters, becoming confluent when broken, and discharging a viscid matter, which gradually concretes into greenish, or yellowish, semi-transparent scabs. The disease extends, by the successive formation of new blotches, which sometimes cover the chin, or surround the mouth, and spread to the cheeks and nose; and, on the scalp, the ulceration ultimately extends, in a similar manner, over the whole head, with a constant discharge, by which the hair and moist scabs are matted together. Under the last-mentioned circumstances, pediculi are often generated in great numbers, and greatly aggravate the itching and irritation of the disease. On the face, too, a similar aggravation of the symptoms is occasioned, in children, by an incessant picking and scratching about the edges of the scabs, which the itching demands, and by which the skin is kept sore, and the ulceration extended; while the scabs are thickened into irregular masses, not unlike honey-comb, by the multiplied and concreting discharge. On the lower extremities considerable ulceration sometimes form, especially about the heels and roots of the toes; and the ends of the toes are sometimes ulcerated, the pustules arising at their sides, and even under the nails.

The ulcerating blotches seldom continue long, or extend far, before the lymphatic system exhibits marks of irritation, probably from the acrimony of the absorbed matter. When the scalp or face is the seat of the disease, the glands on the sides of the neck enlarge and harden, being at first perceived like a chain of little tumours, lying loose under the skin; and the sub-maxillary and parotid glands are often affected in a similar manner. At length some of them inflame, the skin becomes discoloured, and they suppurate slowly, and with much pain and irritation. The eruption, in these situations, is likewise often accompanied by a discharge from behind the ears, or from the ears themselves, with a tumid upper lip, and inflammation of the eyes, or obstinate ulcerations of the edges of the eyelids. When the eruption appears on the trunk, although the pustules there are smaller and less confluent, and the scabs thinner and less permanent, the axillary glands are liable to be affected in the same way.

The discharge from the ulcerated surfaces, especially on the scalp, when the crusts and coverings are removed, exhales an offensive rancid vapour, not only affecting the organs of smell and taste, but the eyes, of those who examine the diseased parts. The acrimony of the discharge is also manifested by the appearance of inflammation, followed by pustules, ulceration, and scabbing, on any portion of the sound skin which comes into frequent contact with the disease: thus, in young children, the breast is inoculated by the chin, and the hands and arms by contact with the face. The arm and breast of the nurse are also liable to receive the eruption in the same manner; but it is not so readily communicated to adults as to children.

The duration of this form of porrigo is very uncertain; but it is, on the whole, much more manageable than the porrigo scutulata and decalvans. Young infants often suffer severely from the pain and irritation of the eruption, and of the glandular affections which it induces; and those who are bred in large towns, and are ill fed and nursed, are thus sometimes reduced to a state of fatal marasmus.

The porrigo favosa requires the exhibition of the same alteratives internally, which have been recommended for the cure of the porrigo larvalis, in doses proportioned to the age and strength of the patients. The diet and exercise should also be regulated with care: all crude vegetables and fruits on the one hand, and stimulating substances, whether solid or fluid, on the other, should be avoided; and milk, puddings, and a little plain animal food or broths, should be alone recommended. If the patient be of a squalid habit, or the glandular affections severe, the bark and chalybeates, or the solution of muriate of barytes united with the former, will contribute materially to the restoration of health.

There is commonly some degree of inflammation present, which contraindicates the use of active stimulants externally. The unguentum zinci, or the unguentum hydrargyri præcipitati, mixed with the former, or with a saturnine ointment, will be preferred as external applications, especially where the discharge is copious: and the ointment of the nitrate of mercury, diluted with about equal parts of simple cerate and of the ceratum plumbi superacetati, is generally beneficial; but the proportion of the unguentum ceræ must be varied according to the degree of inflammation. All stiff and rigid coverings, whether of oiled silk, or, according to a popular practice, of the leaves of cabbage, beet, &c. should be prohibited; for they often excite a most severe irritation.

Po'rrum. (*um*, *i.* n.) The leek. See *Allium porrum*.

Po'rrus. (*us*, *i.* m.) The same.

PO'RTA. (*a*, *æ.* f.; a door or gate: *à portando*, because through it the blood is carried to the liver.) That part of the liver where its vessels enter.

Portæ vena. See *Vena portæ*.

Portaiguille. The French name for the *acutenaculum*.

PO'RTIO. (*o*, *onis.* f.) A portion or branch: applied to two nerves.

Portio dura. (One branch of the seventh pair of nerves is called *portio dura*, the hard portion, from its being of a firm consistence; and the other the *portio mollis*, or soft portion, from its softer consistence.) The *portio dura* or facial nerve arises near the pons, from the crus of the brain, enters the petrous portion of the temporal bone, gives off a branch into the tympanum, which is called the chorda tympani, and then proceeds to form the *pes anserinus* on the face, from which the integuments of the face are supplied with nerves. See *Auris*.

Portio mollis. Auditory nerve. Acoustic nerve. This nerve arises from the medulla oblongata and fourth ventricle of the brain, enters the petrous portion of the temporal bone, and is distributed on the internal ear, by innumerable branches, not only to the cochlea, but

also to the membrane lining the vestibulum and semicircular canals, and is the immediate organ of hearing. See *Auris.*

PORTLAND POWDER. A celebrated gout remedy. It consists of equal parts of gentian, birthwort, the tops and leaves of germander, ground-pine, and lesser centaury, dried, powdered, and sifted. It is now fallen into disuse.

PORTONA'RIUM. (From *porta*, a door; because it is, as it were, the door or entrance of the intestines.) The pylorus, or right orifice of the stomach. Also the duodenum.

PORTULA'CA. (*a*, *æ*. f.; from *porto*, to carry, and *lac*, milk: because it increases the flow of milk.) 1. The name of a genus of plants in the Linnæan system. Class, *Dodecandria*; Order, *Digynia.*

2. The pharmacopœial name of the purslane. See *Portulaca oleracea.*

PORTULACA OLERACEA. The systematic name of the eatable purslane. *Andrachne. Allium gallicum.* The plant which is so called in dietetical and medical writings, abounds with a watery and somewhat acid juice, and is often put into soups, or pickled with spices. It is said to be antiseptic and aperient.

PO'RUS. (*us*, *i*. m.) A pore, or duct. A term used in *Anatomy* and *Botany*; as the pores of the skin; and particularly applied, in botany, to the small puncture-like openings in the inferior surface of the genus *Boletus.*

Po'sca. Vinegar and water mixed.

POSE. An old English term for a cold in the head, or common catarrh. To pose is still used in the sense of to stupify, and the real meaning of *posie* is a "narcotic charm." and hence a nosegay of tranquillising odour, inducing repose or sleep.

POSSE'TUM. (*um*, *i*. n.) Posset. Milk curdled with wine, treacle, or any acid.

POSTE'RIOR. Parts are so named from their relative situation.

POSTERIOR ANNULARIS. *Musculus posterior annularis.* An external interosseal muscle of the hand, that extends and draws the ring-finger inwards.

Posterior auris. See *Retrahens auris.*

POSTERIOR INDICIS. *Musculus posterior indicis.* An internal interosseal muscle of the hand, that extends the fore-finger obliquely, and draws it outwards.

POSTERIOR MEDII. An external interosseal muscle of the hand, that extends the middle finger, and draws it outwards.

POSTI'CUS. Situated behind. Applied to muscles from their position; as *Serratus posticus*; *Tibialis posticus.*

POTAMOGEI'TON. (*um*, *i*. n.; from ποταμος, a river, and γειτων, adjacent: so named because it grows about rivers.) The name of a genus of plants in the Linnæan system. Class, *Tetrandria*; Order, *Tetragynia.*

PO'TASH. (*Potassa*, *æ*. f.; so called from the pots, or vessels, in which it was first made.) Vegetable alkali: so called because it is obtained in an impure state by the incineration of vegetables. *Kali.* An hydrated protoxide of potassium. See *Potassium.*

Table of the saline product of one thousand lbs. of ashes of the following vegetables: —

	Saline products.
Stalks of Turkey wheat or maise,	198 lbs.
Stalks of sun-flower	349
Vine branches	162·6
Elm	166
Box	78
Sallow	102
Oak	111
Aspen	61
Beech	219
Fir	132
Fern cut in August	116 or 125 according to Wildenheim.
Wormwood	748
Fumitory	360
Heath	115 Wildenheim.

On these tables Kirwan makes the following remarks: —

1. That in general weeds yield more ashes, and their ashes much more salt, than woods; and that, consequently, as to salts of the vegetable alkali kind, as potash, pearlash, cashup, &c., neither America, Trieste, nor the northern countries have any advantage over Ireland.

2. That of all weeds fumitory produces more salt, and next to it wormwood. But if we attend only to the quantity of salt in a given weight of ashes, the ashes of wormwood contain most. The *Trifolium fibrinum* also produces more ashes and salt than fern.

The process for obtaining pot and pearlash is given by Kirwan, as follows: —

1. The weeds should be cut just before they seed, then spread, well dried, and gathered clean.

2. They should be burned within doors, on a grate, and the ashes laid in a chest as fast as they are produced. If any charcoal be visible it should be picked out, and thrown back into the fire. If the weeds be moist, much coal will be found. A close smothered fire, which has been recommended by some, is very prejudicial.

3. They should be lixiviated with twelve times their weight of boiling water. A drop of the solution of corrosive sublimate will immediately discover when the water ceases to take up any more alkali. The earthy matter that remains is said to be a good manure for clayey soils.

4. The ley thus formed should be evaporated to dryness in iron pans. Two or three at least of these should be used, and the ley, as fast as it is concreted, passed from the one to the other. Thus, much time is saved, as weak leys evaporate more quickly than the stronger. The salt thus produced is of a dark colour, and contains much extractive matter, and, being formed in iron pots, is called potash.

5. This salt should then be carried to a reverberatory furnace, in which the extractive matter is burnt off, and much of the water dissipated: hence it generally loses from ten to fifteen per cent. of its weight. Particular care should be taken to prevent its melting, as the

extractive matter would not then be perfectly consumed, and the alkali would form such a union with the earthy parts as could not easily be dissolved. Kirwan adds this caution, because Dr. Lewis and Dossie have inadvertently directed the contrary. This salt, thus refined, is called pearlash, and must be the same as the Dantzic pearlash.

To obtain this alkali pure, Berthollet recommends to evaporate a solution of potash, made caustic by boiling with quicklime, till it becomes of a thickish consistence; to add about an equal weight of alkohol, and let the mixture stand some time in a close vessel. Some solid matter, partly crystallised, will collect at the bottom; above this will be a small quantity of a dark-coloured fluid; and on the top another lighter. The latter, separated by decantation, is to be evaporated quickly in a silver basin in a sand-heat. Glass, or almost any other metal, would be corroded by the potash. Before the evaporation has been carried far, the solution is to be removed from the fire, and suffered to stand at rest; when it will again separate into two fluids. The lighter, being poured off, is again to be evaporated with a quick heat; and, on standing a day or two in a close vessel, it will deposit transparent crystals of pure potash. If the liquor be evaporated to a pellicle, the potash will concrete without regular crystallisation. In both cases a high-coloured liquor is separated, which is to be poured off; and the potash must be kept carefully secluded from air.

A perfectly pure solution of potash will remain transparent on the addition of lime-water; show no effervescence with dilute sulphuric acid; and not give any precipitate on blowing air through it by means of a tube.

Pure potash for experimental purposes may most easily be obtained by igniting cream of tartar in a crucible, dissolving the residue in water, filtering, boiling with a quantity of quicklime, and, after subsidence, decanting the clear liquid, and evaporating in a loosely covered silver capsule, till it flows like oil, and then pouring it out on a clean iron plate. A solid white cake of pure hydrate of potash is thus obtained, without the agency of alkohol. It must be immediately broken into fragments, and kept in a well-stoppered phial.

As 100 parts of subcarbonate of potash are equivalent to about 70 of pure concentrated oil of vitriol, if into a measure-tube, graduated into 100 equal parts, we introduce the 70 grains of acid, and fill up the remaining space with water, then we have an alkalimeter for estimating the value of commercial pearlashes, which, if pure, will require for 100 grains 100 divisions of the liquid to neutralise them. If they contain only 60 per cent. of genuine subcarbonate, then 100 grains will require only 60 divisions, and so on. When the alkalimeter indications are required in pure or absolute potash, such as constitutes the basis of nitre, then we must use 102 grains of pure oil of vitriol, along with the requisite bulk of water, to fill up the volume of the graduated tube.

The hydrate of potassium, as obtained by the preceding process, is solid, white, and extremely caustic; in minute quantities, changing the purple of violets and cabbage to a green, reddening litmus to purple, and yellow turmeric to a reddish brown. It rapidly attracts humidity from the air, passing into the *oleum tartari per deliquium* of the chemists; a name, however, also given to the deliquesced subcarbonate. Charcoal applied to the hydrate of potash at a cherry-red heat, gives birth to carburetted hydrogen, and an alkaline subcarbonate; but at a heat bordering on whiteness, carburetted hydrogen, carbonous oxide, and potassium are formed. Several metals decompose the hydrate of potash, by the aid of heat; particularly potassium, sodium, and iron. The fused hydrate of potash consists of 6 deutoxide of potassium + 1·125 water = 7·125, which number represents the compound prime equivalent. It is used in surgery, as the potential cautery for forming eschars; and it was formerly employed in medicine, diluted with broths, as a lithontriptic. In chemistry, it is very extensively employed, both in manufactures and as a reagent in analysis. It is the basis of all the common soft soaps. The oxides of the following metals are soluble in aqueous potash: — Lead, tin, nickel, arsenic, cobalt, manganese, zinc, antimony, tellurium, tungsten, molybdenum.

The preparations of this alkali that are used in medicine are, —

Liquor potassæ.
Potassa cum calce.
Carbonas potassæ.
Bicarbonas potassæ.
Chloridum potassii.
Chloras potassæ.
Hydras potassæ.
Hydriodas potassæ.
Sulphas potassæ.
Bisulphas potassæ.
Tartras potassæ.
Bitartras potassæ.
Acetas potassæ.
Citras potassæ.
Arsenias potassæ.
Sulphuretum potassæ. See *Potassium.*
Potash, acetate of. See *Potassæ acetas.*
Potash, carbonate of. See *Potassæ carbonas.*
Potash, fused. See *Potassa fusa.*
Potash, hyperoxymuriate of. See *Potassæ chloras.*
Potash, solution of. See *Potassæ liquor.*
Potash, subcarbonate of. See *Potassæ carbonas.*
Potash, subcarbonate of, solution of. See *Potassæ carbonatis liquor.*
Potash, sulphate of. See *Potassæ sulphas.*
Potash, sulphuret of. See *Potassæ sulphuretum.*
Potash, supersulphate of. See *Potassæ bisulphas.*
Potash, super-tartrate of. See *Tartarum.*
Potash, tartrate of. See *Potassæ tartras.*
Potash, with lime. See *Potassa cum calce.*

Potassa cum calce. *Calx cum kali puro. Causticum commune fortius.* Take hydrate of potash, lime, of each an ounce. Rub them together and preserve in a well-stopped bottle. This is the caustic in common use with sur-

geons for making issues, and for other purposes.

Potassa fusa. See *Potassæ hydras.*

Potassa impura. See *Potash.*

Potassæ acetatis. Acetate of potash. *Kali acetatum, sal diureticus.* Take of carbonate of potash a pound, acetic acid twenty-six fluid ounces; distilled water twelve fluid ounces; add the carbonate of potash to the acid, previously mixed with the water, to saturation, then strain. Evaporate the liquor in a sand-bath, the heat being cautiously applied, until the salt is dried.

Acetate of potash is considered a good diuretic, and it is perhaps as good and as uncertain as most medicines of this class. The dose is from ten grains to two scruples every eight hours.

Potassæ arsenias. See *Arsenic acid.*

Potassæ arsenis. Arsenite of potash. See *Arsenic* and *Arsenicalis liquor.*

Potassæ bicarbonas. Bicarbonate of potash. This salt is now in general use for all purposes in which it is desirable to disengage the greatest quantity of carbonic acid, and it is made in considerable quantity for the market. There is a formula for preparing it in the last London pharmacopœia.

The *bicarbonate of potash* crystallises in square prisms, the apices of which are quadrangular pyramids. It has a urinous but not caustic taste; changes the syrup of violets green: boiling water dissolves five-sixths of its weight, and cold water one-fourth; alkohol, even when hot, will not dissolve more than 1-1200th. Its specific gravity is 2·012. When it is very pure and well crystallised it effloresces on exposure to a dry atmosphere, though it was formerly considered as deliquescent. It was thought that the common salt of tartar of the shops was a compound of this carbonate and pure potash; the latter of which, being very deliquescent, attracts the moisture of air till the whole is dissolved. From its smooth feel, and the manner in which it was prepared, the old chemists called this solution *oleum tartari per deliquium.*

The bicarbonate of potash melts with a gentle heat, looses its water of crystallisation, amounting to $\frac{3}{10}$, and gives out a portion of its carbonic acid, though no degree of heat will expel the whole of the acid. Thus, as the carbonate of potash is always prepared by incineration of vegetable substances, and lixiviation, it must be in the intermediate state, or that of a carbonate with excess of alkali: and to obtain the true carbonate we must saturate this salt with carbonic acid, which is best done by passing the acid in the state of gas through a solution of the salt in twice its weight of water; or, if we want the potash pure, we must have recourse to lime, to separate that portion of acid which fire will not expel.

The bicarbonate, usually called *super-carbonate* by the apothecaries, consists of 2 primes of carbonic acid = 5·500, 1 of potash = 6, and 1 of water = 1·125, in all 12·625.

Potassæ bisulphas. *Potassæ supersulphas,* bisulphate of potash. Take of the salt which remains after the distillation of nitric acid two pounds, sulphuric acid one pound, boiling water six pints; dissolve the salt in the water, and add the acid to it, and mix. Lastly, boil down and set aside, that crystals may be formed.

This salt consists of two equivalents of sulphuric acid, one of water and two of potash. It has a very acid bitter taste, and is very soluble in water. It is purgative, and is given in combination with other medicines of that class, especially rhubarb, in the dose of from ten grains to a drachm.

This salt has the same properties as the neutral carbonate, but is preferable for the effervescing draught, because it contains more carbonic acid.

A scruple is neutralised by fourteen grains of citric acid.

Potassæ carbonas. Carbonate of potash. *Kali præparatum; potassæ subcarbonas; sal absinthii; sal tartari.* Subcarbonate of potash. Take of impure carbonate of potash two pounds, distilled water a pint and a half; dissolve the impure carbonate of potash in the water, and strain; then pour it off into a proper vessel, and evaporate the water, that the liquor may thicken; then stir it constantly with a spatula until the salt concretes.

Carbonate of potash may be prepared more pure from crystals of bicarbonate of potash heated to redness.

This salt contains one equivalent of each ingredient. It is antacid and diuretic. The dose is from ten grains to half a drachm. It is in common use for forming the effervescent saline draught in the proportion of a scruple to the juice of one lemon. It is more accurately neutralised by seventeen grains of citric acid. The citrate of potash thus formed is a light diaphoretic.

Potassæ bitartras. See *Potassæ supertartras.*

Potassæ chloras. Formerly called oxymuriate of potash. This has been recommended as an alterative and anti-scrofulous medicine, but appears to have but little virtue. It may be given with bark and bitters, in the dose of from ten grains to a scruple three times a day.

Potassæ hydras. See the *Supplement.*

Potassæ hydriodas. See *Potassii iodiodum.*

Potassæ liquor. Solution of potash. *Aqua kali puri. Lixivium saponarium.* Take of carbonate of potash, fifteen ounces; lime, eight ounces; boiling distilled water, a gallon. Dissolve the carbonate of potash in half a gallon of the water; sprinkle a little of the water upon the lime in an earthen vessel, and when the lime is slacked, add the rest of the water. The liquors being immediately mixed together in a close vessel, shake them frequently until they are cold. Then set by that the carbonate of lime may subside. Lastly, keep the supernatant liquor, when poured off, in a green glass bottle well stopped.

This preparation is antacid and diuretic, and possesses great power in allaying irritability of the mucous membranes, especially those of the intestinal canal and urinary passages. The dose is from ℳ x. to ʒ j. in almond emulsion or some other bland liquid.

Potassæ murias. See *Potassii chloridum.*

Potassæ nitras. See *Nitre.*

Potassæ oxymurias. See *Potassæ chloras.*

Potassæ subcarbonas. See *Potassæ carbonas.*

Potassæ subcarbonatis liquor. See *Potassæ carbonatis liquor.*

Potassæ sulphas. Formerly called, *Kali vitriolatum*, *Alkali vegetabile vitriolatum*, *Sal de duobus*, *Arcanum duplicatum*, *Sal polychrestus*, *Nitrum vitriolatum*, and *Tartarum vitriolatum*. Take of the salt which remains, after the distillation of nitric acid, two pounds; boiling water, two gallons. Ignite the salt in a crucible until the excess of sulphuric acid is entirely expelled, then boil it in the two gallons of water until a pellicle floats, and the liquor being strained, set it aside that crystals may be formed. The liquor being poured off, dry them. The crystals are in hexahedral prisms, terminated by hexagonal pyramids, but susceptible of variations. Its crystallisation by quick cooling is confused. The taste of this salt is bitter, acrid, and a little saline. It is soluble in 5 parts of boiling water, and 16 parts at 60°. In the fire it decrepitates, and is fusible by a strong heat. It is decomposable by charcoal at a high temperature. It consists of one equivalent of sulphuric acid, and one of potash. It may be prepared by direct mixture of its component parts; but the usual and cheapest mode is to neutralise the acidulous sulphate left after distilling nitric acid, the *sal enixum* of the old chemists, by the addition of carbonate of potash. The *sal polychrest* of old dispensatories, made by deflagrating sulphur and nitre in a crucible, is a compound of the sulphate and sulphite of potash.

The virtues of this salt are cathartic, diuretic, and deobstruent; with which intentions it is administered in a great variety of diseases, as constipation, suppression of the lochia, fevers, icterus, dropsies, milk tumours, &c. The dose is from one scruple to half an ounce.

Potassæ sulphuretum. See *Potassii sulphuretum.*

Potassæ supersulphas. See *Potassæ bisulphas.*

Potassæ supertartras. Now called *Potassæ bitartras.* Supertartrate of potash. Cream of tartar. This is made by purifying the tartar of commerce. See *Tartar.* It consists of tartaric acid and potash, with more of the acid than that which is combined with the alkali, and forms the tartrate. This loose acid renders it very agreeably acidulous to the palate. Dissolved in water, with the addition of a little sugar, and a slice or two of lemon-peel, it forms an agreeable cooling drink by the name of *imperial*; and if an infusion of green balm be used instead of water, it makes one of the pleasantest liquors of the kind with which we are acquainted. It is given internally as a diuretic and purgative; and in the latter character, formed into an electuary with a little jalap and ginger, it is perhaps as certain and as good an hydragogue as we possess.

Potassæ tartras. Tartrate of potash; formerly called, *Kali tartarisatum*, *Tartarum solubile*, *Tartarus tartarisatus*, *Sal vegetabilis*, and *Alkali vegetabile tartarisatum*. Take of bitartrate of potash, powdered, three pounds; carbonate of potash, sixteen ounces, or as much as may be sufficient; boiling water, six pints. Dissolve the carbonate of potash in the boiling water, then add the bitartrate of potash, and boil. Strain the liquor, and afterwards boil it down until a pellicle floats, and set it aside, that crystals may be formed. The liquor being poured off, dry these, and again evaporate the liquor that crystals may be produced.

This is a mild and excellent purgative, and is also diuretic; the dose is from one to six drachms. It is most frequently given in combination with senna, or the resinous cathartics, the operation of which it accelerates and renders milder.

Potassii bro'midum. Bromide of potassium. Take of bromine, two ounces; carbonate of potash, two ounces and one drachm; iron filings, an ounce; distilled water, three pints. First add the iron, and afterwards the bromine, to a pint and a half of the distilled water. Set them by for half an hour, frequently stirring them with a spatula. Apply a gentle heat, and when a greenish colour appears, pour in the carbonate of potash dissolved in the remainder of the water. Strain, and wash what remains in two pints of boiling distilled water, and again strain. Let the mixed liquors be evaporated, so that crystals may be formed.

This is a stimulant and deobstruent medicine, somewhat resembling the iodide of potassium in its action, but more powerful. M. Magendie has used it in scrofula, amenorrhœa, and hypertrophy of the heart, and Dr. Robert Williams has found it beneficial in cases of enlarged spleen. When dissolved in water it becomes a *hydrobromate of potash.* It often passes in our shops under the improper name of *bromate of potash.* The dose is from five to ten grains twice or thrice a day, in solution.

Potassii chloridum. See the *Supplement.*

Potassii iodidum. Iodide of potassium. *Hydriodate of potash.* Take of iodine, six ounces; carbonate of potash, four ounces; iron filings, two ounces; distilled water, six pints. Mix the iodine with four pints of the water, and add the iron, stirring them frequently with a spatula for half an hour. Apply a gentle heat, and when a greenish colour occurs, add the carbonate of potash, first dissolved in the two pints of water, and strain. Wash what remains with two pints of boiling distilled water, and again strain. Let the mixed liquors be evaporated, so that crystals may be formed.

This is always given in solution, and then only is properly a *hydriodate of potash.* It is given in the same cases as iodine, and generally in solution with it, as it has the property of rendering iodine more soluble in water. The dose is one grain, gradually increased to two, or somewhat more, three times a day. Externally it is applied in the form of an ointment. See *Unguentum potassæ hydriodatis.*

Liquor potassii iodidi compositus. Compound solution of iodide of potassium. Take of iodide of potassium, ten grains; iodine, five grains; distilled water, a pint. Mix, that they may be dissolved.

In this mixture the iodine is rendered more soluble by the presence of the hydriodate of potash. It is called also *iodureted iodide of*

potassium. The dose is from two to six drachms.

POTASSII SULPHURE'TUM. *Hepar sulphuris. Kali sulphuratum.* Sulphuret of potassium. Improperly called sulphuret of potash. Liver of sulphur. Take of sulphur, an ounce; carbonate of potash, four ounces. Rub them together, and place them upon the fire in a covered crucible, until they have united.

Sulphuret of potassium is inodorous when dry, but when moistened with or dissolved in water, a partial decomposition of both the water and the sulphuret takes place, and sulphuretted hydrogen gas is evolved. The sulphuret of potassium has an acrid, bitter taste; it changes the vegetable blues to green; it is hard, brittle, of a liver colour, and stains the skin brown. By exposure to the air it attracts moisture; its colour changes to a pale green; it exhales sulphuretted hydrogen, and is gradually converted into hydroguretted sulphuret of potash, combined with a small proportion of sulphate of potash. All the acids decompose it, forming salts of potash, and precipitating the sulphur.

The liver of sulphur has been employed in gouty and rheumatic cases, and in cutaneous diseases. It has also been in esteem as an antidote to arsenical, mercurial, and saturnine poisons; but no reliance is now placed upon it.

POTA'SSIUM. (*um, ii.* n.) The metallic basis of potash. If a thin piece of solid hydrate of potash be placed between two discs of platinum, connected with the extremities of a voltaic apparatus of 200 double plates, four inches square, it will soon undergo fusion; oxygen will separate at the positive surface, and small metallic globules will appear at the negative surface. These consist of the substance called potassium, first exhibited to the world by Sir H. Davy, early in October, 1807.

If iron turnings be heated to whiteness in a curved gun-barrel, and potash be melted and made slowly to come in contact with the turnings, air being excluded, potassium will be formed, and will collect in the cool part of the tube. This method of procuring it was discovered by MM. Gay Lussac and Thenard in 1808. It may likewise be produced by igniting potash with charcoal, as M. Curaudau showed the same year.

M. Brunner, by acting on calcined tartar in a bottle of wrought iron, has succeeded in obtaining potassium at a comparatively moderate heat. The bottle is spheroidal, about half an inch in thickness, and capable of holding about a pint of water: a bent gun-barrel of 10 or 12 inches in length screws into the mouth of the bottle. The bottle, well luted over with fireclay, is set in a strong air furnace, so as the tube may dip down externally beneath the surface of naphtha contained in a cylindric copper vessel, standing in a tub containing ice and water. The top of the naphtha vessel has a cover fixed on it, pierced with a hole to receive the end of the gun-barrel; and from the side of the upper part of the vessel, a small tube goes off at right angles, to let the air and vapours escape. It is advantageous to mix a little ground charcoal with the tartar previously calcined in a covered vessel, in the same iron bottle for example. Nearly 300 grains of potassium have been procured by this apparatus from 24 ounces of crude tartar. — *Biblioth. Universelle*, t. xxii. p. 36.

Potassium is possessed of very extraordinary properties. It is lighter than water; its sp. gr. being 0·865 to water 1·0. At common temperatures it is solid, soft, and easily moulded by the fingers. At 150° F. it fuses, and in a heat a little below redness it rises in vapour. It is perfectly opaque. When newly cut, its colour is splendent white, like that of silver, but it rapidly tarnishes in the air. To preserve it unchanged, we must enclose it in a small phial with pure naphtha. It conducts electricity like the common metals. When thrown upon water, it acts with great violence, and swims upon the surface, burning with a beautiful light of a red colour, mixed with violet. The water becomes a solution of pure potash. When moderately heated in the air it inflames, burns with a red light, and throws off alkaline fumes. Placed in chlorine, it spontaneously burns with great brilliancy.

On all fluid bodies which contain water, or much oxygen or chlorine, it readily acts; and in its general powers of chemical combination, says its illustrious discoverer, potassium may be compared to the alkahest or universal solvent, imagined by the alchemists.

Potassium combines with oxygen in different proportions. When potassium is gently heated in common air or in oxygen, the result of its combustion is an orange-coloured fusible substance. For every grain of the metal consumed about $1\frac{7}{10}$ cubic inches of oxygen are condensed. To make the experiment accurately, the metal should be burned in a tray of platina covered with a coating of fused muriate of potash.

The substance procured by the combustion of potassium at a low temperature was first observed, in October, 1807, by Sir H. Davy, who supposed it to be the protoxide; but MM. Gay Lussac and Thenard, in 1810, showed that it was in reality the deutoxide or peroxide. When it is thrown into water, oxygen is evolved, and a solution of the protoxide results, constituting common aqueous potash. When it is fused and brought in contact with combustible bodies they burn vividly, by the excess of its oxygen. If it be heated in carbonic acid, oxygen is disengaged, and common subcarbonate of potash is formed.

Mr. Phillips found, in decomposing nitre by heat, that a residuum of peroxide of potassium was left in the gun-barrel; for, on pouring water into it, oxygen was evolved in such quantity as to inflame an ignited stick, and to maintain its combustion for some time. See *Barium* for an analogous result.

When it is heated very strongly upon platina, oxygen gas is expelled from it, and there remains a difficultly fusible substance of a grey colour, vitreous fracture, soluble in water without effervescence, but with much heat. Aqueous potash is then produced. The above ignited solid is protoxide of potassium, which becomes pu-

potash by combination with the equivalent quantity of water. When we produce potassium with ignited iron-turnings and potash, much hydrogen is disengaged from the water of the hydrate, while the iron becomes oxidised from the residuary oxygen. By heating together pure hydrate of potash and boracic acid, Sir H. Davy obtained from 17 to 18 of water from 100 parts of the solid alkali.

By acting on potassium with a very small quantity of water, or by heating potassium with fused potash, the protoxide may also be obtained. The proportion of oxygen in the protoxide is determined by the action of potassium upon water. Eight grains of potassium produce from water about $9\frac{1}{2}$ cubic inches of hydrogen; and for these the metal must have fixed $4\frac{3}{4}$ cubic inches of oxygen. But as 100 cubic inches of oxygen weigh 33·9 gr., $4\frac{3}{4}$ will weigh 1·61. Thus, 9·61 gr. of the protoxide will contain 8 of metal; and 100 will contain 83·25 metal + 16·75 oxygen. From these data, the prime of potassium comes out 4·969; and that of the protoxide 5·969. Sir H. Davy adopts the number 75 for potassium, corresponding to 50 on the oxygen scale.

When potassium is heated strongly in a small quantity of common air, the oxygen of which is not sufficient for its conversion into potash, a substance is formed of a greyish colour, which, when thrown into water, effervesces without taking fire. It is doubtful whether it be a mixture of the protoxide and potassium, or a combination of potassium with a smaller proportion of oxygen than exists in the protoxide. In this case it would be a suboxide, consisting of 2 primes of potassium = 10 + 1 of oxygen = 11.

When thin pieces of potassium are introduced into chlorine, the inflammation is very vivid; and when potassium is made to act on chloride of sulphur, there is an explosion. The attraction of chlorine for potassium is much stronger than the attraction of oxygen for the metal. Both of the oxides of potassium are immediately decomposed by chlorine, with the formation of a fixed chloride, and the extrication of oxygen.

The combination of potassium and chlorine is the substance which has been improperly called muriate of potash, and which, in common cases, is formed by causing liquid muriatic acid to saturate solution of potash, and then evaporating the liquid to dryness, and igniting the solid residuum. The hydrogen of the acid here unites to the oxygen of the alkali, forming water, which is exhaled; while the remaining chlorine and potassium combine. It consists of 5 potassium + 4·5 chlorine.

Potassium combines with hydrogen, to form potassuretted hydrogen, a spontaneously inflammable gas, which comes over occasionally in the production of potassium by the gun-barrel experiment. MM. Gay Lussac and Thenard describe also a solid compound of the same two ingredients, which they call a hydruret of potassium. It is formed by heating the metal a long while in the gas, at a temperature just under ignition. They describe it as a greyish solid, giving out its hydrogen on contact with mercury.

When potassium and sulphur are heated together, they combine with great energy, with disengagement of heat and light even *in vacuo*. The resulting sulphuret of potassium is of a dark grey colour. It acts with great energy on water, producing sulphuretted hydrogen, and burns brilliantly when heated in the air, becoming sulphate of potash. It consists of 2 sulphur + 5 potassium, by Sir H. Davy's experiments. Potassium has so strong an attraction for sulphur, that it rapidly separates it from hydrogen. If the potassium be heated in the sulphuretted gas, it takes fire and burns with great brilliancy; sulphuret of potassium is formed, and pure hydrogen is set free.

Potassium and phosphorus enter into union with the evolution of light; but the mutual action is feebler than in the preceding compound. The phosphuret of potassium, in its common form, is a substance of a dark chocolate colour, but when heated with potassium in great excess, it becomes of a deep grey colour, with considerable lustre. Hence it is probable, that phosphorus and potassium are capable of combining in two proportions. The phosphuret of potassium burns with great brilliancy, when exposed to air; and when thrown into water produces an explosion, in consequence of the immediate disengagement of phosphuretted hydrogen.

Charcoal, which has been strongly heated in contact with potassium, effervesces in water, rendering it alkaline, though the charcoal may be previously exposed to a temperature at which potassium is volatilised. Hence, there is probably a compound of the two formed by a feeble attraction.

Of all known substances, potassium is that which has the strongest attraction for oxygen; and it produces such a condensation of it, that the oxides of potassium are denser than the metal itself. Potassium has been skilfully used by Sir H. Davy and MM. Gay Lussac and Thenard, for detecting the presence of oxygen in bodies. A number of substances, undecomposable by other chemical agents, are readily decomposed by this substance.

Potassiuretted hydrogen. See *Potassium.*

POTATO. (A corruption of *batatas*, the provincial name of the root in that part of Peru from which it was first obtained.) See *Solanum tuberosum.*

Potato, Spanish. See *Convolvulus.*

Potential cautery. See *Cautery.*

POTENTI'LLA. (*a*, *æ*. f.; *à potentia*, from its efficacy.) 1. The name of a genus of plants in the Linnæan system. Class, *Icosandria*; Order, *Polygynia.*

2. The pharmacopœial name of the wild tansy. See *Potentilla anserina.*

Potentilla anseri'na. The systematic name of the silver-weed, or wild tansy. *Argentina. Anserina.* The leaves of this plant, *Potentilla —foliis dentatis, serratis, caule repente, pedunculis unifloris*, of Linnæus, possess mildly astringent and corroborant qualities; but are seldom used, except by the peasantry.

Potentilla reptans. The systematic name of the common cinquefoil, or five-leaved grass.

Pentaphyllum. The roots of this plant, *Potentilla — foliis quinatis, caule repente, pedunculis unifloris*, of Linnæus, have a bitterish styptic taste. They were used by the ancients in the cure of intermittents, and to arrest hæmorrhage; and in later times they have been in esteem as an astringent in diarrhœa and other fluxes.

POTE'RIUM. (*um, ii.* n.; from ποτηριον, a cup: so named from the shape of its flowers.) The name of a genus of plants in the Linnæan system. Class, *Monœcia;* Order, *Polyandria.*

POTERIUM SANGUISORBA. The systematic name of the Burnet saxifrage, the leaves of which are often put into cool tankards: they have an astringent quality.

POUCH. 1. In *Anatomy, sacculus*, a morbid dilatation of any part of a canal; as the intestine.

2. In *Botany,* — see *Silicula.*

POUPART'S LIGAMENT. *Ligamentum Poupartii.* See *Obliquus externus abdominis.*

Powder, antimonial. See *Antimonialis pulvis.*

Powder of burnt hartshorn with opium. See *Pulvis cornu usti cum opio.*

Powder, compound, of aloes. See *Pulvis aloes compositus.*

Powder, compound, of chalk. See *Pulvis cretæ compositus.*

Powder, compound, of chalk, with opium. See *Pulvis cretæ compositus cum opio.*

Powder, compound, of cinnamon. See *Pulvis cinnamomi compositus.*

Powder, compound, of contrayerva. See *Pulvis contrayervæ compositus.*

Powder, compound, of ipecacuanha. See *Pulvis ipecacuanhæ compositus.*

Powder, compound, of kino. See *Pulvis kino compositus.*

Powder, compound, of scammony. See *Pulvis scammoneæ compositus.*

Powder, compound, of senna. See *Pulvis sennæ compositus.*

Powder, compound, of tragacanth. See *Pulvis tragacanthæ compositus.*

POWDER OF PAYNARD. A styptic powder, said to consist of the charcoal of beech wood.

Power, muscular. See *Irritability*, and *Muscular motion.*

Power, tonic. See *Irritability.*

Precipitate, red. See *Hydrargyri nitrico-oxidum.*

Precipitate, white. See *Hydrargyri ammonio-chloridum.*

PRÆCO'RDIA. (*a, orum.* n. pl.; from *præ*, before, and *cor*, the heart.) The forepart of the region of the thorax.

PRÆFU'RNIUM. (From *præ*, before, and *furnus*, a furnace.) The mouth of a chemical furnace.

PREDISPOSING CAUSE. *Causa prædisponens.* See *Ætiologia.*

PREDISPOSITION. *Prædispositio.* That constitution, or state of the solids, or fluids, or both, which disposes the body to assume any particular diseased action.

PRÆMO'RSUS. (From *præmordeo*, to bite off.) Præmorse: bitten off. In *Botany* this term is differently applied: the *radix præmorsa* is an abrupt root, naturally, it is supposed, inclined to a taper root, but from some decay or interruption in its descending point it becomes abrupt, or, as it were, bitten off; as in the *Scabiosa succisa*, and *Hedypnois hirta.*

The old opinion of this formed root is thus described in Gerarde's Herbal: — "The great part of the root seemeth to be bitten away: old fantasticke charmers report, that the divel did bite it for envie, because it is an herbe that hath so many good vertues, and is so beneficiall to mankinde."

The *folium præmorsum* is jagged-pointed, very blunt, with various irregular notches; as in *Epidendum præmorsum*, &c.

PRÆPARANTIA VASA. The spermatic vessels of the testicles.

PRE'PUCE. (*Præputium, ii.* n.; from *præputio*, to cut off before: because some nations used to cut it off in circumcision.) *Epagogion* of Dioscorides. *Posthe.* The membranous or cutaneous fold that covers the glans penis of men, and is partly cut off by the operation of circumcision. The clitoris of the female has the same covering in miniature, called *præputium clitoridis.*

PRA'SINUS. (From πρασον.) *Prasine:* applied to designate the grass green colour of the purest kind. See *Colour.*

PRA'SIUM. (*um, ii.* n.; from πρασια, a square border: so called from its square stalks.) Horehound. See *Marrubium vulgare.*

PRA'SUM. (Πρασον; from πραω, to burn, because of its hot taste.) The leek.

Prawn. See *Cancer squilla.*

PRA'XIS. (*is, eos.* f.; from πρασσω, to perform.) The practice of any thing, as of medicine.

Precipitant. See *Precipitation.*

PRECIPITA'TION. (*Præcipitatio, onis.* f. from *præcipito*, to cast down.) When two bodies are united, for instance, an acid and an oxide, and a third body is added, such as an alkali which has a greater affinity with the acid than the oxide has, the consequence is, that the alkali combines with the acid, and the oxide thus deserted, appears in a separate state at the bottom of the vessel in which the operation is performed. This decomposition is commonly known by the name of *precipitation*, and the substance that sinks is named a *precipitate.* The substance, by the addition of which the phenomenon is produced, is denominated the *precipitant.*

PREGNANCY. *Gestatio uterina.* The particular manner in which pregnancy takes place has hitherto remained involved in obscurity, notwithstanding the laborious investigation of the most eminent philosophers of all ages. Although a state which (with a few exceptions) is natural to all women, it is in general the source of many disagreeable sensations, and often the cause of diseases, which might be attended with the worst consequences if not properly treated.

It is now, however, universally acknowledged that those women who bear children enjoy, usually, more certain health, and are much less

liable to dangerous diseases, than those who are unmarried, or who prove barren.

Signs of pregnancy. — The womb has a very extensive influence, by nervous sympathies, on many other parts of the body: hence the changes which are produced on it by impregnation, must be productive of changes on the state of the general system. These constitute the signs of pregnancy.

During the first fourteen or fifteen weeks, the signs of pregnancy are very ambiguous, and cannot be depended on; for, as they proceed from the irritation of the womb on other parts, they may be occasioned by every circumstance which can alter the natural state of that organ.

The first circumstance which renders pregnancy probable, is the suppression of the periodical evacuation, which is generally accompanied with fulness in the breasts, headach, flushings in the face, and heat in the palms of the hands.

These symptoms are commonly the consequences of suppression, and therefore are to be regarded as signs of pregnancy, in so far only as they depend on it.

As, however, the suppression of the periodical evacuation often happens from accidental exposure to cold, or from the change of life in consequence of marriage, it can never be considered as an infallible sign.

The belly, some weeks after pregnancy, becomes flat, from the womb sinking, and hence drawing down the intestines along with it; but this cannot be looked upon as a certain sign of pregnancy, because an enlargement of the womb from any other cause will produce the same effect.

Many women, soon after they are pregnant, become very much altered in their looks, and have peculiar irritable feelings, inducing a disposition of mind which renders their temper easily rufiled, and inciting an irresistible propensity to actions of which, on other occasions, they would be ashamed.

In such cases, the features acquire a peculiar sharpness, the eyes appear larger, and the mouth wider than usual; and the woman has a particular appearance, which cannot be described, but with which women are well acquainted.

These breeding symptoms, as they are called, originate from the irritation produced on the womb by impregnation; and as they may proceed from any other circumstance which can irritate that organ, they cannot be depended on when the woman is not young, or where there is not a continued suppression for at least three periods.

The irritations on the parts contiguous to the womb are equally ambiguous; and therefore the signs of pregnancy, in the first four months, are always to be considered as doubtful, unless every one enumerated be distinctly and unequivocally present.

From the fourth month, the signs of pregnancy are less ambiguous, especially after the womb has ascended into the cavity of the belly. In general, about the fourth month, or a short time after, the child becomes so much enlarged, that its motions begin to be felt by the mother; and hence a sign is furnished at that period called *quickening*. Women very improperly consider this sign as the most unequivocal proof of pregnancy; for though, when it occurs about the period described, preceded by the symptoms formerly enumerated, it may be looked upon as a sure indication that the woman is with child, yet, when there is an irregularity, either in the preceding symptoms or in its appearance, the situation of the woman must be doubtful.

This fact will be easily understood; for, as the sensation of the motion of the child cannot be explained or accurately described, women may readily mistake other sensations for that of quickening. Flatus has often been so pent up in the bowels, that the natural pulsation of the great arteries, of which people are conscious only in certain states of the body, has frequently been mistaken for this feeling.

After the fourth month, the womb rises gradually from the cavity of the pelvis, enlarges the belly, and pushes out the navel: hence the protrusion of the navel has been considered one of the most certain signs of pregnancy in the latter months. Every circumstance, however, which increases the bulk of the belly occasions this symptom; and therefore it cannot be trusted to, unless other signs occur.

The progressive increase of the belly, along with suppression, after having been formerly regular, and the consequent symptoms, together with the sensation of quickening at the proper period, afford the only true marks of pregnancy.

These signs, however, are not to be entirely depended on; for the natural desire which every woman has to be a mother, will induce her to conceal, even from herself, every symptom which may render her situation doubtful, and to magnify every circumstance which can tend to prove that she is pregnant.

Besides quickening and increase of bulk of the belly, another symptom appears in the latter months, which, when preceded by the ordinary signs, renders pregnancy certain beyond a doubt. It is the presence of milk in the breasts. When, however, there is any irregularity in the preceding symptoms, this sign is no longer to be considered of any consequence.

As every practitioner must naturally wish to distinguish pregnancy from disease, the disorders which resemble it should be thoroughly understood, and also their diagnostics. Generally speaking, there is no difficulty in ascertaining whether a woman be pregnant or not after the fifth month; but, before this period, the most skilful examination may not be able to resolve the point; and a judicious practitioner, in case of doubt, will be careful not to commit himself by a rash decision. One of the most certain signs of pregnancy is the *ballottement*, or passive motion of the fœtus, when the uterus is acted upon by the hands in a particular manner. See *Ballottement*. Towards the end of the fifth month, the active movements of the fœtus may often be excited by striking with the finger on the cervix uteri; this is unequivocal. The same movements, perceived through the parietes of the abdomen, afford less certain indications, because the movements of gas in the

intestines have been mistaken for them, though they can hardly be so by an intelligent observer. The signs of pregnancy derived from auscultation are quite conclusive where they exist; but the converse of the proposition does not hold, and we must by no means decide that a woman is not pregnant because the auscultatory signs are absent. See *Auscultation*.

An enlargement and dark colour of the areola round the nipple generally attends pregnancy: it has been regarded by some as a very unequivocal sign; but it is, in reality, no criterion at all, as it may sometimes be observed in women who have never conceived.

PREHE'NSIO. (From *prehendo*, to surprise: so named from its sudden seizure.) The catalepsy.

Premature labour. See *Abortion*.

PRESBYO'PIA. (*a*, *æ*. f.; from πρεσβυς, old, and ωψ, the eye: because it is frequent with old men.) That defect of the sight by which objects close are seen confusedly, but at remoter distances distinctly. The proximate cause is a tardy adunation or contraction of the iris.

1. It is sometimes caused, however, by a flatness of the cornea. By so much the cornea is flatter, so much the less and more tardy it refracts the rays into a focus. This evil may arise, 1st., From a want of aqueous or vitreous humour, which is common to the aged; or from some disease. 2d, From a cicatrix, which diminishes the convexity of the cornea. 3d, From a natural conformation of the cornea.

2. Another cause of it is too flat a crystalline lens. This evil is most common to the aged, or it may happen from a wasting of the crystalline lens.

3. It may likewise be produced by too small density of the cornea or humours of the eye. By so much more these humours are thin or rarified, so much the less they refract the rays of light. Whosoever is affected from this cause is cured in older age; for age induces a greater density of the cornea and lens. From this it is an observed fact, that the *presbyopes* are often cured spontaneously, and throw away their glasses, which younger persons in this disease are obliged to use.

4. A custom of viewing continually remote objects may also give rise to it: hence artificers who are occupied in viewing remote objects are said to contract this malady. The reason of this phenomenon is not very clear.

5. From a multitude of causes aged persons are presbyopes; from a penury of humours, which render the cornea and lens flatter, and the bulb shorter. When in senile age, from dryness, the bulb of the eye becomes flatter and shorter, and the cornea flatter, those who were short-sighted or myopes before, see now without their concave glasses.

6. Another cause is too close a proximity of objects. The focus is shorter of distant, but longer of nearer objects.

7. *Presbyopia* from a coarctated pupil.

The best remedy for supplying the deficient convexity of the cornea, as well as the deficient irritability of the iris, is convex spectacles; adapting their power to the precise demand of the eye, and increasing it as the demand grows more urgent.

Presbyte. See *Presbyopia*.

PRESBY'TIA. (*a*, *æ*. f.; from πρεσβυς, old: because it is frequent in old people.) See *Presbyopia*.

PRESCRIPTION. *Præscriptio*. A recipe or formula for the exhibition of medicines. We distinguish in prescriptions, 1. The *basis*, or active ingredient. 2. The *adjuvans*, or that which promotes the operation of the former. 3. The *corrigens*, or that which corrects any thing injurious or unpleasant in the operation of the active ingredient. 4. The *constituens*, or that which gives the whole a commodious or agreeable form.

PRESMUCHUM. An alchemical name of ceruse. — *Ruland*.

PRESMUCKIS. The same.

Priapeia. See *Nicotiana rustica*.

PRIAPI'SCUS. (From πριαπος, the penis.) 1. A tent made in the form of a penis.

2. A bougie.

PRI'APISM. (*Priapismus*, *i*. m.; from Πριαπος, a heathen god.) A continual erection of the penis.

PRIA'PUS. (*us*, *i*. m. Πριαπος, a heathen god, remarkable for the largeness of his genitals and whose penis is always painted erect.) The penis, or membrum virile. The dried penis of many animals as the stag, whale, bull, &c., was formerly used in medicine.

Prickle. See *Aculeus*.

Prickly. See *Aculeatus*.

Prickly heat. See *Lichen tropicus*.

PRIMÆ VIÆ. The first passages. The stomach and the intestinal tube are so called, because they are the first passages for what is taken into the stomach; the lacteals, the *secundæ viæ*, because the nourishment next goes into them; and lastly, the blood-vessels, which are supplied by the lacteals, are called *viæ tertiæ*.

PRIMARY. *Primarius*. A term in very general use in *Pathology*. It is applied to diseases, to their symptoms, causes, &c. and denotes priority in opposition to what follows, or what is *secondary*: thus, when inflammation of the diaphragm produces furious delirium, the *primary* disease is the paraphrenitis; so when gall-stones produce violent pain and vomiting, which are followed by jaundice, white fæces, porter-coloured urine, &c. the pain and vomiting are *primary* symptoms, the jaundice and white stools are secondary, &c.

Primary teeth. See *Teeth*.

Primrose. See *Primula vulgaris*.

PRI'MULA. *a*, *æ*. f.; from *primulus*, very early; so called because it flowers in the beginning of the spring.) The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Monogynia*.

PRIMULA VERIS. (From *primulus*, the beginning: so called because it flowers in the beginning of the spring.) *Verbasculum. Herba petri.* The cowslip, paigil, or peagle. The flowers of this plant have a moderately strong and pleasant smell, and a somewhat rough bitter taste. Vinous liquors, impregnated with their flavour by maceration or fermentation, a

strong infusions of them drank as tea, are supposed to be mildly corroborant, antispasmodic, and anodyne. An infusion of three pounds of the fresh flowers in five pints of boiling water is made in the shops into a syrup of a fine yellow colour, and agreeably impregnated with the flavour of the cowslip.

PRIMULA VULGARIS. The primrose. The leaves and root of this common plant possess sternutatory properties.

PRI'NCEPS ALEXIPHARMACO'RUM. The angelica was formerly so much esteemed as to obtain this name.

PRINCIPLE. *Principium.* A term somewhat vaguely used by chemists. Sometimes it means a component part; thus we speak of the *constituent principles* of bodies. At other times it means a substance, on the presence of which, certain qualities, common to a number of bodies, depend; thus we speak of an *acidifying principle.* Lastly, the substances peculiar to animal and vegetable bodies which result from particular modes of combination of ordinary matter, are termed the *proximate principles* of animal and vegetable bodies.

PRIONO'DES. (From πριων, a saw.) Serrated: applied in old writings to the serrated union of bones, or *sutures.*

PRI'OR. The first. A term applied to some muscles and various parts from their order.

PRIOR ANNULARIS. *Musculus prior annularis.* Fourth *interosseous* of Winslow. An internal interosseous muscle of the hand. See *Interossei anus.*

PRIOR INDICIS. *Extensor tertii internodii indicis,* of Douglas. An internal interosseal muscle of the hand, which draws the forefinger inwards towards the thumb, and extends it obliquely.

PRIOR MEDII. *Musculus prior medii. Second interosseous,* of Douglas. An external interosseous muscle of the hand. See *Interossei anus.*

PRISMA'TIC. *Prismaticus.* 1. Prismshaped.

2. The colours which arise from the action of a transparent prism on the solar beam, are called *prismatic colours.*

PRO RE NATA. A term frequently used in extemporaneous prescriptions, and implying occasionally, as circumstances may require: as an aperient dose is required to be taken *pro re natâ.*

PRO'BANG. A flexible piece of whalebone with an oval piece of ivory or a piece of sponge fixed to the end. It is used by surgeons to push down into the stomach foreign bodies which stick in the œsophagus.

PROBE. (From *probo,* to try; because surgeons try the depth and extent of wounds, with it.) *Stylus.* A surgical instrument, of a long and slender form.

PRO'BOLE. (Προβολη, a prominence; from βαλλω, to project.) See *Apophysis.*

PROBO'SCIS. (*is, idis.* f.; from προ, before, and βοσκω, to feed.) A snout or trunk, as that of an elephant, by which it feeds itself.

PROCA'RDIUM. (From προ, before, and καρδια, the orifice of the stomach.) The pit of the stomach.

PROCATA'RCTIC. (*Procatarcticus;* from προκαταρχω, to go before.) Occasional: applied to a remote cause of disease; as exposure to cold, unusual exertion, &c. See *Ætiologia.*

PRO'CESS. (*Processus, ûs.* m.; from *procedo,* to go before.) In *Anatomy,* a production of any part.

Processus cœci vermiformes. See *Intestine.*

Processus caudatus. See *Liver.*

Processus ciliaris. See *Oculus.*

PROCE'SSUS MAMILLA'RES. A name formerly applied to the bulbs of the olfactory nerves.

PROCIDE'NTIA. (*a, æ.* f.; from *procido,* to fall down.) A complete falling down of any part; thus, *procidentia ani, uteri, vaginæ,* &c. See *Prolapsus.*

PROCO'NDYLUS. (From προ, before, and κονδυλος, the middle joint of the finger.) The first joint of the finger next the metacarpus.

PROCTA'LGIA. (*a, æ.* f.; from πρωκτος, the fundament, and αλγος, pain.) A violent pain in the anus. It sometimes takes place suddenly from exposure to cold, from irritating fæces, but it is mostly symptomatic of some disease, as piles, scirrhus, prurigo, cancer, &c.

PROCTI'CUS. (From πρωκτος, the fundament.) Appertaining to the anus, or fundament.

PROCTI'TIS. (*is, idis.* f.; from πρωκτος, the anus.) *Clunesia. Cyssotis.* Inflammation of the internal or mucous membrane of the lower part of the rectum.

PRO'CTOLEUCORRHŒ'A. (*a, æ.* f.; from πρωκτος, the anus, λευκος, white, and ῥεω, to flow.) A purging of white mucus.

PROCTORRHŒ'A. (From πρωκτος, the anus, and ῥεω, to flow.) A purging of mucus.

PROCU'MBENS. Procumbent: trailing, and a little bent upwards. Applied to stems, when lying upon the ground, and not sending out roots, &c.; as that of the *Lysimachia nemorum.*

Productio. See *Apophysis.*

PROEGU'MINOS. (Προηγουμενος; from προηγεομαι, to precede or go before.) Proeguminal. Precedent: the same as predisposing; applied to the causes of disease. See *Ætiologia.*

PROEO'TIA. (*a, æ.* f. Πρωιωτης; from πρωιος, *matutinus.*) Genital precocity.

PROFLU'VIA. Fluxes. The fifth order of Cullen's class *Pyrexiæ.*

Profluvii cortex. See *Nerium antidysentericum.*

PROFLU'VIUM. (*um, ii.* n.; from *profluo,* to flow out.) A flux.

Profundus. See *Flexor profundus perforans.*

PROFU'SIO. A flow of any of the fluids, not attended by fever; as a loss of blood.

PROGLO'SSIS. (From προ, before, and γλωσσα, the tongue.) The tip of the tongue.

PROGNO'SIS. (*is, is.* f.; from προ, before, and γινωσκω, to know.) The foretelling the event of diseases from their symptoms.

PROGNO'STIC. (*Prognosticus;* from προγινωσκω, to know beforehand.) 1. Adjectively, relating to *prognosis.*

2. Substantively, a *prognosis.*

Projectura. See *Apophysis.*

PROLA'PSUS. (*us, i.* m.; from *prolabor*, to slip down.) A protrusion or falling down of a part of a viscus that is uncovered: applied to the uterus, anus, &c.

Prolapsus ani. A falling down of the lower part or extremity of the bowel. It is a very common occurrence in infancy, and indeed not uncommon at any period of life. It is a prominent protrusion of the internal membrane of the gut, through the sphincter, beyond what is natural; for a small portion always protrudes every time the fæces are expelled, and goes back as the sphincter contracts. In most instances this protruded part is easily returned by gentle pressure with the fingers. Cold and astringent lotions and stimulants mostly effect a cure after removing the apparent causes: if these should fail, clipping off a small portion of the relaxed and protruded membrane will be beneficial, or applying a ligature, if there should be any fear of hæmorrhage. Where such treatment is not deemed improper, an instrument must be contrived to keep the bowel in its place.

Prolapsus uteri. A falling down of the womb. When the relaxation is so great that the uterus protrudes through the external parts, the case is called *Procedentia uteri*.

Prole'pticus. (From προλαμβανω, to anticipate.) Applied to those diseases, the paroxysms of which anticipate each other, or return after less and less periods of intermission.

PRO'LIFER. (From *proles*, an offspring, and *fero*, to bear.) Prolific, or proliferous: applied to those stems which shoot out new branches from the summit of the former ones; as in the Scotch fir, *Pinus sylvestris*, and *Hypnum proliferum*: and to blossoms, when one grows out of another, as frequently happens in the genus *Polyanthus*.

Prometopi'dium. (From προ, before, and μετωπον, the forehead.) *Prometopis*. The skin upon the forehead.

Prometopis. See *Prometopidium*.

PROMINENT. *Prominens*. Projecting: standing out beyond the surrounding parts. Besides its general application, it is particularly used, in botanical language, to express the parts of a seed-vessel which project beyond the valves, as in many of the tetradynamic plants.

PRONA'TION. *Pronatio*. The act of turning the palm of the hand downwards. It is performed by rotating the radius upon the ulna, by means of several muscles, which are termed pronators.

PRONA'TOR. (*or, oris.* m.) A name given to two muscles of the hand, the pronator radii quadratus, and pronator radii teres; the use of which is to perform the opposite action to that of the supinators, viz. pronation.

Pronator quadratus. See *Pronator radii quadratus*.

Pronator radii brevis. See *Pronator radii quadratus*.

Pronator radii quadratus. *Pronator quadratus*, of Douglas and Albinus. *Pronator quadratus sive transversus*, of Winslow. *Pronator radii brevis seu quadratus*, of Cowper. This, which has got its name from its use and its shape, is a small fleshy muscle, situated at the lower and inner part of the fore-arm, and covered by the tendons of the flexor muscles of the hand. It arises tendinous and fleshy from the lower and inner part of the ulna, and runs nearly in a transverse direction, to be inserted into that part of the radius which is opposite to its origin, its inner fibres adhering to the inter-osseous ligament. This muscle assists in the pronation of the hand, by turning the radius inwards.

Pronator radii teres. *Pronator teres*, of Albinus and Douglas. *Pronator teres, sive obliquus*, of Winslow. A small muscle situated at the upper and anterior part of the fore-arm. It is called *teres*, to distinguish it from the pronator quadratus. It arises tendinous and fleshy from the anterior and inferior part of the outer condyle of the os humeri; and tendinous from the coronoid process of the ulna, near the insertion of the brachialis internus. The median nerve passes between these two portions. From these origins the muscle runs obliquely downwards and outwards, and is inserted, tendinous and fleshy, into the anterior and convex edge of the radius, about the middle of that bone. This muscle, as its name indicates, serves to turn the hand inwards.

Pronerva'tio. (From *pro*, before, and *nervus*, a string.) A tendon or aponeurosis.

PRO'NUS. (*Pronus*, having the face downwards.) Applied to the under surface of a leaf.

Prop. See *Fulcrum*.

PROPA'GO. (*o, inis.* f.) A slip, layer, or cutting of a vine. Some anatomists have called the smaller branches of vessels and nerves *propagines*.

PROPHYLA'CTIC. (*Prophylacticus*; from προφυλασσω, to guard against.) Any means used with a view to guard against diseases are so called.

PRO'PRIUS. Proper. Belonging to an individual thing; hence *tunica propria renis*, &c.

PROPTO'SIS. (*is, is.* f.; from προπιπτω, to fall down.) *Proptoma*. 1. A protrusion or falling down of any part: applied, like prolapsus, to the uterus, rectum, &c.

2. A relaxation of parts, as the scrotum, breasts, &c.

Propye'ma. (From προ, before, and πυον, pus.) A premature collection of pus.

PRO'RA. (*a, æ.* f.; from πρωρα, the prow of a vessel.) The occiput.

Prosarthro'sis. (From προς, to, and αρθρον, to articulate.) Synonymous with *Diarthrosis*.

Prose'ctor. (From *proseco*, to cut.) The person who dissects the subject for anatomical demonstration is now generally so called.

Prospe'gma. (From προσπηγνυμι, to fix near.) A fixing of humours in one spot.

Pro'stasis. (From προιστημι, to predominate.) An abundance of morbid humours.

PRO'STATE. (*Prostatus*; from προιστημι, to stand before: because it is situated before the urinary bladder.) Standing before; jutting out.

Prostate gland. *Glandula prostata*. Cowper's

glandulosum. *Adenoides.* A very large, heart-like, firm gland, situated between the neck of the urinary bladder and the bulbous part of the urethra. It secretes the lacteal fluid, which is emitted into the urethra by ten or twelve ducts, that open near the verumontanum, during coition. This gland is very liable to inflammation, scirrhus, and cancer.

Prostate, inferior muscle of the. See *Transversus perinei alter.*

PROSTA'TIC. *Prostaticus.* Appertaining to the prostate gland.

PROSTRA'TUS. Prostrate: applied synonymously with *depressus*, depressed, to a stem which lies naturally remarkably flat, spreading horizontally over the ground; as in *Coldenia procumbens*, and *Coronopus ruelli.*

PROTO'GALA. (*a*, *æ.* f.; from πρωτος, first, and γαλα, milk.) The milk first secreted after delivery. See *Colostrum.*

PROTOPA'THIC. (*Protopathicus*; from πρωτος, first, and παθος, a disease.) Applied to the symptoms of diseases in the same sense as *primary.*

Protoxide. See *Oxide.*

PROTUBERA'NTIA. 1. A protuberance in any part.

2. An apophysis.

PRO'XIMATE. *Proximus.* The next in order.

PROXIMATE CAUSE. (*Causa proxima*; so called, because when the exciting cause begins to have effect it is the *proximum*, or next thing that happens.) The proximate cause of a disease is the disordered action in which the disease consists: in other words, the disease itself.

Proximate principle. See *Principle.*

PRUI'NA. (*a*, *æ.* f.; hoar-frost.) The powdery substance observed on ripe fruit, especially plums.

PRU'NA. (*a*, *æ.* f.; a live coal: so called by Avicenna from its assuming the colour, and often the oval figure, of the sloe, or fruit of the *Prunus spinosa.* — *Good.*) The carbuncle.

Prune. See *Prunus domestica.*

PRUNE'LLA. (*a*, *æ.* f.; from *pruno*, a burn: because it heals burns.) 1. The name of a genus of plants in the Linnæan system. Class, *Didynamia*; Order, *Gymnospermia.*

2. The pharmacopœial name of the self-heal. See *Prunella vulgaris.*

3. The name given by Paracelsus to sore throat.

PRUNELLA VULGARIS. The systematic name of the self-heal or bugle; called also, *Prunella; consolida minor*, and *Symphitum minus. Prunella — foliis omnibus ovato-oblongis, serratis, petiolatis*, of Linnæus. It is recommended as an astringent in hæmorrhages and fluxes, as also in gargles against aphthæ and inflammation of the fauces.

PRUNE'LLO. The Brignole plum; a variety of the common plum.

PRU'NUM. (*um*, *i.* n.; from *prunus*, the tree which bears it.) A plum or prune. *Prunus* is the name of the tree, and *Prunum* is the name of the fruit.

Prunum gallicum. See *Prunus domestica.*

Prunum sylvestre. See *Prunus spinosa.*

PRU'NUS. (*us*, *i.* f.; the name of the tree which bears the fruit called prunum.) The name of a genus of plants in the Linnæan system. Class, *Icosandria*; Order, *Monogynia.*

Prunus armeniaca. See *Armeniaca vulgaris*, in the Supplement.

PRUNUS AVIUM. The systematic name of the black cherry tree. *Prunus — umbellis sessilibus, foliis ovato-lanceolatis, subtus pubescentibus, conduplicatis*, of Linnæus. The flavour of the ripe fruit is esteemed by many; and, if not taken in too large quantities, it is sufficiently wholesome. A gum exudes from the tree, whose properties are similar to those of gum-arabic.

PRUNUS CERASUS. The systematic name of the red cherry-tree. *Prunus — umbellis subpedunculatis, foliis ovato-lanceolatis, glabris, conduplicatis*, of Linnæus. The fruit of this tree, *Cerasa rubra, anglica, sativa*, possess a pleasant, acidulated, sweet flavour, and are proper in fevers, scurvy, and bilious obstructions. Red cherries are mostly eaten as a luxury, and are very wholesome, except to those whose bowels are remarkably irritable.

PRUNUS DOMESTICA. The systematic name of the plum or damson tree. *Prunus — pedunculis subsolitariis, foliis lanceolato-ovatis convolutis, ramis muticis; gemmæ floriferæ aphyllæ*, of Linnæus. Plums are a sufficiently wholesome fruit when eaten, though they generally bear the blame of the bowels complaints, which are really produced by the sudden vicissitudes of temperature in autumn. Plums dried with sugar are called *prunes*, or French plums. They are a good mild laxative, especially when stewed. Prunes form an ingredient in confection of senna. The *damson* is only a variety of the plum, which, when perfectly ripe, affords a wholesome material for tarts, &c., gently opening the body: but when damsons are not perfectly mature, they produce colicky pains and diarrhœa.

PRUNUS LAURO-CERASUS. The systematic name of the poison-laurel: called also, common cherry laurel, bay laurel, and Alexandrian laurel. *Lauro-cerusus. Prunus — floribus racemosis foliis sempervirentibus dorso biglandulosis*, of Linnæus. The leaves of the lauro-cerasus have a bitter styptic taste, accompanied with a flavour resembling that of bitter almonds, or other kernels of the drupaceous fruits: the flowers also manifest a similar flavour. The powdered leaves, applied to the nostrils, excite sneezing, though not so strongly as tobacco. The kernel-like flavour which these leaves impart, being generally esteemed grateful, has sometimes caused them to be employed for culinary purposes, and especially in custards, puddings, blancmange, &c.; and as the proportion of this sapid matter of the leaf to the quantity of the milk is commonly inconsiderable, bad effects have seldom ensued. But as the poisonous quality of this laurel is now indubitably proved, and known to be the prussic acid, which can be obtained in a separate form (see *Hydrocyanic acid*), the public ought to be cautioned against its internal use.

The following communication to the Royal Society, by Dr. Madden, of Dublin, contains

the first and principal proofs of the deleterious effects of this vegetable upon mankind: — "A very extraordinary accident that fell out here some months ago, has discovered to us a most dangerous poison, which was never before known to be so, though it has been in frequent use among us. The thing I mean is a simple water, distilled from the leaves of the lauro-cerasus: the water is at first milky, but the oil which comes over being in a good measure separated from the phlegm, by passing it through a flannel bag, it becomes as clear as common water. It has the smell of bitter almonds, or peach-kernel, and has been for many years in frequent use among our housewives and cooks, to give that agreeable flavour to their creams and puddings. It has also been much in use among our drinkers of drams; and the proportion they generally use it in has been one part of laurel-water to four of brandy. Nor has this practice, however frequent, ever been attended with any apparent ill consequences, till some time in the month of September, 1728, when it happened that one Martha Boyse, a servant, who lived with a person who sold great quantities of this water, got a bottle of it from her mistress, and gave it to her mother. Ann Boyse made a present of it to Frances Eaton, her sister, who was a shopkeeper in town, and who, she thought, might oblige her customers with it. Accordingly, in a few days, she gave about two ounces to a woman named Mary Whaley, who drank about two thirds of what was filled out, and went away. Frances Eaton drank the rest. In a quarter of an hour after Mary Whaley had drunk the water (as I am informed), she complained of a violent disorder in her stomach, soon after lost her speech, and died in about an hour, without vomiting or purging, or any convulsion. The shopkeeper, F. Eaton, sent word to her sister, Ann Boyse, of what had happened, who came to her upon the message, and affirmed that it was not possible the cordial (as she called it) could have occasioned the death of the woman; and, to convince her of it, she filled out about three ounces, and drank it. She continued talking with F. Eaton about two minutes longer, and was so earnest to persuade her of the liquor's being inoffensive, that she drank about two spoonfuls more, but was hardly well seated in her chair when she died without the least groan or convulsion. Frances Eaton, who, as before observed, had drank somewhat more than a spoonful, found no disorder in her stomach, or elsewhere; but to prevent any ill consequences, she took a vomit immediately, and has been well ever since." — Dr. Madden mentions another case, of a gentleman at Kilkenny, who mistook a bottle of laurel-water for a bottle of ptisan. What quantity he drank is uncertain, but he died in a few minutes, complaining of a violent disorder in the stomach. In addition to this, we may refer to the unfortunate case of Sir Theodosius Boughton, whose death, in 1780, an English jury declared to be occasioned by this poison. In this case, the active principle of the lauro-cerasus was concentrated by repeated distillations, and given to the quantity of one ounce; the suddenly fatal effects of which must be still in the recollection of the public. To brute animals this poison is almost instantaneously mortal, as amply appears by the experiments of Madden, Mortimer, Nicholls, Fontana, Langrish, Vater, and others. The experiments conducted by these gentlemen, show that the laurel-water is destructive to animal life, not only when taken into the stomach, but also on being injected into the intestines, or applied externally to different organs of the body. It is remarked by Abbé Fontana, that this poison, even "when applied in a very small quantity to the eyes, or to the inner part of the mouth, without touching the œsophagus, or being carried into the stomach, is capable of killing an animal in a few minutes: whilst, applied in a much greater quantity to wounds, it has so little activity, that the weakest animals, such as pigeons, resist its action."

The poisonous quality of this species of laurel is the prussic acid; and, if we judge from its sensible qualities, an analogous principle seems to pervade many other vegetable substances, especially the kernels of drupaceous fruits; and in various species of the amygdalus, this sapid principle extends to the flowers and leaves. It is of importance to notice, that this is much less powerful in its action upon human subjects than upon dogs, rabbits, pigeons, and reptiles. To poison man, the essential oil of the lauro-cerasus must be separated by distillation, as in the spirituous or common laurel-water; and unless this is strongly embued with the oil, or given in a large dose, it proves innocent. Dr. Cullen observes, that the sedative power of the lauro-cerasus acts upon the nervous system in a different manner from opium and other narcotic substances, whose primary action is upon the animal functions; for the lauro-cerasus does not occasion sleep, nor does it produce local inflammation, but seems to act directly upon the vital powers. Abbé Fontana supposes that this poison destroys animal life, by exerting its effects upon the blood; but the experiments and observations from which he draws this opinion are evidently inconclusive. It may also be remarked, that many of the Abbé's experiments contradict each other. Thus, it appears from the citation given above, that the poison of this vegetable, when applied to wounds, does not prove fatal: but future experiments led the Abbé to assert that the oil of the lauro-cerasus, whether given internally, or applied to the wounds of animals, is one of the most terrible and deadly poisons known. Though this vegetable seems to have escaped the notice of Stoerck, yet it is not without advocates for its medical use. Linnæus informs us, that in Switzerland it is commonly and successfully used in pulmonary complaints. Langrish mentions its efficacy in agues; and, as Bergius found bitter almonds to have this effect, we may, by analogy, conclude that this power of the lauro-cerasus is well established. Baylies found that it possessed a remarkable power of diluting the blood, and, from experience, recommended it in those cases of disease supposed to proceed from too dense a state of that fluid: adducing particular instances of its efficacy in rheumatisms, asthma,

and schirrhous affections. Nor does this author seem to have been much afraid of the deleterious quality of lauro-cerasus, as he directs a pound of its leaves to be macerated in a pint of water, of which he gives from thirty to sixty drops three or four times a day.

PRUNUS PADUS. The systematic name of the wild cluster, or bird-cherry tree. *Padus.* The bark and berries of this shrub are used medicinally. The former, when taken from the tree, has a fragrant smell, and a bitter, subastringent taste, somewhat similar to that of bitter almonds. Made into a decoction, it cures intermittents, and it has been recommended in the cure of several forms of syphilis. The latter are said to cure the dysentery.

PRUNUS SPINOSA. The systematic name of the sloe tree. *Prunus sylvestris. Agrio-coccymela. Prunus — pedunculus solitariis foliis lanceolatis, glabris, ramis spinosis,* of Linnæus. It is sometimes employed in gargles, in tumefactions of the tonsils and uvula, and, from its astringent taste, was formerly much used in hæmorrhages, &c.

PRURIGO. (*o, inis.* f.; from *prurio,* to itch.) *Pruritus.* Prurigo is a papulous eruption. As it arises from different causes, or at different periods of life, and exhibits some varieties in its form, it is described by Dr. Willan under the titles of prurigo mitis, prurigo formicans, and prurigo senilis. In these the whole surface of the skin is usually affected; but there are likewise many cases of local prurigo, which will be afterwards noticed according to their respective situations.

1. The *prurigo mitis* originates without any previous indisposition, generally in spring, or the beginning of summer. It is characterised by soft and smooth elevations of the cuticle, somewhat larger than the papulæ of the lichen, from which they also differ by retaining the usual colour of the skin; for they seldom appear red, or much inflamed, except from violent friction. They are not, as in the other case, accompanied with tingling, but with a sense of itching almost incessant. This is, however, felt more particularly on undressing, and often prevents rest for some hours after getting into bed. When the tops of the papulæ are removed by rubbing or scratching, a clear fluid oozes out from them, and gradually concretes into thin thick scabs.

This species of prurigo mostly affects young persons; and its cause may, Dr. Willan observes, in general be referred to sordes collected on the skin, producing some degree of irritation, and also preventing the free discharge of the cutaneous exhalation; the bad consequences of which must necessarily be felt at that season of the year when perspiration is most copious. Those who have originally a delicate or irritable skin, must likewise, in the same circumstances, be the greatest sufferers.

The eruption extends to the arms, breast, back, and thighs, and often continues during two or three months of the summer, if not relieved by proper treatment. When persons affected with it neglect washing the skin, or are uncleanly in their apparel, the eruption grows more inveterate, and at length, changing its form, often terminates in the itch. Pustules arise among the papulæ, some filled with lymph, others with pus. The acarus scabiei begins to breed in the furrows of the cuticle, and the disorder becomes contagious. A steady perseverance in tepid lotions of water, and of the warm bath, is mostly of infinite service. Sulphur, magnesia, soda, nitrate of potash, are useful internally; and also, where there is debility, the internal use of cinchona and the mineral acids.

2. The *Prurigo formicans* is a much more obstinate and troublesome disease than the foregoing. It usually affects persons of adult age, commencing at all seasons of the year indifferently; and its duration is from four months to two or three years, with occasional short intermissions. The papulæ are sometimes larger, sometimes more obscure, than in the preceding species; but are, under every form, attended with an incessant, almost intolerable itching. They are diffused over the whole body, except the face, feet, and palms of the hands: they appear, however, in greatest number on those parts which, from the mode of dress, are subjected to tight ligatures; as about the neck, loins, and thighs.

The itching is complicated with other sensations, which are variously described by patients. They sometimes feel as if small insects were creeping on the skin; sometimes as if stung all over with ants; sometimes as if hot needles were piercing the skin in divers places. On standing before a fire, or undressing, and more particularly on getting into bed, these sensations become more violent, and usually preclude all rest during the greater part of the night. The prurigo formicans is, by most practitioners, deemed contagious, and confounded with the itch. In endeavouring to ascertain the justness of this opinion, Dr. Willan has been led to make the following remarks: — 1. The eruption is, for the most part, connected with internal disorder, and arises where no source of infection can be traced. 2. Persons affected may have constant intercourse with several others, and yet never communicate the disease to any of them. 3. Several persons of one family may have the prurigo formicans about the same time; but he thinks this should be referred rather to a common predisposition than to contagion, having observed that individuals of a family are often so affected at certain seasons of the year, even when they reside at a distance from each other.

Although the prurigo formicans is never, like the former species, converted into the itch, yet it does occasionally terminate in a pustular disease, not contagious. For the most part, it is necessary, in attempting the cure of this species, to attend to, and remove, if possible, some hepatic or other visceral obstruction, by an alterative course of medicine. When there is a state of debility, tonics with mineral acids and nourishing diet must be resorted to. Steel is also serviceable. Chlorine, soda, and bitters, with saline aperients, are, in common cases, of great benefit.

With respect to the external applications,

warm water, with a little spirit or liquor ammonia acetate, or Harrogate sulphureous water, will frequently allay the itching: all greasy applications are to be avoided.

3. *Prurigo senilis.* This affection does not differ much in its symptoms and external appearances from the prurigo formicans; but has been thought by medical writers to merit a distinct consideration, on account of its peculiar inveteracy. The prurigo is perhaps aggravated, or becomes more permanent in old age, from the dry, condensed state of the skin and cuticle which often takes place at that period. Those who are affected with it in a high degree have little more comfort to expect during life, being incessently tormented with a violent and universal itching. The state of the skin, in the prurigo senilis, is favourable to the production of an insect, the pediculus humanus, more especially to the variety of it usually termed bodylice.

These insects, it is well known, are bred abundantly among the inhabitants of filthy dwellings, of gaols, workhouses, &c., and in such situations prey upon persons of all ages indiscriminately. But in the prurigo senilis they arise, notwithstanding every attention to cleanliness or regimen, and multiply so rapidly that the patient endures extreme distress from their perpetual irritation. The nits or eggs are deposited on the small hairs of the skin, and the pediculi are only found on the skin, or on the linen, not under the cuticle, as some authors have represented. Warm bathing gives temporary ease in this complaint. The Harrogate water is beneficial. Lotions of nitric acid and oxymuriatic acid are very useful; thirty minims of the former to ten fluid ounces of pure water, and as much muriatic acid in addition when the former fails. Sea-water bathing, and the application of sea-water, are also very beneficial. Internally, such medicines must be given as are calculated to meet constitutional defects. Tonics with mineral acids are, in most cases, useful; and, when dyspepsia exists, bitters with the mineral alkali.

In connection with the foregoing series of complaints, Dr. Willan mentions some pruriginous affections which are merely local. He confines his observations to the most troublesome of these, seated in the podex, præputium, urethra, pubes, scrotum, and pudendum muliebre. Itching of the nostrils, eyelids, lips, or of the external ear, being generally symptomatic of other diseases, do not require a particular consideration.

1. *Prurigo podicis.* Ascarides in the rectum excite a frequent itching and irritation about the sphincter ani, which ceases when the cause is removed by proper medicines. A similar complaint often arises, independently of worms, hæmorrhoidal tumours, or other obvious causes, which is mostly found to affect persons engaged in sedentary occupations, and may be referred to a morbid state of secretion in the parts, founded, perhaps, on a diminution of constitutional vigour. The itching is not always accompanied with an appearance of papulæ or tubercles: it is little troublesome during the day-time, but returns every night soon after getting into bed, and precludes rest for several hours. The complaint continues in this form during three or four months, and has then an intermission, till it is produced again by hot weather, fatigue, watching, or some irregularity in diet. The same disease occurs at the decline of life, under a variety of circumstances.

Women, after the cessation of the catamenia, are liable to be affected with this species of prurigo, more especially in summer or autumn. The skin between the nates is rough and papulated, sometimes scaly, and a little humour is discharged by violent friction. Along with this complaint, there is often an eruption of itching papulæ on the neck, breast, and back; a swelling and inflammation of one or both ears, and a discharge of matter from behind them, and from the external meatus auditorius. The prurigo podicis sometimes occurs as a symptom of the lues venerea.

2. The *prurigo præputii* is owing to an altered state of secretion on the glans penis, and inner surface of the præputium. During the heat of summer there is also, in some persons, an unusual discharge of mucus, which becomes acrimonious, and produces a troublesome itching and often an excoriation of these parts. Washing them with water, or soap and water, employed from time to time, relieves the complaint, and should, indeed, be practised as an ordinary point of cleanliness, where no inconvenience is immediately felt. If the fluid be secreted in too large a quantity, that excess may be restrained by washes made with the liquor plumbi acetatis, or by applying the unguentum plumbi acetatis.

3. *Prurigo urethralis.* A very troublesome itching sometimes takes place at the extremity of the urethra in females, without any manifest cause. It occurs as well in young women as those who are of an advanced age. On examination, no stricture nor tumour has been found along the course of the urethra. Probably, however, the itching may be occasioned by a morbid state of the neck of the bladder, being in some instances connected with pain and difficulty in making water.

An itching at the extremity of the urethra in men is produced by calculi, and by some disease of the bladder. In cases of stricture an itching is also felt, but near the place where the stricture is situated. Another cause of it is small broken hairs, which are sometimes drawn in from the pubes, between the præputium and glans, and which afterwards becoming fixed at the entrance of the urethra, occasion an itching or slight stinging, particularly on motion. By removing the small hairs from the urethra gives immediate relief.

4. *Prurigo pubis.* Itching papulæ often arise on the pubes, and become extremely sore if the tops are removed by scratching. They are occasioned sometimes by neglect of cleanliness, but more commonly by a species of pediculus which perforates the cuticle, and thus derives nourishment, remaining fixed in the same situation. These insects are termed by Linné, &c. *pediculi pubis:* they do not, however, leave the pubes only, but often adhere to the eyebrows

eyelids, and axillæ. They are often found, also, on the breast, abdomen, thighs, and legs, in persons of a sanguine temperament, who have those parts covered with strong hairs. It is remarkable that they seldom or never fix upon the hairy scalp. The great irritation produced by them on the skin solicits constant scratching, by which they are torn from their attachments; and painful tubercles arise at the places where they had adhered. When the pediculi are diffused over the greater part of the surface of the body, the patient's linen often appears as if sprinkled with drops of blood.

5. *Prurigo scroti.* The scrotum is affected with a troublesome and constant itching from ascarides within the rectum, from friction by violent exercise in hot weather, and very usually from the pediculi pubis. Another and more important form of the complaint appears in old men, sometimes connected with the prurigo podicis, and referable to a morbid state of the skin, or superficial gland of the part. The scrotum, in this case, assumes a brown colour, often also becoming thick, scaly, and wrinkled. The itching extends to the skin covering the penis, more especially along the course of the urethra; and has little respite, either by day or night.

6. The *Prurigo pudendi muliebris*, is somewhat analogous to the prurigo scroti in men. It is often a symptomatic complaint in the lichen and lepra: it likewise originates from ascarides irritating the rectum; and is, in some cases, connected with a discharge of the fluor albus.

A similar affection arises in consequence of a change of state in the genital organs at the time of puberty, attended with a series of most distressing sensations. Dr. Willan confines his attention to one case of the disorder, which may be considered as idiopathic, and which usually affects women soon after the cessation of the catamenia. It chiefly occurs in those who are of the phlegmatic temperament, and inclined to corpulency. Its seat is the labia pudendi, and entrance to the vagina. It is often accompanied with an appearance of tension or fulness of those parts, and sometimes with an inflamed itching pustulæ on the labia and mons veneris. The distress arising from a strong and almost perpetual itching in the above situation may be easily imagined. In order to allay it in some degree, the sufferers have frequent recourse to friction, and to cooling applications; whence they are necessitated to forego the enjoyment of society. An excitement of venereal sensations also takes place from the constant direction of the mind to the parts affected, as well as from the means employed to procure alleviation. The complicated distress thus arising renders existence almost insupportable, and often produces a state of mind bordering on phrensy.

Deep ulcerations of the parts seldom take place in the prurigo pudendi; but the appearance of the aphthæ on the labia and nymphæ is by no means unusual. From intercourse with females, under these circumstances, men are liable to be affected with small ulcerations on the glans, and inside of the præputium, which prove troublesome for a length of time, and often create an alarm, being mistaken for chancres.

Women, after the fourth month of their pregnancy, often suffer greatly from the prurigo pudendi, attended with aphthæ. These, in a few cases, have been succeeded by extensive ulcerations: such instances are, however, extremely rare. The complaint has, in general, some intervals or remissions; and the small ulcers usually disappear soon after delivery, whether at the full time or by a miscarriage.

PRURI'TUS. (*us, ûs.* m.; from *prurio*, to itch.) See *Prurigo.*

Prussian alkali. See *Alkali, phlogisticated.*

PRUSSIAN BLUE. A compound of a rich blue colour well known as a pigment. This substance, the discovery of which was made in 1710, has been studied by several chemists, especially by Proust, (An. de Chimie, lx.) by Berzelius and Robiquet, and by Porrett, whose essay was referred to in the description of ferrocyanic acid. The colouring matter of this pigment is ferrocyanate of peroxide of iron, which is mixed with alumina and peroxide of iron, together with the subsulphates of one or both of those bases. It is prepared by heating to redness dried blood, or other animal matters, with an equal weight of pearlash, until the mixture has acquired a pasty consistence. The residue, which consists chiefly of cyanuret of potassium and carbonate of potash, is dissolved in water, and after being filtered, is mixed with a solution of two parts of alum and one part of protosulphate of iron. A dirty-greenish precipitate ensues, which absorbs oxygen from the atmosphere, and passes through different shades of green and blue, until at length it acquires the proper colour of the pigment.

The chemical changes which take place in this process are of a complicated nature. The precipitate, which is at first thrown down, is occasioned by the potash, and consists chiefly of alumina and protoxide of iron. Ferrocyanic acid is generated by the protoxide reacting upon some of the hydrocyanic acid, so as to form water, and cyanuret of iron, which then unites with undecomposed hydrocyanic acid. The ferrocyanic acid, thus produced, combines with oxide of iron; and when the latter has attained its maximum of oxidation, the compound acquires its characteristic blue tint. The only apparent use of protoxide of iron is to convert hydrocyanic into ferrocyanic acid; a purpose for which its presence is essential, because peroxide of iron does not produce this effect, or at least in a very slow and imperfect manner. In every good specimen of Prussian blue which Dr. Turner examined, the ferrocyanic acid was in combination with peroxide of iron only. — *Turner.*

PRU'SSIATE. A salt formed by the union of the prussic or hydrocyanic acid with a salifiable basis.

PRU'SSIC ACID. *Acidum prussicum.* An acid, so called because it was first obtained from Prussian blue. See *Hydrocyanic acid.*

Pru'ssine. See *Cyanogen.*

PSALLOI'DES. (From ψαλλος, a stringed instrument, and ειδος, a likeness.) An appearance on the under surface of the fornix of the brain is called *corpus psalloides.*

PSALTE'RIUM. (*um*, *ii.* n.; a harp: because it is marked with lines that give it the appearance of a harp.) *Lyra.* The *corpus psalloides.* See *Encephalos.*

PSAMMI'SMUS. (From ψαμμος, sand.) An application of hot sand to any part of the body.

PSAMMO'DES. (From ψαμμος, sand.) Sand-like. Applied to urine which deposits a sandy sediment.

PSELLI'SMUS. (*us*, *i.* m.; from ψελλιζω, to stammer or hesitate in speech.) Defect of speech, in which the articulation is imperfect or depraved. Stammering and hesitation of speech, and the mispronunciation of words, are generally arranged by nosologists under this head. See *Lallatio*, *Lambdacismus*, &c.

Pse'llotes. See *Psellismus.*

PSEUDACORUS. (From ψευδης, false, and ακορον, the acorus plant: because it resembled and was substituted for that plant.) See *Iris pseudacorus.*

PSEUDOBLE'PSIS. (*is*, *is.* f.; from ψευδης, false, and βλεψις, sight.) Imaginary vision of objects, characterised by depraved sight, creating objects, or representing them different from what they are. Species: —

Imaginary objects floating before the sight, or real objects appearing with imaginary qualities: constituting two varieties. The most common of ocular spectres is *dark spots*, the *muscæ volitantes* of writers. They are seen in full light, and may often be seen to change their form with the motions of the eye. Another form is that of a *network*, which is sometimes permanent, sometimes transitory. A third appearance is *sparks*, or scintillations. The eye is also affected with an imaginary sense of dazzling, sometimes the ocular spectres assume an iridescent appearance, or exhibit in succession all the colours of the rainbow.

The other variety of false sight, in which real objects appear changed in their natural qualities, affords an *error of form*, in which objects appear too large, too small, cut in half, or in some way distorted; or an *error of motion*, in consequence of which they seem to be dancing, nodding, or in rapid succession; or *error of number*, and then they appear double, triple, or otherwise increased or multiplied; or *error of colour*, in which case one hue is mistaken for another, as red for green, or green for yellow, or every hue appears alike.

Exposure to cold, spasmodic affections, or structural disease of some part, have produced these affections, but the causes are not well known. Where no organic disease is known to exist, and debility or an opposite condition of the optic nerves, blood-vessels, or iris is suspected, blisters, local bleeding, or stimulating applications should be resorted to.

The appearances constituting false sight are mostly symptomatic or sympathetic, and accompany inflammation of or about the eyes or brain; also fevers, hysteria, syncope, lethargy, apoplexy, &c.

PSEU'DOCYE'SIS. (*is*, *is.* f.; from ψευδης, false, and κυησις, pregnancy.) False conception.

PSEU'DÆSTHE'SIA. (*a*, *æ.* f.; from ψευδος, false, and αισθανομαι, to feel.) Imaginary or false feeling, or imaginary sense of touch in organs which have no existence. This is frequently mentioned by persons who have suffered amputation; who, for a long time after the loss of the separated limb, have still a sense of its forming a part of the body, and suffer in idea the same kind of pain or other inconvenience they endured before its removal. It proceeds from that close sympathy which prevails between the extremities of the living fibres in all organs whatever. A like imaginary sensation is frequently complained of in hypochondriacism, and various mental affections.

PSEU'DOMELA'NTHIUM. (*um*, *i.* n.; from ψευδης, false, and μελανθιον, the herb gith, the name of a plant.) See *Agrostemma githago.*

PSEUDOME'MBRANE. (A hybrid term.) A false membrane, or organised layer of lymph, effused in consequence of inflammation.

PSEUDOPYRE'THRUM. (*um*, *i.* n.; from ψευδης, false, and πυρεθρον: so called because when the flowers are chewed they impart a warmth somewhat like that of pyrethrum root.) See *Achillæa ptarmica.*

Pseudo-syphilis. See *Syphilis.*

PSI'DIUM. (*um*, *i.* n.; altered by Linnæus from ψιδιας of the ancient Greeks.) The name of a genus of plants in the Linnæan system. Class, *Icosandria;* Order, *Monogynia.*

PSIDIUM POMI'FERUM. The systematic name of the apple guava. This plant, and the *pyriferum*, bear fruits, the former like apples, the latter like pears. The apple kind is most cultivated in the Indies, on account of the pulp having a fine acid flavour, whereas the pear species is sweet, and therefore not so agreeable in warm climates. Of the inner pulp of either the inhabitants make jellies; and of the outer rind they make tarts, marmalades, &c. The latter they also stew and eat with milk, and prefer them to any other stewed fruits. They have an astringent quality, which exists also in every part of the tree, and abundantly in the leaf-buds, which are occasionally boiled with barley and liquorice, as an excellent drink against diarrhœas. A simple decoction of the leaves, used as a bath, is said to cure the itch, and most cutaneous eruptions.

PSIDIUM PYRI'FERUM. The guava pear-tree. See *Psidium pomiferum.*

PSILO'THRA. (From ψιλοω, to denudate.) Applications to remove the hair.

PSILO'THRUM. (From ψιλοω, to depilate: so called because it was used to remove the hair.) The white bryony.

PSIMMY'THIUM. (From ψιω, to smooth: so called because of its use as a cosmetic.) Cerusse, or white lead.

PSO'Æ. (Ψοαι, the loins.) *Allopeces. Nephrometræ. Neurometeres.* 1. The loins.

2. The name of two pair of muscles in the loins.

PSO'AS. (From ψοαι, the loins.) Belonging to the loins.

Psoas abscess. See *Lumbar abscess.*

PSOAS MAGNUS. *Psoas, seu lumbaris in-*

ternus, of Winslow. This is a long, thick, and very considerable muscle, situated close to the fore-part and sides of the lumbar vertebræ. It arises from the bodies of the last vertebræ of the back, and of all the lumbar vertebræ laterally, as well as from the anterior surfaces of their transverse processes, by distinct tendinous and fleshy slips, that are gradually collected into one mass, which becomes thicker as it descends, till it reaches the last of the lumbar vertebræ, where it grows narrower again, and, uniting its outer and posterior edge (where it begins to become tendinous) with the iliacus internus, descends along with that muscle under the ligamentum Fallopii, and goes to be inserted tendinous at the bottom of the trochanter minor of the os femoris, and fleshy into the bone a little below that process. Between the tendon of this muscle and the ischium we find a considerable bursa mucosa. This muscle, at its origin, has some connexion with the diaphragm, and likewise with the quadratus lumborum. It is one of the most powerful flexors of the thigh forwards, and may likewise assist in turning it outwards. When the inferior extremity is fixed, it may help to bend the body forwards; and in an erect posture it greatly assists in preserving the equilibrium of the trunk upon the upper part of the thigh.

Psoas parvus. This muscle, which was first described by Riolanus, is situated upon the psoas magnus, at the anterior part of the loins. The psoas parvus arises thin and fleshy from the side of the uppermost vertebra of the loins, and sometimes also from the lower edge of the last vertebra of the back, and from the transverse processes of each of these vertebræ: it then extends over part of the psoas magnus, and terminates in a thin flat tendon, which is inserted into that part of the brim of the pelvis where the os pubis joins the ilium. From this tendon a great number of fibres are sent off, which form a thin fascia, that covers part of the psoas magnus and iliacus internus, and gradually loses itself on the fore-part of the thigh. In the human body this muscle is very often wanting; but in a dog, according to Douglas, it is never deficient. Riolanus was of opinion, that it occurs oftener in men than in women. Winslow asserts just the contrary; but the truth seems to be, that it is as often wanting in one sex as in the other. Its use seems to be to assist the psoas magnus in bending the loins forwards; and when we are lying upon our back, it may help to raise the pelvis.

Psoas sive lumbaris internus. See *Psoas magnus.*

PSO'RA. (*a*, *æ*. f. Ψωρα.) The itch. See *Scabies.*

PSORA'LEA. (*a*, *æ*. f.; from ψωραλεος, scabby: because the calyx, and other parts of the plant, are more or less besprinkled with glandular dots, causing a scurfy roughness.) The name of a genus of plants. Class, *Diadelphia*; Order, *Decandria.*

Psoralea pentaphy'lla. The systematic name of the Mexican contrayerva, *Contrayerva nova*, which is by many as much esteemed as the Dorstenia. It was introduced into Europe soon after the true plant, from Guiana as well as Mexico.

PSORI'ASIS. (*is*, *is*. f.; from ψωρα, the itch.) The disease to which Dr. Willan gives this title is characterised by a rough and scaly state of the cuticle, sometimes continuous, sometimes in separate patches, of various sizes, but of an irregular figure, and for the most part accompanied with rhagades or fissures of the skin. From the lepra it may be distinguished, not only by the distribution of the patches, but also by its cessation and recurrence at certain seasons of the year, and by the disorder of the constitution with which it is usually attended. Dr. Willan gives the following varieties: —

1. *Psoriasis guttata.* This complaint appears in small, distinct, but irregular patches of laminated scales, with little or no inflammation round them. The patches very seldom extend to the size of a sixpence. They have neither an elevated border, nor the oval or circular form by which all the varieties of lepra are distinguished; but their circumference is sometimes angular, and sometimes goes into small serpentine processes. The scale formed upon each of them is thin, and may be easily detached, leaving a red shining base. The patches are often distributed over the greatest part of the body, but more particularly on the back part of the neck, the breasts, arms, loins, thighs, and legs. They appear also upon the face, which rarely happens in lepra. In that situation they are red, and more rough than the adjoining cuticle, but not covered with scales. The psoriasis guttata often appears on children in a sudden eruption, attended with a slight disorder of the constitution, and spreads over the body within two or three days. In adults it commences with a few scaly patches on the extremities, proceeds very gradually, and has a longer duration than in children. Its first occurrence is usually in the spring season, after violent pains in the head, stomach, and limbs. During the summer it disappears spontaneously, or may be soon removed by proper applications, but it is apt to return again early in the ensuing spring, and continues so to do for several successive years. When the scales have been removed, and the disease is about to go off, the small patches have a shining appearance, and they retain a dark red, intermixed with somewhat of a bluish colour, for many days, or even weeks, before the skin is restored to its usual state. In the venereal disease there is an eruption which very much resembles the psoriasis guttata, the only difference being a slighter degree of scaliness, and a different shade of colour in the patches, approaching to a livid red, or very dark rose colour. The patches vary in their extent, from the section of a pea to the size of a silver penny, but are not exactly circular. They rise at first very little, if at all, above the cuticle. As soon, however, as the scales appear on them, they become sensibly elevated; and sometimes the edge, or circumference of the patch is higher than the little scales in its centre. This eruption is usually seen upon the forehead, breast, between the shoulders, or in the inside of the fore-arms, in the groins, about the inside of the

thighs, and upon the skin covering the lower part of the abdomen. The syphilitic psoriasis guttata is attended with, or soon followed by, an ulceration of the throat. It appears about six or eight weeks after a chancre has been healed by an ineffectual course of mercury. A similar appearance takes place, at nearly the same period, in some cases where no local symptoms had been noticed. When a venereal sore is in a discharging state, this eruption, or other secondary symptoms, often appear much later than the period above mentioned. They may also be kept back three months, or even longer, by an inefficient application of mercury. If no medicine be employed, the syphilitic form of the psoriasis guttata will proceed during several months, the number of the spots increasing, and their bulk being somewhat enlarged, but without any other material alteration.

2. The *Psoriasis diffusa* spreads into large patches, irregularly circumscribed, reddish, rough, and chappy, with scales interspersed. It commences, in general, with numerous minute asperities, or elevations of the cuticle, more perceptible by the touch than by sight. Upon these small distinct scales are soon after formed, adhering by a dark central point, while their edges may be seen white and detached. In the course of two or three weeks all the intervening cuticle becomes rough and chappy, appears red, and raised, and wrinkled, the lines of the skin sinking into deep furrows. The scales which form among them are often slight, and repeatedly exfoliate. Sometimes, without any previous eruption of papulæ, a large portion of the skin becomes dry, harsh, cracked, reddish, and scaly, as above described. In other cases, the disorder commences with separate patches of an uncertain form and size, some of them being small, like those in the psoriasis guttata, some much larger. The patches gradually expand till they become confluent, and nearly cover the part or limb affected. Both the psoriasis guttata and diffusa likewise occur as a sequel of the lichen simplex. This transition takes place more certainly after frequent returns of the lichen. The parts most affected by psoriasis diffusa are the cheeks, chin, upper eyelids, and corners of the eyes, the temples, the external ear, the neck, the fleshy parts of the lower extremities, and the fore-arm, from the elbow to the back of the hand, along the supinator muscle of the radius. The fingers are sometimes nearly surrounded with a loose scaly incrustation; the nails crack and exfoliate superficially. When limited to the back of the hand, where it often appears in bakers, it is called the *bakers' itch*. The scaly patches likewise appear, though less frequently, on the forehead and scalp, on the shoulders, back, and loins, on the abdomen and instep. This disease occasionally extends to all the parts above mentioned at the same time; but, in general, it affects them successively, leaving one place free, and appearing in others; sometimes again returning to its first situation. The psoriasis diffusa is attended with a sensation of heat, and with a very troublesome itching, especially at night. It exhibits small, slight, distinct scales, having less disposition than the lepra to form thick crusts. The chaps, or fissures of the skin, which usually make a part of this complaint, are very sore and painful, but seldom discharge any fluid. When the scales are removed by frequent washing, or by the application of unguents, the surface, though raised and uneven, appears smooth and shining; and the deep furrows of the cuticle are lined by a slight scaliness. Should any portion of the diseased surface be forcibly excoriated, there issues out a thin lymph, mixed with some drops of blood, which slightly stains and stiffens the linen, but soon concretes into a thin dry scab; this is again succeeded by a white scaliness, gradually increasing, and spreading in various directions. As the complaint declines, the roughness, chaps, scales, &c. disappear, and a new cuticle is formed, at first red, dry, and shrivelled, but which, in two or three weeks, acquires the proper texture. The duration of the psoriasis diffusa is from one to four months. If, in some constitutions, it does not then disappear, but becomes, to a certain degree, permanent, there is, at least, an aggravation or extension of it, about the usual periods of its return. In other cases, the disease, at the vernal returns, differs much as to its extent, and also with respect to the violence of the preceding symptoms. The eruption is, indeed, often confined to a single scaly patch, red, itching, and chapped, of a moderate size, but irregularly circumscribed. This solitary patch is sometimes situated on the temple, or upper part of the cheek, frequently on the breast, the calf of the leg, about the wrist, or within and a little below the elbow joint, but especially at the lower part of the thigh, behind. It continues in any of these situations several months, without much observable alteration. The complaint, denominated with us the bakers' itch, is an appearance of psoriasis diffusa on the back of the hand, commencing with one or two small, rough, scaly patches, and finally extending from the knuckles to the wrist. The rhagades, or chaps and fissures of the skin, are numerous about the knuckles and ball of the thumb, and where the back of the hand joins the wrist. They are often highly inflamed and painful, but have no discharge of fluid from them. The back of the hand is a little raised or tumefied, and, at an advanced period of the disorder, exhibits a reddish, glossy surface, without crusts or numerous scales. However, the deep furrows of the cuticle are, for the most part, whitened by a slight scaliness. This complaint is not general among bakers: that it is only aggravated by their business, and affects those who are otherwise disposed to it, may be collected from the following circumstances: — 1. It disappears about Midsummer, and returns in the cold weather at the beginning of the year. 2. Persons constantly engaged in the business, after having been once affected with the eruption, sometimes enjoy a respite from it for two or three years. 3. When the business is discontinued, the complaint does not immediately cease. The grocers' itch has some

affinity with the bakers' itch, or tetter; but, being usually a pustular disease at its commencement, it properly belongs to another genus. Washerwomen, probably from the irritation of soap, are liable to be affected with a similar scaly disease on the hands and arms, sometimes on the face and neck, which, in particular constitutions, proves very troublesome, and of long duration.

3. The *Psoriasis gyrata* is distributed in narrow patches or stripes, variously figured: some of them are nearly longitudinal; some circular, or semicircular, with vermiform appendages; some are tortuous or serpentine; others like earth-worms or leeches: the furrows of the cuticle being deeper than usual, make the resemblance more striking, by giving to them an annulated appearance. There is a separation of slight scales from the diseased surface, but no thick incrustations are formed. The uniform disposition of these patches is singular. A large circular one is sometimes situated on each breast above the papillæ; and two or three others, of a serpentine form, in analogous situations along the side of the chest. The back is often variegated in like manner, with convoluted tetters, similarly arranged on each side of the spine. They likewise appear, in some cases, on the arms and thighs, intersecting each other in various directions. A slighter kind of this complaint affects delicate young women and children in small scaly circles or rings, little discoloured: they appear on the cheeks, neck, or upper part of the breast, and are mostly confounded with the herpetic or pustular ringworm. The psoriasis gyrata has its remissions and returns, like the psoriasis diffusa: it also exhibits, in some cases, patches of the latter disorder on the face, scalp, or extremities, while the trunk of the body is chequered with the singular figures above described.

4. *Psoriasis palmaria.* This very obstinate species of tetter is nearly confined to the palm of the hand. It commences with a small, harsh, or scaly patch, which gradually spreads over the whole palm, and sometimes appears in a slighter degree on the inside of the fingers and wrist. The surface feels rough from the detached and raised edges of the scaly laminæ: its colour often changes to brown, or black, as if dirty; yet the most diligent washing produces no favourable effect. The cuticular furrows are deep, and cleft at the bottom longitudinally, in various places, so as to bleed on stretching the fingers. A sensation of heat, pain, and stiffness in the motions of the hand, attend this complaint. It is worse in winter or spring, and occasionally disappears in autumn or summer, leaving a soft, dark red cuticle; but many persons are troubled with it for a series of years, experiencing only very slight remissions. Every return or aggravation of it is preceded by an increase of heat and dryness, with intolerable itching. Shoemakers have the psoriasis palmaria locally, from the irritation of the wax they so constantly employ. In braziers, tinmen, silversmiths, &c. the complaint seems to be produced by handling cold metals. A long predisposition to it, from a weak, languid, hectical state of the constitution, may give effect to different occasional causes. Dr. Willan has observed it in women after lying-in: in some persons it is connected or alternates with arthritic complaints. When the palms of the hands are affected as above stated, a similar appearance often takes place on the soles of the feet; but with the exception of rhagades or fissures, which seem less liable to form there, the feet being usually kept warm and covered. Sometimes, also, the psoriasis palmaria is attended with a thickness of the præputium, with scaliness and painful cracks. These symptoms at last produce a phimosis, and render connubial intercourse difficult or impracticable: so great, in some cases, is the obstinacy of them, that remedies are of no avail, and the patient can only be relieved by circumcision. This affection of the præputium is not exactly similar to any venereal appearance; but rhagades or fissures, and indurated patches within the palm of the hand, take place in syphilis, and somewhat resemble the psoriasis palmaria. The venereal patches are, however, distinct, white and elevated, having nearly the consistence of a soft corn. From the rhagades there is a slight discharge, very offensive to the smell. The soles of the feet are likewise, in this case, affected with the patches, not with rhagades. When the disease yields to the operation of mercury, the indurated portions of cuticle separate, and a smooth new cuticle is found formed underneath. The fingers and toes are not affected with the patches, &c. in venereal cases.

5. *Psoriasis labialis.* The psoriasis sometimes affects the lip without appearing on any other part of the body. Its characteristics are, as usual, scaliness, intermixed with chaps and fissures of the skin. The scales are of a considerable magnitude, so that their edges are often loose, while the central points are attached, a new cuticle gradually forms beneath the scales, but is not durable. In the course of a few hours it becomes dry, shrivelled and broken; and, while it exfoliates, gives way to another layer of tender cuticle, which soon in like manner perishes. These appearances should be distinguished from the light chaps and roughness of the lips produced by very cold or frosty weather, but easily removed. The psoriasis labialis may be a little aggravated by frost or sharp winds, yet it receives no material alleviation from an opposite temperature. It is not, indeed, confined within any certain limit, or period of duration, having, in several instances, been protracted through all the seasons. The under lip is always more affected than the upper; and the disease takes place more especially in those persons whose lips are full and prominent.

6. *Psoriasis scrotalis.* The skin of the scrotum may be affected in the psoriasis diffusa like other parts of the surface of the body; but sometimes a roughness and scaliness of the scrotum appears as an independent complaint, attended with much heat, itching, tension, and redness. The above symptoms are succeeded by a hard, thickened, brittle texture of the skin, and by painful chaps or excoriations, which are not easy to be healed. This complaint is sometimes produced under the same circumstances as the prurigo

scroti, and appears to be in some cases a sequel of it. A species of the psoriasis scrotalis likewise occurs in the lues venerea, but merits no particular attention, being always combined with other secondary symptoms of the disease.

7. *Psoriasis infantilis.* Infants between the ages of two months and two years are occasionally subject to the dry tetter. Irregular scaly patches, of various sizes, appear on the cheeks, chin, breast, back, nates, and thighs. They are sometimes red, and a little rough or elevated; sometimes excoriated, then again covered with a thin incrustation; and, lastly, intersected by chaps or fissures. The general appearances nearly coincide with those of the psoriasis diffusa; but there are several peculiarities in the tetters of infants which require a distinct consideration.

8. The *Psoriasis inveterata* is characterised by an almost universal scaliness, with a harsh, dry, and thickened state of the skin. It commences with a few irregular though distinct patches on the extremities. Others appear afterwards on different parts, and, becoming confluent, spread at length over all the surface of the body, except a part of the face or sometimes the palms of the hands, and soles of the feet. The skin is red, deeply furrowed or wrinkled, stiff and rigid, so as somewhat to impede the motion of the muscles, and of the joints. So quick, likewise, is the production and separation of scales, that large quantities of them are found on the bed on which a person affected with the disease has slept. They fall off in the same proportion by day, and being confined within the linen, excite a troublesome and perpetual itching.

The same general plan of treatment is applicable to the different modifications of psoriasis, the period of its duration and the degree of irritability being carefully attended to. In the commencement of the eruption, when it appears suddenly, and the constitution is obviously disordered, a moderate antiphlogistic treatment must be pursued. A gentle purgative should be administered, and the diet made light, by abstracting every thing stimulant. This regimen, indeed, is requisite throughout the course of the disease, which is immediately aggravated in sympathy with irritation of the stomach, whether by spices, fermented liquors, pickles, or vegetable acids; whence the disuse of these articles contributes materially to its cure. But if the constitutional disturbance has subsided, the use of the fixed alkali, combined with sulphur lotum, or with an infusion of cinchona, together with tepid washing with simple water, or milk and water, will gradually remove the complaint. If the scaly patches have extended over a considerable part of the body, it must be viewed in a similar light with the lepra, and the remedies recommended for the first and second species of that disease must be resorted to. The shooting and burning pain and itching, in the early and more inflammatory stages of psoriasis, induce the patient to seek anxiously for relief from local external applications; but he is mortified to find that even the mildest substances prove irritants, and aggravate his distress. A decoction of bran, a little cream, or oil of almonds, sometimes produce ease; but any admixture, even of the oxide of zinc, or preparations of lead, with these liniments, is commonly detrimental. But the more local and less inflammatory eruption of psoriasis is considerably alleviated by local expedients. The palmar variety is deprived of its dryness and itching by exposure to the vapour of hot water, and by the application of the unguentum hydrargyri nitratis, diluted with the unguentum cetacei or ceræ, according to the degree of irritation in the skin. The scrotal and ophthalmic varieties are also relieved by the same application, or the unguentum hydrargyri precipitati albi: but great care is requisite, in the former case, to keep the parts clean by frequent ablution, and to prevent attrition. In the psoriasis of the lips, nothing acrid can be borne; and much of the cure depends upon securing the parts from irritation, even from heat and cold, by a constant covering of some mild ointment or plaster. In all these cases, some of the internal remedies above mentioned must be at the same time employed, according to the period and other circumstances of the disease.

PSO'RIC. (*Psoricus*; from ψωρα, the itch.) Appertaining to the itch, or *psora*.

PSOROPTHA'LMIA. (*a*, *æ*. f.; from ψωρα, the itch, and οφθαλμος, the eye.) Psorophthalmy. An inflammation of the eyelids, attended with ulcerations, which itch very much. The cause is an acrimony secreted by the glands of the eyelids. See *Ophthalmitis*.

PSYCHAGO'GICUS. (From ψυχη, the mind, and αγω, to move.) Applied by Schneider to medicines which have the power of restoring the senses; as volatiles and stimulants, which recover a patient from syncope.

PSYCHOLOGY. (*Psychologia*, *æ*. f.; from ψυχη, the soul, and λογος, a discourse.) The doctrine of the mind or soul. Mental philosophy.

PSYCHROLU'TRUM. (From ψυχος, cold, and λουω, to wash.) A cold bath.

PSY'CHTICUS. (From ψυχω, to refrigerate.) Having a cooling property: applied to refrigerating medicines.

PSYDRA'CIUM. (*um*, *ii*. n.; from ψυχος, cold.) A species of pustule. See *Pustule*.

PSY'LLIUM. (*um*, *ii*. n.; from ψυλλος, a flea: so called because it was thought to destroy fleas.) See *Plantago psyllium*.

PTA'RMICA. (*a*, *æ*. f.: from πταιρω, to sneeze: so called, because it irritates the nose, and provokes sneezing.) Sneezewort. See *Achillæa ptarmica*.

PTA'RMICUS. (Πταρμικος; from πταιρω, to sneeze.) Ptarmic. Sternutatory.

PTE'RIS. (*is*, *idis*. f.; from πτερον, a wing, so called from the likeness of its leaves to wings.) The name of a genus of plants in the Linnæan system. Class, *Cryptogamia*; Order, *Filices*.

PTERIS AQUILI'NA. The systematic name of the common brake, or female fern. *Filix. Filix fœmina*. The plant which is thus called in the pharmacopœias, is not the *Polypodium filix fœmina*, but the *Pteris—frondibus supra-*

decompositis, foliolis pinnatis, pinnis lanceolatis, infimis, pinnatifidis, superioribus minoribus, of Linnæus. The root is esteemed as an anthelmintic, and is supposed to be as efficacious in destroying the tapeworm as the root of the male fern.

PTEROCA'RPUS. (*us, i.* m.; from πτερον, a wing, and καρπος, fruit.) The name of a genus of plants in the Linnæan system. Class, *Diadelphia*; Order, *Decandria*.

Pterocarpus draco. This is one of the species which yields dragon's blood. See *Dragon's blood*.

Pterocarpus erina'ceus. The tree which is supposed to yield the African kino. See *Kino*.

Pterocarpus santali'nus. The systematic name of the red saunders tree. *Santalum rubrum*. There is some reason to believe that several red woods, capable of communicating this colour to spirituous liquors, are sold as red saunders; but the true officinal kind appears, on the best authority, to be of this tree, which is extremely hard, of a bright, garnet-red colour, and bears a fine polish. It is only the inner substance of the wood that is used as a colouring matter, and the more florid red is the most esteemed. On being cut, it is said to manifest a fragrant odour, which is more especially observed in old trees. According to Lewis, this wood is of a dull red, almost blackish colour on the outside, and a deep brighter red within; its fibres are now and then curled, as in knots. It has no manifest smell, and little or no taste; even of extracts made from it with water, or with spirit, the taste is not considerable.

To watery liquors it communicates only a yellowish tinge, but to rectified spirit a fine deep red. A small quantity of an extract made with this menstruum tinges a large one of fresh spirit of the same colour; though it does not, like most other resinous bodies, dissolve in expressed oils. Of distilled oils, there are some, as that of lavender, which receive a red tincture from the wood itself, and from its resinous extract, but the greater number do not. Red saunders has been esteemed as a medicine; but its only use attaches to its colouring property. The juice of this tree, like that of some others, affords a species of sanguis draconis.

PTERY'GIUM. (*um, ii.* n. Πτερυξ, a wing.) 1. In *Pathology*, a membraneous excrescence which grows upon the internal canthus of the eye chiefly, and expands itself over the albuginea and cornea towards the pupil. It appears to be an extension or promulgation of the fibres and vessels of the caruncula lachrymalis, or semilunar membrane, appearing like a wing. It is sometimes a pellucid pellicle, thin, of a cineritious colour, and unpainful, growing out from the caruncula lachrymalis. In other cases it is thick, of a red colour, attended with fulness of the vessels on the white of the eye, and stretches over the cornea like fasciculi of vessels. This was called *pannus*: this pannus is occasionally of various colours, painful and cancerous. The *pterygium pinguc*, or *pinguicula*, is a small substance, like lard or fat, soft, without pain, and of a light yellow colour, which commonly is situated in the external angle of the eye, and rarely extends to the cornea; but often remains through life.

2. In *Botany*, a wing. See *Ala*.

Pte'rygo-pharyngæ'us. See *Constrictor pharyngeus superior*.

Pte'rygo-staphili'nus exte'rnus. See *Levator palati*.

PTE'RYGOID. (*Pterygoides. Pterygoideus*; from πτερυξ, a wing, and ειδος, resemblance.) Resembling the wing of a bird.

Pterygoid processes. The wing-like processes of the sphenoid bone. See *Sphenoides os*.

Pterygoideum os. See *Sphenoides os*.

Pterygoide'us externus. (*Pterygoideus*, from its belonging to the processus pterygoides.) *Pterygoideus minor*, of Winslow. *Musculus alaris externus*. A muscle placed, as it were, horizontally along the basis of the skull, between the pterygoid process and the condyle of the lower jaw. It usually arises by two distinct heads, one of which is thick, tendinous, and fleshy, from the outer wing of the pterygoid process of the os sphenoides, and from a small part of the os maxillare adjoining to it; the other is thin and fleshy, from a ridge in the temporal process of the sphenoid bone, just behind the slit that transmits the vessels to the eye. Sometimes this latter origin is wanting, and, in that case, part of the temporal muscle arises from this ridge. Now and then it affords a common origin to both these muscles. From these origins the muscle forms a strong fleshy belly, which descends almost transversely outwards and backwards, and is inserted, tendinous and fleshy, into a depression in the forepart of the condyloid process of the lower jaw, and into the anterior surface of the capsular ligament that surrounds the articulation of that bone. All that part of this muscle, which is not hid by the pterygoideus internus, is covered by a ligamentous expansion, which is broader than that belonging to the pterygoideus internus, and originates from the inner edge of the glenoid cavity of the lower jaw, immediately before the styloid process of the temporal bone, and extends obliquely downwards, forwards and outwards, to the inner surface of the angle of the jaw. When these muscles act together, they bring the jaw horizontally forwards. When they act singly, the jaw is moved forwards, and to the opposite side. The fibres that are inserted into the capsular ligament, serve likewise to bring the moveable cartilage forwards.

Pterygoideus internus. *Pterygoideus major*, of Winslow. This muscle arises tendinous and fleshy from the whole inner surface of the external ala of the pterygoid process, filling all the space between the two wings; and from that process of the os palati that makes part of the pterygoid fossa. Thence growing larger the muscle descends obliquely downwards, forwards, and outwards, and is inserted, by tendinous and fleshy fibres, into the inside of the lower jaw, near its angle. This muscle covers a great part of the *pterygoideus externus*; and along its posterior edge we observe a ligamentous band, which extends from the back part of the styloid process to the bottom of the angle of the lower jaw. The use of this muscle is

to raise the lower jaw, and to pull it a little to one side.

Pterygoideus major. See *Pterygoideus internus.*

Pterygoideus minor. See *Pterygoideus externus.*

PTE'RYGO-STAPHYLI'NUS. Chaussier's name for the circumflexus palati muscle.

PTILO'SIS. (From πτιλος, bald.) See *Madarosis.*

PTI'SANA. (*a*, *æ*. f.; from πτισσω, to decorticate, bruise, or pound.) A ptisan. A decoction made of decorticated barley, raisins, liquorice, or other vegetable matters. The French physicians use a variety of ptisans. See *Tisane.*

PTO'SIS. (*is*, *is*. f.; from πιπτω, to fall.) A falling down of the upper eyelid. See *Blepharoptosis.*

PTYA'LAGOGUE. (*Ptyalagogus*; from πτυαλον, spittle, and αγω, to excite.) A medicine, or any thing which promotes a discharge of the saliva or causes salivation.

Ptyali'smus. See *Ptyalism.*

PTY'ALISM. (*Ptyalismus*, *i*. m.; from πτυαλιζω, to spit.) A ptyalism: salivation, or increased secretion of saliva.

An increased and involuntary flow of saliva may be caused in a variety of ways. Fits of anger, and many excitements of the mind, will cause it; chewing sialagogues; the sight, smell, or even thought of agreeable food; it is a common effect of mercury, and is symptomatic of many diseases of the mouth and neighbouring parts. Its species are,

1. *Salivation from sialagogues.* — There are numerous plants which stimulate the salivary glands, so as to cause a very considerable salivation, but particularly the root of the *Anthemis pyrethrum*, or pellitory of Spain; the leaves of the *Nicotiana tabacum*, or tobacco; the root of the *Daphne mezereum*; the *Pimpinella saxifraga*, or smaller burnet saxifrage; the *Imperatoria ostruthrum*, or master-wort. The increased flow of saliva which they cause, generally ceases after an hour, and does not return unless they are used again.

2. *Mercurial ptyalism.* — In whatever mode introduced into the system, quicksilver generally produces salivation, and that after a short time, and even from a small quantity. The discontinuance of mercury is the cure: it soon subsides: but it is often attended with much inconvenience; as a high degree of irritation, not only of the mouth and fauces, but of the system generally. The common course of symptoms is this: the mouth feels uncommonly hot, and there is a coppery or metallic taste; the lingual and sublingual glands swell; aphthous vesicles appear, and terminate in minute and offensive ulcerations; the tongue swells; the throat becomes sore; feverishness and sleeplessness supervene, and are often present from an early period of the disease; and, in habits of great irritability, the surface of the body is, in particular parts or wholly, reddened with a peculiar erythematic inflammation, continuous or in patches, to which the names of *hydrargyria* and *erythema mercuriale* have been given by some writers. See *Eczema.* It is not at all understood by what means mercury produces this singular effect on the salivary glands.

In attempting the cure of mercurial salivation, the attention is to be directed to the local state of the fauces, and the general state of the system. The use of all mercurials is to be avoided, both externally and internally. The patient is to be moved into a pure air, and warmth is to be guarded against, as well as exposure to cold: but there is no reason why the person should not be exposed to pure and open air in the summer time. The bowels are to be kept soluble with saline aperients. Acidulated gargles of barley-water, with nitre, citric acid, and the like, will often be sufficient, or very dilute compound infusion of roses; but the best of all gargles by far is the chlorate of soda or lime, so diluted as not to produce more than just a sensible sting in the mouth.

3. *Symptomatic salivation.* — This is produced by dentition, small-pox, scarlatina, palsy, and some diseases of the mouth; and requires the gargles just mentioned, and the remedies calculated to relieve the disease of which it is symptomatic.

4. *Critical salivation.* — This occurs sometimes in fevers, and is relieved by the gargles before enumerated, and by bark and wine.

5. *Chronic ptyalism.* — The long use of tobacco causes this sometimes; and it is an attendant on old age and idiotism.

PTY'ALUM. (From πτυω, to spit up.) The mucus ejected from the bronchia.

PTYSMAGO'GUS. (From πτυσμα, *sputum*, and αγω, to expel.) Expectorant.

PU'BERTY. The transition from childhood to youth; or that period of life when the individual acquires the power of propagation. The age of puberty varies extremely according to climate. In torrid climates boys arrive at puberty at twelve years of age; in temperate ones at fourteen or fifteen; while in high northern latitudes this change is frequently deferred till eighteen or twenty. Girls arrive at puberty about two years earlier than boys. The law of England fixes the age of puberty at fourteen in the male, and twelve in the female; but this as a general estimate, is earlier than the truth as a large proportion of individuals at these ages are still children. Puberty in man is marked by a sudden increase of strength and stature; a change in the tone of the voice, which after remaining for some time cracked and discordant settles into a graver tone than it formerly possessed; the development of hair on the pubes and in the arm-pits, succeeded at some distance of time by the development of the beard; lastly, the desire for the female, and the power of secreting a fertile semen. In woman, the phenomena of puberty consist chiefly in a change of shape in the genital organs: the growth of hair on the pubes and in the arm-pits; the enlargement of the breasts; lastly, the appearance of the menses and the aptitude for conception. These physical changes in both sexes are accompanied with corresponding alterations in the moral constitution.

PU'BES. (*es*, *is*. f.) 1. In *Anatomy*, the external part of the organs of generation of both sexes, which, after puberty, is covered with hair.

2. In *Botany*, the down or pubescence on the leaves, seeds, &c. of some plants. See *Pubescence.*

PU'BES. *Puber.* Adolescent. Arrived at the age of puberty.

Pubes seminis. See *Pappus.*

PUBE'SCENCE. *Pubescentia.* Under this term are included all kinds of down, hairs, and bristle-like bodies found on the surface of the leaves, stems, pods, &c., of plants. They differ considerably in form and texture, but consist of small slender bodies, which are either soft and yielding to the slightest impression, or rigid and comparatively unyielding: the former are, properly speaking, *pili*, or hairs; the latter bristles, *setæ*; and therefore, under these two heads, every kind of pubescence may be arranged. See *Pilus*, and *Seta.*

PUBE'SCENS. Pubescent: clothed with a soft wool or hair. Applied to the leaves, stems, &c., of plants.

Pubis os. A separate bone of the fœtal pelvis. See *Innominatum os.*

PUDE'NDAGRA. (*a*, *æ*. f.; from *pudenda*, the private parts, and αγρα, a seizure.) Any disease of the genital organs. An ill constructed and superfluous term.

PUDE'NDUM. (*um*, *i*. n.; from *pudes*, to be ashamed.) *Pudenda.* The parts of generation.

Pudendum muliebre. The female parts of generation.

PU'DIC. (*Pudi'cus*; from *pudor*, shame.) Belonging to the *pudenda.*

Pudic arteries. *Arteriæ pudi'cæ.* Pudendal arteries. The arteries which supply the parts of generation. These are, 1. the *internal pudic.* Sometimes simply called the *pudic*, which is a branch of the internal iliac, and gives off the external hæmorrhoidal and perineal arteries, and those of the penis. 2. The *external pudic arteries*, varying in number, and rising from the common femoral artery.

Pudic nerve. This is formed on each side by fibrils from all the cords which enter into the constitution of the great sciatic nerve. It arises in two fasciculi, which pass through the lower part of the iliac notch, and between the sacro-sciatic ligaments to join the pudic artery, the branches of which they accompany, bearing the same names.

Pueri'lis morbus. The epilepsy.

PUE'RPERAL. *Puerperalis.* Appertaining to child-bearing; as puerperal convulsions, puerperal fever, &c.

Puerperal fever. Several distinct affections have been treated of under this name. There has been much controversy as to what puerperal fever really is. Now the following appears to be the proper answer to this question. Puerperal fever is a vague term, meaning nothing more than a fever occurring in a woman who has recently lain in: but lying-in women, like other persons, are subject to divers forms of febrile disease; and, accordingly, certain authors have described one kind of febrile affection of lying-in women, and called it *puerperal fever*, and maintained that no other disease ought to be so called; while other authors have described another form of febrile disease incident to lying-in women, and called that *puerperal fever*, and maintained its exclusive right to the denomination; and so on with other authors and other affections. The real point at issue, therefore, is, not as to the pathology of any one given disease, but as to the respective claims of a number of different diseases to the particular title *puerperal fever*: hence the dispute is about words, and the best way of settling it, like others of a similar kind, would be to discard the term that has given rise to it.

The principal diseases which have passed under the name of puerperal fever are,

1. Peritonitis.

2. An adynamic febrile disease, supposed to be of a contagious nature, and of which peritoneal inflammation is a prominent feature; it being, at the same time, doubtful whether the inflammation should be considered as a complication of an idiopathic fever, or the fever as symptomatic of a peculiar and malignant form of inflammation: just as in the disease called *malignant pneumonia*, it frequently admits of a doubt whether the inflammation of the lungs be the primary affection or a complication of typhous fever.

3. Inflammation of the uterus or its appendages.

4. Inflammation of the uterine veins and lymphatics.

Puerperal peritonitis.—The peritonæum lining the abdomen, or that covering the intestines, may be inflamed alone, or the disease may be combined with inflammation of the uterus.

Peritonæal inflammation may be caused by violence during delivery, or the application of cold, or the injudicious use of stimulants. Those who have suffered from uterine hæmorrhage, after delivery, are most liable to this disease, as well as to inflammation of the uterus. It may not come on for three weeks after delivery, but it usually appears on the second day; and it may often be observed that the pulse continues frequent from the time of delivery. It is preceded or attended by shivering, and sickness or vomiting, and is marked by pain in the belly, which is sometimes very universal, though, in other cases, it is, at first, confined to one spot. The abdomen very soon becomes swelled and tense, and the tension rapidly increases. The pulse is frequent, small, and sharp, the skin hot, the tongue either clean, or white and dry, the patient thirsty; she vomits frequently, and the milk and lochia usually are obstructed. These symptoms often come on very acutely, but it ought to be deeply impressed on the mind of the student that they may also approach insidiously. Wandering pain is felt in the belly, neither acute nor altogether constant. It passes for afterpains, but it is attended with frequency of pulse and some fulness of the belly, and a little sickness. But, whether the early symptoms come on rapidly or slowly, they soon increase, the belly becomes as large as before delivery, and is often so tender that the weight of the bedclothes can scarcely be endured; the patient also feels much pain when she turns. The respiration becomes difficult, and, sometimes, a cough comes on, which

aggravates the distress; or, it appears from the first, attended with pain in the side, as a prominent symptom. Sometimes the patient has a great inclination to belch, which always gives pain. The bowels are either costive or the patient purges bilious or dark-coloured fæces. These symptoms are more or less acute, according to the extent to which the peritonæum is affected. They are, at first, milder and more protracted in those cases where the inflammation begins in the uterus; and, in such, the pain is often not very great nor very extensive for some time. If the disease be to prove fatal, the swelling and tension of the belly increase, so that the abdomen becomes round and prominent, the vomiting continues, the pulse becomes very frequent and irregular, the fauces are aphthous, death is marked in the countenance, the extremities are cold, and the pain usually ceases rather suddenly. The patient has unrefreshing slumber, and sometimes *delirium mite*, but she may also remain sensible to the last. The disease usually proves fatal within five days, but may be protracted for eight or ten days, or even longer. If the patient be to recover, the swelling does not proceed to a great degree, the pain gradually abates, the vomiting ceases, the pulse becomes fuller and slower, the breathing easier, so that the patient can lie better down in bed, and she can turn more easily. Sometimes this disease ends in suppuration, and the abscess points and bursts externally. Dr. Gordon, in his Treatise on Puerperal Fever, relates three cases of this kind. In one of these, the matter was discharged from the umbilicus a month after the attack; in another, six weeks after delivery; and in the third, after two months, it came from the urethra. Similar cases have come under the observation of Dr. Burns.

Upon dissection, the peritonæum is found in a state of high inflammation; but it is rare to find it mortified. The omentum is often inflamed. A considerable effusion of serous fluid, mixed with curdy substance, is found in the belly.

The patient is only to be saved by vigorous means, and great attention. If the pulse continue above a hundred in the minute, for twenty-four hours after delivery, there is reason to apprehend that some serious mischief is about to happen; and, therefore, unless the frequency depend, decidedly, on debility, produced by great hæmorrhage, &c., we ought to open the bowels freely, and give a diaphoretic. We must carefully examine the belly, and, if it be full, or painful on pressure, or, if the patient be inclined to vomit, we ought instantly to open a vein, and use purgatives. One copious bleeding, on the very invasion of the disease, is more useful than ten afterwards; and the delay of two hours may be the loss of the patient, whose danger, even under the most active practice, is extreme. Many are unwilling to bleed women in the puerperal state; and the condition of the pulse may seem, to young practitioners, to forbid it. But, in cases of peritonæal inflammation, blood-letting is imperiously called for at a very early period; and the evacuation is to be repeated or not, according to its effects, and the constitution of the patient. If she have borne it ill, and not been relieved, when it was used first, there is reason to apprehend that the case has not been simple peritonæal inflammation, but malignant puerperal fever. If she bear it well, and the pulse becomes slower and fuller, and the pain abate, we are encouraged to repeat it. The fatal consequence of neglecting blood-letting in this disease, cannot be too strongly represented. The lancet is the anchor of hope: it may indeed be pushed too far; it may be used by young practitioners in cases of spasm, mistaken for peritonitis; but the error is safer than the contrary extreme, for, of two evils, debility is more easily removed than inflammation. It is not intended, however, to urge the senseless and extravagant use of the lancet. A prudent practitioner will bleed early and freely so long as he is thereby abating inflammation; but he will stop in time, and observe whether he be really gaining advantage by evacuation, or, on the contrary, sinking the patient, and destroying that vigour which is necessary for an effort to recover. He will never bleed late in the disease, unless it be to subdue an exacerbation, and when the effect of former depletion leads him to hope for renewed benefit. Whilst some have been dilatory and too timid, others, it is to be feared, have sunk their patients as effectually by inordinate evacuation, as if they had left the inflammation quite uncontrolled. After the lancet has been early used, if pain continue, many leeches, or the scarificator, should be applied to the most painful part. The abdomen should then be covered by a warm poultice. A large dose of opium, that is, three grains, is to be administered after the bleeding, and repeated according to circumstances, in smaller doses. The bowels are, at the very first, to be opened freely with calomel, or some other purgative which ought to be given in a large dose, particularly calomel, for ordinary doses do no good. Dr. Armstrong, who is also a powerful advocate for the use of opium, gives half a drachm of calomel, and, afterwards, a purgative draught of senna and salts to work it off, and the practice is safe provided we regulate the dose of the medicine by the constitution and habits of the patient. In an advanced state of the disease, after effusion has taken place, we must employ purges alone, rather than blood-letting. Sinapisms and blisters have been advised, but are chiefly useful when the pain is circumscribed. Fomentations or warm poultices, if the weight do not give pain, are more generally useful. Digitalis has been given, either to abate inflammation or promote absorption, after effusion has taken place; but Dr. Burns declares that he has never, in one single instance, found it useful. After effusion has begun, and debility is produced, cordials, of which wine is the best, should be given, and anodyne clysters are to be administered. There are one or two cases recorded where the fluid has been either spontaneously discharged by an opening taking place in the intestine, or, artificially, by paracentesis, and with a good effect.

A modification of this disease is not unfrequent, in which the inflammatory affection,

so far as traces are left after death, is apparently very limited in extent, as well as inconsiderable in degree. The pain seems to arise more from high sensibility of the nerves, than from actual inflammation of the parts, and it often shoots in the direction of some particular abdominal nerve, for instance, the ilio-pubal. There is, at first, either circumscribed pain, or wandering pain, like gripes. The pulse is frequent, but not sharp. The skin hot. The belly little swelled, and the pain felt chiefly on pressure, or in turning, or breathing deeply. The discharge usually continues. This disease generally comes on about the second or third day, and, if not checked, the pain increases greatly; the belly swells and becomes tense; and the patient dies, with the usual symptoms of peritonitis. But, on inspection, the peritonæum is not found to be inflamed; often it is pale, or, at most, rather more injected than usual. The bowels are inflated, and there is some serum in the abdomen. The uterus is contracted, and apparently healthy; but more minute examination usually discovers some slight or limited mark of inflammation in the veins, or cervix, or appendages. The state of the abdominal nerves has not been particularly attended to. The diagnosis is difficult. There is seldom shivering or coldness, the pulse is soft, the pain is soon more acute than usually happens in peritonitis; but the chief practical mark is, that venesection, although it may give momentary mitigation, affords no permanent relief, and, if repeated, is as little beneficial. It is, however, always proper to take away some blood at first, and it is found to be sizy. Then we give an opiate, either by the stomach or in form of clyster, and apply a large linseed meal poultice to the abdomen; after this, if necessary, a saline clyster or mild laxative is to be given. In some cases, Dr. Burns has found most benefit from opiates; in others, from poultices. The feverishness lasts for some days. If there be continued local pain, leeches should be applied to the part. Dr. Gooch has detailed several cases of this disease, which, in some instances, seemed to proceed from the griping operation of a brisk purgative; in others, from severe afterpains, more especially when the patient, in her ordinary state, was delicate and nervous. He is against bleeding, and advises Dover's powder and poultices.

Peritonæal inflammation may take place during pregnancy, and not prove fatal. After delivery, the pulse continues quick, the face is flushed, the belly is swelled, and fluctuation is perceived. The patient dies of rapid hectic, and, on inspection, the intestines are found inflamed and pushed aside, with much pus. If the disease be not checked, by bleeding, in the commencement, I believe nothing can do good in the hectic stage. Paracentesis may be proposed, but its effects are not to be depended on.

Chronic, or slow inflammation of the peritonæum, is not very unfrequent, and may last for some weeks. It is attended with constant pain in some parts of the abdomen, but it is not unbearable; the belly is tender, the pulse frequent, the thirst urgent, and, often, the mind is affected as in hysteria, or a train of hysterical symptoms supervenes, which may lead off the attention from the seat of the disease. It requires, at first, blood-letting, and then the frequent use of laxatives, with repeated blisters.

When upon this subject, it may not be improper to mention that a young practitioner may mistake spasmodic affections or colic pains for puerperal inflammation; for, in such cases, there is often retching and sensibility of the muscles, which renders pressure painful. But there is less heat of the skin, the tongue is moist, the pulse, though it may be frequent, is soft, the feet are often cold, the pain has great remissions; if it do not go off completely, there is little fulness of the belly, and the patient is troubled with flatulence. It requires laxatives, antispasmodics, anodyne clysters, and friction with camphorated spirits. If these means do not give speedy relief, then we use the lancet. Blood drawn in this disease, after it has continued for some hours, even when the woman is not in childbed, is sizy; and it is always so in the puerperal as well as the pregnant state, although the woman be well. — *Burns.*

Malignant puerperal fever. — There can be no doubt that in particular seasons a contagion has prevailed, inducing fever in the puerperal state, attended with the symptoms of the preceding inflammatory diseases, varying, however, according as one or other of these predominated in the individual cases. In some instances, proving fatal, rather from mere exhaustion than from inflammation. In others, leaving marks of great inflammation or of suppuration. It is not, therefore, to be expected that either the *post mortem* examination or the individual symptoms, during life, should be very different from peritonitis, &c., the chief distinction being in the complication with a malignant influence, and in the patient being neither benefited by, nor bearing depletion so copiously as should have been both warranted and useful in the simple affection.

The description, therefore, in many of the essential points, must be much the same as that of hysteritis, &c.

Malignant puerperal fever sometimes begins in an insidious manner, without that shivering which usually gives intimation of the approach of a serious malady. But, generally, shivering is perceived, and varies considerably in degree, being either slight or pretty severe. The first symptoms, independent of the shivering, are, frequency of pulse, oppression, nausea, or retching, pain in the head, particularly over the eyebrows. The night is passed with little sleep, much confusion, and, occasionally, some delirium. It must not, however, be unnoticed that, in many instances, there is no headach in any stage of the disease, nor any sickness or vomiting in the beginning. In some, the temper is, from the first, uncommonly irritable; in others, there is much timidity, or listlessness, or apathy. Hysterical symptoms not unfrequently supervene; or particular nerves become more sensible; or organs of sense are affected; thus, some imagine they hear the performance of a piece of music. From the beginning of the attack,

or very soon afterwards, pain is felt in the belly, at first slight, but it presently increases; and, in some instances, the abdomen becomes so tender that even the weight of the bedclothes is productive of distress. A general fulness of the belly precedes this, or, at least, accompanies it from the first; and this usually increases pretty rapidly, and may proceed so far as to make the patient nearly as large as she was before delivery, and, in such cases, the breathing becomes very much oppressed; indeed, in every instance, the respiration is more or less affected; the free action of the abdominal muscles, which are concerned in that function, being productive of pain. The degree of pain, its seat, and period of accession, vary in different cases. In some, it evidently begins in the uterus, never going entirely off, yet being subject to severe exacerbation, accompanied with sense of bearing-down. The uterine region is painful, particularly toward one side. The os uteri, if examined, is not much more sensible than usual. There is, generally, pain in the back. In other cases, it is first felt about the lower ribs, on one side, and is accompanied by cough; the belly is tumid and tender when pressed, but, excepting then, or when the patient turns, she complains little of it. Sometimes severe pain, like spasm, attacks the iliac region, and extends down the thigh, and towards the bladder and pubis. The face is sometimes flushed at first, or the cheeks are suffused; but the countenance, in general, is pale and ghastly, the eyes are without animation, and the lips and angles of the eyes are white. When the face is flushed, the cheeks are generally covered with a broad patch of deep red, whilst the brow and other parts are cadaverous or covered with perspiration. The whole features indicate anxiety, if not terror, and great debility. Vomiting frequently occurs at the very commencement, and, in that case, it is bilious. In the course of the disease, it sometimes becomes so frequent that nothing will stay in the stomach; and, towards the conclusion of the fever, the fluid thrown up is dark coloured, and frequently fœtid. There is a great dejection of mind, languor, with general debility of the muscular fibres, and the patient lies chiefly on her back; or there is so much listlessness that she sometimes makes little complaint. The skin is not very hot, but is rather clammy and relaxed. The tongue is pale or white at first, but presently becomes brown, and, uniformly, aphthæ appear in the throat, and extend down the œsophagus, and over all the inside of the mouth. From the irritability of the stomach and bowels, it is probable that these organs participate in the tender state; and, from the cough which is excited, the upper part of the larynx seems also to be affected. It has already been mentioned that, from the first, the pulse is very frequent, and is, at that period, fuller than in simple peritonæal inflammation, but it soon becomes feeble. The thirst is not always great, at least the patient often is careless about drink. The bowels are often, at first, bound, but afterwards, especially about the third day, they usually become loose, and the stools are dark, fœtid, and often frothy. This evacuation seems to give relief. It is, indeed, peculiarly deserving of remark, that often in this disease, either from spontaneous or artificial evacuation, or sometimes without any perceptible cause, there is a delusive calm, and the patient is supposed to be better: in such cases, Dr. Burns says that he does not remember ever to have found a corresponding improvement in the pulse, and, therefore, places no reliance on the apparent relief. The urine is dark coloured, has a brown sediment, and is passed frequently, and with pain. The lochial discharge is diminished and has a bad smell, or is changed in appearance, or gradually ceases; and it is observable, that the reappearance of the lochia, if they had been entirely suppressed, which is not common, is not critical. The secretion of milk stops, and the patient inquires very seldom about the child. In some cases pleuritic symptoms occur. As the disease advances, the pulse becomes more frequent, and weaker, or tremulous. In bad cases, the swelling of the belly increases rapidly; but the pain does not always keep pace with the swelling, being sometimes least when the swelling is greatest, and in the end it generally goes entirely off. The breathing becomes laborious, in proportion as the belly enlarges. The strength sinks; the pulse, always frequent, becomes weak and tremulous; the throat and mouth become sloughy; perhaps the stools are passed involuntarily; hiccup sometimes takes place; and the patient usually dies before the fifth day of the disease, but in some cases not until the fourteenth; in others so early as the second day. In some instances, death is preceded by low delirium or stupor. In others, the mind continues unimpaired till within a few minutes of dissolution, and the patient is carried off after a fit of a convulsive kind.

This fever attacks generally on the second, or sometimes on the third day after delivery, but it has also occurred so late as after a week. The earlier it attacks the greater is the danger, and few women recover who have the belly much swelled.

On dissection, there is found in the abdomen a considerable quantity of fluid, similar to that met with in peritonitis. The omentum and peritonæum are inflamed in a variable degree, sometimes considerably, sometimes very slightly, and gangrene is unusual. The swelling is neither proportioned to the inflammation nor effusion, nor, in every instance, dependent on these, but on the inflation of the bowels which results from that relaxation of the muscular fibres of the bowels, which is so common in the puerperal state, particularly in puerperal disease. The uterus, although sometimes the first seat of the pain, and occasionally found considerably inflamed, yet, in general, is not more affected than the intestines. In some cases, the thoracic viscera are inflamed, as well as the intestines, or they may be almost exclusively affected. In either case, sero-purulent effusion is found in the chest.

It is most frequent and most fatal in hospitals. In private practice, it is less malignant, though still very dangerous. It is sometimes

epidemic, and, in some instances, it has been easy to trace the contagion from one woman to another. In hospitals, it has conspicuously appeared as a contagious disease. There has been much dispute whether the contagion were one, *sui generis*, or that of typhus, or erysipelas, or hospital gangrene; or if the disease depended on some noxious state of the atmosphere, conjoined with the absorption of putrid matter. When this fever is prevalent, women, after abortion, are liable to it, as well as those who have reached the full time. Unmarried women who attended the sick, have also died with many of its symptoms. Patients who miscarry during typhus fever, are in great danger of dying, and when they do so, there is almost invariably pain in the belly, with tympanitic swelling; and in most cases inflammation and suppuration are found on inspection. The disease appears to depend on inflammation of the peritonæum, conjoined with the operation of some debilitating poison, more or less contagious. It is not connected with the state of the labour, except in so far as that hæmorrhage seems to predispose to it; but when epidemic, it occurs after a rapid and easy, as well as after a more painful labour. It seems to be established, not only that different individuals may have more or less violent symptoms of inflammation, but also that particular epidemics have the peritonitic state, more or less prominent and acute: in some, there is much swelling, with little pain.

We attempt the diagnosis, rather, perhaps, by our knowledge of the existence of an epidemic, than, at first, by any special symptom. We also find that, very soon, the symptoms of depression are greater than should be expected at the period in simple inflammation, and venesection does less good, even for a few minutes.

This disease is dangerous in proportion to the malignancy of the cause, and the situation of the patient. All writers agree that in hospitals it is peculiarly fatal, and that few recover from it. In private practice, the disease is milder, but still, it is most formidable. — *Burns.*

The treatment of the low fever of lying-in women does not differ materially from that of epidemic typhus, complicated with local inflammation. Venesection, to a moderate extent, is sometimes useful at the commencement of the disease; but large or repeated bleeding can never be borne, nor must bleeding be practised at all in an advanced stage of the disease. Leeches to the abdomen are more useful than general blood-letting. The bowels should, at first, be cleared out by a full dose of calomel and a saline purgative, and laxatives may afterwards be given as they are required; but as the disease advances, diarrhœa is more common than constipation. There is, perhaps, no medicine so serviceable in this disease, as opium. It allays pain and irritation, checks the vomiting, which is so frequent and distressing, and obviates diarrhœa. Opiate enemata are frequently serviceable in allaying tenesmus. Blisters to the abdomen are recommended by some practitioners, but objected to by others as increasing irritation. Cloths wet with warm oil of turpentine seem to be much preferable, and often produce a very soothing effect on the internal pain, while they excite a degree of counter irritation on the surface. In the advanced stage of the disease, stimulants are indicated, and wine, camphor, and the sulphate of quinine may be administered; but when the powers of the constitution begin to sink in this disease, it is hardly possible to rally them, and the case is almost always fatal.

Inflammation of the uterus or its appendages.— A general description of this will be found in the article *Hysteritis.*

Inflammation of the veins and lymphatics of the uterus. — Uterine *phlebitis* is an affection which has only attracted attention of late years. An interesting account of it has been given by Dr. Robert Lee, from which the following is taken. Dr. Lee considers a large proportion of the cases called typhoid puerperal fever as referrible to uterine phlebitis, but, as before observed, the question, What is puerperal fever? is one about words, and therefore not worth arguing.

In women who have enjoyed good health during pregnancy, and in whom the process of parturition has been easily accomplished, uterine phlebitis occasionally commences within twenty-four hours after delivery, with pain, more or less acute, in the region of the uterus, accompanied or followed by a severe rigor, or a succession of rigors, a suppression of the lochial discharge, acceleration of the pulse, cephalalgia, or slight incoherence of intellect, with most distressing sensation of general uneasiness, and sometimes by nausea and vomiting. These symptoms, after a short duration, are succeeded by increased heat of the body, tremors of the muscles of the face and extremities, rapid feeble pulse, anxious and hurried respiration, great thirst, with brown dry tongue, and frequent vomiting of green-coloured matters. The sensorial functions usually become much affected, and there is a state of drowsy stupor or violent delirium and agitation, which is followed by symptoms of extreme exhaustion; the whole surface of the body not unfrequently assumes a deep and peculiar sallow or yellow colour; the abdomen sometimes becomes swollen and tympanitic, and some of the remote organs of the body, such as the lungs, heart, brain, liver, and spleen, or the articulations and cellular membrane of the extremities, suffer disorganisation from congestion, or a rapid and destructive inflammation.

There is scarcely an organ of the body which has not been observed to become secondarily affected from suppuration of the uterine veins. The vessels of the brain sometimes become greatly congested, and lymph is effused upon the surface of the pia mater, or serum into the ventricles; portions of the brain have become softened and disorganised, or purulent infiltrations have taken place into the cerebral substance.

In other individuals, whose lungs had previously been healthy, a rapid and destructive inflammation of the pleura has taken place, or portions of the pulmonary texture have become condensed, of a dark red colour, or infiltrated with pus. In three cases, where there had only

been obscure pain in the chest during life, with slight cough and dyspnœa, a copious effusion of lymph and serum was found to have taken place into the cavities of the thorax; the pleura was covered with false membranes, and portions of the lung had fallen into a state of complete gangrene. In one individual the pleura had given way by sloughing, and the right side of the chest was distended with air.

In uterine phlebitis, the mucous membrane lining the stomach has also been observed by M. Dance to have been reduced to the state of a diffluent pulp, and the substance of the spleen has been extensively softened and disorganised; the eyes have also become suddenly affected with destructive inflammation, and the vision has been lost many days before the termination of life. In two cases which came under our care, the conjunctiva of both eyes, without much pain, suddenly became intensely red, the corneæ opaque, and the eyelids much swollen, and under their lining membrane a large serous deposition took place; lymph and pus were also effused into the anterior chamber, and in one the cornea ultimately burst. In a case related by M. Cruveilhier, the nose became black and gangrenous, yet the patient recovered.

Deposits or infiltrations of pus, of enormous extent, also take place into the cellular membrane, between the muscles of the extremities, and often in the neighbourhood of the joints; the cartilages of the joints themselves become ulcerated, and pus is formed within the capsular ligaments.

In other individuals, who have never been subject to attacks of rheumatism, severe pain is experienced in various parts of the body, more particularly in the joints and extremities, with an exhausting fever.

All these affections appear to have a common origin, and cannot be referred to any other cause than to the morbid condition of the veins of the uterus. The purulent or other secretions, formed by inflammation within the cavities of these vessels, probably produce the whole of the injurious effects now described, by entering the system, and contaminating the mass of blood in like manner as poisons do when absorbed into the body.

In some cases uterine phlebitis commences at a later period after delivery than above described, and in a much more obscure and insidious form, without pain or sense of uneasiness in the region of the uterus, or any other local symptom by which the affection can be recognised. The uterus may return to the reduced volume it usually assumes after delivery; the lochial discharge may continue; and the inflammation and suppuration of the veins, which have caused the whole of the violent constitutional disturbance and destructive lesions in distant parts of the body, may have been wholly overlooked during life. In many cases which we have witnessed, this error was committed by the medical attendant, and stimulants were liberally administered to obviate the debility supposed to exist in a specific form without any local affection of the uterine organs.

The effects of inflammation in the uterine veins are the formation of adventitious membranes on their inner surface, and the deposition of coagula of lymph, or of purulent matter, within their cavities.

Coagula of the fibrine of the blood, which often extend a considerable distance into the uterine veins, are formed in the orifices of these vessels after every labour, and are the principal means employed by nature for the permanent suppression of uterine hemorrhage. These may be distinctly perceived for a long period after delivery, and they have a form and colour different from the coagula produced by inflammation. In opening the body of a patient four weeks after confinement, we absorbed distinct traces of these coagula, partially absorbed, in the muscular substance of the uterus, at the part where the placenta had adhered.

The inflammation may be limited to the veins, but not unfrequently the muscular tissue contiguous to them participates in the inflammation, and becomes of a dark red, or blackish brown colour, and of an unusually soft consistence. The peritoneal covering may also be affected, and the usual consequences of puerperal peritonitis then ensue.

The veins which return the blood from the uterus and its appendages may be either wholly or in part inflamed: generally, however, (and this is a circumstance in the history of uterine phlebitis deserving particular attention,) the inflammation attacks the spermatic veins alone, and for the most part the one only on that side of the uterus to which the placenta has been attached; and it may either confine itself to a small portion of the vessel, or extend throughout its whole course from the uterus to the vena cava. The usual consequences of inflammation of veins are then apparent, viz. injection and condensation of the cellular membrane in which they are imbedded, thickening, induration, and contraction of their coats, and the deposition of lymph, mixed with pus and coagula of blood, within their cavities.

The same is the case with regard to the hypogastric veins, one only being generally affected. These are, however, more rarely affected than the spermatic veins; and this would seem to depend on the latter veins being invariably employed to return the blood from that part of the uterus to which the placenta had been attached.

But inflammation having once begun, it is liable to spread continuously to the veins of the whole uterine system, to those of the ovaria, of the Fallopian tubes, and broad ligaments. The vena cava itself does not always escape, the inflammation spreading to it from the iliac or from the spermatic veins. This occurrence seldom takes place to a great extent through the medium of the spermatic, the inflammation usually terminating abruptly at the opening of the spermatic into it on the right side, or of the renal on the left. If it pursue, as it sometimes does, the direction of the kidneys, the substance of these organs, as well as their veins, may be involved in the disease.

When the inflammation affects the hypo

gastric veins, it may extend from these to the iliac and femoral veins, and thus give rise to all the phenomena observed in phlegmasia dolens.

Uterine phlebitis would appear to result either from the mechanical injury inflicted by protracted labour, from the force required for the extraction of the placenta in uterine hæmorrhage, from retained portions of placenta undergoing decomposition in the uterus, and from any of the causes which produce the other varieties of uterine inflammation.

Though a most dangerous disease, uterine phlebitis is not invariably fatal. That it often occurs in puerperal women where it is not suspected to exist during life, is demonstrated by the fact that in the spermatic and hypogastric veins of females advanced in life, calcareous concretions and various kinds of disorganisations have frequently been observed, which must have been the consequence of attacks of acute inflammation at some remote period.

With respect to the treatment of uterine phlebitis, Dr. Lee states that, in cases where venesection at the invasion of the disease has been employed, the relief obtained has only been temporary, if at all experienced, and, in some instances, the abstraction of only a few ounces of blood from the arm has produced alarming syncope. When the local pain is severe, leeches and warm fomentations seem to be the appropriate remedies; but as far as our observations go, we are in possession of no remedial means which effectually control these varieties of inflammation of the deeper seated structures of the uterus, which we have attempted to describe. The French practitioners have great confidence in the action of mercury pushed quickly to salivation. Dr. Lee states that he gave this practice a fair trial, and that it failed, although he carried it to a great extent, and brought the system under the influence of mercury in less than twenty-four hours: yet the progress of the symptoms was not arrested, and the patients died, as others had done where the remedy had not been administered.

Inflammation of the uterine absorbents is not a common case. Dr. Robert Lee has given four examples of it, in one of which the absorbents were found filled with pus. The local symptoms are often so obscure as altogether to escape detection during life; while the constitutional affection, which often strikingly resembles the effect of a specific poison, is so violent as to yield to no treatment, however early or vigorously employed.

Puffball. See *Lycoperdon.*

PUGI'LLUS. (*us, i.* m.; and *um, i.* n.; from *pugnus*, the fist.) A pugil or eighth part of a handful. A very indefinite measure.

PULE'GIUM. (*um, ii.* n.; from *pulex*, a flea: because the smell of its leaves, burnt, destroys fleas.) See *Mentha pulegium.*

PULEGIUM CERVI'NUM. Hart's pennyroyal. The *Mentha cervina*, of Linnæus.

PULICA'RIA. (*a, æ.* f.; from *pulex*, a flea: so named because it was thought to destroy fleas if hung in a chamber.) See *Plantago psyllium.*

PULICULARIS MORBUS. Typhus has been so named from the petechiæ, resembling flea-bites, which accompany it.

PU'LMO. (*o, onis.* m. Πνευμων: Atticè πλευμων, *unde, per metathesin, pulmo.*) The lung. See *Lung.*

PULMONA'RIA. (*a, æ.* f.; from *pulmo*, the lung: so called because of its virtues in affections of the lungs.) The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Monogynia.* Lung-wort.

Pulmonaria arborea. See *Lichen pulmonarius.*

Pulmonaria lutea. See *Hypochæris.*

Pulmonaria maculata. See *Pulmonaria officinalis.*

PULMONARIA OFFICINALIS. The systematic name of the spotted lung-wort. Jerusalem cowslips. Jerusalem sage. *Pulmonaria maculata. Symphytum maculosum.* This plant is rarely found to grow wild in England; but is very commonly cultivated in gardens, where its leaves become broader, and approach more to a cordate shape. The leaves, which are the part medicinally used, have no peculiar smell; but, in their recent state, manifest a slightly astringent and mucilaginous taste; hence it seems not wholly without foundation that they have been supposed to be demulcent and pectoral. They have been recommended in hæmoptoes, tickling coughs, and catarrhal defluxions upon the lungs. The name pulmonaria, however, seems to have arisen rather from the speckled appearance of these leaves resembling that of the lungs, than from any intrinsic quality which experience discovered to be useful in pulmonary complaints.

PU'LMONARY. *Pulmonalis.* Belonging to the lungs.

PULMONARY ARTERY. The pulmonary artery, *arteria pulmonalis*, arises from the right ventricle of the heart, and soon divides into the right and left branches, which ramify throughout the lungs, and form a beautiful network on the air vesicles, where they terminate in the veins, *venæ pulmonales*, whose branches at length form four trunks, which empty themselves into the left auricle of the heart.

Pulmonary consumption. See *Phthisis.*

PULMONARY PLEXUS. *Bronchial plexus.* The plexus of nerves formed at the back of the bronchia by the par vagum and great sympathetic. See *Trachea.*

Pulmonary vein. See *Pulmonary artery.*

PULMO'NICUS. (From *pulmo*, the lungs.) Of or belonging to the lungs.

PULMONI'TIS. (*is, idis.* f.; from *pulmo*, the lung.) An inflammation of the lungs. See *Pneumonitis.*

PULPEZIA. *Pulpelzia.* A barbarous name of apoplexy.

PULPO'SUS. Pulpy: soft.

PULSATI'LLA NIGRICANS. (*Pulsatilla*; from *pulso*, to beat about: so called from its being perpetually agitated by the air.) See *Anemone pratensis.*

PULSATION. The beating of the pulse, or any movement resembling it.

PULSATIVE. *Pulsativus.* Applied to a pain accompanied with throbbing.

PULSE. *Pulsus.* The beating of the heart and arteries. The pulse is generally felt at the wrist, by pressing the radial artery with the fingers. The action depends upon the impulse given to the blood by the heart: hence physicians feel the pulse to ascertain the quickness or tardiness of the blood's motion, the strength of the heart, &c. See *Circulation.*

Pulsilo'gium. (*um, ii.* n.; from *pulsus*, the pulse, and λεγω, to tell.) An instrument for measuring the pulse.

Pulvi'nar. (A cushion; from *pulvis*, dust or chaff, with which it is filled.) *Pulvinarium.* A medicated cushion.

PU'LVIS. (*is, eris.* m.) A powder. This form of medicine is either coarse or very fine, simple or compound. In the compounded powders the intimate and complete admixture of the several ingredients, and more especially in those to which any of the more active substances, as opium, scammony, &c., are added, cannot be too strongly recommended; and for this purpose it may be proper to pass them, after they are mixed mechanically, through a fine sieve.

Pulvis aloes compositus. Compound powder of aloes. Formerly called *pulvis aloes cum guaiaco.* Take of aloes, an ounce and half; guaiacum resin, an ounce; compound powder of cinnamon, half an ounce: powder the extract of aloe and guaiacum resin separately; then mix them with the compound powder of cinnamon. The dose is from gr. x. to ʒj. It is a warm, aperient, laxative powder, calculated for the aged, and those affected with dyspeptic gout, attended with costiveness and spasmodic complaints of the stomach and bowels.

Pulvis aloes cum canella. A cathartic, deobstruent powder, possessing stimulating and aloetic properties; now omitted in the London Pharmacopœia, as rather suited to the purpose of extemporaneous prescription.

Pulvis aloes cum ferro. This possesses aperient and deobstruent virtues; and is mostly given in chlorosis and constipation. In the London Pharmacopœia this formula is omitted for the same reason as pulvis aloes cum canellâ.

Pulvis aloes cum guaiaco. See *Pulvis aloes compositus.*

Pulvis antimonialis. See *Antimonialis pulvis.*

Pulvis aromaticus. See *Pulvis cinnamomi compositus.*

Pulvis arthriticus Ducis Portlandi. See *Portland powder.*

Pulvis arthriticus turneri. Turner's gout powder. This consisted of turbeth mineral, hermodactyl, scammony, and the berries of the dwarf elder, of each equal parts. It was given at intervals with a view of preventing the return of the gout. Dose from grains xv. to ʒij.

Pulvis basilicus. Basilic powder. Royal powder. This consisted of diagrydium, cream of tartar, and calomel, of each equal parts. It was used principally as a vermifuge for children, in a dose of from six to fifteen grains.

Pulvis cephalicus. There are many powders prepared under this name, and most of them contain some agreeable aromatic, and many some asarabacca.

Pulvis cerussæ compositus. This is mostly used in the form of collyrium, lotion, or injection, as a mucilaginous sedative.

Pulvis chelarum cancri compositus. An antacid and astringent powder, mostly given to children with diarrhœa and acidity of the primæ viæ.

Pulvis cinnamomi compositus. Compound powder of cinnamon. Formerly called, *pulvis aromaticus, species aromatica,* and *species diambræ sine odoratis.* Take of cinnamom bark, two ounces; cardamom-seeds, an ounce and a half; ginger root, an ounce; long pepper, half an ounce: rub them together, so as to make a very fine powder. The dose is from five to ten grains. An elegant stimulant, carminative, and stomachic powder.

Pulvis cobbii. *Pulvis Tunquinensis.* Cobb's powder. Tonquin powder. This once celebrated powder consists of sixteen grains of musk, and forty-eight grains of cinnabar, to be taken mixed in a gill of arrack. It was regarded as a specific in hydrophobia.

Pulvis Comitis Warwicensis. See *Cornachinus pulvis.*

Pulvis contrayervæ compositus. Take of contrayerva root, powdered, five ounces; prepared shells, a pound and a half: mix. A febrifuge diaphoretic, given in the dose of from one to two scruples.

Pulvis cornu usti cum opio. Powder of burnt hartshorn with opium. *Pulvis opiatus.* Take of hard opium, powdered, a drachm; hartshorn, burnt and prepared, an ounce; cochineal, powdered, a drachm: mix. This preparation affords a convenient mode of exhibiting small quantities of opium, ten grains containing one of the opium. It is absorbent and anodyne.

Pulvis cretæ compositus. Compound powder of chalk. *Pulvis è bolo compositus sine opio. Species è scordio sine opio.* Take of prepared chalk, half a pound; cinnamon bark, four ounces; tormentil root, acacia gum, of each three ounces; long pepper, half an ounce: reduce them separately into a very fine powder, and then mix. The dose is from ʒss. to ʒj. An astringent, carminative, and stomachic powder, exhibited in the cure of diarrhœa, pyrosis, and diseases arising from acidity of the bowels, inducing much pain.

Pulvis cretæ compositus cum opio. Compound powder of chalk with opium. Take of compound powder of chalk, six ounces and a half; hard opium, powdered, four scruples: mix. An anodyne astringent. The dose from one scruple to two.

Pulvis ipecacuanhæ compositus. Compound powder of ipecacuanha. Take of ipecacuanha root, powdered, hard opium, powdered, of each a drachm; sulphate of potash, powdered, an ounce: mix. A diaphoretic powder, similar to that of Dr. Dover, which gained such repute in the cure of rheumatism and other diseases arising from obstructed perspiration and spasm. The dose is from five grains to a scruple.

Pulvis jalapæ compositus. Compound

powder of jalap. Take of jalap, three ounces; bitartrate of potash, six ounces; ginger, two drachms: rub them separately to powder; then mix them. A hydragogue purgative, in which the action of the jalap is rendered milder by the salt. Dose from one to two scruples.

Pulvis kino compositus. Compound powder of kino. Take of kino, 15 drachms; cinnamon bark, half an ounce; hard opium, a drachm: reduce them separately to a very fine powder, and then mix. The proportion of opium this astringent contains is one part in twenty. The dose is from five grains to a scruple.

Pulvis myrrhiæ compositus. A stimulant, antispasmodic, and emmenagogue powder, exhibited in the dose of from fifteen grains to two scruples, in uterine obstructions and hysterical affections.

Pulvis opiatus. See *Pulvis cornu usti cum opio.*

Pulvis scammonii compositus. Compound powder of scammony. Take of scammony, hard extract of jalap, of each two ounces; ginger-root, half an ounce: reduce them separately to a very fine powder, and then mix. From ten to fifteen grains or a scruple are exhibited as a stimulating cathartic.

Pulvis scammonii cum aloe. A stimulating cathartic, in the dose of from ten to fifteen grains.

Pulvis scammonii cum calomelane. A vermifuge cathartic, in the dose of from ten to fifteen grains.

Pulvis sennæ compositus. Compound powder of senna. *Pulvis diasennæ.* Take of senna leaves, supertartrate of potash, of each two ounces; scammony gum resin, half an ounce; ginger-root, two drachms: reduce the scammony gum resin separately, the rest together, to a very fine powder, and then mix. The dose is from one scruple to one drachm. A saline stimulating cathartic.

Pulvis stypticus Helvetii. See *Stypticum Helvetii.*

Pulvis tragacanthæ compositus. Compound powder of tragacanth. *Species diatragacanthæ frigidæ.* Take of tragacanth, powdered, acacia gum, powdered, starch, of each an ounce and half; sugar, three ounces: powder the starch and sugar together; then add the tragacanth and acacia gum, and mix the whole. Tragacanth is difficult to be reduced to powder. The dose is from ten grains to a drachm. A very useful demulcent powder, which may be given in coughs, diarrhœas, strangury, &c.

Pumpion. See *Cucurbita.*

Puncta lachrymalia. See *Lachrymal apparatus.*

PUNCTA'TUS. Dotted: applied to parts of plants, &c.; as the petals of the *Melanthium capense*, and the receptacle of the *Leontodon taraxacum.*

PU'NCTUM. (*um, i.* n.; from *pungo*, to prick.) A point. Applied, in anatomy, to several minute objects.

Punctum aureum. Formerly, when a hernia of the intestines was reduced by an incision made through the skin and membrana adiposa, quite down to the upper part of the spermatic vessels, a golden wire was fixed and twisted, so as to prevent the descent of any thing down the tunica vaginalis. This operation was called *Punctum aureum.*

Punctum lachrymale. See *Lachrymal apparatus.*

Punctum saliens. The first appearance of the heart in the embryo. See *Ovum.*

PU'NICA. (*a, æ.* f.) The name of a genus of plants in the Linnæan system. Class, *Icosandria;* Order, *Monogynia.*

Punica grana'tum. The systematic name of the pomegranate. *Granatum. Punica — foliis lanceolatis, caule, arboreo,* of Linnæus. The rind of the fruit, and the flowers called *Balaustine flowers*, are the parts directed for medicinal use. In their smell there is nothing remarkable, but to the taste they are very astringent, and have successfully been employed as such in diseases, both internal and external.

PUNI'CEUS. (From *punica*, the pomegranate, the flowers of which are of a peculiar colour.) Puniceal, or of a fine bright red colour, like that of the flowers of the pomegranate. See *Colour.*

PUPIL. (*Pupilla, æ.* f.; from *pupa*, a babe: because it reflects the diminished image of the person who looks upon it, like a puppet.) The round opening in the middle of the iris. See *Oculus.*

Pupil, closed. See *Synizesis.*

PUPILLA'RIS. (From *pupilla*, the pupil.) Of or belonging to the pupil.

Pupillaris membrana. See *Membrana pupillaris.*

Pupillæ velum. See *Membrana pupillaris.*

PURGAME'NTUM. A purge.

PURGATIVE. Applies adjectively and substantively to whatever increases the peristaltic motion of the bowels, so as to considerably increase the alvine evacuations. See *Cathartic.*

Purging flax. See *Linum catharticum.*

Purging-nut. See *Jatropha curcas.*

PU'RIFORM. (*Puriformis;* from *pus*, and *forma*, resemblance.) Resembling pus.

Purl. A beverage prepared by infusing common wormwood in ale.

Purple powder of Cassius. See *Aurum.*

PU'RPURA. (*a, æ.* f. Πορφυρα, the name of a shell of a purple colour: hence *purpura*, a purple colour.) An efflorescence consisting of small, distinct, purple specks and patches, attended with general debility, but not always with fever, which are caused by an extravasation of the vessels under the cuticle. It is divided into the five following species: —

1. *Purpura simplex.*—This has the appearance of petechiæ, without much disorder of the constitution, except languor, pain in the limbs, and a sallow complexion. The petechiæ are most numerous on the breast, inside of the arms and legs, and are of various sizes, and commonly circular. There is no itching or other sensation attending the petechiæ.

2. *Purpura hæmorrhagica* is considerably more severe: the petechiæ are of larger size, and interspersed with vibices and ecchymoses, resembling the marks left by the strokes of a whip, or by violent bruises. They appear first

on the legs, and afterwards on the thighs, arms, and trunk of the body; the hands being more rarely spotted with them, and the face generally free. They are of a bright red colour when they first appear, but soon become purple or livid; and when about to disappear they change to a brown or yellowish hue: the cuticle over them appears smooth and shining, but is not sensibly elevated; in a few cases, however, it has been seen raised into a sort of vesicle, containing black blood. This more particularly happens in the spots which appear on the tongue, gums, and palate, and inside of the cheeks and lips, where the cuticle is extremely thin: the gentlest pressure on the skin, even feeling the pulse, will often produce a purple blotch, like that which is left after a severe bruise.

The same state of habit which gives rise to these effusions under the cuticle, produces likewise copious discharges of blood, especially from the internal parts: they are often very profuse, and suddenly prove fatal; but in other cases they are less copious; sometimes returning every day at stated periods, and sometimes less frequently, and at regular intervals; and sometimes there is a slow and almost incessant oozing of blood. The bleeding occurs from the gums, nostrils, throat, inside of the cheeks, tongue, and lips, and sometimes from the lining membrane of the eyelids, the urethra, and external ear; and also from the internal cavities of the lungs, stomach, bowels, uterus, kidneys, and bladder.

This disease is often preceded by great lassitude, faintness, and pains in the limbs; but not unfrequently it appears suddenly in the midst of apparent good health. It is always accompanied with extreme debility and depression of spirits; the pulse is commonly feeble, and sometimes quickened; and heat, flushing, perspiration, and other symptoms of febrile irritation, occasionally attend. When the disease has continued for some time, the patient becomes sallow, and much emaciated; and some degree of œdema appears on the lower extremities, which afterwards extends to other parts of the body. This disease is extremely uncertain in its duration: in some instances it has terminated in a few days, while in others it has continued, not only for many months, but even for years.

The causes of this disease are by no means clearly ascertained: it occurs at every period of life, and in both sexes, but especially in women and in boys before the age of puberty, particularly those who are employed in sedentary occupations, and who live in close and crowded situations. It has sometimes occurred as a sequæla of small-pox, and of measles, and sometimes in the third or fourth week of puerperal confinement. It is supposed that some local visceral obstruction is the cause of the disease in different instances, as artificial bleeding and purging tend greatly to relieve it. The ancient physicians attributed the hæmorrhages from the nose, gums, and other parts, to the morbid enlargement of the spleen.

In the slighter degrees of purpura occurring in children who are ill-fed and nursed, and who reside in close places, or in women shut up in similar situations, and debilitated by anxiety of mind, want of proper food, and by fatigue, the use of tonics, with the mineral acids, and wine, will doubtless be adequate to the cure of the disease, especially where exercise in the open air can be employed at the same time. But when it occurs in adults, especially those who already have the benefit of exercise in the air of the country, and who have suffered no privation with respect to diet, when it is accompanied with a white and loaded tongue, a quick and somewhat small though sharp pulse, occasional chills and heats, and other symptoms of feverishness, however moderate, and if there be at the same time fixed internal pains, a dry cough, and an irregular state of the bowels (symptoms which may be presumed to indicate some local congestion), then the administration of tonic medicines, particularly wine, cinchona, and other warmer tonics, will be found inefficacious, if not decidedly injurious. In such cases, free and repeated doses of medicines containing the submuriate of mercury, and regulated by their effects on the symptoms of the complaint, and by the appearance of the excretions from the intestines, will be found most beneficial.

If the pains are fixed, the marks of febrile irritation considerable, and the spontaneous hæmorrhage not profuse, local or general bloodletting may be employed with great benefit, especially in robust adults. When the urgency of hæmorrhagic tendency has been diminished by these means, the constitution rallies, though not rapidly, with the assistance of the mineral acids, and cinchona or cascarilla, or some preparation of iron, together with moderate exercise and nutritious diet.

3. *Purpura urticans* is distinguished by commencing in the form of rounded and reddish elevations of the cuticle, resembling wheals, which are not accompanied, like the wheals of urticaria, by any sensation of tingling and itching. These tumours gradually dilate; but within one or two days they subside to the level of the surrounding cuticle, and their hue becomes darker, and at length livid. They are most common on the legs, where they appear with petechiæ, but also appear on the arms, thighs, breast, &c.

It usually occurs in summer and autumn, and lasts from three to five weeks. Some œdema of the extremities usually accompanies it, and it is occasionally preceded by a stiffness and weight of the limbs. The same rules of treatment apply to this as to the preceding varieties of the disease.

4. *Purpura senilis* appears principally along the outside of the fore-arm, in elderly women, in successive dark purple blotches, of an irregular form, and various magnitude: each of these continues from a week to ten days, when the extravasated blood is absorbed.

Tonics or any other expedient do not appear to exert any influence over the eruption.

5. *Purpura contagiosa* is an eruption of petechia which occasionally accompanies typhoid fevers: where they occur in close situations, they are merely symptomatic, and are very rarely seen.

Purpura alba. *Purpura rubra.* Many writers term the miliary fever, when the pus

tules are white, *purpura alba;* and, when they are red, *purpura rubra.*

Purpura scorbutica. The dark-coloured blotches which appear on the skin in scurvy.

PURPU'REUS. Purple: applied to designate a particular colour. See *Colour.*

Purpu'ric acid. *Acidum purpuricum.* The excrements of the *Boa constrictor* serpent contain lithic acid. Dr. Prout found that, on digesting this, or the same acid from urinary calculi, in dilute nitric acid, an effervescence takes place, and the lithic acid is dissolved, forming a beautiful purple liquid. The excess of nitric acid being neutralised with ammonia, and the whole concentrated by slow evaporation, the colour of the solution becomes of a deeper purple; and dark red granular crystals, sometimes of a greenish hue externally, soon begin to separate in abundance. These crystals are a compound of ammonia with the acid principle in question. The ammonia was displaced by digesting the salt in a solution of caustic potash, till the red colour entirely disappeared. This alkaline solution was then gradually dropped into dilute sulphuric acid, which, uniting with the potash, left the acid principle in a state of purity.

This acid principle is likewise produced from lithic acid by chlorine, and also, but with more difficulty, by iodine. Dr. Prout, the discoverer of this new acid, has, at the suggestion of Dr. Wollaston, called it purpuric acid, because its saline compounds have for the most part a red or purple colour.

This acid, as obtained by the preceding process, usually exists in the form of a very fine powder, of a slightly yellowish or cream colour; and when examined with a magnifier, especially under water, appears to possess a pearly lustre. It has no smell nor taste. Its specific gravity is considerably above water. It is scarcely soluble in water. One tenth of a grain, boiled for a considerable time in 1000 grains of water, was not entirely dissolved. The water, however, assumed a purple tint, probably, Dr. Prout thinks, from the formation of a little purpurate of ammonia. Purpuric acid is insoluble in alkohol and ether. The mineral acids dissolve it only when they are concentrated.

Purslane. See *Portulaca.*

PU'RULENT. (*Purulens;* from *pus.*) Of the nature of pus.

Purulent ophthalmia. See *Ophthalmitis.*

PUS. (*us, uris.* n.; pl. *pura.* Πύος.) Matter. A whitish, bland, cream-like fluid, heavier than water, found in abscesses, or on the surface of sores. It is distinguished, according to its nature, into laudable or good pus, scrofulous, serous, and ichorous pus, &c.

Pus taken from a healthy ulcer, near the source of circulation, as on the arm or breast, readily separates from the surface of the sore, the granulations underneath being small, pointed, and of a florid red colour, and has the following properties: it is nearly of the consistence of cream; is of a white colour; has a mawkish taste; and, when cold, is inodorous; but, when warm, has a peculiar smell. Examined in a microscope, it is found to consist of two parts,—of globules, and a transparent colourless fluid; the globules are probably white, at least they appear to have some degree of opacity. Its specific gravity is greater than that of water. It does not readily go into putrefaction. Exposed to heat, it evaporates to dryness, but does not coagulate. It does not unite with water in the heat of the atmosphere, but falls to the bottom; yet, if kept in a considerable degree of heat, it rises and diffuses itself through the water, and remains mixed with it, even after having been allowed to cool, the globules being decomposed.

Pus varies in its appearance according to the different circumstances which affect the ulcer that forms it; such as the degree of violence of the inflammation, also its nature, whether healthy or unhealthy; and these depend upon the state of health, and strength of the parts yielding pus. These changes arise more from indolence and irritability than from any absolute disease; many specific diseases, in healthy constitutions, producing no change in the appearance of the matter from their specific quality. Thus, the matter from a gonorrhœa, from the small-pox pustules, or the chicken-pock, has the same appearance, and seems to be made up of similar parts, consisting of globules floating in a transparent fluid, like common pus; the specific properties of each of these poisons being superadded to those of pus. Matter from a cancer may be considered as an exception; but a cancerous ulcer is never in a healthy state.

In indolent ulcers, whether the indolence arises from the nature of the parts, or the nature of the inflammation, the pus is made of globules and flaky particles, floating in a transparent fluid; and globules and flakes are in different proportions, according to the degree of indolence: this is particularly observable in scrofulous abscesses, preceded by a small degree of inflammation. That this flaky appearance is no part of true pus, is well illustrated by observing, that the proportion it bears to the globules is greatest where there is the least inflammation: and in those abscesses that sometimes occur, which have not been preceded by any inflammation at all, the contents are wholly made up of a curdy or flaky substance of different degrees of consistence, which is not considered to be pus, from its not having the properties stated in the definition of that fluid.

The constitution and part must be in health to form good pus; for very slight changes in the general health are capable of producing an alteration in it, and even of preventing its being formed at all, and substituting in its place coagulating lymph.

This happens most readily in ulcers in the lower extremities, owing to their distance from the source of the circulation rendering them weaker. And it is curious to observe the influence that distance alone has upon the appearance of pus.

The cases in which pus is formed are, properly speaking, all reducible to one, which is, the state of parts consequent to inflammation. For, as far as we yet know, observes Sir E. Home, pus has in no instance been met with unless preceded by inflammation; and although

in some cases a fluid has been formed independent of preceding inflammation, it differs from pus in many of its properties.

In considering the time required for the formation of pus, it is necessary to take notice of the periods which are found, under different circumstances, to intervene between a healthy or natural state of the parts, and the presence of that fluid after the application of some irritating substance to the skin.

In cases of wounds made into muscular parts, where blood-vessels are divided, the first process which takes place is the extravasation of red blood; the second is the exudation of coagulating lymph, which afterwards becomes vascular; and the third, the formation of matter, which last does not in common take place in less than two days: the precise time will, however, vary exceedingly, according to the nature of the constitution, and the state of the parts at the time.

If an irritating substance is applied to a cuticular surface upon which it raises a blister, pus will be formed in about twenty-four hours. As pus and mucus greatly resemble each other, several pathologists have exercised their ingenuity to find a criterion between them. According to Dr. C. Darwin, the following chemical distinctions are to be depended upon:— 1. Sulphuric acid dissolves it, and the solution is decomposed by water, which *precipitates* the pus. Sulphuric acid also dissolves mucus; but the addition of water separates it in flakes, which *float upon the surface*. 2. Pus is diffusible through dilute sulphuric acid, and through water and brine; but mucus is not. 3. Caustic alkalis dissolve both pus and mucus; but, when water is added, a difference is exhibited, the pus becoming separated, but not the mucus. Professor Brande states, however, that he has not found the last of these alleged criteria accurate; and that, even supposing all these statements correct, they are of no practical utility; because where pus is mixed with mucus in various proportions, the tests are not sufficiently delicate to distinguish it.

Another test of pus has been recommended by Grasmeyer. Triturate the substance to be examined with an equal quantity of warm water; then add to it an equal quantity of a concentrated solution of subcarbonate of potass. If pus be present, a transparent jelly subsides in a few hours, which is not the case where only mucus is present. These experiments repeated by Mr. Brande did not yield satisfactory results. The late Dr. T. Young proposed an optical test, which he regarded as a very certain one. He very justly regards the globules as the essential characteristic of pus; and it is from their presence that the test about to be described is derived, while the colour indicates that there is no mixture of blood. If we put a small quantity of the substance to be examined between two pieces of plate glass, and holding it near the eye, look through it at a distant candle, we shall observe the appearance, even in the day-time, of a bright circular corona of colours, of which the candle is the centre; a red area, surrounded by a circle of green, and this again by another of red; the colours being so much the brighter, as the globules are more numerous and more equable. If the substance be simply mucus, there will be no rings of colours, although sometimes there is a sufficient mixture of heterogeneous particles even in mucus, to cause the appearance of a reddish area only about the candle.

Much less importance is now attached to these criteria than formerly. They were supposed to be of great moment in the diagnosis of phthisis, which, however, in the present day, is deduced from much more certain data. See *Phthisis*.

For the consideration of the circumstances connected with the formation of pus, see *Abscess*.

Pustula oris. See *Aphtha*.

PU'STULE. (*Pustula*, a little pustule; from *pus*, matter.) An elevation of the cuticle, sometimes globate, sometimes conoidal in its form, and containing pus or lymph, which is in general discoloured.

Pustules are various in their size, but the diameter of the largest seldom exceeds two lines. There are many different kinds of pustules, properly distinguished in medical authors, by specific appellations; as,

1. *Phlyzacium*, a small pustule containing pus, and raised on a hard, circular, inflamed base of a vivid red colour. It is succeeded by a thick, hard, dark-coloured scab.

2. *Psydracium*, according to Dr. Willan, a minute pustule, irregularly circumscribed, producing but a slight elevation of the cuticle, and terminating in a laminated scab. Many of these pustules usually appear together, and become confluent. When mature, they contain pus; and, after breaking, discharge a thin watery humour. Pustules originate from an inflammation of the skin, and the consequent partial effusion of purulent matter under the cuticle, by which the latter is elevated into small circumscribed tumours. Sometimes several of these elevations arise upon a common inflamed surface; but most frequently, the inflammation of the base of each is distinct and circumscribed. They often terminate in a scabby incrustation, varying in hardness according to the various tenacity of the contained fluid, and sometimes in superficial ulceration. The genera impetigo, porrigo, ecthyma, variola, and scabies, which Dr. Willan includes under the order of pustulæ, have nothing in common in their character, except the appearance of pustules in some stage of their progress; for some are contagious and others not, some are acute and others chronic.

PUTA'MEN. (*en*, *inis*. n.; from *puto*, to cut.) The bark or paring of any vegetable; as the walnut. See *Juglans regia*.

PUTAMI'NEÆ. The name of an order in Linnæus's Fragments of a Natural Method, embracing those which have an outer shell, or putamen, over a hard fruit; as in *Capparis* and *Merisoma*.

PUTREFACTION. (*Putrefactio*; from *putrefacio*, to make rotten, to cause to putrefy.) Putrid fermentation. Putrefactive fermentation. The spontaneous decomposition of animal and vegetable matters attended with a fœtid exhalation. The solid and the fluid matters are re-

solved into gaseous compounds and vapours, which escape, and earthy matters, which remain. The requisites to this process are — 1. A certain degree of humidity. 2. The access of atmospheric air. 3. A certain degree of heat: hence the abstraction of the air and water, or humidity, by drying, or its fixation by cold, by salt, sugar, spices, &c., will counteract the process of putrefaction, and favour the preservation of food, on which principle some patents have been obtained.

Putrid fever. See *Typhus.*

PYLO'RIC. (*Pyloricus;* from *pylorus.*) Belonging to the pylorus.

Pyloric artery. *Arteria pylorica.* A branch of the hepatic artery.

PYLO'RUS. (*us, i.* m.; from πυλη, an entrance, and ωρεω, to guard: because it guards, as it were, the entrance of the bowels.) The inferior aperture of the stomach, which opens into the intestines.

Pyopoie'tic. (From πυον, pus, and ποιεω, to make.) Suppurative.

Pyorrhœ'a. (From πυον, pus, and ῥεω, to flow.) A purulent discharge.

Pyuru'ria. (From πυον, pus, and ουρον, urine.) *Pyuria.* A purulent state of the urine.

PYRA'MIDAL. (*Pyramidalis:* so called from its form.) Of the figure of a pyramid.

Pyramidalia corpora. See *Corpus pyramidale.*

PYRAMIDA'LIS. (From πυραμις, a pyramid.) A muscle in the front of the belly. Fallopius, who is considered as the first accurate describer of this muscle, gave it the name of *pyramidalis,* from its shape: hence it is called *pyramidalis Fallopii,* by Douglas. But Vesalius seems to have been acquainted with it, and to have described it as a part of the rectus. It is called *pyramidalis vel succenturiatus,* by Cowper. It is a very small muscle, situated at the bottom of the forepart of the rectus, and is covered by the same aponeurosis that forms the anterior part of the sheath of that muscle. It arises, by short tendinous fibres, from the upper and forepart of the os pubis. From this origin, which is seldom more than an inch in breadth, its fibres ascend somewhat obliquely, to be inserted into the linea alba, and inner edge of the rectus, commonly at about the distance of two inches from the pubes, and frequently at a greater or less distance, but always below the umbilicus. In some subjects the pyramidalis is wanting on one or both sides; and when this happens, the internal oblique is usually found to be of greater thickness at its lower part. Now and then, though rarely, there are two at one side, and only one at the other; and Sabatier has even seen two on each side. Fallopius, and many others after him, have considered it as the congener of the internal oblique; but its use seems to be to assist the lower part of the rectus.

Pyramidalis faciei. See *Levator labii superioris alæque nasi.*

Pyrenoi'des. (From πυρην, a kernel, and ειδος, likeness: so called from its kernel-like shape.) Kernel-shaped: applied to the odontoid process of the second vertebra.

Pyrete'rium. (From πυρ, fire, and τηρεω, to keep.) The fire-hole of a furnace.

PYRE'THRUM. (*um, i.* n.; from πυρ, fire, because of the hot taste of its root.) See *Anthemis pyrethrum.*

Pyrethrum sylvestre. See *Achillea.*

PYRE'TIC. (*Pyreticus;* from πυρ, fire.) Appertaining to fever.

PYRETO'LOGY. (*Pyretologia, æ.* f.; from πυρετος, fever, and λογος, a discourse.) The doctrine of fevers.

PYRE'XIA. (*a, æ.* f.; from πυρ, fire.) Fever.

Pyrexiæ. Febrile diseases. The first class of Cullen's Nosology; characterised by frequency of pulse after a cold shivering, with increase of heat, and especially, among other impaired functions, a diminution of strength.

PYRE'XIAL. (*Pyrexialis;* from *pyrexia,* fever.) Febrile. Appertaining to fever.

PY'RIFORM. (*Pyriformis;* from *pyrus,* the pear, and *forma,* likeness.) Pear-like; pear-shaped.

PYRIFO'RMIS. (From *pyrus,* a pear, and *forma,* a shape: shaped like a pear.) A small radiated muscle of the pelvis, situated under the glutæus maximus, along the inferior edge of the glutæus minimus. *Periformis, seu iliacus externus,* of Douglas and Cowper. Spigelius was the first who gave a name to this muscle, which he called *pyriformis,* from its supposed resemblance to a pear. It is the *pyriformis sive pyramidalis,* of Winslow. It arises by three and sometimes four tendinous and fleshy origins, from the anterior surface of the second, third, and fourth pieces of the os sacrum, so that this part of it is within the pelvis. From these origins the muscle grows narrower, and passing out of the pelvis, below the niche in the posterior part of the ilium, from which it receives a few fleshy fibres, is inserted by a roundish tendon, of an inch in length, into the upper part of the cavity, at the root of the trochanter major. The use of this muscle is to assist in moving the thigh outwards, and moving it a little upwards.

PYRMONT. The name of a village in the circle of Westphalia, in Germany, which has a celebrated acidulous chalybeate water. Pyrmont water, *Aqua Pyrmontana,* is of an agreeable, though strongly acidulated taste, and emits a large portion of gas, which affects the persons who attend at the well, and also those who drink the fluid, with a sensation somewhat resembling that produced by intoxication. The Pyrmont water contains muriates of soda and magnesia; sulphates of soda and magnesia; carbonates of iron, lime, and magnesia; and a quantity of free carbonic acid. The diseases in which this mineral water may be advantageously used, are the same as those for which the Spa, and others of the acidulated chalybeates, are resorted to, that is, all cases of debility which require an active tonic not permanently heating; as various disorders in the alimentary canal, especially bilious vomiting, and diarrhœa, and complaints that originate from obstructed menstruation. The quantity of the water drunk, is two, three, or more English pints in the morning. Its common operation is by urine; but, if taken

copiously, it generally proves laxative; and when it has not this effect, and that effect is wanted, they commonly mix, with the first glass drunk in the morning, from one to five or six drachms of some purging salts.

PY'RO-ACE'TIC. (*Pyro-aceticus*: so called because it is an acetic acid obtained by the aid of fire.) Appertaining to the acid so called.

Pyro-acetic spirit. *Pyro-acetic æther.* A substance obtained along with acetic acid by the destructive distillation of the acetates. It was first observed by Derosne. When pure, it is a colourless limpid liquid of a peculiar penetrating odour. It is highly inflammable. Its specific gravity is 0·792. It boils at 132°. It mixes readily with water, alkohol, æther, and turpentine. It is called *pyro-acetic*, because it is formed by the action of fire, πυρ, on the acetic acid.

Pyro-ci'tric acid. *Acidum pyro-citricum.* An acid obtained by M. Lassaigne by subjecting citric acid to destructive distillation, saturating the acid liquor which results with lime, and decomposing the precipitate with oxalic acid. A peculiar acid is thus set free, which is the pyro-citric.

Pyro-ga'llic acid. An acid obtained by the action of heat upon gallic acid.

Pyro-ki'nic acid. An acid obtained by the action of heat on kinic acid.

PY'ROLA. (*a, æ.* f.; from *pyrus*, a pear: so named because its leaves resemble those of the pear-tree.) 1. The name of a genus of plants in the Linnæan system. Class, *Decandria*; Order, *Monogynia.*

2. The pharmacopœial name of the winter-green. See *Pyrola rotundifolia.*

Pyrola rotundifolia. The systematic name of the round-leaved winter-green. This elegant little plant, common in our woods, is now forgotten in the practice of medicine. It possesses gently astringent qualities, and has a somewhat bitter taste.

Pyrola umbellata. The exotic species is a strong diuretic. The leaves are infused in boiling water, and the tea drunk rather freely.

Pyroligneous acid. *Acidum pyroligneosum.* Pyrolignous acid. In the destructive distillation of any kind of wood, an acid is obtained, which was formerly called *acid spirit of wood*, but now pyroligneous acid. Fourcroy and Vauquelin showed that this acid was merely the acetic, contaminated with empyreumatic oil and bitumen. See *Acetum.*

Pyroli'thic acid. *Pyro-uric acid* When uric acid concretions are distilled in a retort, silvery white plates sublime. These are pyrolithate of ammonia. When their solution is poured into that of subacetate of lead, a pyrolithate of lead falls, which, after proper washing, is to be shaken with water, and decomposed by sulphuretted hydrogen gas. The supernatant liquid is now a solution of pyrolithic acid, which yields small acicular crystals by evaporation.

Pyroma'lic acid. *Acidum pyromalicum.* When malic or sorbic acid, for they are the same, is distilled in a retort, an acid sublimate, in white needles, appears in the neck of the retort, and an acid liquid distils into the receiver. This liquid, by evaporation, affords crystals, constituting a peculiar acid, to which the above name has been given.

Py'romeco'nic acid. An acid obtained from meconic acid by the aid of heat.

PYROMU'CIC. (*Pyromucicus*; from πυρ, fire, and mucic acid.) Of or belonging to the peculiar acid so called.

Pyromucic acid. *Acidum pyromucicum.* Pyromucous acid. This acid is one of the products of the distillation of mucic acid.

Pyromucous acid. See *Pyromucic acid.*

PYRO'METER. (*Pyrometrum, i.* n.; from πυρ, fire, and μετρον, measure.) To measure those higher degrees of heat to which the thermometer cannot be applied, there have been other instruments invented by different philosophers: these are called *pyrometers.* The most celebrated instrument of this kind, and which has been adopted into general use, is that invented by the late ingenious Mr. Wedgwood.

PYRO'PHORUS. An artificial product, which takes fire or becomes ignited on exposure to the air.

PYRO'SIS. (*is, is.* f.; from πυροω, to burn.) A disease called in Scotland the water-brash; in England, black-water: known by a burning pain in the stomach, attended with copious eructation, generally of a watery insipid fluid. See *Cardialgia.*

Pyrosorbic acid. See *Pyromalic acid.*

Pyrotartaric acid. *Acidum pyrotartaricum.* Into a coated glass retort introduce tartar, or rather tartaric acid, till it is half full, and fit to it a tubulated receiver. Apply heat, which is to be gradually raised to redness. Pyrotartaric acid of a brown colour, from impurity, is found in the liquid products, which is to be purified by evaporation, solution, and filtration, several times.

Pyrote'chnia. (From πυρ, fire, and τεχνη, an art.) Formerly applied to chemistry, or that art by which the properties of bodies are examined by fire, but now used to designate the art of making fireworks.

Pyro'tica. (From πυροω, to burn.) Caustics.

Pyro-uric acid. See *Pyrolithic acid.*

PY'RUS. The name of a genus of plants in the Linnæan system. Class, *Icosandria*; Order, *Pentagynia.*

Pyrus communis. The pear-tree. The fruit is analogous to that of the apple, but more delicately flavoured. Its juice, when fermented, forms perry. Pears, when ripe, are easy of digestion, when not taken in excess.

Pyrus cydonia. The systematic name of the quince-tree. The fruit is termed *Cydonium malum*, or quince. The tree which affords this fruit is the *Pyrus — foliis integerrimis, floribus solitariis*, of Linnæus. Quince seeds are directed by the London College to be made into a decoction, which is recommended in aphthous affections, and excoriations of the mouth and fauces.

Pyrus malus. The systematic name of the apple-tree. The common crab-tree is the parent of all the vast variety of apples at present cultivated. Apples, in general, when ripe, afford

a pleasant and easily digestible fruit for the table; but, when the stomach is weak, they are very apt to remain unaltered for some days, and to produce dyspepsia. Sour fruits are to be considered as unwholesome, except when boiled or baked, and rendered soft and mellow with the addition of sugar.

PYU'LCA. (From πυον, *pus*, and ελκω, to draw.) Medicines which draw pus towards the surface.

PYU'LCUM. (From πυον, pus, and ἑλκω, to draw.) An instrument to extract the pus from the cavity of any sinuous ulcer. The instrument so called by Ambroise Paré and other old surgeons, was a kind of syringe. Galen mentions a pyulcum, but it is not clear what sort of instrument it was.

Pyuria. See *Pyoturia.*

PYXACA'NTHA. (From πυξος, the box tree, and ακανθα, a thorn.) The barberry, or thorny box-tree.

PY'XIS. (*is, idis.* f.; so called because it was made of the wood of the πυξος, or box-tree.) Properly a box; but, from its resemblance, the cavity of the hip-bone, or acetabulum, has been sometimes so called.

Q.

Q. P. An abbreviation of *quantum placet*, as much as you please.

Q. S. The contraction for *quantum sufficiat*, as much as may suffice.

Q. V. An abbreviation of *quantum vis*, as much as you will.

QUADRA'NGULAR. *Quadrangularis.* Four-cornered: often used to express the form of muscles, leaves, &c. The receptacle of the *Dorstenia Houstonii*, and *contrayerva*, is quadrangular.

Quadrates. See *Depressor labii inferioris.*

QUADRA'TUS. (From *quadra*, a square: so called from its figure.) Square-figured.

QUADRATUS FEMORIS. A muscle of the thigh, situated on the outside of the pelvis. It is a flat, thin, and fleshy muscle, but not of the shape its name would seem to indicate. It is situated immediately below the gemini. It arises tendinous and fleshy from the external surface and lower edge of the tuberosity of the ischium, and is inserted by short tendinous fibres into a ridge which is seen extending from the basis of the trochanter major to that of the trochanter minor. Its use is to bring the os femoris outwards.

Quadratus genæ. See *Platisma-myoides.*

Quadratus labii inferioris. See *Depressor labii inferioris.*

QUADRATUS LUMBORUM. *Quadratus, seu lumbaris externus*, of Winslow. A muscle situated within the cavity of the abdomen. This is a small, flat, and oblong muscle, that has got the name of *quadratus*, from its shape, which is that of an irregular square. It is situated laterally, at the lower part of the spine. It arises tendinous and fleshy from about two inches from the posterior part of the spine of the ilium. From this broad origin it ascends obliquely inwards, and is inserted into the transverse processes of the four superior lumbar vertebræ, into the lower edge of the last rib, and, by a small tendon that passes up under the diaphragm, into the side of the last vertebra of the back. When this muscle acts singly, it draws the loins to one side: when both muscles act, they serve to support the spine, and perhaps to bend it forwards. In laborious respiration, the quadratus lumborum may assist in pulling down the ribs.

Quadratus maxillæ inferioris. See *Platysma-myoides.*

Quadratus radii. See *Pronator radii-quadratus.*

QUADRIDENTA'TUS. (From *quatuor*, four, and *dens*, a tooth.) Four-toothed.

QUADRI'FIDUS. (From *quatuor*, and *findo*, to cleave.) Four-cleft.

QUADRI'GA. (From *quatuor*, four, and *jugum*, a yoke.) A bandage which resembles the trappings of a four-horse cart.

QUADRILOBA'TUS. (From *quatuor*, and *lobatus*, lobed.) Four-lobed.

QUADRILOCULA'RIS. (From *quatuor*, and *locularis*, having cells.) Quadrilocular, or four-celled.

QUADRIPARTI'TUS. (From *quatuor*, and *partitus*, divided.) Quadripartite; having four divisions.

QUADRIVA'LVUS. Quadrivalve, or having four valves.

QUADRU'MANA. (*Quatuor*, four, and *manus*, a hand.) An order of mammiferous animals which have four hands, as monkeys.

QUA'DRUPED. (*Quadrupes, dis.*; from *quatuor*, four, and *pes*, a foot.) An animal having four feet. The term is generally confined to *mammiferous* animals having four feet. Thus a spider has four feet, but we do not call it a quadruped.

QUARANTI'NE. (From the Italian *quarantana*, which is from *quaranta*, forty, because forty days is its ordinary duration.) The term during which persons or goods coming from an infected port are kept from landing, or confined in a lazzaretto. The term of the quarantine is often not nearly so long as forty days.

QUARS. A gall-stone. — *Ruland.*

QUA'RTAN. (*Quartanus*, fourth.) Occurring every fourth day. See *Ague.*

QUARTA'RIUS. The fourth part of a gallon. A quart.

QUARTA'TION. An operation in assaying, by which the quantity of one thing is made

equal to a fourth part of the quantity of another thing.

QUA'SSIA. (*a, æ.* f.; from a slave of the name of *Quassi,* who first used it with uncommon success as a secret remedy in the malignant endemic fevers which frequently prevailed at Surinam.) 1. The name of a genus of plants in the Linnæan system. Class, *Decandria;* Order, *Monogynia.*

2. The pharmacopœial name of the bitter quassia. See *Quassia amara.*

Quassia amara. The systematic name of the bitter quassia tree. *Quassia — floribus hermaphroditis, foliis impari-pinnatis, foliolis oppositis, sessilibus, petiolo articulato alato, floribus racemosis,* of Linnæus. The root, bark, and wood of this tree are all comprehended in the catalogues of the Materia Medica. The tree is a native of South America, particularly of Surinam, and also of some of the West India islands.

The roots are perfectly ligneous: they may be medically considered in the same light as the wood, which is now most generally employed, and seems to differ from the bark in being less intensely bitter: the latter is, therefore, thought to be a more powerful medicine. Quassia has no sensible odour; its taste is that of a pure bitter, more intense and durable than that of almost any other known substance; it imparts its virtues more completely to watery than to spirituous menstrua, and its infusions are not blackened by the addition of sulphate of iron. The watery extract is from a sixth to a ninth of the weight of the wood, the spirituous about a twenty-fourth. This bitter extract has been considered as a principle *sui generis,* and named *quassina.* Quassia, as before observed, derived its name from a negro named Quassi, who employed it with uncommon success as a secret remedy in the malignant endemic fevers which frequently prevailed at Surinam. In consequence of a valuable consideration, this secret was disclosed to Daniel Rolander, a Swede, who brought specimens of the quassia wood to Stockholm, in the year 1756; and, since then, the effects of this drug have been generally tried in Europe, and numerous testimonies of its efficacy published by many respectable authors. Various experiments with quassia have likewise been made, with a view to ascertain its antiseptic powers; from which it appears to have considerable influence in retarding the tendency to putrefaction; and this, Professor Murray thinks, cannot be attributed to its sensible qualities, as it possesses no astringency whatever; nor can it depend upon its bitterness, as gentian is much bitterer, yet less antiseptic. The medicinal virtues ascribed to quassia are those of a tonic, stomachic, antiseptic, and febrifuge. It has been found very effectual in restoring digestion, expelling flatulencies, and removing habitual costiveness, produced from debility of the intestines, and common to a sedentary life. Dr. Lettsom, whose extensive practice gave him an opportunity of trying the effects of quassia in a great number of cases, says: "In debility, succeeding febrile diseases, the Peruvian bark is most generally more tonic and salutary than any other vegetable hitherto known; but in hysterical atony, to which the female sex is so prone, the quassia affords more vigour and relief to the system than the other, especially when united with the vitriolum album, and still more with the aid of some absorbent." In dyspepsia, arising from hard drinking, and also in diarrhœas, the doctor exhibited the quassia with great success. But, with respect to the tonic and febrifuge qualities of quassia, he says: "I by no means subscribe to the Linnæan opinion, where the author declares, 'me quidem judice chinchinam longe superat.'" It is very well known that there are certain peculiarities of the air, and idiosyncrasies of constitution, unfavourable to the exhibition of Peruvian bark, even in the most clear intermissions of fever; and writers have repeatedly noticed it. But this is comparatively rare. About midsummer, 1785, Dr. Lettsom met with several instances of low remittent and nervous fevers, wherein the bark uniformly aggravated the symptoms, though given in intermissions the most favourable to its success, and wherein quassia or snake-root was successfully substituted. In such cases he mostly observed, that there was great congestion in the hepatic system, and the debility at the same time discouraged copious evacuations. And in many fevers, without evident remissions to warrant the use of the bark, whilst at the time increasing debility began to threaten the life of the patient, the doctor found that quassia, or snake-root, singly or combined, upheld the vital powers, and promoted a critical intermission of fever, by which an opportunity was afforded for the bark to effect a cure. It may be given in infusion, or in pills made from the watery extract: the former is generally preferred, in the proportion of three or four scruples of the wood to twelve ounces of water.

Quassia excelsa. *Simarouba excelsa.* Mountain damson. A great part of the quassia wood found in the market is the produce of this tree.

Quassia simarouba. See *Simarouba officinalis.*

Quassina. See *Quassia.*

Qua'trio. (From *quatuor,* four: so called because it has four sides.) The astragalus.

Quauli. An alchemical name of lead.

Queen of the meadow. See *Spiræa ulmaria.*

Quercera. See *Epialus.*

Quercitron bark. See *Quercus tinctoria.*

Que'rcula. (A diminutive of *quercus,* the oak: so called because it has leaves like the oak.) See *Teucrium chamædrys.*

QUE'RCUS. (*us, ûs.* f.) The oak.

1. The name of a genus of plants in the Linnæan system. Class, *Monœcia;* Order, *Polyandria.*

2. The pharmacopœial name of the oak. See *Quercus robur.*

Quercus cerris. See *Quercus infectoria.*

Quercus e'sculus. The Italian oak; the acorns of which are, in times of scarcity, said to afford a meal of which bread is made.

Quercus infecto'ria. *Quercus cerris,* The name of the tree which affords the excrescence

called *Galla*, *Galla maxima orbiculata*, and *Nux galla*, or gall-nut. By the name of gall-nut is usually denoted any protuberance, tubercle, or tumour, produced by the puncture of insects on plants and trees of different kinds. These galls are of various forms and sizes, and no less different with regard to their internal structure. Some have only one cavity, and others a number of small cells, communicating with each other. Some of them are as hard as the wood of the tree they grow on, whilst others are soft and spongy; the first being termed gall-nuts, and the latter berry-galls, or apple-galls.

The gall-nut used in medicine is thus produced:—The *cynips quercus folii*, an insect of the fly kind, deposits its eggs in the leaves and other tender parts of the tree. Around each puncture an excrescence is presently formed, within which the egg is hatched, and the worm passes through all the stages of its metamorphosis, until it becomes a perfect insect, when it eats its way out of its prison. The best oak-galls are heavy, knotted, and of a bluish colour, and are obtained from Aleppo. They are nearly entirely soluble in water, with the assistance of heat. From 500 grains of Aleppo galls, Sir Humphry Davy obtained, by infusion, 185 grains of solid matter, which, on analysis, appeared to consist of *tannin*, 130; mucilage, and matter rendered insoluble by evaporation, 12; gallic acid, with a little extractive matter, 31; the remainder, calcareous earth and saline matter, 12. Another sort comes from the south of Europe, of a light brownish or whitish colour, smooth, round, easily broken, less compact, and of a much larger size. The two sorts differ only in size and strength, two of the blue galls being supposed equivalent in this respect to three of the others.

Oak-galls are supposed to be the strongest astringent in the vegetable kingdom. Both water and spirit take up nearly all their virtue, though the spirituous extract is the strongest preparation. The powder is, however, the best form; and the dose is from a few grains to half a drachm.

They are not much used in medicine, though they are said to be beneficial in intermittents. Dr. Cullen has cured agues by giving half a drachm of the powder of galls every two or three hours during the intermission; and by it alone, or joined with chamomile flowers, has prevented the return of the paroxysms. But the doctor states the amount of his results only to be this:—"that, in many cases, the galls cured the intermittents; but that it failed also in many cases in which the Peruvian bark afterwards proved successful." A fomentation, made by macerating half an ounce of bruised galls in a quart of boiling water for an hour, has been found useful for the piles, the prolapsus ani, and the fluor albus, applied cold. An injection, simply astringent, is made by diluting this fomentation, and used in gleets and leucorrhœa. The camphorated ointment of galls has been found also serviceable in piles, after the use of leeches; and is made by incorporating half a drachm of camphire with one ounce of hog's lard, and adding two drachms of galls in very fine powder. In fact, galls may be employed for the same purposes as oak-bark, and are used under the same forms.

Quercus marina. Sea oak. See *Fucus vesiculosus*.

Quercus phellos. The systematic name of the willow-leaved oak, the acorns of which are much sweeter than chestnuts, and much eaten by the Indians. They afford, by expresssion, an oil little inferior to oil of almonds.

Quercus robur. The oak-tree. *Balanos. Quercus—foliis oblongis, glabris sinuatis, lobis rotundis, glandibus oblongis*, of Linnæus. This valuable tree is indigenous to Britain. Its astringent effects were sufficiently known to the ancients, but it is the bark which is now directed for medicinal use by our Pharmacopœias. Oak-bark manifests to the taste a strong astringency, accompanied with a moderate bitterness. Like other astringents, it has been recommended in agues, and for restraining hæmorrhages, alvine fluxes, and other immoderate evacuations. A decoction of it has likewise been advantageously employed as a gargle, and as a fomentation or lotion in *procidentia recti et uteri*.

The fruit of this tree was the food of the first ages; but when corn was cultivated, acorns were neglected. They are of little use with us, except for fattening hogs and other cattle and poultry. Among the Spaniards, the acorn, or *glans iberica*, is said to have long remained a delicacy, and to have been served up in the form of a dessert. In dearths, acorns have been sometimes dried, ground into meal, and baked as bread. Bartholin relates, that they are used in Norway for this purpose. The inhabitants of Chio held out a long siege without any other food; and in a time of scarcity in France, A. D. 1709, they recurred to this food. But they are said to be hard of digestion, and to occasion headachs, flatulency, and colics. In Smoland, however, many instances occur in which they have supplied a salutary and nutritious food. With this view they are previously boiled in water and separated from their husks, and then dried and ground; and the powder is mixed with about one half or one third of corn flour. A decoction of acorns is reputed good against dysenteries and colics; and a pessary of them is said to be useful in immoderate fluxes of the menses. Some have recommended the powder of acorns in intermittent fever; and in Brunswick, they mix it with warm ale, and administer it for producing a sweat in cases of erysipelas. Acorns, roasted and bruised, have restrained a violent diarrhœa. For other medical uses to which they have been applied, see Murray's Appar. Medic. vol. i. page 100.

From some late reports of the Academy of Sciences at Petersburg, we learn that acorns are the best substitute for coffee that has been hitherto known. To communicate to them the oily properties of coffee, the following process is recommended:—When the acorns have been toasted brown, add fresh butter in small pieces to them, while hot in the ladle, and stir them with care: cover the ladle and shake it, that the whole may be well mixed. The acorns of the Holm oak are formed at Venice into cups

about one inch and a half in diameter, and somewhat less in depth. They are used for dressing leather, and instead of galls for dyeing woollen cloth black.

Quercus suber. The systematic name of the cork-tree. *Suber.* The fruit of this tree is much more nutritious than our acorns, and is sweet, and often eaten, when roasted, in some parts of Spain. The bark, called cork, when burnt, is applied as an astringent application to bleeding piles, and to allay the pain usually attendant on hæmorrhoids, in the form of ointment. Pessaries and other chirurgical instruments are also made of this useful bark. By the action of nitric acid, cork becomes acidified. See *Suberic acid.*

Quercus tinctoria. This species is a native of North America, and yields the quercitron bark used as a yellow dye.

Quick-grass. See *Triticum repens.*

Quick-lime. See *Lime.*

Quicksilver. See *Mercury.*

Quid pro quo. These words are applied synonymously with *succedaneum*, or one thing made use of to supply the defect of another.

Quiescent affinity. See *Affinity.*

QUI'NA. (*a*, *æ*. f.; so called by the French because obtained from Peruvian bark, which they call *Quinquina.*) *Quinina. Quinea.* Quinine: the alkali obtained from the bark of the *Cinchona cordifolia.* It may be obtained by the following process. The cinchona is deprived of its bitterness by means of boiling alkohol, and the tincture distilled to dryness in a water-bath. The alkoholic extract is entirely dissolved in boiling water, strongly impregnated with hydrochloric acid. Calcined magnesia is then added in excess to fix the red colouring matter, and to clarify the liquor, the latter being effected by some minutes' boiling. It is allowed to cool, filtered, and the magnesian precipitate washed with cold water. The precipitate having been dried on a stove, is repeatedly treated with boiling alkohol, in order to remove all bitterness. The alkoholic liquors are now mixed, and the cinchona crystallises on cooling. The cinchona thus obtained is still impure, from the presence of the green fatty matter, which may be got rid of by solution in a highly diluted acid; if the acid were too concentrated, it would dissolve a portion of the fatty matter, and the end would be frustrated. By the above process quina is obtained from the yellow bark, and cinchona from the grey.

As the sulphate of quina is now prepared on a large scale for medical use, the readiest way of obtaining the quina is to decompose a solution of the sulphate by means of ammonia.

Quina, when pure, is of a white colour. Its taste is intensely bitter. It is very sparingly soluble in water even when boiling. It is readily soluble in boiling alkohol, which, when evaporated, leaves it in the form of a viscid mass. It is distinctly alkaline, and forms salts with the acids. It crystallises with difficulty; but M. Pelletier has obtained it crystallised in fine silky flocculi, by submitting to spontaneous evaporation a very pure alkoholic solution. MM. Henri and Delondre have also obtained it crystallised in a hydrated form. Quina, unlike cinchonia, is very soluble in ether.

According to Dumas and Pelletier, quina consists of,

Carbon	75·00
Azote	8·45
Hydrogen	6·66
Oxygen	10·40

The analysis of Liebig and Brande agree very nearly with the above.

The medicinal properties of quina agree as nearly as possible with those of its sulphate; and as the latter is more readily prepared, the uncombined alkali is seldom used.

The other salts of quina, as the acetate, citrate, &c., have the properties of the sulphate, but in an inferior degree. The disulphate of quina is accordingly the only preparation of this alkali in general use. See *Quinæ disulphas.*

Quina-quina. See *Cinchona.*

Quinæ disulphas. *Disulphate of quina.* Take of heart-leaved cinchona, bruised, seven pounds; sulphuric acid, nine ounces; purified animal charcoal, two ounces; hydrated oxide of lead, solution of ammonia, distilled water, each as much as may be sufficient: mix four ounces and two drachms of the sulphuric acid with six gallons of distilled water, and add the cinchona to them; boil for an hour and strain. In the same manner again boil what remains in acid and water, mixed in the same proportions, for an hour, and again strain. Lastly, boil the cinchona in eight gallons of distilled water for three hours, and strain. Wash what remains frequently with boiling distilled water. To the mixed liquors add oxide of lead, while moist nearly to saturation. Pour off the supernatant liquor, and wash what is thrown down with distilled water. Boil the liquors for a quarter of an hour, and strain; then gradually add solution of ammonia to precipitate the quina. Wash this until nothing alkaline is perceptible. Let what remains be saturated with the rest of the sulphuric acid diluted. Afterwards digest with two ounces of animal charcoal, and strain. Lastly, the charcoal being thoroughly washed evaporate the liquor cautiously that crystals may be produced. The above preparation is a hydrated disulphate of quina. As a medicine, it possesses the febrifuge power of the cinchona bark in the highest degree, and it is applicable in every instance in which the bark is exhibited except as a stomachic bitter in dyspepsia, in which case it often proves too stimulating, and inferior in efficacy to a decoction of the bark. The dose is from one grain to ten. In cases of ague, after the primæ viæ have been properly cleared, three grains of the sulphate given every three hours during the intermission, will prevent the access of the paroxysm with a certainty that seems almost magical.

Quinæ sulphas. Sulphate of quina. Quina combines with sulphuric acid in two proportions, forming a neutral sulphate and a disulphate. The former consists of one equivalent of the acid and of the alkali, and eight of water; the

latter of one equivalent of acid, two of quina, and eight of water. The *disulphate* only is used in medicine. This, however, is the preparation known in our shops as the *sulphate*.

Quince. See *Pyrus cydonia.*

Quinsy. See *Cynanche.*

Quinia. See *Quina.*

Quinina. See *Quina.*

QUINATE. A salt formed by the *quinic* or *kinic* acid with a base. See *Kinic acid.*

Quinine, sulphate of. See *Quinæ sulphas.*

QUINQUEFO'LIUM. (*um, i.* n.; from *quinque*, five, and *folium*, a leaf: so called because it has five leaves on each foot-stalk.) See *Potentilla reptans.*

Quinquina, Mexican. See *Iva frutescens.*

Quinquina. See *Cinchona.*

QUINTA ESSENTIA. The quintessence. A term used by the alchemists to signify the active principle of any thing, in which its properties and virtues reside, separated by art from the inert matters with which it was combined. The term was also used in several mysterious and unintelligible acceptations.

Quintessence. See *Quinta essentia.*

Quotidian. See *Ague.*

R.

R. or R. This letter is placed at the beginning of a prescription, as a contraction of *Recipe*, take: thus, R *Magnes.* ʒj. signifies, Take 1 drachm of magnesia. "In ancient times," says Dr. Paris, in his excellent work on pharmacology, 'of planetary influence, that it was usual to prefix a symbol of the planet under whose reign the ingredients were to be collected; and it is not, perhaps, generally known, that the character which we at this day place at the head of our prescriptions, and which is understood and supposed to mean *recipe*, is a relic of the astrological symbol of Jupiter, as may be seen in many of the older works on pharmacy.

Rabbit. See *Lepus cuniculus.*

RA'BIES. (*es, ei.* f.) Madness: generally applied to the disease in dogs, otherwise called hydrophobia. See *Hydrophobia.*

Rabies canina. See *Hydrophobia.*

RACE'MUS. (*us, i.* m.; from *ramus.*) A raceme, cluster, or bunch. A species of inflorescence, consisting of a cluster of flowers, rather distant from each other, each on its own proper stalk, the tops of the lower ones not coming near to the tops of the upper ones, as in a corymb, and all connected by one common stalk; as a bunch of currents. It is therefore a kind of pedunculated spike.

From the *division* of the common stalk, it is denominated,

1. *Simple*, not having any branches; as in *Ribes rubrum*, and *Acer pseudo-platanus.*

2. *Compound*, being branched; as in *Vitis vinifera.*

3. *Conjugate*, two clusters from the end of the common peduncle.

4. *Aggregate*, several being gathered together; as in *Actæa racemosa.*

5. *Unilateral*, the proper stalks of the flowers proceeding from one side only of the common stalk; as in *Pyrola secunda.*

6. *Secund*, the proper stalks of the flowers coming from every part of the common stalk, but all looking to one side only; as in *Andromeda racemosa, Teucrium scorodonia*, &c.

From the *direction* of the racemus, —

7. *Erectus*; as in *Chenopodium album, Ribes alpinum*, and *Astragalus austriacus.*

8. *Pendulus*; as in *Cytisus laburnum.*

9. *Laxus*, easily bent; as in *Celosia trigyna*, and *Solanum carolinense.*

10. *Strictus*, bent with difficulty; as in *Ononis cernua.*

From its *vesture*, —

11. *Nudus*; as in *Vaccinium ligustrinum.*

12. *Pilosus*; as in *Ribes nigrum.*

13. *Foliatus*; as in *Chenopodium ambrosioides.*

14. *Bracteatus*; as in *Andromeda racemosa.*

Rachialgia. See *Rhachialgia.*

Rachitis. See *Rhachitis.*

Rackasiri balsamum. See *Balsamum rackasiri.*

RACO'SIS. (*is, is.* f.; from ῥάκος, a rag.) A relaxation of the scrotum.

RA'DIAL. (*Radialis*; from *radius*, the name of a bone.) Belonging to the radius.

RADIAL ARTERY. *Arteria radialis.* A branch of the humeral artery that runs down the side of the radius. See *Artery.*

Radialis externus brevior. See *Extensor carpi radialis brevior.*

Radialis externus longior. See *Extensor carpi radialis longior.*

Radialis externus primus. See *Extensor carpi radialis longior.*

Radialis internus. See *Flexor carpi radialis.*

Radialis secundus. See *Extensor carpi radialis brevior.*

RADIA'TUS. Radiate. Applied to a sort of compound flower, in which the florets of the centre differ in form from those in the circumference: thus the flower of the *Bellis perennis*, or daisy, is a radiate flower.

RA'DICAL. (*Radicalis*; from *radix*, the root or base.) 1. In *Chemistry*, applied to that which is considered as constituting the distinguishing part of an acid, by its union with oxygen or some other acidifying principle. Thus sulphur is the radical of the sulphuric and sul-

phurous acids. It is sometimes called the base of the acid; but base is a term of more extensive application.

2. In *Botany*, applied to leaves. *Folia radicalia* are such as spring from the root, like those of the cowslip.

Radical vinegar. See *Acetum.*

RA'DICANS. A botanical term, applied to a stem which clings to any other body for support, and strikes root by means of fibres which do not imbibe nourishment; as the ivy, *Hedera helix.*

RADI'CULA. (*a, æ.* f.; diminutive of *radix*, a root.) 1. A radicle, rootlet, or little root. It probably means the fibres which come from the main root, and which are the most essential to the life of the plant, they alone imbibing the nourishment.

2. Applied to the origin of vessels and nerves.

3. The common radish is so sometimes called. See *Raphanus sativus.*

Radish. See *Cochlearia armoracia.*

Radish, garden. See *Raphanus sativus.*

Radish, horse. See *Cochlearia armoracia.*

RA'DIUS. (*us, ii.* m.) 1. In *Anatomy*, a bone of the fore-arm, which has got its name from its supposed resemblance to the spoke of a wheel, or to a weaver's beam; and sometimes, from its supporting the hand, it has been called *manubrium manus.* Like the ulna, it is of a triangular figure, but it differs from that bone, in growing larger as it descends, so that its smaller part answers to the larger part of the ulna, and *vice versâ.* Of its two extremities, the uppermost and smallest is formed into a small rounded head, furnished with cartilage, and hollowed at its summit, for an articulation with the little head at the side of the pully of the os humeri. The round border of this head, next the ulna, is formed for an articulation with the lesser sigmoid cavity of that bone. This little head of the radius is supported by a neck, at the bottom of which, laterally, is a considerable tuberosity, into the posterior half of which is inserted the posterior tendon of the biceps, while the anterior half is covered with cartilage, and surrounded with a capsular ligament, so as to allow this tendon to slide upon it as upon a pulley. Immediately below this tuberosity, the body of the bone may be said to begin. We find it slightly curved throughout its whole length, by which means a greater space is formed for the lodgment of muscles, and it is enabled to cross the ulna without compressing them. Of the three surfaces to be distinguished on the body of the bone, the external and internal ones are the broadest and flattest. The anterior surface is narrower and more convex. Of its angles, the external and internal ones are rounded; but the posterior angle, which is turned towards the ulna, is formed into a sharp spine, which serves for the attachment of the interosseous ligament, of which mention is made in the description of the ulna. This strong ligament, which is a little interrupted above and below, serves not only to connect the bones of the fore-arm to each other, but likewise to afford a greater surface for the lodgment of muscles. On the fore-part of the bone, and at about one third of its length from its upper end, we observe a channel for vessels, slanting obliquely upwards. Towards its lower extremity, the radius becomes broader, of an irregular shape, and somewhat flattened, affording three surfaces, of which the posterior one is the smallest; the second, which is a continuation of the internal surface of the body of the bone, is broader and flatter than the first; and the third, which is the broadest of the three, answers to the anterior and external surface of the body of the bone. On this last we observe several sinuosities, covered with a thin layer of cartilage, upon which slide the tendons of several muscles of the wrist and fingers. The lowest part of the bone is formed into an oblong articulating cavity, divided into two by a slight transverse rising. This cavity is formed for an articulation with the bones of the wrist. Towards the anterior and convex surface of the bone, this cavity is defended by a remarkable eminence, called the *styloid* process of the radius, which is covered with a cartilage that is extended to the lower extremity of the ulna; a ligament is likewise stretched from it to the wrist. Besides this large cavity, the radius has another much smaller one, opposite its styloid process, which is lined with cartilage, and receives the rounded surface of the ulna. The articulation of the radius with the lesser sigmoid cavity of the ulna, is strengthed by a circular ligament which is attached to the two extremities of that cavity, and from thence surrounds the head of the radius. This ligament is narrowest, but thickest at its middle part. But, besides this ligament, which connects the two bones of the fore-arm with each other, the ligaments which secure the articulation of the radius with the os humeri, are common both to it and the ulna, and therefore cannot well be understood till both these bones are described. These ligaments are a capsular and two lateral ligaments. The capsular ligament is attached to the anterior and posterior surface of the lower extremity of the os humeri, to the upper edges and sides of the cavities, we remarked, at the bottom of the pully and little head, and likewise to some part of the condyles: from thence it is spread over the ulna, to the edges of the greater sigmoid cavity, so as to include in it the end of the olecranon, and of the coronoid process; and it is likewise fixed round the neck of the radius, so as to include the head of that bone within it. The lateral ligaments may be distinguished into external and internal, or, according to Winslow, into *brachio-radialis* and *brachio-cubitalis.* They both descend laterally from the lowest part of each condyle of the os humeri, and, from their fibres spreading wide as they descend, have been compared to a goose's foot. The internal ligament, or brachio-cubitalis, which is the longest and thickest of the two, is attached to the coronoid process of the ulna. The external ligament, or brachio-radialis, terminates in the circular ligament of the radius. Both these ligaments adhere firmly to the capsular ligament, and to the tendons of some of the adjacent muscles. In considering the articu-

lation of the fore-arm with the os humeri, we find that when both the bones are moved together upon the os humeri, the motion of the ulna upon the pully allows only of flexion and extension: whereas, when the palm of the hand is turned downwards or upwards, or, in other words, in pronation and supination, we see the radius moving upon its axis, and in these motions its head turns upon the little head of the os humeri at the side of the pully, while its circular edge rolls in the lesser sigmoid cavity of the ulna. At the lower end of the fore-arm the edge of the ulna is received into a superficial cavity at the side of the radius. This articulation, which is surrounded by a loose capsular ligament, concurs with the articulation above, in enabling the radius to turn with great facility upon its axis; and it is chiefly with the assistance of this bone that we are enabled to turn the palm of the hand upwards or downwards, the ulna having but a very inconsiderable share in these motions.

2. In *Botany*, the marginal part of the corolla of compound flowers: thus, in the daisy, the marginal white florets form the rays or radius, and the yellow central ones the discus or disk. See *Discus*.

The radii of a peduncle of a compound umbel are the *common stalks* or spokes of the umbel, and *pedicelli* are the stalks of the flowrets.

RA'DIX. (*ix, icis.* f.) A root. 1. In *Botany*, that part of a plant which imbibes its nourishment, producing the herbaceous part and the fructification, and which consists of the *caudex*, or body, and *radicles*. — *Linnæus*.

That part of the plant by which it attaches itself to the soil in which it grows, or to the substance on which it feeds, and is the principal organ of nutrition. — *Keith*.

In all plants the primary root is a simple elongation of that part which, during the germination of the seed, is first protruded, and is denominated the radicle; and, as the plant continues to grow, the root gradually assumes a determinate form and structure, which differs materially in different plants, but always is found similar in all the individuals of the same species. From the figure, duration, direction, and insertion, roots are variously arranged.

From its *figure*, a root is called,

1. *Fusiform*, spindle-shaped, of an oblong, tapering form, pointed at its extremity; as in *Daucus carota*, the carrot; *Beta vulgaris*, beet; *Pastinaca sativa*, parsnip, &c.

2. *Ramose*, branched, which consists of a *caudex*, or main root, divided into lateral branches, which are again subdivided; so that it resembles in its divisions the stem and branches inverted. Most trees, shrubs, and many herbaceous plants, have this form of root.

3. *Fibrose*, fibrous, consisting wholly of small fibres; as the *Hordeum vulgare*, common barley, and most grasses.

4. *Præmorse*, abrupt, or truncated, appearing as if bitten off close to the top; as in *Scabiosa succisa*, the devil's bit; *Plantago major*, larger plantain; *Hieracium præmorsum*, &c.

5. *Globose*, having the caudex round, or subround, sending off radicles in many places; as in *Cyclamen europeum*, sow-bread; *Brassica rapa*, turnip, &c.

6. *Tuberose*, furnished with farinaceous tubers; as in *Solanum tuberosum*, the potato; *Helianthus tuberosus*, Jerusalem artichoke, &c.

7. *Pendulous*, consisting of tubers connected to the plant by thin or filiform portions; as in *Spiræa filipendula*, common drop-wort; *Pæonia officinalis*, pæony, &c.

8. *Granulate*, formed of many small globules; as in *Saxifraga granulata*, meadow saxifrage, &c.

9. *Articulate*, articulated, or jointed, apparently formed of distinct pieces, united, as if one piece grew out of another, with radicles proceeding from each joint; as in *Oxalis acetosella*, woodsorrel; *Asarum canadense*, wild ginger, &c.

10. *Dentate*, toothed, which has a fleshy caudex, with teeth-like prolongations; as in *Ophrys corallorhiza*.

11. *Squamose*, scaly, covered with fleshy scales; as in *Lathræa squamaria*, toothwort, &c.

12. *Fascicular*, bundled, or fasciculate; as in *Ophrys nidus avis*, &c.

13. *Hollow*; as in *Fumaria cava*.

There are other distinctions of modern botanists derived from the form; as conical, subrotund, napiform, placentiform, filiform, capillary, tufted, funiliform, geniculate, contorted, moniliform, &c.

From the *direction*, roots are distinguished into, —

14. *Perpendicular*, which descend in a straight direction; as in *Daucus carota*, *Beta vulgaris*, *Scorzonera hispanica*, &c.

15. *Horizontal*, which is extended under the earth transversely; as in *Laserpitium parthenium*, &c.

16. *Oblique*, descending obliquely; as in *Iris germanica*, &c.

17. *Creeping*, descending transversely, but here and there sending off new plants; as in *Sambucus ebulus*, *Glycyrrhiza glabra*, *Ranunculus repens*, &c.

The *duration* affords, —

18. *Annual*, yearly, which perishes the same year with the plant; as *Draba verna*, and all annuals.

19. *Biennial*, which vegetates the first year, flowers the next, and then perishes; as the *Œnothera biennis*, *Beta vulgaris*, &c.

20. *Perennial*, which lives for many years; as trees and shrubs.

Roots are also distinguished from their *situation* into, —

21. *Terrene*, earth-root, which grow only in the earth; as the roots of most plants.

22. *Aquatic*, water-root, which grow only in the water, and perish when out of it; as *Trapa natans*, *Nymphæa alba*.

23. *Parasitic*, parasitical, which inserts the root into another plant; as in *Epidendrum vanilla*, &c.

24. *Arrhize*, which does not insert radicles, but coheres to other plants by an anastomosis of vessels; as in *Viscum album*, *Loranthus europæus*, &c.

II. In *Anatomy*, the term radix is applied to some parts which are inserted into others, or spring from them as a root from the earth; as the fangs of the teeth, the origin of some of the nerves, &c.

Radix bengale. See *Cassumuniar.*

Radix brasiliensis. See *Callicocca ipecacuanha.*

Radix dulcis. See *Glycyrrhiza.*

Radix indiana. See *Callicocca ipecacuanha.*

Radix rosea. See *Rhodiola.*

Radix rubra. See *Rubia tinctorum.*

Radix ursina. See *Ethusa meum.*

RA'DULA. (From *rado*, to scrape.) A wooden spatula, or scraper.

Ragwort. See *Senecio Jacobæa.*

RA'IA. (*a*, *æ*. f.) The name of a genus of fishes of the order *Chondropterygia*. There are many species, all inhabitants of the sea. The following are sometimes eaten as food: —

Raia batis. The skate. This flat fish grows to a great size, weighing from 50 to 200 pounds. It is considered as more difficult of digestion than the more tender-fibred fishes; but, when kept a certain time, it becomes very tender, and is considered a wholesome and delicate fish.

Raia clavata. The thornback. Very inferior to the skate, but eaten where it is abundant.

Raia oxyri'nchus. The sharp-nosed ray. Found in abundance in the Mediterranean. It is a wholesome fish, easy of digestion, and is often salted and sent into the interior of Germany.

Raia torpe'do. The torpedo or electric ray. This inhabits the Mediterranean sea, but is caught about Torbay and Waterford. The touch of this fish conveys an electric shock. It is hard of digestion, and seldom eaten.

Rainbow worm. A name of the *Herpes iris.* See *Herpes.*

Raisin. See *Vitis vinifera.*

Râle. See *Rhonchus.*

Rama'lis vena. (From *ramale*, a dead bough.) Applied to the vena portæ, from its numerous ramifications, which resemble a bough stripped of its leaves.

RAME'NTUM. (*um*, *i.* n.; *à radendo.*) A species of pubescence of plants, consisting of hairs in form of flat, strap-like portions, resembling shavings, seen on the leaves of some of the genus *Bigonia.* See *Pilus.*.

Rame'nta. Filings, as those of iron, zinc, &c.

Ra'mex. (From *ramus*, a branch: from its protruding like a branch.) An obsolete term for a rupture.

Ramolli'ssement. The term applied by the French pathologists to morbid softening of the texture of an organ; as *ramollissement du cerveau*, softening of the substance of the brain. This word has been very unnecessarily adopted into the language of our own country; it means nothing more nor less than *softening.*

RAMOSI'SSIMUS. Much branched. Applied to a stem which is repeatedly subdivided into a great many branches, without order; as those of the apple, pear, and gooseberry.

RA'MOUS. *Rameus. Ramosus.* Branched. Of or belonging to a bough or branch: applied to branch leaves, which are so distinguished, because they sometimes differ from those of the main stem; as is the case in *Melampyrum arvense:* and also to a leaf-stalk when it comes directly from the main branch; as in *Eugenia Malaccensis.*

RA'MULUS. A little branch, or the branch of a branch.

RA'MUS. (*us*, *i.* m.) A branch, or primary division of a stem into lateral stems. In the language of botanists, rami, or branches, are denominated, —

1. *Opposite*, when they go off, or pair opposite to each other, as they do in *Mentha arvensis.*

2. *Alternate*, one after another, alternately; as in *Althæa officinalis.*

3. *Verticillate*, when more than two go from the stem in a whorled manner; as in *Pinus abies.*

4. *Scattered*, without any order.

5. *Erect*, rising close to the stem; as in *Populus dilatata.*

6. *Patent*, or *expanding*, descending from the stalk at an obtuse angle; as in *Galium mollugo*, and *Cistus italicus.*

7. *Very spreading*, descending at a right angle; as in *Ammannia ramosior.*

8. *Brachiate*, the opposite spreading branches crossing each other; as in *Pisonia aculeata*, and *Banisteria brachiata.*

9. *Deflex*, arched, with the apex downwards: as in *Pinus larix.*

10. *Reflex*, hanging perpendicularly from the trunk; as in the *Salix babylonica.*

11. *Retroflex*, turned backwards; as in *Solanum dulcamara.*

12. *Fastigiate*, forming a kind of pyramid: as in *Chrysanthemum corymbosum.*

13. *Vergate*, twig-like, long and weak: as in *Salix viminalis.*

RA'NA. The name of a genus of animals Class, *Amphibia;* Order, *Reptilia.* The frog.

Rana esculenta. The French frog. The flesh of this species of frog, very common in France, is highly nutritious and easily digested.

RANI'NUS. (From *rana*, a frog.) Ra nine. 1. Appertaining to a frog.

2. The name of an artery, called also *Arter ranina.* Sublingual artery. The second branch of the external carotid.

RA'NULA. (*a*, *æ*. f.; from *rana*, a frog said to be so called because the tumour re sembles a frog, or because the patient croa like a frog; neither of which however is true *Batrachos. Hypoglossus. Hypoglossum. Ran* An inflammatory or indolent tumour, und the tongue. These tumours are of vario sizes and degrees of consistence, seated on eith side of the frænum. Children, as well as adul are sometimes affected with tumours of t kind: in the former, they impede the action sucking; in the latter, of mastication, and ev speech. The contents of them are various: some they resemble the saliva; in others, glairy matter found in the cells of swel joints. Sometimes it is said that a fatty mat has been found in them; but, from the nat

and structure of the parts, we are sure that this can seldom happen: and, in by far the greatest number of cases, we find that the contents resemble the saliva itself. This, indeed, might naturally be expected, for the cause of these tumours is universally to be looked for in an obstruction of the salivary ducts. Obstructions here may arise from a cold, inflammation, violent fits of the tooth-ach, attended with swelling in the inside of the mouth; and, in not a few cases, we find the ducts obstructed by a stony matter, seemingly separated from the saliva, as the calculous matter is from the urine; but where inflammation has been the cause we always find matter mixed with the other contents of the tumour. As these tumours are not usually attended with much pain, they are sometimes neglected, till they burst of themselves, which they commonly do when arrived at the bulk of a large nut. As they were produced originally from an obstruction in the salivary duct, and this obstruction cannot be removed by the bursting of the tumour, it hence happens that they leave an ulcer extremely difficult to heal, nay, which cannot be healed at all till the cause is removed.

Ranunculoi'des. (From *ranunculus*, and εἶδος, resemblance: so named from its resemblance to the ranunculus.) See *Caltha palustris*.

RANU'NCULUS. (*us*, *i.* m.; diminutive of *rana*, a frog: because it is found in fenny places, where frogs abound.) The name of a genus of plants in the Linnæan system. Class, *Polyandria*; Order, *Polygynia*.

The great acrimony of most of the species of ranunculus is such, that, on being applied to the skin, they excite itching, redness, and inflammation, and even produce blisters, tumefaction, and ulceration of the part. On being chewed, they corrode the tongue; and, if taken into the stomach, bring on all the deleterious effects of an acrid poison. The corrosive acrimony which this family of plants possesses was not unknown to the ancients, as appears from the writings of Dioscorides; but its nature and extent had never been investigated by experiments, before those instituted by C. Krapf, at Vienna, by which we learn that the most virulent of the Linnæan species are the bulbosus, sceleratus, acris, arvensis, thora, and illyricus.

The effects of these were tried either upon himself or upon dogs, and show that the acrimony of the different species is often confined to certain parts of the plant, manifesting itself either in the roots, stalks, leaves, flowers, or buds: the expressed juice, extract, decoction, and infusion of the plants, were also subjected to experiments. In addition to these species mentioned by Krapf, we may also notice the R. flammula, and especially the R. alpestris, which, according to Haller, is the most acrid of this genus. Curtis observes, that even pulling up the ranunculus acris, the common meadow species, which possesses the active principle of this tribe in a very considerable degree throughout the whole herb, and carrying it to some little distance, excited a considerable inflammation in the palm of the hand in which it was held. It is necessary to remark, that the acrimonious quality of these plants is not of a fixed nature; for it may be completely dissipated by heat; and the plant, on being thoroughly dried, becomes perfectly bland. Krapf attempted to counteract this poisonous acrimony of the ranunculus by means of various other vegetables, none of which were found to answer the purpose, though he thought that the juice of sorrel, and that of unripe currants, had some effect in this way; yet these were much less availing than water; while vinegar, honey, sugar, wine, spirit, mineral acids, oil of tartar, and other sapid substances, manifestly rendered the acrimony more corrosive. It may be also noticed, that the virulency of the most of the plants of this genus depends much upon the situation in which they grow, and is greatly diminished in the cultivated plant.

Ranunculus abortivus. The systematic name of a species of ranunculus, which possesses acrid and vesicating properties.

Ranunculus acris. The systematic name of the meadow crowfoot. *Ranunculus pratensis.* This and some other species of ranunculus have, for medical purposes, been chiefly employed externally as a vesicatory, and are said to have the advantage of a common blistering plaster, in producing a quicker effect, and never causing a strangury; but, on the other hand, it has been observed, that the ranunculus is less certain in its operation, and that it sometimes occasions ulcers, which prove very troublesome and difficult to heal. Therefore their use seems to be applicable only to certain fixed pains, and such complaints as require a long-continued topical stimulus, or discharge from the part, in the way of an issue, which, in various cases, has been found to be a powerful remedy.

Ranunculus albus. The plant which bears this name in the pharmacopœias is the *Anemone nemorosa*, of Linnæus. See *Anemone nemorosa*.

Ranunculus bulbosus. Bulbous-rooted crowfoot. The roots and leaves of this plant, *Ranunculus — calycibus retroflexis, pedunculis sulcatis, caule erecto multifloro, foliis compositis*, of Linnæus, have no considerable smell, but a highly acrid and fiery taste. Taken internally, they appear to be deleterious, even when so far freed from the caustic matter by boiling in water, as to discover no ill quality to the palate. The effluvia, likewise, when freely inspired, are said to occasion headachs, anxieties, vomiting, &c. The leaves and roots, applied externally, inflame and ulcerate, or vesicate the parts, and are liable to affect also the adjacent parts to a considerable extent.

Ranunculus ficaria. The systematic name of the pilewort. *Chelidonium minus. Scrophularia minor. Chelidonia rotundifolia minor. Cursuma hæmorrhoidalis herba. Ranunculus vernus.* Lesser celandine, and pilewort. The leaves and root of this plant, *Ranunculus — foliis cordatis angulatis petiolatis, caule unifloro*, of Linnæus, are used medicinally. The leaves are deemed antiscorbutic, and the root reckoned a specific, if beat into cataplasms, and applied to the piles.

Ranunculus flammula. The systematic name of the smaller water crow-foot, or spear-

wort. *Surrecta alba.* The roots and leaves of this common plant, *Ranunculus—foliis ovatis-lanceolatis, petiolatis, caule declinato*, of Linnæus, taste very acrid and hot, and when taken in a small quantity, produce vomiting, spasms of the stomach, and delirium. Applied externally, they vesicate the skin. The best antidote, after clearing the stomach, is cold water acidulated with lemon-juice, and then mucilaginous drinks.

RANUNCULUS PALUSTRIS. Water crow-foot. See *Ranunculus sceleratus.*

RANUNCULUS PRATENSIS. Meadow crow-foot. See *Ranunculus acris.*

RANUNCULUS SCELERATUS. The systematic name of the marsh crow-foot. *Ranunculus palustris.* The leaves of this species of crow-foot are so extremely acrid, that the beggars in Switzerland are said, by rubbing their legs with them, to produce a very fetid and acrimonious ulceration.

RA'PA. (*a, æ.* f.) See *Brassica napus.*

Rape. See *Brassica napus.*

Rape oil. See *Brassica napus.*

Rape seed. See *Brassica napus.*

RAPHA'NIA. (*a, æ.* f.; from *raphanus*, the radish, or charlock: because the disease is said to be produced by eating the seeds of a species of raphanus.) *Convulsio ab ustilagine. Convulsio raphania. Convulsio cereale. Eclampsia typhodes. Convulsio soloniensis. Necrosis ustilaginea.* Cripple disease. A genus of disease in the class *Neuroses*, and order, *Spasmi*, of Cullen; characterised by a spasmodic contraction of the joints, with convulsive motions, and a most violent pain returning at various periods. It begins with cold chills and lassitude, pain in the head, and anxiety about the præcordia. These symptoms are followed by spasmodic twichings in the tendons of the fingers and of the feet, discernible to the eye, heat, fever, stupor, delirium, sense of suffocation, aphonia, and horrid convulsions of the limbs. After these, vomiting and diarrhœa come on, with a discharge of worms, if there are any. About the eleventh or the twentieth day, copious sweats succeed, or purple exanthemata, or tabes, or rigidity of all the joints.

RAPHANI'STRUM. The trivial name of a species of raphanus.

RA'PHANUS. (*us, i.* m. Ῥαφανος παρα το ῥαδιως φαινεσθαι: from its quick growth.) 1. A genus of plants in the Linnæan system. Class, *Tetradynamia*; Order, *Siliculosa.*

2. The radish. See *Raphanus sativus.*

Raphanus hortensis. See *Raphanus sativus.*

Raphanus niger. See *Raphanus sativus.*

Raphanus rusticanus. See *Cochlearia armoracia.*

RAPHANUS SATIVUS. The systematic name of the radish-plant. *Raphanus hortensis. Radicula. Raphanus niger.* The radish. The several varieties of this plant are said to be employed medicinally in the cure of calculous affections. The juice, made into a syrup, is given to relieve hoarseness. Mixed with honey or sugar, it is administered in pituitous asthma; and, as antiscorbutics, their efficacy is generally acknowledged.

Raphanus sylvestris. See *Lepidium sativum.*

RA'PHE. (*e, es.* f. Ῥαφη, a suture.) A suture. Applied to parts which appear as if they were sewed together.

RAPHE CEREBRI. The longitudinal eminence of the corpus collosum of the brain is so called, because it appears somewhat like a suture.

RAPHE SCROTI. The rough eminence which divides the scrotum, as it were, in two. It proceeds from the root of the penis inferiorly towards the perinæum.

RAPHIDA. (From ῥαφη, a suture.) The name given by Necker to the bivalve pericarp of the genera *Anthoceros* and *Targionia.*

RAPHIDES. (Ῥαφιδες, needles.) The name given by De Candolle to the small acicular bodies found in the texture of some plants. M. Raspail has found that they are acicular crystals of phosphate of lime.

RAPI'STRUM. (*um, i.* n.; from *rapa*, the turnip: because its leaves resemble those of the turnip.) 1. The name of a genus of plants. Class, *Tetradynamia*; Order, *Siliculosa.*

2. The name of two species of *Crambe*, the *orientalis* and *hispanica.*

RA'PTUS. (*us, us.* m.; from *rapio*, to seize violently.) A sudden or violent seizure.

RAPTUS HÆMORRHAGICUS. The outbreaking of a hæmorrhage.

RAPTUS NERVORUM. The cramp.

RAPTUS SUPINUS. Opisthotonos.

RA'PUM. (*um, i.* n.; derivation uncertain.) 1. The turnip. See *Brassica rapa.*

2. The *Campanula rapunculus.*

RAPU'NCULUS. (*us, i.* m.; diminutive of *rapa*, the turnip.) The trivial name of a species of *Campanula.*

Rapunculus corniculatus. See *Phyteuma orbiculare.*

Rapunculus virginianus. The blue cardinal flower. See *Lobelia.*

Rapus. See *Brassica rapa.*

RAREFA'CTION. (From *rarefacio*, to make thin.) The diminution of the density of a body, as of a gas, by the agency of caloric.

Rash. See *Exanthema.*

RASPATO'RIUM. (From *rado*, to scrape. *Rasorium. Scalprum.* A raspatory. An instrument for rasping bones.

Raspberry. See *Rubus idæus.*

RASU'RA. (*a, æ.* f.; from *rado*, to scrape. 1. A rasure or scratch.

2. The raspings or shavings of any substance.

RATIFI'A. A liquor prepared by imparting to ardent spirits the flavour of various kinds of fruits.

Rattle. See *Rhonchus.*

RATTLES. A term very generally applied by nurses to the rattle-like, noisy breathing often heard in persons who are *in articulo mortis*, and which arises from an accumulation of mucus in the air-passages.

Rattlesnake. See *Crotalus horridus.*

Rattlesnake-root. See *Polygala.*

RAUCE'DO. (*o, inis.* f.; from *raucus*, hoarse.) *Raucitas.* Hoarseness. A roughness of the voice, arising from some disease of the larynx or trachea, as catarrh, &c.

Ray of a flower. See *Radius.*

REA'GENT. Test. A substance used in chemistry to detect the presence of other bodies.

REA'LGAR. *Arlada. Arladar. Auripigmentum rubrum. Arsenicum rubrum factitium. Abessi.* The protosulphuret of arsenic. See *Arsenic.*

RECEIVER. A chemical vessel adapted to the neck or beak of a retort, alembic, or other distillatory vessel, to receive and contain the product of distillation.

RECEPTA'CULUM. (*um, i.* n.; from *recipio*, to receive.) I. In *Anatomy*, a name given by anatomists to a part of the thoracic duct. See *Receptaculum chyli.*

II. In *Botany*, the common basis or point of connexion of the other parts of the fructification of plants; by some called the *Thalamus* and the *Placenta.*

It is distinguished by botanists into *proper* and *common*: one flower only belongs to the *former*, and it is formed mostly from the apex of the peduncle or scape; as in *Tulipa gesneriana*, and *Lilium candidum.* The *latter* has many flowers; as in *Helianthus annuus.*

The proper receptacle or apex of the peduncle swells in some flowers, and becomes the fruit: thus the *Fragaria vesca* is not a berry, but a *fleshy receptacle*, with its naked seeds nestling on its surface; so, in the *Howenia dulcis*, the peduncles swell into a thick *fleshy receptacle*, on which there are small capsules; and, in the *Anacardium occidentale*, the peduncle swells into a receptacle, on which the nut rests.

The varieties of the common receptacle are,—

1. *Flat*; as in *Helianthus annuus.*
2. *Convex*; as in *Leontodon taraxacum.*
3. *Conic*; as in *Bellis perennis.*
4. *Punctate*; as in *Leontodon taraxacum.*
5. *Globose*; as in *Cephalanthus.*
6. *Oval*; as in *Dorstenia drakenia.*
7. *Ovate*; as in *Omphalea.*
8. *Favose*, cellular on the surface, honeycomb-like; as in *Onopordium.*
9. *Scrobiculate*, having round and deep holes; as in *Helianthus annuus.*
10. *Subulate*; as in *Scabiosa atropurpurea.*
11. *Quadrangular*; as in *Dorstenia houstoni*, and *Contrayerva.*
12. *Turbinate*; as in *Ficus carica.*
13. *Digitiform*; as in *Arum maculatum*, and *Calla æthiopica.*
14. *Filiform*, thread-like; as in the catkins and *Corylus.*
15. *Occluse*, or shut. The *Ficus carica* is a connivent fleshy receptacle enclosing the florets.
16. *Nude*, naked, without any vesture; as in *Lactuca* and *Leontodon taraxacum.*
17. *Pilose*; as in *Carthamus tinctorius.*
18. *Villose*; as in *Artemisia absynthium.*
19. *Setose*; as in *Echinops sphærocephalus*, and *Centaurea.*
20. *Paleaceous*, covered with chaffy scales; as in *Xeranthemum dipsacus*, &c.

On the receptacle and seed down are founded the most solid generic characters of syngenesious plants, admirably illustrated by the inimitable Gærtner.

The term receptacle sometimes extended by Linnæus to express the base of a flower, or even its internal part between the stamens and pistils, provided there be any thing remarkable in such parts, without reference to the foundation of the whole fructification. It also expresses the part to which the seeds are attached in a seed vessel, and the common stalk of a spike or spikelet, in grasses.

RECEPTACULUM CHYLI. *Receptaculum Pecqueti*, because Pecquet was the first to describe it. *Diversorium. Sacculus chyliferus.* A dilatation at the commencement of the thoracic duct, generally opposite the third lumbar vertebra. This dilatation varies in size in different subjects, and in some there is none at all. See *Absorbents.*

RECLINA'TION. One of the operations used for the cure of cataract. See *Cataract.*

Reciprocal affinity. See *Affinity.*

RECLINA'TUS. Reclining: applied to stems, leaves, &c. which are curved towards the ground, so that the extremity is lower than the base; as the stem of the bramble, and leaves of the *Leonurus cardiaca.*

RECTIFICA'TION. (*Rectificatio, onis.* f.; from *rectus*, right, and *fio*, to be made.) A second distillation, in which substances are purified by their more volatile parts being raised by heat, carefully managed: thus, spirit of wine, ether, &c. are rectified by their separation from the less volatile and foreign matter which altered or debased their properties.

RE'CTUM. (*um, i.* n.: so named from an erroneous opinion that it was straight.) *Apeuthysmenos. Longanon. Longaon. Archos. Cyssaros.* The last portion of the large intestines, terminating in the anus. See *Intestine.*

RE'CTUS. Straight. Several parts of the body, particularly muscles, are so called from their direction. Parts of plants also have this term; as *caulis rectus*, the straight stem of the garden-lily, &c.

RECTUS ABDOMINIS. A long and straight muscle situated near its fellow, at the middle and fore-part of the abdomen, parallel to the linea alba, and between the aponeurosis of the other abdominal muscles. It arises sometimes by a single broad tendon from the upper and inner part of the os pubis, but more commonly by two heads, one of which is fleshy, and originates from the upper edge of the pubis, and the other tendinous, from the inside of the symphisis pubis, behind the pyramidalis muscle. From these beginnings, the muscle runs upwards the whole length of the linea alba, and becoming broader and thinner as it ascends, is inserted by a thin aponeurosis into the edge of the cartilago ensiformis, and into the cartilages of the fifth, sixth, and seventh ribs. This aponeurosis is placed under the pectoral muscle, and sometimes adheres to the fourth rib. The fibres of this muscle are commonly divided by three tendinous intersections, which were first noticed by Berenger, or, as he is commonly called, Carpi, an Italian anatomist, who flourished in the sixteenth century. One of these intersections is usually where the muscle runs over the cartilage of the seventh rib; another is at the umbilicus; and the third is between these two. Sometimes there is one,

and even two, between the umbilicus and the pubes. When one or both of these occur, however, they seldom extend more than halfway across the muscle. As these intersections seldom penetrate through the whole substance of the muscle, they are all of them most apparent on its anterior surface, where they firmly adhere to the sheath: the adhesions of the rectus to the posterior layer of the internal oblique are only by means of cellular membrane, and of a few vessels which pass from one to another.

Albinus and some others have seen this muscle extending as far as the upper part of the sternum.

The use of the rectus is to compress the fore-part of the abdomen, but more particularly the lower part: and, according to the different positions of the body, it may likewise serve to bind the trunk forwards, or to raise the pelvis. Its situation between the two layers of the internal oblique, and its adhesions to this sheath, secure it in its place, and prevent it from rising into a prominent form when in action; and, lastly, its tendinous intersections enable it to contract at any of the intermediate spaces.

Rectus abducens oculi. See *Rectus externus oculi.*

Rectus abducens oculi. See *Rectus internus oculi.*

Rectus anterior brevis. See *Rectus capitis internus minor.*

Rectus anterior longus. See *Rectus capitis internus major.*

Rectus attollens oculi. See *Rectus superior oculi.*

Rectus capitis anticus longus. See *Rectus capitis internus major.*

Rectus capitis internus major. A muscle situated on the anterior part of the neck, close to the vertebræ. *Rectus internus major*, of Albinus, Douglas, and Cowper. *Rectus anterior longus*, of Winslow. It was known to most of the ancient anatomists, but was not distinguished by any particular name until Cowper gave it the present appellation, and which has been adopted by most writers except Winslow. It is a long muscle, thicker and broader above than below, where it is thin, and terminates in a point. It arises, by distinct and flat tendons, from the anterior points of the transverse processes of the five inferior vertebræ of the neck, and, ascending obliquely upwards, is inserted into the anterior part of the cuneiform process of the occipital bone. The use of this muscle is to bend the head forwards.

Rectus capitis internus minor. Cowper, who was the first accurate describer of this little muscle, gave it the name of *rectus internus minor*, which has been adopted by Douglas and Albinus. Winslow calls it *rectus anterior brevis.* It is in part covered by the rectus major. It arises, fleshy, from the upper and fore-part of the body of the first vertebra of the neck, near the origin of its transverse process, and, ascending obliquely inwards, is inserted near the root of the condyloid process of the occipital bone, under the last described muscle. It assists in bending the head forwards.

Rectus capitis lateralis. *Rectus lateralis Fallopii*, of Douglas. *Transversalis anticus primus*, of Winslow. *Rectus lateralis*, of Cowper. This muscle seems to have been first described by Fallopius. Winslow calls it *transversalis anticus primus.* It is somewhat larger than the rectus minor, but resembles it in shape, and is situated immediately behind the internal jugular vein, at its coming out of the cranium. It arises fleshy from the upper and fore-part of the transverse process of the first vertebra of the neck, and, ascending a little obliquely upwards and outwards, is inserted into the occipital bone, opposite to the stylo-mastoid hole of the os temporis. This muscle serves to pull the head to one side.

Rectus capitis posticus major. This muscle, which is the *rectus major* of Douglas and Winslow, and the *rectus capitis posticus minor* of Albinus, is small, short, and flat, broader above than below, and is situated, not in a straight direction, as its name would insinuate, but obliquely, between the occiput and the second vertebra of the neck, immediately under the complexus. It arises, by a short thick tendon, from the upper and posterior part of the spinous process of the second vertebra of the neck; it soon becomes broader, and ascending obliquely outwards, is inserted, by a flat tendon, into the external lateral part of the lower semicircular ridge of the os occipitis. The use of this is to extend the head, and pull it backwards.

Rectus capitis posticus minor. This is the *rectus minor* of Douglas and Winslow. It is smaller than the last described muscle, but resembles it in shape, and is placed close by its fellow, in the space between the recti majores. It arises, by a short thick tendon, from the upper and lateral part of a little protuberance in the middle of the back part of the first vertebra of the neck, and, becoming broader and thinner as it ascends, is inserted, by a broad flat tendon, into the occipital bone, immediately under the insertion of the last described muscle. The use of it is to assist the rectus major in drawing the head backwards.

Rectus cruris. See *Rectus femoris.*

Rectus deprimens oculi. See *Rectus inferior oculi.*

Rectus externus oculi. The outer straight muscle of the eye: called also, *Abductor oculi*, *Iracundus*, and *Indignabundus.* It arises from the bony partition between the foramen opticum and lacerum, being the longest of the straight muscles of the eye, and is inserted into the sclerotic membrane, opposite to the outer canthus of the eye. Its use is to move the eye outwards.

Rectus femoris. A straight muscle of the thigh, situated immediately at the fore part. *Rectus sive Gracilis anterior*, of Winslow. *Rectus cruris*, of Albinus. It arises from the os ilium by two tendons. The foremost and shortest of these springs from the outer surface of the inferior and anterior spinous process of the ilium; the posterior tendon, which is thicker and longer than the other, arises from the posterior and outer part of the edge of the cotyloid cavity and from the adjacent capsular ligament. The

two tendons soon unite, and form an aponeurosis, which spreads over the anterior surface of the upper part of the muscle; and through its whole length we observe a middle tendon, towards which its fleshy fibres run on each side in an oblique direction, so that it may be styled a penniform muscle. It is inserted tendinous into the upper edge and anterior surface of the patella, and from thence sends off a thin aponeurosis, which adheres to the superior and lateral part of the tibia. Its use is to extend the leg.

RECTUS INFERIOR OCULI. The inferior of the straight muscles of the eye. *Depressor oculi. Deprimens. Humilis. Amatorius.* It arises within the socket, from below the optic foramen, and passes forwards to be inserted into the sclerotic membrane of the bulb on the under part. It pulls the eye downwards.

Rectus internus femoris. See *Gracilis.*

RECTUS INTERNUS OCULI. The internal straight muscle of the eye. *Adducens oculi. Adductor oculi. Bibitorius.* It arises from the inferior part of the foramen opticum, between the obliquus superior and the rectus inferior, being, from its situation, the shortest muscle of the eye, and is inserted into the sclerotic membrane opposite to the inner angle. Its use is to turn the eye towards the nose.

Rectus lateralis Fallopii. See *Rectus capitis lateralis.*

Rectus major capitis. See *Rectus capitis posticus major.*

RECTUS SUPERIOR OCULI. The uppermost straight muscle of the eye. *Attollens oculi. Levator oculi. Superbus.* It arises from the upper part of the foramen opticum of the sphenoid bone, below the levator palpebræ superioris, and runs forward to be inserted into the superior and fore part of the sclerotic membrane by a broad and thin tendon.

RECURRENT NERVE. *Nervus recurrens.* A branch given off from the par vagum, on each side, in the cavity of the thorax, is so called. The right is given off near the subclavian artery, which it surrounds, and is reflected upwards to the thyroid gland; the left a little lower, and reflected around the aorta to the œsophagus, as far as the larynx. They are both distributed to the muscles of the larynx and pharynx.

Recurvatus. See *Recurvus.*

RECU'RVUS. Recurved: bowed or turned backward. Applied to leaves, &c. See *Reflexus.*

Red saunders. See *Pterocarpus santalinus.*

RE'DDLE. A species of ochre or argillaceous earth, of a dark red colour, which has been used medicinally as a tonic and antacid.

REDU'CTION. 1. In *Surgery*, the returning of a dislocated bone into its proper place.

2. In *Chemistry*, revivification: applicable to all operations by which any substance is restored to its natural state, or which is considered as such; but custom confines it to operations by which metals are restored to their metallic state, after they have been deprived of this, either by combustion, as the metallic oxides, or by the union of some heterogeneous matters which disguise them, as fulminating gold, luna cornea, cinnabar, and other compounds of the like kind. These reductions are also called revivifications.

REFLEX. This name has been given to those instances of nervous action in which an impression made on the extremity of one nerve is propagated to the extremity of another, through the intervention of the nervous centres.

REFLE'XUS. Reflected; bent backward: applied in botany to leaves, as those of the *Erica retorta;* and to the border of the flower-cup of the *Œnothera biennis*, and the petals of the *Pancratium zeylanicum.*

REFRA'CTUS. Bent back, as if broken.

REFRI'GERANT. (*Refrigerans;* from *refrigero*, to cool.) Possessed of the property of allaying the heat of the body or of the blood.

REFRIGERATO'RIUM. (From *refrigero*, to cool.) A vessel filled with water to condense vapours, or to make cool any substance which passes through it.

RE'GIMEN. (*en, inis.* f.; from *rego*, to govern.) A term employed in medicine to express the regulation of the diet and habits of an individual, with a view to the preservation of health or the cure of disease.

REGINA PRATI. Queen of the meadow. See *Spiræa ulmaria.*

Regions of the body. See *Body.*

RE'GIUS. (From *rex*, a king.) Royal: applied, 1. in *Pathology*, to the jaundice: why so called it is not easy to understand, unless it be because the colour of the skin is like gold, which is a royal metal.

2. In *Chemistry*, to the noble metals, especially gold, and to a preparation, the *aqua regia*, which has the power of dissolving gold.

REGULAR. *Regularis.* 1. In *Pathology*, applied to diseases which observe their usual course, in opposition to irregular, in which the course of symptoms deviate from what is usual; as regular gout, regular small-pox, &c.

2. In *Botany*, applied to parts of plants; as blossoms, &c. when regular in their figure and size, and proportion of their parts; as the flowers of the *Lilium* and *Hyacinthus.*

Regular gout. See *Gout.*

Regular small-pox. See *Variola.*

RE'GULUS. (Diminutive of *rex*, a king: so called because the alchemists expected to find gold, the king of metals, collected at the bottom of the crucible after fusion.) The name regulus was given by chemists to metallic matters when separated from other substances by fusion. This name was introduced by the alchemists, who, expecting always to find gold in the metal collected at the bottom of their crucibles after fusion, called this metal, thus collected, regulus, as containing gold, the king of metals. It was afterwards applied to the metal extracted from the ores of the semi-metals, which formerly bore the name that is now given to the semi-metals themselves. Thus we had regulus of antimony, regulus of arsenic, and regulus of cobalt.

Regulus of antimony. See *Antimony.*

REGULUS ANTIMONII MARTIALIS. Martial regulus of antimony. An old preparation, made by heating purified iron filings in a crucible, adding sulphuret of antimony, fusing

them, then adding nitre, fusing the whole together, cooling, and separating the regulus from the scoriæ, then fusing a second and third time, with the addition of some more nitre each time.

Regulus of arsenic. See *Arsenic.*

Regulus jovialis. An alloy made by fusing antimony and tin.

Regulus veneris. An alloy of antimony and copper.

RELAXATION. In *Pathology*, diminution of the natural and healthy tone of parts.

REME'DIUM. (*um, ii.* n.; *à re*, and *medeor*, to cure.) A remedy, or that which is employed with a view to prevent, palliate, or remove a disease.

Remedium divinum. See *Imperatoria.*

REMITTENT. (*Remittens;* from *remitto*, to assuage or lessen.) Applied to diseases the symptoms of which diminish very considerably, but return again so as not to leave the person free from the disease until it changes its character or vanishes.

Remittent fever. A remittent fever is characterised by the usual symptoms of febrile action, which become much more intense once or oftener every four and twenty hours, and then remit. This *exacerbation*, as it is called, is widely different from the paroxysm of an intermittent, and the remission differs also very much from that subsidence of the febrile symptoms of an intermittent which constitutes the intermission. In a remittent, however marked the diminution of the fever, there is still a considerable degree of it, and nothing like an apyrexial state; and although, in many cases, the symptoms of the fever may approach somewhat in character those of the paroxysms of an intermittent, yet they are very different, and evidently consist merely of an increased violence of those which were severest during the remission. This genus of fever sometimes exists in a mild form, sometimes in the most malignant. It is a common disease with infants, and it may be observed that the febrile affections of children have almost always more or less tendency to the remittent type. The infantile remittent is generally produced by intestinal irritation; but remittent fevers in general are caused by marsh miasmata, and by peculiar poisons of vegetable and animal origin. Remittent fevers are distinguished into *mild* and *malignant.* Malignant remittent fever has been named according to the places where it has prevailed, the *Bulam, Philadelphian, Demerara, St. Domingo, Barbadoes, Jamaica, American, Hungarian, African, Gibraltar* fever. The malignant remittent of warm climates is called *bilious remittent*, from the great disorder of the hepatic system; *yellow fever* from the yellow tinge which it communicates to the skin; and *jungle fever*, from the origin of the poison which produces it in swamps and jungles.

The following are the principal species of remittents: —

1. The mild form. In this remittent the pulse is very frequent, but regular throughout, the debility is not considerable, and the skin soon becomes relaxed, and perspires freely. It attacks young persons of relaxed habits, who are weakly, and commences mostly with some disturbance of the bowels. It occurs at all seasons of the year, but more frequently in the autumn. Fatigue, cold, or long exposure to the sun's heat, often bring it in into action. The patient complains of drowsiness, and is very languid; is occasionally chilly, and afterwards flushed, but without perspiration; for the skin is hot and dry, and the thirst considerable, attended by nausea and total loss of appetite. In the course of the day, but usually towards evening, the pulse quickens, the heat increases, and at length terminates in a sweat, which after a time goes off, leaving the skin hot and dry, and the pulse still very quick. This exacerbation sometimes occurs at noon, and sometimes also in the night. If the disease be left to itself, the symptoms augment in severity daily; the head occasionally, but more frequently the liver, or some other abdominal viscus, gives proof of being loaded and oppressed, and the restlessness is intolerable: or a sudden bilious purging or vomiting supervenes, and carries off the complaint by a salutary crisis. Mild remittents seem to be occasionally produced by disordered states of the chylopoietic viscera, independently of marsh poison; but like the more formidable fevers of this type, they are most frequent in marshy localities. They generally give way to purgatives, especially mercurial ones. The submuriate of mercury should be given in doses of two or four grains to adults every second day, and followed by saline purgatives with senna, and the febrile symptoms mitigated in the intervals by saline sudorifics; and the diet should consist of very little more than farinaceous drinks, sago, arrow-root, or the like. The pulse will generally be found from ninety to a hundred strokes in a minute; but as soon as it sinks below this, or the sweat is considerable, or, without this, the skin is moist and not so much heated, mild tonics, especially the mineral acids with light infusion of colomba, gentian, quassia, chamomile, cascarilla, or cinchona, will complete the cure, though the disease usually runs on for ten days or a fortnight.

2. The infantile remittent does not essentially differ from the description just given. It is usually ascribed to worms, which are occasionally its cause; but the most common by far is crude accumulations in the bowels, from which the digestion proceeds imperfectly, producing great general irritation, and considerable languor. The belly becomes tumid and painful, and the food is nauseated. The head becomes hot, heavy, and often comatose, the disease similating in this stage the commencement of hydrocephalus, with which it is very frequently confounded. See *Hydrocephalus.* The skin is pale or livid, with occasional flushes in the cheeks. It is a singular fact, that, if the exacerbation or increase of fever take place in the night, there is watchfulness and perpetual jactitation; if in the day-time, drowsiness and stupor. Remittents in the infantile and juvenile periods of life are almost always accompanied by a sluggish state of the bowels, and require the exhibition of calomel, with jalap and scammony: the *pulvis scammonii cum calomelane* is an excellent for for children; and if this do not act, its operation

must be assisted by the infusion of senna, with sulphate of magnesia or potash. Until the bowels are well cleared, the fever goes on increasing; but under a course of brisk cathartics, in conjunction with perfect quiet, good ventilation, and light farinaceous drinks and diet, it will usually give way, in a week or a fortnight. Particular symptoms are to be opposed by their appropriate remedies: thus, if there be much coma, the head should be bathed with a cold or evaporating lotion of dilute acetic acid or spirit, or the feet fomented; if there be bilious diarrhœa, the purgative plan is to be abandoned, and the pains of the bowels allayed by absorbents, demulcents, and mild anodynes: if there be bilious or other vomitings, carbonic acid, with very mild aperients, until the irritability of the stomach is allayed.

3. Besides the infantile fever and mild form of this genus, there are others which are usually of a more malignant nature, and which, occurring towards the decline of summer, are called autumnal remittents: these we shall now describe. They are usually ushered in with extreme weakness, and irregularity of the voluntary motions; the muscular strength gradually goes, and the mind soon wanders: there is coldness and shrinking of the extremities, and a tendency to faint in the erect posture; nausea, vomiting, and a total disinclination for nourishment; and sooner or later, a putrid tendency of the fluids becomes apparent, by the skin being covered with fetid sweat; the breath being offensive, the tongue clammy, fetid, livid, or greenish black; the lips swelled, and purplish; the urine brown or blackish and offensive; a black discharge, often in great quantity, from the stomach; the stools blackish, colliquative, and very offensive, and parted with insensibly; the mind wandering; with twitching of the tendons, petechial spots, and purpura of large size, and hæmorrhages.

In this country such remittents have a strong tendency to assume the tertian or double tertian type; or, in other words, they have striking exacerbations every other day. Autumnal remittents commence with lassitude, a general soreness over the body, yawning, inquietude, and most of the other concomitants of febrile action. As some of the larger organs have been more affected by the influence of the season than the rest, we find them giving way in proportion: hence the head is sometimes severely affected with pain or heaviness; the bowels are overloaded with bile; or the stomach is exquisitely irritable, and rejects whatever is introduced into it. Generally, the stomach suffers more disturbance than any other organ; and, along with the sickness, there is in many cases a troublesome looseness. Sometimes, however, the bowels are costive, and the stomach but little affected. The violence of the symptoms is commonly in proportion to the violence of the incursion. The exacerbation ordinarily takes place at noon, or early in the afternoon, and consists in an increase of heat and of the pulse; for there is rarely any preceding chill, and as rarely any salutary moisture when the heat diminishes. The night is passed under extreme restlessness, vomiting, and mild delirium; and thus the fever continues, with strong exacerbations about noon or night, and obvious remissions.

At the very commencement of this fever, an emetic is generally found serviceable, as it not only clears the stomach of vitiated secretions, but is one of the best means of determining to the skin. The use of the lancet must depend on the circumstances of the particular case. Where the onset is violent, and particularly where the parient is plethoric, or of a vigorous habit, it may be employed with advantage instantly and freely; for without it, from the urgency of the symptoms, there can be little doubt that some large organ or other will soon become locally affected with congestion or effusion, which is always to be avoided as one of the worst symptoms that can occur: and if there be reason to suspect that such local affection exist at the time of the attack, and more especially that it be the cause of it, copious depletion will be still more necessary; for in this case, not only is the fever to be contended with, but an inflammation of the affected organ to be guarded against. Except in these cases there is no call for the lancet, but, on the contrary, the loss of blood is injurious.

The common saline diaphoretics, either effervescing or not, will commonly take off the burning heat of the skin; or, where the stomach is not in an irritable state, the antimonial powder, or small doses of the tartarised antimony, may be given: and with such remedies, and pediluvia or fomentation to the feet at night, the fever will mostly be diminished. Dilute acids are highly useful in form of drinks, as imperial, lemonade, orangeade, the subacid fruits, and infusions of mint, balm, &c., where the bowels are not irritable. Mild aperients of rhubarb, sulphate of potash, infusion of senna, or cassia electuary, are the best aperients from time to time, unless the bilious or constipated condition of the bowels demand the submuriate of mercury, or the more active purgatives.

4. The *yellow* and *jungle* fevers owe their production unquestionably to marsh miasm; and hence they are so common in the swampy soils and morasses of the intertropical regions, exposed to a high solar heat, and perpetually exhaling a decomposition of animal and vegetable materials. It has been matter of keen dispute whether yellow fever is contagious? The result of impartial inquiry appears to be, that it is not generally so; at the same time it would be rash to deny that it may possibly become so under particular circumstances. Dr. Mosely gives an excellent account of these malignant remittents: — "When a new comer," says he, "is seized with a sudden loss of strength, and a desire of changing for rest into every position, without finding it in any, those symptoms which constitute the endemial fever may be expected. The following day, but sometimes within twelve hours from the first indisposition, the violence of the disease will commence thus: — There will be a faintness, and generally a giddiness of the head, with a small degree of chilliness and horror, but never a rigor. Then immediately will succeed a high degree of fever with great heat, and strong beating in all the

arteries of the body, particularly observable in the carotid and temporal arteries; flushings in the face, gaspings for cool air, white tongue, but tinged with yellow, after the retchings have commenced; excessive thirst, redness, heaviness, and burning in the eyes; heaviness and darting pains in the head and small of the back, and often down the thighs; pulse quick, generally full and strong, in some cases quick, low, and vacillating; skin hot and dry, sometimes with a partial and momentary moisture; sickness of stomach from the first, which increases with the disease; and, immediately after any thing is taken to quench the thirst, retchings succeed, in which bilious matter is brought up; anxiety and stricture, soreness, and intense heat about the præcordia; great restlessness, heavy respiration, sighing, urine deep-coloured, and but little in quantity. This is the first stage of the fever, and may continue twenty-four, thirty-six, forty-eight, or sixty hours; and this constitutes its inflammatory period.

The second stage begins with the abatement of many of the preceding symptoms, and the rise of others: sometimes with a deceiving tranquillity, but with perturbation if the patient should fall into a sleep; then a yellow tinge is observed in the eyes, neck, and breast: the heat subsides, and sometimes with a chilliness; but not with that sort of strong rigor which, when it happens, terminates the disease by sweat, or by copious bilious evacuations upwards and downwards. The retchings are violent, and turn porraceous; the pulse flags, but is sometimes high and sometimes soft; the skin soft and clammy; the urine in small quantity, and of a dark croceous colour: the tongue, in some cases, is dry, harsh, and discoloured; in others, furred and moist: there is confusion in the head, and sometimes delirium, with the eyes glassy. This stage of the disease sometimes continues only for a few hours; sometimes for twelve, twenty-four, thirty-six, or forty-eight hours, but never longer.

In the third and last stage of the fever, the pulse sinks and becomes unequal and intermittent, sometimes very quick; frequent vomiting, with great straining and noise in vomiting, and what is brought up now is more in quantity, and has the appearance of the grounds of coffee, or is of a slate colour. Nothing can be retained in the stomach; difficult breathing, black tongue, cold clammy sweats, eyes hollow and sunk, yellowness round the mouth and temples, and soon after over the whole body.

The symptoms become gradually more aggravated, accompanied with subsultus tendinum, black urine, deadly coldness of the limbs, delirium, faltering speech, hæmorrhage, or oozing of blood from the mouth and nostrils, corners of the eyes and ears, black bloody vomiting and stools, vibices, hiccough, muttering, coma, death."

After the first prostration of strength, the disease runs on violently till the sensorial power is exhausted. Through its entire course, till the patient is sinking, the intellect is not particularly disturbed, and the organs principally affected are the abdominal: hence the intense heat and anxiety about the præcordia, the saffron dye of the urine, the yellow tint of the skin, and the vomitings, first of a bilious and afterwards of a chocolate or sanguineous colluvies. In some cases the disease opens with great violence, and rushes forward at once to its acme, and the patient is cut off in four and twenty hours. Though the remittents, in hot climates, generally pursue the course of febrile action that has been described, it is sometimes otherwise, and even in milder climatees; for it sometimes commences more like to an intermittent, and sometimes it more resembles a continued fever, as which it has terminated, and occasionally as an intermittent.

Every endemic marsh fever has its peculiarities. The bilious remittent of the West Indies differs from that of the East, and the fevers of Sierra Leone and the Campagna di Roma differ from both, and from each other.

With respect to the treatment of this fever, unfortunately the practitioners in warm climates have differed very much; some, alarmed at the debility which the system has to encounter in the second stage of the disease, or as soon as it has run through its inflammatory career, shuddered at the thought of the lancet, and commenced with mild saline purgatives, and immediately afterwards had recourse to the Peruvian bark. Others, somewhat less timid, have allowed the abstraction of blood to the extent of ten or twenty ounces at the very beginning; while others, again, regarding the inflammatory impetus as the sole cause of danger, resorted boldly to the lancet, and followed up the abstraction of blood as long as a single germ of an inflammatory diathesis was manifest, paying no regard to the appearance of the blood. This sanguineous depletion was accompanied by the free exhibition of purgatives. Another plan consisted in giving purgatives, especially the submuriate of mercury, in large doses. Ten grains of calomel, and as much of jalap, are often exhibited every six hours until the alvine canal is effectually evacuated. The sulphates of magnesia and soda, with infusion of senna, are also esteemed by some; and this milder practice should generally be preferred to repeated venesection, where there is not much impetuosity in the onset, no great derangement or prognostic of inflammatory congestion in the larger viscera, where the remissions are regular and the epidemic pretty uniform in its character. Under such circumstances, the loss of a large quantity of blood will not shorten the career of the disease, but will most probably convert the remittent into a continued fever, in the latter stage of which that strength will be wanted which might have been retained, but for the profuse and injudicious bleedings.

The common nervine and saline diaphoretics are useful to oppose the febrile action: acetate of ammonia, the citrate also, with sulphuric ether diluted with camphire mixture. Acids are continually called for as common drinks; and the dilute chlorine or oxygenated muriatic acid, in large doses, promises to be a good medicine.

In all cases where the remission is without any inflammatory condition,—in all cases where there is a flabby state of the fibre, and mo

especially where a septic diathesis, or putrid-tending state is apparent, bitters, such as calomba, serpentaria, Virginiana, and quassia, with mineral acids, will be required; and, in a more decided malignant state, cascarilla, cinchona, and the like, as directed against typhus, should be administered, with brandy and cordials *ad libitum*.

Particular symptoms call for particular remedies.

a. Where there is congestion in the vascular system of an organ, topical bleedings are necessary in addition to general blood-letting; and cold applications also, especially cold sea-water, iced water, diluted spirit, and evaporating lotions to the shaved head, the epigastric region, or wherever the congestion may be.

b. Nausea and vomiting will be best opposed by mild aperients in the effervescing state; by carbonic acid from yeast, beer, or soda-water: but the best remedy against continued vomiting of porraceous, chocolate-ground-like, or slate-coloured fluids from the stomach, is a punch made with brandy, lemon-juice, and cayenne pepper, from the last of which the benefit is said to result.

c. Comatose states call for stimulating cataplasms and fomentations, and cold evaporating lotions to the head. Blisters have very seldom been useful.

5. There is another form of malignant remittent, which is called *ardent remittent*, and which appears to be the same disease with the *causus* of the ancients. See *Causus*. It is characterised by extreme heat, violent thirst, a rough and black tongue, the complexion inclined to yellowness, and the saliva bilious. There is commonly an acute aching in the head, nausea, great anxiety of the præcordia, with frequently a gnawing pain at the stomach. The bowels are unusually costive, particularly at the commencement of the disease. The tongue, mouth, nostrils, and, indeed, the whole surface of the body, is parched and fiery hot; the pulse is full and strong; the voice hoarse; the breath short and quick; occasionally delirium. It chiefly attacks the young and vigorous, who bear it better than old persons. The treatment of this fever is precisely that of a synocha.

6. The several forms of remittent fevers which have been described, have shown a tendency to an inflammatory or a synochous, that is, a mixed type. There is, however, another which clearly evinces a typhoid tendency from the very commencement; for it is ushered in by extreme debility, both of the action of the heart, of the mental faculties and moving powers, and the common symptoms of typhus in the most aggravated form. It occurs in localities, where the marsh miasm is more than usually malignant and concentrated, or where its effects on the system are favoured by other depressing influences, as in the case of dispirited and ill-provided armies in unhealthy localities, or of a crowded, squalid, and ill-fed population. The disease then assumes the appearance of a highly congestive typhus, and the remedies which are applicable in the one, are equally so in the other.

RE'MORA. (*a*, *æ*. f.; from *remoror*, to hinder.) See *Ononis spinosa*.

REMOTE. 1. In *Pathology*, applied to the causes of diseases. See *Ætiology*.

2. In *Botany*, applied to flowers of verticillated plants when there is a considerable length of stem between each whorl.

REN. (*en*, *enis*. m. *Ren*, *απο του ῥειν*: because through them the urine flows.) The kidney. See *Kidney*.

RE'NAL. (*Renalis*; from *ren*, the kidney.) Appertaining to the kidney.

Renal artery. See *Emulgent*.

RENAL GLAND. *Glandula renalis*. Renal capsule. Supra-renal gland. The supra-renal glands are two hollow bodies, like glands in fabric, and placed one on each side upon the kidney. They are covered by a double tunic, and their cavities are filled with a liquor of a brownish red colour. Their figure is triangular, and they are larger in the fœtus than the kidneys; but in adults they are less than the kidneys. The right is affixed to the liver, the left to the spleen and pancreas, and both to the diaphragm and kidneys. They have arteries, veins, lymphatics, and nerves: their arteries arise from the diaphragmatic, the aorta, and renal arteries. The vein of the right supra-renal gland empties itself into the vena cava; that of the left into the renal vein: their lymphatic vessels go directly to the thoracic duct: they have nerves common alike to these glands and the kidneys. They have no excretory duct, and their use is at present unknown. It is supposed they answer one use in the fœtus, and another in the adult; but what these uses are is uncertain. Boerhaave supposed their use to consist in furnishing lymph to dilute the blood returned after the secretion of the urine in the renal vein; but this is very improbable, since the vein of the right supra-renal gland goes to the vena cava, and the blood carried back by the renal vein wants no dilution. It has also been said, that these glands not only prepare lymph, by which the blood is fitted for the nutrition of the delicate fœtus; but that in adults they serve to restore to the blood of the vena cava the irritable parts which it loses by the secretion of bile and urine. Some, again, have considered them as diverticula in the fœtus, to divert the blood from the kidneys, and lessen the quantity of urine. The celebrated Morgagni believed their office to consist in conveying something to the thoracic duct. It is singular, that in children who are born without the cerebrum, these glands are extremely small, and sometimes wanting.

Renal vein. See *Emulgent*.

RE'NIFORM. *Reniformis*. Kidney-shaped. 1. In *Anatomy*, this term is applied to any deviations of parts, assuming a kidney-like form.

2. In *Botany*, leaves, seeds, &c., are so called from their shape: it is a short, broad, roundish leaf, the base of which is hollowed out; as that of the *Asarum europæum* and *Sibthorpia europæa*, and the seeds of *Beta* and *Phaseolus*.

RE'NNET. Runnet. The gastric juice and contents of the stomach of calves. It is much

employed in preparing cheese, and in pharmacy, for making whey. To about a pound of milk, in a silver or earthen basin placed on hot ashes, add three or four grains of rennet, diluted with a little water: as it becomes cold, the milk curdles, and the whey, or serous part, separates itself from the caseous part. When these parts appear perfectly distinct, pour the whole upon a strainer, through which the whey will pass, while the curds remain behind. This whey is always rendered somewhat whitish, by a very small and much divided portion of the caseous part; but it may be separated in such a manner that the whey will remain limpid and colourless, and this is what is called clarifying it. Put into a basin the white of an egg, a glass of the serum of milk, and a few grains of tartaric acid in powder: whip the mixture with an ozier twig, and, having added the remainder of the unclarified whey, place the mixture again over the fire until it begins to boil. The tartaric acid completes the coagulation of the white part of the milk which remains; the white of egg, as it becomes hot, coagulates and envelops the caseous part. When the whey is clear, filter it through paper: what passes will be perfectly limpid, and have a greenish colour. This is clarified whey.

REINUENS. (From *renuo*, to nod the head back, in sign of refusal: so called from its office of jerking back the head.) An old epithet of the rectus anticus capitis minor muscle.

REPA'NDUS. Repand: wavy; serpentine. A leaf is so called which is bordered with many acute angles, and small segments of circles alternately; as that of the *Menyanthes nymphæoides*.

REPE'LLENT. (*Repellens*; from *repello*, to drive back.) Applications are sometimes so named which make diseases recede, as it were, from the surface of the body.

RE'PENS. Creeping. Often used in *Botany*; *caulis repens*, one that creeps along the earth; as that of the *Ranunculus repens*. Applied to a root, it means running transversely, and here and there giving off new plants; as that of the *Glycyrrhiza glabra*, and *Sambucus ebulus*.

REPLICA'TUS. Replicate: folded; plaited so as to form a groove or channel; as in the legumen of the *Astragalus hypoglottis*.

REPTI'LIA. (From *repo*, to creep.) A class of vertebrated animals. See *Animal kingdom*.

REPULSION. (*Repulsio, onis*. f.; from *repello*, to repel.) All matter possesses a power which is in constant opposition to attraction. This agency, which is equally powerful and equally obvious, acts an important part in the phænomena of nature, and is called *the power of repulsion*.

That such a force exists, which opposes the approach of bodies towards each other, is evident from numberless facts.

Newton has shown that when a convex lens is put upon a flat glass, it remains at a distance of the one hundred and thirty-seventh part of an inch, and a very considerable pressure is required to diminish this distance; nor does any force which can be applied bring them into actual mathematical contact. A force may indeed be applied sufficient to break the glasses into pieces, but it may be demonstrated that it does not diminish their distance much beyond the one thousandth part of an inch. There is, therefore, a repulsive force which prevents the two glasses from touching each other.

Boscovich has shown that when an ivory billiard-ball sets another in motion by striking against it, an equal quantity of its own motion is lost, and the ball at rest begins to move while the other is still at a distance.

There exists, therefore, a repulsion between bodies: this repulsion takes place while they are yet at a distance from each other; and it opposes their approach towards each other.

The cause or the nature of this force is equally inscrutable with that of attraction, but its existence is undoubted; it increases, as far as has been ascertained, inversely as the square of the distance; consequently at the point of contact it is infinite.

The following experiments will serve to prove the energy of repulsion more fully: —

Experiment.— When a glass tube is immersed in water, the fluid is attracted by the glass, and drawn up into the tube; but, if we make use of mercury instead of water, we shall find a different effect. If a glass tube of any bore be immersed in this fluid, it does not rise, but the surface of the mercury is considerably below the level of that which surrounds it when the diameter of the tube is very small. In this case, a repulsion takes place between the glass and the mercury, which is even considerably greater than the attraction existing between the particles of the mercury; and hence the latter cannot rise in the tube, but is repelled, and becomes depressed.

Experiment. — When we present the north pole of a magnet A, to the same pole of another magnet B, suspended on a pivot, and at liberty to move, the magnet B will recede as the other approaches; and, by following it with A, at a proper distance, it may be made to turn round on its pivot with considerable velocity. In this case there is some agency which opposes the approach of the north poles of A and B, which acts as an antagonist, and causes the moveable magnet to retire before the other. There is, therefore, a *repulsion* between the two magnets, a repulsion which increases with the power of the magnets, which may be made so great that all the force of a strong man is insufficient to make the two north poles touch each other. The same repulsion is equally obvious in electrical bodies. For instance:

Experiment. — If two small cork balls be suspended from a body so as to touch one another, and if we charge the body in the usual manner with electricity, the two cork balls separate from each other, and stand at a distance proportional to the quantity of electricity with which the body is charged: the balls of course repel each other.

Experiment. — If we rub over the surface of a sheet of paper the fine dust of lycopodium or puffball, and then let water fall on it in small

quantities, the water will instantly be repelled, and form itself into distinct drops, which do not touch the lycopodium, but roll over it with uncommon rapidity. That the drops do not touch the lycopodium, but are actually kept at a distance above it, is obvious from the copious reflection of white light.

Experiment. — If the surface of water contained in a basin be covered over with lycopodium, a solid substance deposited at the bottom of the fluid may be taken out of it with the hand without wetting it. In this case the repulsion is so powerful as to defend the hand completely from the contact of the fluid.

Res naturales. The naturals. According to Boerhaave, these are life, the cause of life, and its effects. These, he says, remain in some degree, however disordered the system may be.

Res non-naturales. See *Non-naturals.*

RESE'DA. (*a*, *æ*. f.; from *resedo*, to appease: so called from its virtue of allaying inflammation.) The name of a genus of plants in the Linnæan system. Class, *Dodecandria*; Order, *Trigynia*.

2. The name, in some pharmacopœias, of the dyers' weed. See *Reseda lutcola.*

Reseda luteola. The dyers' weed. Dioscorides mentions it as useful in jaundice.

RESIN. (*Resina*, *æ*. f.; from ῥέω, to flow: because it flows spontaneously from the tree.) The name *resin* is used to denote solid inflammable substances, of vegetable origin, soluble in alkohol, usually affording much soot by their combustion. They are likewise soluble in oils, but not at all in water: and are more or less acted upon by the alkalis.

All the resins appear to be nothing else but volatile oils, rendered concrete by their combination with oxygen. The exposure of these to the open air, and the decomposition of acids applied to them, evidently prove this conclusion.

There are some among the known resins which are very pure, and perfectly soluble in alkohol, such as the balsam of Mecca and of Capivi, turpentines, tacamahaca, elemi: others are less pure, and contain a small portion of extract, which renders them not totally soluble in alkohol; such are mastic, sandarach, guaiacum, labdanum, and dragon's blood.

The essential properties of resin are, being in the solid form, insoluble in water, perfectly soluble in alkohol, and in essential and expressed oils, and being incapable of being volatilised without decomposition.

Resins are obtained chiefly from the vegetable kingdom, either by spontaneous exudation, or from incisions made into vegetables affording juices which contain this principle. These juices contain a portion of essential oil, which, from exposure to the air, is either volatilised or converted into resinous matter, or sometimes the oil is abstracted by distillation. In some plants the resin is deposited, in a concrete state, in the interstices of the wood, or other parts of the plant.

Resins, when concrete, are brittle, and have generally a smooth and conchoidal fracture; their lustre is peculiar, they are more or less transparent, and of a colour which is usually some shade of yellow, or brown; they are of a greater specific gravity than water; they are often odorous and sapid, easily fusible, and, on cooling, become solid.

Resin, black. See *Resina nigra.*

Resin of copper. Boyle gives this name to the protochloride of copper on account of its resinous appearance.

Resin, elastic. See *Caoutchouc.*

Resin tree, elastic. See *Caoutchouc.*

Resin, white. See *Resina alba.*

Resin, yellow. See *Resina flava.*

Resina alba. The inspissated juice of the *Pinus sylvestris*, &c. The residuum of the distillation of oil of turpentine is also called, by some, white resin. See *Resina flava.*

Resina elastica. See *Caoutchouc.*

Resina flava. Yellow resin is that which remains in the still after distilling oil of turpentine, by adding water to the common turpentine. It is of very extensive use in surgery as an active detergent, and forms the base of the *ceratum resinæ.*

Resina nigra. *Colophonia.* What remains in the retort after distilling the oil of turpentine from the common turpentine.

Resolutio nervorum. Palsy. — *Celsus.*

Resina novi belgii. Botany Bay gum. See *Xanthorrhœa hastilis.*

Resinatum vinum. Wine impregnated with the resin of fir. Anciently used as a stomachic.

RESOLUTION. (*Resolutio*; from *resolvo*, to loosen.) 1. A termination of inflammation, in which the disease disappears without any abscess, mortification, &c. See *Inflammation.*

2. The dispersion of swellings, indurations, &c.

RESOLVENT. (*Resolvens*; from *resolvo*, to loosen.) This term is applied by surgeons to such substances as discuss inflammatory and other tumours.

RESPIRATION. (*Respiratio*, *onis*, f.; from *respiro*, to take breath.) To comprehend the important function of breathing or respiration, it is not only necessary to have a knowledge of the structure of the thoracic viscera, the form of the parietes, of the chest, and to comprehend the mechanism by which the air enters and passes out of it, but also to be well acquainted with the chemical and physical properties of the air, and the circulation of the blood.

The lungs are two spongy and vascular organs of a considerable size, situated in the lateral parts of the chest. Their parenchyma is divided and subdivided into lobes and lobules, the forms and dimensions of which it is difficult to determine.

We learn, by the careful examination of a pulmonary lobule, that it is formed of a spongy tissue, the *areolæ* of which are so small that a strong lens is necessary to observe them distinctly: these *areolæ* all communicate with each other, and they are surrounded by a thin layer of cellular tissue which separates them from the adjoining lobules.

Into each lobule enters one of the divisions of the bronchia, and one of the pulmonary artery: this last is distributed in the body of the lobule

in a manner that is not well known: it seems to be transformed into numerous radicles of the pulmonary veins. Dr. Magendie believes that these numerous small vessels, by which the artery terminates and the pulmonary veins begin, by crossing and joining in different manners, form the *areolæ* of the tissue of the lobules. The small bronchial division that ends in the lobule, does not enter into the anterior of it, but breaks off as soon as it has arrived at the parenchyma. This last circumstance appears remarkable: because, since the bronchia do not penetrate into the spongy tissue of the lungs, it is not probable that the surface of the cells, with which the air is in contact, is covered by the mucous membrane. The most minute anatomy cannot prove its existence in this place.

A part of the nerve of the eighth pair, and some filaments of the sympathetic, are expended on the lungs, but it is not known how they are distributed: the surface of the organ is covered by the pleura, a serous membrane, similar to the *peritonæum* in its structure and functions.

Round the *bronchia*, and near the place where they enter into the tissue of the lungs, a certain number of lymphatic glands exist, the colour of which is almost black, and to which the small number of lymphatic vessels which spring from the surface and from the interior of the pulmonary tissue are directed.

With regard to the lungs, we receive from the art of delicate injection some information that we ought not to neglect.

If we inject mercury, or even coloured water, into the pulmonary artery, the injected matter passes immediately into the pulmonary veins, but at the same time a part enters the *bronchia*, and goes out by the *trachea*. If the matter be injected into a pulmonary vein, it passes partly into the artery and partly into the bronchia. Lastly, if it be introduced into the trachea, it very soon penetrates into the artery, into the pulmonary veins, and even into the *bronchial* artery and vein.

The lungs fill up a great part of the cavity of the chest, and enlarge and contract with it; and, as they communicate with the external air by the trachea and the larynx, every time that the chest enlarges it is distended by the air, which is again expelled when the chest resumes its former dimensions. We must, then, necessarily stop to examine this cavity.

The chest, or the thorax, is of the form of a *cone*, the summit of which is above, and the base below.

The apparent form and dimensions of the chest are determined by the length, disposition, and motions of the ribs upon the vertebræ.

The chest is capable of being dilated vertically, transversely, forward, and backward; that is, in the direction of its principal diameters.

The principal, and almost the only, agent of the vertical dilatation is the diaphragm, which, in contracting, tends to lose its vaulted form, and to become a plane; a motion which cannot take place without the pectoral portion of the thorax increasing, and the abdominal portion diminishing.

The sides of this muscle, which are fleshy, and correspond with the lungs, descend farther than the centre, which, being aponeurotic, can make no effort by itself, and which is, besides, retained by its union with the *sternum* and the *pericardium*.

In most cases this lowering of the diaphragm is sufficient for the dilatation of the chest; but it often happens that the sternum and the ribs, in changing the position between them and the vertebral column, produce a sensible augmentation in the thoracic cavity.

In the general elevation of the thorax, its form necessarily changes, as well as the relations of the bones of which it is composed. The cartilages of the ribs seem particularly intended to assist these changes: as soon as they are ossified, and consequently lose their elasticity, the chest becomes immoveable.

Whilst the sternum is carried upwards, its inferior extremity is directed a little forward: it thus undergoes a slight swinging motion; the ribs become less oblique upon the vertebral column; they remove a little from each other, and their inferior edge is directed outward by a small tension of the cartilage. All these phenomena are not very apparent, except in the superior ribs.

A general enlargement of the thorax takes place by its elevation, as well from front to back, as transversely, and upwards.

This enlargement is called *inspiration*. It presents three degrees: — 1st, Ordinary *inspiration*, which takes place by the depression of the diaphragm, and an almost insensible elevation of the thorax. 2dly, The *great* inspiration, in which there is an evident elevation of the thorax, and, at the same time, a depression of the diaphragm. 3dly, *Forced* inspiration, in which the dimensions of the thorax are augmented in every direction, as far as the physical disposition of this cavity will permit.

Expiration succeeds to the dilatation of the thorax; that is, the return of the thorax to its ordinary position and dimensions.

The mechanism of this motion is the reverse of what we have just described. It is produced by the elasticity of the cartilages, and by the ligaments of the ribs, which have a tendency to resume their former shape, by the relaxation of the muscles that had raised the thorax, and by the contraction of a great number of muscles so disposed that they lower and contract the chest.

The contraction of the thorax, or expiration, presents also three degrees: — 1st, *Ordinary expiration*; 2d, *Great expiration*; 3d, *Forced expiration*.

In ordinary expiration, the relaxation of the diaphragm, pressed upwards by the abdominal viscera, which are themselves urged by the anterior muscles of this cavity, produces the diminution of the vertical diameter: vehement expiration is produced by the relaxation of the inspiring muscles, and a slight contraction of those of expiration, which permits the ribs to assume their ordinary relations with the vertebral column. But the contraction of the chest may go still farther. If the abdominal and

other expiratory muscles contract forcibly, a greater depression of the diaphragm takes place, the ribs descend lower, the base of the *conoid* shrinks, and there is, consequently, a greater diminution of the capacity of the thorax. This is called forced expiration.

We shall now consider the air as an elastic fluid, which possesses the property of exerting pressure upon the bodies it surrounds, and upon the sides of the vessels that contain it. This property supposes, in the particles of air, a continual tendency to repulse each other.

Another property of the air is *compressibility;* that is, its volume changes with the pressure which it supports.

The air expands by heat like all other bodies; its volume augments $\frac{1}{480}$ by an increase of one degree of Fahrenheit's thermometer.

The air has weight: this is ascertained by weighing a vessel full of air, and then weighing the same vessel after the air has been taken out by the air-pump.

The air is more or less charged with humidity.

Air, notwithstanding its thinness and transparency, refracts, intercepts, and reflects the light.

The air is composed of two gases that are very different in their properties: —

1st, Oxygen: this gas is a little heavier than air, in the proportion of 11 to 10, and it combines with all the simple bodies: it is an element of water, of vegetable and animal matters, and of almost all known bodies; it is essential for combustion and respiration. 2dly, Azote: this gas is a little lighter than air: it is an element of ammonia and of animal substances; it extinguishes bodies in combustion.

It has been thus found that 100 parts in weight of air contain 21 parts of oxygen and 79 of azote. These proportions are the same in every place and at all heights, and have not sensibly changed for these fifteen years, since they were positively established by chemistry.

Besides oxygen and azote, the air contains a variable quantity of the vapour of water, as we have already observed, and a *small quantity* of carbonic acid, the proportion of which has not yet been positively fixed.

The air is decomposed by almost all combustible bodies, at a temperature which is peculiar to each. In this decomposition they combine with the oxygen, and set the azote at liberty.

Of Inspiration and Expiration. — If we call to mind the disposition of the pulmonary lobules, the extensibility of their tissue, their communication with the external air by means of the bronchia, of the trachea, and of the larynx, it may easily be conceived that every time the breast dilates, the air immediately enters the pulmonary tissue, in a quantity proportionate to the degree of dilatation. When the breast contracts, a part of the air that it contains is expelled, and passes out by the glottis.

In order to arrive at the glottis in inspiration, and to go outwards in expiration, the air sometimes traverses the nasal canal, and sometimes the mouth: the position of the velum of the palate, in these two cases, deserves to be described. When the air traverses the nasal canals and the pharynx, to enter or to pass out of the larynx, the velum of the palate is vertical, and placed with its anterior surface against the posterior part of the base of the tongue, so that the mouth has no communication with the larynx. When the air traverses the mouth, in inspiration or expiration, the velum of the palate is horizontal, its posterior edge is embraced by the concave surface of the pharynx, and all communication is cut off between the inferior parts of the pharynx and the superior part of this canal, as well as with the nasal canals. Thence the necessity of making the sick breathe by the mouth, if it is necessary to examine the tonsils or the pharynx.

These two ways for the air to arrive at the glottis were necessary, for they assist each other: thus, when the mouth is full of food, the respiration takes place by the nose; it takes place by the mouth when the nasal canals are obstructed by mucus, by a slight swelling of the membrane, or any other cause. The glottis opens in the instant of inspiration, and, on the contrary, it shuts in the expiration.

It appears that in a given time the number of inspirations made by one person are very different from those of another. Haller thinks there are twenty in the space of a minute. A man upon whom Menzies made experiments respired only fourteen times in a minute. Sir H. Davy informs us that he respires in the same period twenty-six or twenty-seven times; Dr. Thomson says that he respires generally nineteen times; and Dr. Magendie only respires fifteen times. Taking twenty times in a minute for the mean, this will give 28,800 inspirations in twenty-four hours. But this number probably varies according to many circumstances, such as the state of sleep, motion, distension of the stomach by food, the capacity of the chest, moral affections, &c. What quantity of air enters the chest at each inspiration? What quantity goes out at each expiration? How much generally remains?

According to Menzies, the mean quantity of air that enters the lungs at each inspiration, is 40 cubic inches. Goodwin thinks that the quantity remaining, after a complete expiration, is 109 cubic inches; Menzies affirms that this quantity is greater, and that it amounts to 179 cubic inches.

According to Davy, after a forced expiration, his lungs contained 41 cubic inches.

After a natural expiration.....	118
After a natural inspiration.....	135
After a forced inspiration	254

By a forced expiration, after a forced inspiration, there passed out of the lungs ..... 190 cu. in.

After a natural inspiration.....	78·5
After a natural expiration.....	67·5

Dr. Thomson thinks that we should not be far from the truth in supposing that the ordinary quantity of air contained in the lungs is 280, and that there enter or go out at each inspiration, or expiration, 40 inches. Thus, supposing

twenty inspirations in a minute, the quantity of air that would enter and pass out in this time would be 800 inches; which makes 48,000 in the hour, and in 24 hours, 1,152,000 cubic inches. A great number of experiments have been made by chemists to determine if the volume of air diminishes while it remains in the lungs. In considering the latest experiments, it appears that, in most cases, there is no diminution; that is, a volume of expired air is exactly the same as one of inspired air. When this diminution takes place it appears to be only accidental.

By successively traversing the mouth or the nasal cavities, the pharynx, the larynx, the trachea, and the bronchia, the inspired air becomes of a similar temperature with the body. It most generally becomes heated, and consequently rarefied, so that the same quantity in weight of air occupies a much greater space in the lungs than it occupied before it entered them. Besides this change of volume, the inspired air is charged with the vapour that it carries away from the mucous membranes of the air-passages, and in this state always, hot and humid, it arrives in the pulmonary lobules; also this portion of air of which we treat mixes with that which the lungs contained before.

But expiration soon succeeds to inspiration: an interval only of a few seconds passes in general between them; the air contained by the lungs, pressed by the powers of expiration, escapes by the expiratory canal in a contrary direction to that of the inspired air.

We must here remark, that the portion of air expired is not exactly that which was inspired immediately before, but a portion of the mass which the lungs contained after inspiration; and, if the volume of air that the lungs usually contains is compared with that which is inspired and expired at each motion of respiration, we may be inclined to believe that inspiration and expiration are intended to renew in part the considerable mass of air contained by the lungs.

This renewal will be so much more considerable as the quantity of air expired is greater; and as the following inspiration is more complete.

Physical and Chemical Changes that the Air undergoes in the Lungs. — The air, in its passage from the lungs, has a temperature nearly the same as that of the body: there escapes with it from the breast a great quantity of vapour called *pulmonary transpiration;* besides, its chemical composition is different from that of the inspired air. The proportion of azote is much the same, but that of oxygen and carbonic acid is quite different.

In place of 0·21 of oxygen, and a trace of carbonic acid, which the atmospheric air presents, the expired air gives 0·18 or 0·19 of oxygen, and 0·3 to 0·4 of carbonic acid; generally the quantity of carbonic acid exactly represents the quantity of oxygen which has disappeared: nevertheless, the last experiments of Gay Lussac and Davy give a small excess of acid; that is, there is a little more acid formed than the oxygen absorbed.

In order to determine the quantity of oxygen consumed by an adult in twenty-four hours, we have only to know the quantity of air respired in this time. According to Lavoisier and Sir H. Davy, 32 cubic inches are consumed in a minute, which gives for 24 hours 46,037 cubic inches.

It is not difficult to appreciate the quantity of carbonic acid that passes out of the lungs in the same time, since it nearly represents the volume of oxygen that disappears. Thomson values it at 40,000 cubic inches, though he says it is probably a little less: now this quantity of carbonic acid represents nearly 12 ounces avoirdupois of carbon.

Some chemists say that a small quantity of azote disappears during respiration; others think, on the contrary, that its quantity is sensibly augmented: but there is nothing positive in this respect.

We are informed of the degree of alteration that the air undergoes in our lungs by a feeling which inclines us to renew it: though this is scarcely sensible in ordinary respiration, because we always continue it, it nevertheless becomes very painful if we do not satisfy it quickly; carried to this degree, it is accompanied with anxiety and fear, an instinctive warning of the importance of respiration.

Whilst the air contained in the lungs is thus modified in its physical and chemical properties, the venous blood traverses the ramifications of the pulmonary artery, of which the tissue of the lobules of the lungs is partly formed; it passes into the radicles of the pulmonary veins and very soon into these veins themselves; but in passing from the one to the other, it changes its nature from venous to arterial blood.

Respiration, puerile. See *Auscultation.*

Rest-harrow. See *Ononis spinosa.*

Re'sta bo'vis. (So called because it hinders the plough.) See *Ononis spinosa.*

RESUPINA'TUS. Resupinate: reversed. Applied to leaves, &c. when the upper surface is turned downwards; as in the leaf of the *Pharus latifolius.*

RESUSCITATION. (*Resuscitatio, onis.* f.; from *resuscito,* to rouse or awake.) Revivification. The restoring of persons, apparently dead, to life. See *Asphyxia.*

RETE. (*e, is.* n.; so called *à retinendis piscibus.*) A net: a term applied very generally, in *Anatomy* and *Natural History,* to cellular membrane, nerves, vessels, and other parts which appear like a net or web.

Rete malpighi. The rete mucosum. See *Cutis.*

Rete mirabile. The network of blood-vessels at the basis of the brain of quadrupeds.

Rete mucosum. A mucous substance situated between the cuticle and true skin. See *Cutis.*

RETENTION. (*Retentio, onis.* f.; from *retineo,* to keep back.) The keeping back of any thing which should be expelled: applied to the excretions, but particularly to the urine. See *Suppression.*

Retention of the menses. See *Amenorrhœa.*

Retention of urine. *Retentio urinæ.* The collection of urine within the bladder, the

son not being able to expel it. This is sometimes partial, and sometimes total. It is known, in both cases, by a tumour in the region of the bladder, subsequent to the person having passed his urine, and by his not having the power so to do, when partial small quantities of urine dribble away. This disease occasionally occurs in old age from debility: it is frequently the result of an affection of the nerves of the bladder, over-distension of the bladder, inflammation, hernia, and other displacements of the abdominal viscera; pressure on the neck of the bladder from several causes, and from strictures; and pressure of tumours in the course of the urethra, as enlarged prostate gland, uterus, &c.; and from foreign bodies lodging in the urethra. For the cure of this disease, attention must be given to the removal of those diseases from which it arises, and to the removal of all obstructions. The palliative cure is drawing off the urine by a catheter. A want of tone in the bladder is most relieved by chalybeates and bark; and spasmodic stricture, by fomentations, warm bath, and cinchona and opium.

RETI'CULAR. (*Reticularis*; from *rete*, a net.) *Reticulatus.* Interwoven like a web.

Reticulatus. See *Reticular.*

RETI'CULUM. (*um, i.* n.; from *rete*, a net.) A little net or web.

RE'TIFORM. (*Retiformis*; from *rete*, a net, and *forma*, resemblance.) Net-like.

RE'TINA. (*a, æ.* f.; from *rete*, a net.) The fourth or innermost membrane of the eye, expanded within the choroid coat, to the ciliary ligament. It is the true organ of vision, and is formed by an expansion of the pulp of the optic nerve. See *Oculus*, and *Vision.*

RETINA'CULUM. (From *retineo*, to hold or restrain.) An old surgical instrument for keeping the bowels in their place during the operation for hernia, or that of castration.

RETINI'TIS. (*is, idis.* f.; from *retina*, the name of the part, and the terminal *itis*, which imports inflammation.) Inflammation of the retina. See *Ophthalmitis.*

RETORT. (*Retorta, æ.* f.; from *retorqueo*, to bend back again: probably so called because its neck was curved and bent back again.) A chemical vessel employed for many distillations, and most frequently for those which require a degree of heat superior to that of boiling water. They differ in form and materials: when pierced with a little hole in their roof, they are called tubulated retorts. They are made of common glass, stone-ware, or iron.

RETRA'CTOR. A muscle, the office of which is to retract the part into which it is inserted.

Retractor anguli oris. See *Buccinator.*

RE'TRAHENS. Drawing back.

RETRAHENS AURIS. *Posterior auris*, of Winslow. *Retrahens auriculæ*, of Albinus. *Depriens auriculæ*, of Douglas. *Retrahens auriculam*, of Cowper. Two small bundles of muscular fibres which arise from the external and posterior part of the mastoid process of the temporal bone, immediately above the insertion of the sterno-cleido-mastoideus muscle. They are inserted into that part of the back of the ear which is opposite to the septum, which divides the concha and scapha. Their use is to draw the ear backwards, and stretch the concha.

RETROCE'DENT. *Retroce'dens. Retrogradus.* When a disease that moves about from one part to another, and is sometimes fixed, has been some time in its more common situation, and retires from it, it is said to be retrocedent.

Retrocedent gout. See *Arthritis.*

Retrograde. See *Retrocedent.*

RETROVE'RSION. *Retroversio.* Turning back: applied to the uterus, bladder, and other organs.

Retroversion of the uterus. See *Uterus, retroversion of.*

RETU'SUS. Retuse: dented. Applied to a leaf which ends in a broad shallow notch; as in the *Rumex digynus.*

Reverberatory. See *Furnace.*

Revery. See *Aphelxia.*

REVOLU'TUS. Revolute, rolled back. Applied to a leaf, the margin of which is turned or rolled backwards; as in *Andromeda polifolia.*

REVULSION. (*Revulsio*; from *revello*, to draw away.) An old term used by the humoral pathologists, signifying the drawing of humours a contrary way.

RHABA'RBARUM. (*um, i.* n.; from *Rha*, and *barbarus*, wild: so called because it was brought from the banks of the Rha, now called the Wolga, in Russia.) See *Rheum.*

Rhabarbarum album. See *Convolvulus mechoacan.*

Rhabarbarum antiquorum. See *Rheum.*

Rhabarbarum Dioscoridis. See *Rheum.*

Rhabarbarum monachorum. See *Rumex patientia.*

Rhabarbarum rhaponticum. See *Rheum rhaponticum.*

Rhabarbarum sibericum. See *Rheum.*

Rhabarbarum tartaricum. See *Rheum.*

Rhabarbarum verum. See *Rheum.*

RHACHIA'LGIA. (*a, æ.* f.; from ῥαχις, the spine of the back, and αλγος, pain.) A pain in the spine of the back. It was formerly applied to some species of colic, when attended with severe pain in the back, and more particularly to the *colica pictonum.*

RHA'CHIS. (*is, eos.* f. Ῥαχις, the spine of the back.) 1. In *Anatomy*, the spine. See *Spine.*

2. In *Botany*, the common stalk or spike-stalk, or receptacle of the florets in the spikelets of grasses, or of the spikelets themselves; as in *Lolium, Triticum, Hordeum*, &c. It also means the rib or leaf-stalk of ferns, which is often winged or bordered.

RHACHISAGRA. (*a, æ.* f.; from ῥαχις, the spine of the back, and αγρα, a seizure.) A sudden pain in the spine: applied to gout fixed in the spine of the back. An ill-constructed term.

RHACHI'TIS. (*is, idis.* f.; from ῥαχις, the spine of the back: so called because the spine is distorted in severe cases.) *Cyrtonosos.* The English disease. The rickets. A disease known by a large head, prominent forehead, protruded sternum, flattened ribs, big belly, and emaciated limbs, with great debility. It is usually con-

fined in its attack between the two periods of nine months and two years of age, seldom appearing sooner than the former, or showing itself for the first time after the latter period. The muscles become flaccid, the head enlarges, the carotids are distended, the limbs waste away, and their epiphyses increase in bulk. The bones and spine of the back are variously distorted; disinclination to muscular exertion follows; the abdomen swells and grows hard; the stools are frequent and loose; a slow fever succeeds, with cough and difficulty of respiration: atrophy is confirmed, and death ensues. Frequently it happens that nature restores the general health, and leaves the limbs distorted.

After death, the liver and the spleen have been found enlarged and scirrhous, the mesenteric glands indurated, and the lungs either charged with vomicæ or adhering to the pleura; the bones soft, the brain flaccid, or oppressed with lymph, and the distended bowels loaded most frequently with slime, sometimes with worms.

It is remarkable, that in the kindred disease, which Hoffmann and Sauvages call the atrophy of infants, we have many of the same symptoms, and the same appearances nearly after death. They who perish by this disease, says Hoffmann, have the mesenteric glands enlarged and scirrhous; the liver and spleen obstructed, and increased in size; the intestines are much inflated, and are loaded with black and fœtid matters; and the muscles, more especially of the abdomen, waste away.

In the treatment of rickets, besides altering any improprieties in the regimen which may have co-operated in producing it, those means should be employed by which the system may be invigorated. Tonic medicines are therefore proper, particularly chalybeates, which are easily given to children; and the cold-bath may be essentially beneficial. The child should be regularly well exercised, kept clean and dry, and a pure air selected; the food nutritious and easy of digestion. When the appetite is much impaired, an occasional gentle emetic may do good; more frequently tonic aperients, as rhubarb, will be required to regulate the bowels; or sometimes a dose of calomel in gross habits. Of late, certain compounds of lime have been strongly recommended, particularly the phosphate, which is the earthy basis of the bones; though it does not appear likely to enter the system, unless rendered soluble by an excess of acid. Others have conceived the disease to arise from an excess of acid, and therefore recommended alkalies; which may certainly be useful in correcting the morbid prevalence of acid in the primæ viæ, so frequent in children. Where the bones are inclined to bend, care must be taken not to throw the weight of the body too much upon them.

RHA'GAS. (*as, adis.* f.; from *ῥηγνυμι*, to break or bruise.) 1. A common fissure, chap, or cleft.

2. A malignant, dry, and deep cutaneous fissure.

RHAGOI'DES. (From *ῥαξ*, a grape-stone, and *εἰδος*, a likeness: so called from its likeness in colour to a grape-seed.) Grape-seed-like. Applied to the uvea of the eye.

RHA'MNUS. (*us, i.* m. *Ῥαμνος.*) 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Monogynia.* Buckthorn.

2. The pharmacopœial name of the purging buckthorn. See *Rhamnus catharticus.*

RHAMNUS CATHARTICUS. Buckthorn. Purging buckthorn. *Spina cervina. Rhamnus solutivus. Spina infectoria. Cervispina.* The fruit or berries of this shrub, *Rhamnus — spinis terminalibus floribus quadrifidis dioicis, foliis ovatis, caule erecto,* of Linnæus, have been long received into the Materia Medica: they contain a pulpy deep green juice, of a faint unpleasant smell, a bitterish, acrid, nauseous taste, which operates briskly by stool, producing thirst, dryness of the mouth, and fauces, and severe gripings, unless some diluting liquor be drank plentifully after it: at present it is rarely prescribed, except as a drastic purge. The dose is said to be about twenty of the fresh berries in substance; twice or thrice that number in decoction; a drachm or a drachm and a half of the dried berries; an ounce of the expressed juice, or half an ounce of the rob or extract, obtained by inspissating the juice.

RHAMNUS FRANGULA. The systematic name of the black alder. *Frangula alnus. Alnus nigra. Rhamnus frangula — inermis floribus monogynis hermaphroditis, foliis integerrimis,* of Linnæus.

All the parts of this tree, as well as of the common alder, are astringent and bitter. The bark is most astringent; a decoction of it has cured agues, and is often used to repel inflammatory tumours of the throat, by way of gargle. The inner yellow bark of the trunk, or root, given to ʒij., vomits, purges, and gripes; but joined with aromatics, it operates more agreeably. An infusion, or decoction in water, inspissated to an extract, acts yet more mildly than these. It is mostly employed by the common people in dropsy and other disorders. The berries of alder are purgative. They are not in use under their own name, but are often substituted for buckthorn berries; to discover which it should be observed, that the berries of the black alder have a black skin, a blue juice, and two seeds in each of them: whereas the buckthorn berries have a green juice, and commonly four seeds. The substitution of one for the other is not of material consequence, as the plants belong to the same genus, and the berries do not differ greatly.

Dr. Murray, of Gottingen, recommends, from his own experience, the leaves of alder chopped in small pieces, and heated over the fire, as the best remedy with which he is acquainted for dispersing milk in the breasts.

RHAMNUS ZIZYPHUS. The name of the tree which affords the jujubes. A half-dried fruit of the plum kind, about the size and shape of an olive. Jujubes, when in perfection, have an agreeable, sweet taste; and in the southern parts of Europe, where they are common, they make an article of food in their recent state, and a medicine when half dried.

RHAPO'NTICUM. (*um, i.* n.; the Rha of Pontus, *i. e.* the Rha, in Russia, a river on the banks of which it grew.) See *Rheum rhaponticum.*

Rhapontic rhubarb. See *Rheum rhaponticum.*

Rhapontieum vulgare officinarum. See *Centaurea.*

Rhatania. See *Crameria.*

Rhatany root. See *Crameria.*

RHE'IN. The name given by M. Vaudin to a substance procured by treating rhubarb with ether.

Rheum. See *Rheuma.*

RHE'UM. (*um, i.* n.; from *Rha*, a river in Russia, now called the Wolga, from the banks of which it was first brought.) 1. The name of a genus of plants in the Linnæan system. Class, *Enneandria;* Order, *Trigynia.* Rhubarb.

2. The pharmacopœial name of the officinal rhubarb. See *Rheum palmatum.*

RHEUM PALMA'TUM. The systematic name of the officinal rhubarb. *Rhabarbarum. Rheon. Rhœum. Barbaria. Lapathum orientale. Lapathum chinense. Rhabarbarum verum. Rhabarbarum tartaricum.* It was not until the year 1732 that naturalists became acquainted with any plant which seemed to afford the rhabarbarum officinale; when some plants received from Russia by Jussieu at Paris, and Rhand at Chelsea, were said to supply this important desideratum, and as such were adopted by Linnæus, in his first edition of the Species Plantarum, under the name of *Rheum rhabarbarum.* This, however, was not generally received as the genuine rhubarb plant; and with a view to ascertain this matter more completely, Kaan Boerhaave procured from a Tartarian rhubarb merchant the seeds of those plants, whose roots he annually sold, and which were admitted at Petersburg to be the true rhubarb. These seeds were soon propagated, and were discovered by De Gorter to produce two distinct species; viz. the *Rheum rhabarbarum* of Linnæus, or, as it has since been called, the *Rheum undulatum;* and another species, a specimen of which was presented to Linnæus, who declared it to be a new one; and it was first mentioned in the second edition of the Species Plantarum, in 1762, by the name of *Rheum palmatum.* Previous to this time, De Gorter had repeatedly sent its seeds to Linnæus, but the young plants which they produced constantly perished; at length he obtained the fresh root, which succeeded very well at Upsal, and afterwards enabled the younger Linnæus to describe this plant, in 1767. But two years antecedent to this, Dr. Hope's account of the *Rheum palmatum*, as it grew in the Botanic Garden near Edinburgh, had been read before the Royal Society at London; and of the great estimation in which this plant was held by him, we have the following proof: — "From the perfect similarity of this root with the best foreign rhubarb, in taste, smell, colour, and purgative qualities, we cannot doubt of our being at last possessed of the plant which produces the true rhubarb, and may reasonably entertain the agreeable expectation of its proving a very important acquisition to Britain."

But, from the relation we have given, it appears that both the seeds of the R. palmatum, and the R. undulatum, were transmitted to Petersburg as those of the true rhubarb. We are therefore to conclude, that the former species has an equal claim to this importance with the latter; and, from further inquiries made in Russia, there is the best authority for believing that the R. compactum also affords this very useful drug. The seeds of the R. palmatum were first introduced into Britain in 1762 by Dr. Hounsy (who sent them from Russia), and were supposed to be a part of that already mentioned; and since their prosperous cultivation by the late professor of botany at Edinburgh, the propagation of this plant has been gradually extended to most of our English gardens, and with a degree of success which promises, in time, to supersede the importation of the foreign root. Three sorts of rhubarb roots are usually imported into this country for medical use; viz. the Turkey rhubarb; the Russian or Tartarian rhubarb, which is exactly similar to the former; and the Chinese or East India rhubarb. The Indian is in oblong pieces, flattish on one side, and convex on the other; compact, hard, heavy; internally of a dull red colour, variegated with yellow and white, and when recently powdered appears yellow, but on being kept becomes gradually redder. The Russian is the most valuable, and is brought to us in roundish pieces, with a large hole through the middle of each; it is more soft and friable than the former sort, and exhibits, when broken, many streaks of a bright red colour. The marks of the goodness of rhubarb are, the liveliness of its colour when cut; its being firm and solid, but not flinty or hard; its being easily pulverable, and appearing when powdered of a fine bright yellow colour; its imparting to the spittle, when chewed, a deep saffron tinge, and not proving slimy or mucilaginous in the mouth; its taste is subacrid, bitterish, and somewhat styptic; the smell slightly aromatic.

The purgative qualities of rhubarb are extracted more perfectly by water than by rectified spirit: the part remaining after the action of water is almost, if not wholly, inactive; whereas, after repeated digestion in spirit, it proves still very considerably purgative. The virtue of a watery infusion, on being inspissated by a gentle heat, is so much diminished, that a drachm of the extract is said to have scarcely any greater effect than a scruple of the root in substance. The chemical analysis of rhubarb is still very imperfect, and the active principle is not known. According to the analysis of Brande, it consists of

Water	8·2
Gum	31·0
Resin	10·0
Extract, tan, and gallic acid	26·0
Phosphate of lime	2·0
Malate of lime	6·5
Woody fibre	16·3

According to most other analyses the *oxalic* is the acid with which the lime is combined. The *Rhabarbarine* of Caventon is the colouring matter merely. M. Hornemann has found a principle

which he calls *rheumine*, and believes to be the characteristic one, but little is known of it. The two kinds of rhubarb differ considerably in their chemical composition. The spirituous tincture loses less; half a drachm of this extract proving moderately purgative. The qualities of this root, says Dr. Cullen, are those of a gentle purgative; and so gentle, that it is often inconvenient on account of the bulk of the dose required, which, in adults, must be from ʒss. to ʒj. When given in a large dose it will occasion some griping, as other purgatives do; but it is hardly ever heating to the system, or shows the other effects of the more drastic purgatives. The purgative quality is accompanied with a bitterness, which is often useful in restoring the tone of the stomach when it has been lost; and, for the most part, its bitterness makes it sit better on the stomach than many other purgatives do. Its operation joins well with neutral laxatives; and both together operate in a lesser dose than either of them would singly. Some degree of stypticity is always evident in this medicine; and as this quality acts when that of the purgative has ceased, so in cases of diarrhœa, when any evacuation is proper, rhubarb has been considered as the most proper remedy to be employed. It must, however, be remarked here, that, in many cases of diarrhœa, no further evacuation than what is occasioned by the disease is necessary or proper. The use of rhubarb, in substance, for keeping the belly regular, for which it is frequently employed, is by no means proper, as the astringent quality is ready to undo what the purgative has done; but it is found that the purpose mentioned may be obtained by it, if the rhubarb is chewed in the mouth, and no more is swallowed than what the saliva has dissolved. And it must be remarked, that in this way employed it is very useful to dyspeptic persons. Analogous to this, is the use of rhubarb in solution, in which it appears that the astringent quality is not so largely extracted as to operate so powerfully as when the rhubarb was employed in substance.

The officinal preparations of this drug are, a watery and a vinous infusion, a simple and a compound tincture, and an extract. It is also an ingredient in different compositions.

RHEUM RHAPONTICUM. The systematic name of the rhapontic rhubarb. *Rhaponticum. Rhabarbarum Dioscoridis. Rhabarbarum antiquorum.* The root of this species appears to have been the true rhubarb of the ancients. By some it is confounded with the modern rhubarb, though considerably different from that root in appearance, as well as in quality. The rhapontic is of a dusky colour on its surface, and a loose spongy texture; is more astringent than rhubarb, and less purgative: in this last intention, two or three drachms are required for a dose.

RHEUM UNDULATUM. The systematic name of the Siberian rhubarb. The *Rheum undulatum — foliis subvillosis undulatis petiolis æqualibus*, of Linnæus. It possesses similar virtues to those of the palmate species, and is in common use in Russia.

RHEU'MA. (*a*, *atis*. n.; from ῥεω, to flow.) Rheum. The discharge from the nostrils, or air-passages, arising from cold.

RHEU'MATISM. (*Rheumatismus*, *i*. m.; ῥευματισμος, from ῥευματιζω, to be afflicted with defluxions.) *Dolores rheumatici et arthritici*, of Hoffmann. *Myositis*, of Sagar. Rheumatism is an affection of the extremities and external coverings of the human body, occupying the muscular, tendinous, and fibrous textures, and characterised by pain, stiffness, and swelling of a joint, with or without fever, according to the violence of the disorder. In common life, a threefold distinction is made, *viz.*, into the true rheumatism, the rheumatic gout, and the rheumatic fever. The two latter alone merit the title of *inflammations*, but there is obviously a close analogy in the pathology of all these affections. In their symptoms and mode of treatment, however, sufficient difference exists to entitle them to separate examination. It is certainly a curious circumstance, considering the frequency of this complaint, that there should still be so much obscurity in regard to several of the fundamental doctrines connected with rheumatic inflammation. This may be partly explained, perhaps, from its being a disease of so little danger, as never to have received any elucidation from the labours of the morbid anatomist.

Acute rheumatism. — We shall begin by the consideration of that highest grade of rheumatism, called the rheumatic fever, the acute rheumatism of nosologists, a painful and severe disease, thus characterised. It is ushered in by a sudden attack of rigors, followed by the usual symptoms of pyrexia, and is particularly distinguished by the great pain and swelling which affect one or more joints, coupled with an utter inability to move them, and very commonly with considerable redness. The affected joints are acutely tender to the touch. The pains are aggravated towards night, and for the most part, at all times, by external heat. The swelling, except in certain cases hereafter to be specified, does not take the form of the joint, but is diffused over the cellular membrane in its neighbourhood. Several joints are commonly affected at the same time, but one of the most singular phenomena of rheumatic inflammation is the strong tendency which it exhibits to *shift its situation*; to abate in one or two joints, often very suddenly, and to become as suddenly violent in another, and a distant part.

The accompanying fever presents several important peculiarities. The pulse seldom exceeds 100 or 110 in the minute; but instead of the hardness which characterises inflammatory fever, it is full, soft, and as it were *round*. The skin, instead of being hot, harsh, and dry, is commonly in a state of profuse perspiration; and a remarkable acid odour of its secretions may be noticed. The tongue is always deeply loaded. The papillæ appear elongated, and covered with a thick and abundant mucus. The functions of the brain are in a peculiar manner exempt. Headach is seldom present in any form of rheumatic inflammation, acute or chronic; and delirium is almost unknown. There is great thirst, but rarely any nausea or vomiting. The

bowels are costive, though easily made to move. There is a sallowness in the aspect, and a peculiar expression of the countenance, sufficiently distinct from that of common febrile anxiety.

Terminations. — Different as are the local and constitutional symptoms from those of other phlegmasiæ, the terminations of rheumatic inflammation are no less peculiar. The local inflammation may run high, but it never proceeds to suppuration. It is seldom, indeed, that any permanent injury is done to the joints; for if effusions of a transparent gelatinous fluid into, or around the sheaths of tendons and the capsular ligaments, take place, they are commonly absorbed in a short time. The most important consideration in this view of the subject, is the disposition which exists, in a state of acute rheumatism, to an affection of some internal organ by *metastasis*, or rather by extension of inflammation; for it is not often that the joints are relieved when this event takes place. The organ chiefly liable to be so affected is the heart, and its investing membrane, the pericardium, and it is from this occurrence alone that any danger in the progress of the disease is to be apprehended. The symptoms that result are those already described when treating of pericarditis. It was then remarked, that the circumstances which occasion this extension of rheumatic inflammation to an internal organ have never yet been satisfactorily determined.

Recurrence of rheumatic fever. — No disease is more liable to relapse on slight occasions than acute rheumatism. Going out a little too early in the open air, too much exercise of a particular joint, or an excess in diet, have frequently brought it back in all its former violence. Acute rheumatism is characterised also by a tendency to recurrence after a long interval. Those who have once suffered from an attack of the disease, should therefore be particularly careful to avoid what we shall point out as its exciting causes, or to obviate them by proper attention to clothing. Rheumatism is certainly the most tedious of all the acute inflammations. In many cases it appears to run a defined course, which does not admit of being shortened by any process of treatment, and in a certain length of time to wear itself out. This is seldom less than a month, or longer than six weeks. That the acute sometimes terminates in a state of chronic rheumatism, cannot be doubted; but, instead of being a frequent occurrence, as is often imagined, this is in fact rare; and though the recovery from genuine acute rheumatism is seldom, it is usually perfect.

Remote causes. — Children are very seldom the subjects of acute rheumatism. It most commonly occurs from the age of puberty to the thirtieth or thirty-fifth year of life, and chiefly affects those of sanguine temperament, robust form, and plethoric habit of body. It prevails principally in the months of December and January, and least frequently in August and September. Cold, with moisture, particularly when long applied, is certainly the most common, and perhaps it might be added, its only exciting cause. Hence it is that we find it attributed, in a large proportion of cases, to sleeping in damp beds, living within damp walls, sitting in damp clothes, or working in damp situations.

Seat of rheumatism. — Very little is known regarding the precise seat of inflammation in acute rheumatism. It appears to be situated primarily in capsular ligaments, tendinous sheaths, and aponeurotic expansions; but the cellular membrane around the joints also partakes of inflammation in the active form of the complaint. In this, perhaps, consists the principal local distinction between acute and chronic rheumatism.

Arthritis, or inflammation of synovial membrane. — In some instances of disease, not usually distinguished by the physician from those of common rheumatism, though known to the world by the name of the *rheumatic gout*, the swelling will be found to take the exact form of the joint, or of a bursa in its neighbourhood. This affection is simple inflammation of the synovial membrane. By some pathologists it is imagined that such a disease is altogether distinct from true rheumatism, and the term *arthritis* has been applied to it. It occurs both with and without fever. It is said to differ from rheumatism in its causes, progress, and treatment, as well as in the character of its symptoms. It is this form of fibrous inflammation which occurs as a secondary effect of gonorrhœa. It is frequently confined to a single joint, as the knee or the elbow, and then commonly falls under the cognisance of the surgeon. It exhibits less tendency to shift its situation from one joint to another. Lastly, it has been observed, that the synovial or bursal rheumatism is more under the control of local remedies, especially leeches and blisters, than the more common or *diffuse* form of rheumatism. All distinctions among diseases, even the most minute, which serve to facilitate treatment, are useful. On this account the separation of arthritis from rheumatism may be considered as an improvement in pathology, but the student will remember that in all their important relations, the two affections are closely associated.

Treatment. — If an opinion were formed from the various, and even opposite modes of treatment which have been recommended in the common acute rheumatism, not upon theoretical grounds, but after ample and successful experience, it might rationally be supposed, that the disease occurs in the most opposite states of the system; but this opinion is at variance with common observation. I believe the better conclusion to be, that acute rheumatism is at all times a tedious, and rarely a dangerous disease; that a large proportion of cases would recover with very slight care; and that, in many, medical treatment is of little further service than as obviating the tendency to internal inflammation. It cannot, I think, be doubted, with regard to the power of *cutting short* the disease, that a considerable difference exists between rheumatism and common inflammation.

Three plans of treatment have been advised in the acute rheumatism. 1. The usual antiphlogistic system, consisting of blood-letting,

purgatives, saline and antimonial medicines. 2. Calomel and opium. 3. Bark.

1. The authority of Sydenham is in favour of the first; and though it is impossible to call in question the very remarkable efficacy of opium, and of calomel in combination with opium, in many cases of this disease, yet the plan of treatment which that judicious physician employed, will be found, upon the whole, the most generally efficacious. The important distinction to be kept in view between the practice in acute rheumatism and that in other inflammatory affections is, that while, in the latter, a continuance of the same symptoms calls for a repetition of the same evacuation, it does not do so in the former. To subdue rheumatic inflammation by the lancet alone (even if possible), would be to weaken the system unnecessarily; for it is to be remembered, that, in this disease, the inflammation is not in an organ essential to life. Sixteen ounces of blood may at first be taken from the arm, and repeated two days afterwards, if the pain continues urgent, and the pulse active, with much feeling of general oppression. The blood will always be found highly cupped, and buffy. The further treatment of the disease may commonly be intrusted to purgatives, calomel and opium, antimony, colchicum, and the common saline diuretics; but venesection must be again had recourse to, at any period, if symptoms of cardiac or other internal inflammation supervene.

2. The power of opium, and of calomel in combination with opium, in relieving pain, and repressing acute rheumatic inflammation, is very remarkable; and in almost all cases this medicine may be employed with advantage. Calomel in acute rheumatism is best given in full doses. It is seldom that mercury affects the salivary glands while the system is labouring under rheumatic fever.

3. Bark was introduced as a remedy in acute rheumatism, with the highest encomiums, by Dr. George Fordyce and Dr. Haygarth; but as far as my observation extends, it has not answered the expectations which might have been formed of it from the testimony of these authors. It has appeared to me to be of use only in the latter periods of the disease, when considerable pain and stiffness of the joints are frequently found to exist, but with a *natural* state of the pulse and tongue.

Regimen. — In the true acute rheumatism, local applications to the affected joints are of little service; or rather, in most cases, of no service at all. This remark applies equally to fomentations, cold lotions, rubefacient liniments, and blisters. Not so, however, is it with regard to diet. In acute rheumatism, the functions of the stomach are often little impaired; but a free indulgence of the appetite protracts the complaint, frustrates the effects of other remedies, and has certainly contributed to give to rheumatism that character of tediousness, which makes it the opprobrium of physic. Broths and jellies, animal food in every shape, as well as wine and porter, are to be prohibited; and a cool, spare, vegetable diet, strictly enforced.

Chronic rheumatism. — In the great majority of cases primary rheumatism is of the chronic kind. Indeed the very rarity of acute rheumatism is sufficient to point out that the chronic is not often the sequel of the acute form of the disease. Chronic rheumatism is characterised by pain of the joints aggravated by motion, stiffness of the joints, thickening of the several structures in their vicinity, or increased effusion into the synovial bags. It is readily distinguished from the acute rheumatism by the absence of inflammatory fever, and of redness in the affected part. To this kind of affection the term *rheumatism* is, in common language, specially appropriated.

1. Three species of true rheumatism may be distinguished. The first is that which is connected with a certain degree of obscure febrile excitement in the system, and which would be more correctly designated by the term *subacute rheumatism*. It is known by the pains occasionally shifting their situation suddenly, as in the acute form of the disease, and by their being increased by warmth, and especially, at night, by the warmth of the bed. The frequent occurrence of œdema along with the affection of the joints, may serve to distinguish this from the other species of the disease. Those joints which are surrounded by a large mass of muscular substance, and which are the most constantly exerted, are especially liable to it, such as the hip, and the joints of the lumbar vertebræ. This state of chronic rheumatism is accompanied by a white tongue, thirst, a quickened pulse, and a costive state of the bowels.

2. The second species of chronic rheumatism is marked, not by any degree of excitement in the system, but by the absence of constitutional symptoms. Hence it is not unreasonable to believe, that there may be a loss of tone in the vessels of the affected part. It is not so common as the preceding species, but it sometimes follows it. Stiffness of the joint is here the prominent symptom. *Pain*, in this form of the complaint, is often not at all felt except on motion, or on occasion of changes in the heat or moisture of the atmosphere. It is relieved rather than increased by the warmth of bed. The pain and stiffness do not shift from joint to joint. Spontaneous coldness of the limb, and even a degree of paralytic torpor, are often complained of by the patient. The pulse is seldom quick, or the tongue white.

3. The third species of chronic rheumatism is attended with permanent derangement in the structure of the joint; and it is that form of the disease which has been so ably described by Dr. Haygarth, under the title of Nodosity of the Joints. The ends of the bones, the periosteum, and ligaments, become thickened; and nodes form upon them, often to such an extent as to distort the joint in the most unsightly manner. This form of rheumatism chiefly affects the fingers, but I have seen it also in the knees and ancles. It is principally met with in women, after they have passed the period of menstruation. It is attended with pain of the joint, particularly severe at night.

Causes and seats. — The usual causes of chronic rheumatism are exposure to cold and

moisture, or to partial currents of air, and local injuries, such as strains and bruises. It is also one of the common effects of the syphilitic poison, and of mercury. The structures affected in chronic rheumatism are those called by Bichat *fibrous: viz.* the periosteum in every part of its extent, the tendons and tendinous sheaths of muscles, the ligaments around the joints, the investing membranes of the nerves and of the teeth, and not unfrequently the substance of muscle itself. The sclerotic coat of the eye, which has a dense structure of an analogous kind, is subject also to a species of *rheumatic* inflammation. To distinguish this affection is by no means easy; nor is this the only instance in which chronic rheumatism has given occasion to difficulties in diagnosis. Lumbago has been mistaken for nephralgia or lumbar abscess; rheumatism of the intercostal muscles for pleurisy; and sciatica for ulceration within the cavity of the acetabulum.

Prognosis. — The obstinacy of chronic rheumatism is proverbial, but being a disease that affects only the exterior of the frame, it may continue for years, without material injury to the general health. Under good management many cases may be cured; and life, under all circumstances, rendered at least more comfortable.

Treatment. — No general rules of much importance can be laid down for the guidance of the student in the treatment of chronic rheumatism. Attention must always be paid to the state of the constitution; and the remedies, both internal and external, varied according to the greater or less degree of feverish excitement present. The number of cures for the rheumatism, both popular and scientific, is so great, that it is difficult for a student to believe that any case can occur, for which some appropriate remedy may not be found. Instead, however, of a bare enumeration of the several plans that have been tried, and occasionally found useful in chronic rheumatism, it may be advisable to attempt, at least, to point out a few *principles* that may prove of general application.

1. In some of the forms of subacute rheumatism, particularly lumbago and sciatica, *the local abstraction of blood* by cupping will be productive of great benefit. Where the pains are very severe, it may be even necessary to take blood from the arm, which in this state of disease will always be found cupped and buffy. Leeches are well adapted to those cases of *arthritic* rheumatism, where there is pain and swelling of a joint from distension of the synovial membrane. Dr. Haygarth recommends their application where an enlargement of the extremities of the bones has taken place.

2. The cure of chronic rheumatism may occasionally be effected by promoting *diaphoresis.* This mode of treatment is adapted to those cases where there exists some degree of febrile excitement, where the pains are of recent date, and shift from one joint to another. The warm bath may be directed twice in the week (provided the pulse be perfectly free from all activity), and the following diaphoretic draught given repeatedly during the day: —

℞ Misturæ camphoræ, ʒ vj.
Liquoris ammoniæ acetatis, ʒ iij.
Pulveris ipecac. compos. gr. vj.
Pulveris acaciæ, gr. iv.
Syrupi, ʒ j. Misce.
Fiat haustus sextis horis sumendus.

It is unnecessary to add, that neither in this, nor in any other form of chronic rheumatism, can any thing be hoped for without proper attention to clothing, and, above all, the use of flannel as an under dress. In the same description of cases which are benefited by diaphoretics, the vinum colchici may be given with great advantage. Where there is any considerable degree of effusion, either within the capsular ligaments or the bursæ, or where the cellular membrane in the neighbourhood of the joint is œdematous, a draught of the following kind will be found useful: —

℞ Aquæ menthæ piperitæ, ʒ vij.
Liquoris ammoniæ acetatis, ʒ ij.
Vini colchici, ♏ xv.
Syrupi tolutani, ʒ j. Misce.
Fiat haustus ter in die sumendus.

Where the colchicum irritates the bowels, it should be omitted, and a common saline effervescing draught substituted.

3. Great benefit is experienced in all forms of chronic rheumatism by strict attention to the bowels. In some cases the daily use of an enema will be found to supersede the necessity of aperient medicine. Where this is insufficient, a mild aperient draught should be directed twice, or even three times during the week: —

℞ Infusi rhei, ʒ x.
Magnesiæ sulphatis, ʒ ij.
Tincturæ sennæ,
——— cardam. compos. *sing.* ʒ j.
Sacchari albi, ʒ j. Misce.
Fiat haustus, pro re natâ sumendus.

A more active purgative, containing calomel and antimony, may be given, should the symptoms of feverish excitement (from cold or any other accidental cause) be unexpectedly renewed.

4. Where great torpor and debility of the general system prevail, stimulant and tonic medicines of different kinds have been administered with advantage, the principal of which are gum guaiacum and the volatile alkali (or their combination, the volatile tincture of guaiacum), the oil of turpentine, the balsam of Peru, and mezereon. Bark, both in the form of decoction and powder, unquestionably possesses considerable power over certain forms of chronic rheumatism attended with general torpor; and arsenic has proved successful, even when the *structures* about the joints had become partially disorganised. The good effects of all these remedies will be considerably aided by the diligent use of stimulating embrocations (such as the compound camphor or soap liniment), friction alone appearing to be a powerful means of exciting the languid action of the vessels.

The following formula is strongly recommended by Dr. Bardsley: —

℞ Linimenti saponis compositi, ℥ ij.
Liquoris ammoniæ,
Tincturæ cantharidis,
——— opii, *sing.* ℥ ij. Misce.
Fiat linimentum.

In all cases of chronic rheumatism of long standing, permanent stiffness of the joint is chiefly to be dreaded, to which nothing contributes so much as neglect of the due exercise of the joint. Exercise, therefore, should always be strongly recommended to a rheumatic patient. In a few cases, where torpor and stiffness predominate, the introduction of needles into the skin and subjacent cellular membrane, has proved serviceable. This practice is called acupuncturation.

5. Mercury, pushed so as to affect the mouth, is very effectual in the cure of rheumatic affections of a chronic nature. It appears to operate as a general *stimulant*. The best mode of administration is five grains of Plummer's pill (pilula submur. hydrarg. compos.), taken every night at bed-time. In many of these cases it has been supposed, that a syphilitic taint may have existed in the constitution, and kept up the disease; but very frequently there is no foundation for such a suspicion. Where rheumatic pains can be traced to cold while the system was under the influence of mercury, decoctions of sarsaparilla, guaiacum, and elm bark, or the powder of sarsaparilla, carefully prepared, in doses of two drachms three times a day, may be given with a reasonable prospect of advantage. The sarsaparilla should be continued, in full doses, for five or six weeks.

6. No one remedy, perhaps, is of such general application in the treatment of chronic rheumatism as warm bathing, general and topical. In that severe form of the disease, which has been called nodosity of the joints, scarcely anything else can be relied on to soothe the pain, and relax the rigid fibres. The efficacy of the waters of Bath and Buxton, even in very obstinate cases, is generally acknowledged. They are applicable, however, only in that species of rheumatism which is unattended by inflammatory excitement. The vapour bath is a remedy of very decided efficacy, when there is effusion into the joints of long standing, which the usual antiphlogistic measures have failed to reduce.

7. In all cases of chronic rheumatism, *pain* is, if possible, to be relieved; and, generally, opium will be found the only effectual resource. The best forms of administering opium in this disease are Dover's powder (pulv. ipecac. compos.), in the dose of ten grains every night at bed-time; or the liquor opii sedativus in combination with antimonial wine, and in doses sufficient to lull pain and procure sleep. The headach and costiveness which opium occasions, and which constitute the great bar to its employment, must be obviated, as far as possible, by the use of enemata, or the aperient formerly recommended. Where opium in every form disagrees with the system, the extracts of conium, or hyoscyamus, may be substituted; but the relief they afford is very trifling.

There are three forms of chronic rheumatism which have acquired specific denominations. They are sciatica, lumbago, and pleurodyne. A few observations upon the peculiarities, which have entitled them to such a distinction, may not be out of place.

Sciatica. — This is rheumatism of the cellular envelope of the great sciatic nerve. It is characterised by an excruciating pain, extending from the loins down the back part of the thigh, particularly urgent during the night, and totally preventing sleep. When occurring in its utmost intensity, sciatica is accompanied with high irritative fever, a hard pulse, and deeply loaded tongue. It occurs in all habits, but chiefly in the robust. It can be traced in almost all cases to the combined influence of cold and moisture. Cupping, blistering, and active purgatives long and steadily continued, are required for its cure. A pill, containing three grains of calomel and one of opium, should also be given every night at bed-time, until the system has been brought under the influence of mercury. In obstinate cases an issue should be directed. The application of the *moxa* has occasionally given relief; and, as a last resource, is certainly worthy of a trial.

Lumbago and pleurodyne. — Lumbago is the rheumatism of the lumbar vertebræ, or rather of the large masses of muscular substance attached to them, and serving for the support of the body. It is distinguished from nephritis by the aggravation of pain on stooping. It is a less violent form of ailment than the preceding, and yields, for the most part, to strong stimulating embrocations, a blister, active aperients, and Dover's powder, in full doses, taken at bed-time.

Rheumatism of the thoracic parietes is called pleurodyne, or bastard pleurisy. It is to be distinguished from true pleurisy by the character of the pulse, and the absence of constitutional derangement. It is a very transient form of rheumatism, best combated by the warm bath, and frictions with anodyne liniments. — *Gregory.*

Rheu'mic acid. (*Acidum rheumicum. Rheumicus;* from rheum, from which it is obtained.) An acid found by Mr. J. Henderson in rhubarb, and thought by him to be peculiar; but, according to Lassaignes, it is merely oxalic acid.

Rhinæ'us. (*us, i.* m.; from ῥὶν, the nose.) See *Compressor naris.*

Rhine'nchytes. (From ῥὶν, the nose, and εγχυω, to pour in.) A syringe for the nose.

Rhinopho'nia. (*a, æ.* f.; from ῥὶν, the nose, and φωνη, the voice.) Nasal voice.

Rhizagra. (From ῥίζα, a root, and αγρευω, to seize.) An instrument for taking out the roots or stumps of teeth.

RHIZO'PHORA. (*a, æ.* f.; from ῥίζα, a root, and φερω, to bear or carry.) The name of a genus of a plants. Class, *Dodecandria*; Order, *Monogynia.*

Rhizophora gymnorhi'za. The mangrove tree, the juice of the root of which is applied in the East to the bites of serpents.

Rhodia. See *Rhodiola.*

RHODI'OLA. (*a, æ.* f.; a diminutive of *rhodia*; from *ῥοδον*, a rose: so called because its root smells like the damask rose.) The name of a genus of plants. Class, *Dioecia*; Order, *Octandria*.

RHODIOLA ROSEA. Rosewort. The *radix rhodiæ* of some pharmacopœias is the produce of this plant. When dry, it has a very pleasant smell, resembling that of the damask rose. In this odorous matter the medical virtue of the root resides. Poultices in which this root enters as a chief ingredient, are said to allay violent pains of the head.

RHO'DIUM. (*um, ii.* n.; from *ῥοδον*, a rose.) A metal found by Dr. Wollaston among the grains of crude platina, and so named on account of the rose colour of some of its compounds. Neither this metal, nor any of its combinations, have yet been used medicinally.

Rhodium lignum. See *Rosewood.*

RHODODE'NDRON. (*on, i.* n.; from *ῥοδον*, a rose, and *δενδρον*, a tree: so called because its flowers resemble the rose.) The name of a genus of plants in the Linnæan system. Class, *Decandria*; Order *Monogynia.*

RHODODENDRON CHRYSANTHUM. The yellow rhododendron. This species of rhododendron, — *foliis oblongis impunctis supra scabris venosissimis, corolla rotata irregulari gemma florifera ferrugineo-tomentosa*, — has not yet been introduced in Britain; it is a native of Siberia, affecting mountainous situations, and flowering in June and July.

This plant and its medical virtues were first described, in 1747, by Gmelin and Haller. Little attention, however, was paid to it till the year 1779, when it was strongly recommended by Koelpin as an efficacious medicine, not only in rheumatism and gout, but even in venereal cases; and it is now very generally employed in chronic rheumatisms, in various parts of Europe. The leaves, which are the part directed for medicinal use, have a bitterish subastringent taste. Taken in a large dose, they prove a narcotic poison; and in moderate doses, they are said to occasion heat, thirst, a degree of delirium, and a peculiar sensation of the parts affected.

As a powerful and active medicine, this shrub, says Dr. Woodville, may probably be found an addition to the materia medica. Dr. Home, who tried it unsuccessfully in some cases of acute rheumatism, says, "It appears to be one of the most powerful sedatives which we have, for in most of the trials, it made the pulse remarkably slow, and in one patient reduced it to thirty-eight beats. And in other cases, in which the rhododendron has been used at Edinburgh, it has been productive of good effects, and accordingly it is now introduced into the Edinburgh Pharmacopœia. The manner of using this plant by the Siberians, was by putting two drachms of the dried leaves in an earthen pot, with about ten ounces of boiling water, keeping it near a boiling heat for a night; and this they took in the morning, and, by repeating it three or four times, generally effected a cure.

RHODO'MELI. (From *ῥοδον*, the rose, and *μελι*, honey.) Honey of roses.

RHŒA'DEÆ. (From *rhœas*, the red poppy.) The name of an order in Linnæus's Fragments of a Natural Method, consisting of poppy and similar plants, the calyx of which is caducous, and the fruit a capsule.

RHŒ'AS. (*as, ados.* m.; from *ῥεω*, to flow.) See *Papaver rhœas.*

RHOMBOIDE'US. (From *ῥομβος*, the rhomb, a geometrical figure, and *ειδος*, resemblance.) 1. In *Anatomy*, the name of a muscle of the scapula. *Rhomboideus major* and *minor. Rhomboideus* of Douglas, Winslow, and Cowper. This muscle, which is so named from its shape, is situated immediately under the trapezius. We find it usually, though not always, divided into two portions, which Albinus describes as two distinct muscles. The uppermost of these, or *Rhomboideus minor*, arises tendinous from the spinous processes of the three inferior vertebræ of the neck, and from the ligamentum colli; the lowermost, or *rhomboideus major*, arises tendinous from the spinous processes of the back: the former is inserted into the basis of the scapula, opposite to its spine; the latter into all the basis of the scapula below its spine. Its use is to draw the scapula obliquely upwards, and directly backwards.

2. In *Botany*, applied to leaves, &c. the shape of which is rhomboidal, or nearly diamond-shaped, but broader one way than the other.

RHO'NCHUS. (*us, i.* m. *Ῥογχος, rhonchus, stertor.*) A rattling or wheezing sound. The term is applied in auscultation to any preternatural sound accompanying respiration, occasioned either by the passage of the air through fluids obstructing the bronchia or air cells, or by constriction of the bronchial tubes. It is also called *rattle* — râle of the French writers.

There are five species of rattle or rhoncus.

1. The *crepitous.* — This is produced by the successive bursting of minute bubbles of an uniform size, and resembles in sound the decrepitation of salt over a gentle fire. It takes place when the air cells are filled with blood, or some fluid of similar consistence; hence, it is observed in the first degree of pneumonia, in œdema of the lungs, and in the state called *engouement.*

2. The *mucous.* — This is similar to the sound heard in the windpipe of dying persons, vulgarly known by the name of *dead rattles.* It is produced by the passage of air through a liquid of some tenacity forming bubbles, varying in size and number; hence, the sound of the mucous rattle varies considerably, according to circumstances. It occurs when the bronchia are obstructed with blood, mucus, pus, or a mixture of these. Hence it is met with in bronchitis, hæmoptysis, phthisis, and pneumonia. When the mucous rattle occurs in an excavation of the lungs, arising from an abscess or any other cause, the sound is augmented, and it is called *cavernous rattle.*

3. The *sonorous.* — This is a sound which, when slight, resembles the cooing of a dove, but when stronger, is not unlike the sound of snoring. It arises from narrowing of the bronchial tubes. It is heard in bronchitis.

4. The *sibilant*. — This has a great variety of sound: sometimes it resembles a slight chirping, or the clicking of a small valve, at others, it is like whistling, more or less sharp or grave. It arises from narrowing of the smaller bronchial tubes, or from their obstruction by very viscid mucus. It is therefore heard in bronchitis.

5. The *crackling*. — This resembles the sound caused by the inflation of a dry bladder. It is heard only during inspiration, and arises from the penetration of air into dry and unequally diluted cells. It is heard in pulmonary emphysema.

The different rattles above described are heard during coughing as well as breathing, and are generally more distinct.

Rhopalo'sis. (*is, is.* f.; from ῥοπαλον, a club.) A disorder in which the hair cleaves together, and hangs down in clusters resembling clubs. See *Plica*.

Rhubarb. See *Rheum*.

Rhubarb, monk's. See *Rumex patientia*.

Rhubarb, rhapontic. See *Rheum*.

RHUS. (*us, i.* f. and m.; from ῥεω, to flow: so called because it stops fluxes.) The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Trigynia*. The sumach-tree.

Rhus Belgica. See *Myrica gale*.

Rhus coriaria. Sumach. Elm-leaved sumach. This plant, *Rhus coriaria — foliis pinnatis obtusiuscule serratis ovalibus subtus villosis*, of Linnæus, is a small tree, a native of the south of Europe. It is singular that this is the only species of the genus rhus which is perfectly innocent; the others being active poisons. Both the leaves and berries of this plant are used medicinally, as astringents and tonics; the former are the most powerful, and have been long in common use, where they may be easily obtained, in various complaints, indicating this class of remedies. The berries, which are red, and of a roundish compressed figure, contain a pulpy matter, in which is lodged a brown, hard, oval seed, manifesting a considerable degree of astringency. The pulp, even when dry, is grateful, and has been discovered to contain an essential salt, similar to that of wood sorrel. An infusion of the dried fruit is not rendered black by a solution of iron: hence it appears to be destitute of astringency. But its acidity is extremely grateful; therefore, like many other fruits, these berries may be advantageously taken to allay febrile heat, and to correct bilious putrescency.

Rhus radicans. See *Rhus vernix*.

Rhus typhinum. The systematic name of the Virginian sumach, the seeds of which are said to be useful in stopping hæmorrhages.

Rhus toxicodendron. Poison oak, or sumach. This plant is a native of North America. The stems, when cut, exude a milky juice, which inflames the skin. The leaves, now inserted in the Pharmacopœia, are inodorous, and have a mawkish subacrid taste. Their virtues are extracted more perfectly by water than by alkohol. They prove stimulant and narcotic, when taken internally. Dr. Alderson, of Hull, found them successful in several cases of paralysis. They excite a sense of heat and pricking, and irregular twitches in the affected limbs. They have been sometimes useful, also, in herpetic eruptions. The dose may be from half a grain, gradually increased to four grains, two or three times a day.

Rhus vernix. *Rhus radicans*. The systematic name of a poisonous plant, the efficacy of which M. Fresnoy has endeavoured to prove in the disease called paralysis, and herpetic affections. He, in order that others should not suffer by his experiments, began by taking an infusion of one of the three foliola of which each leaf of this plant consists; and as this dose produced no sensible effect, he increased the number to twelve. His urine and perspiration were increased in quantity; and he had some pains in his belly. He relates seven cases, in which he thinks he can remove all doubt of the efficacy of this infusion in herpetic affections.

RHY'AS. (*as, adis.* f. Ῥυας.) A disease of the eye, consisting in a decrease or defect of the lachrymal caruncle. The defect may be congenital, or it may originate from excision, erosion, or acrimony. This disorder is commonly incurable, and it induces an incurable *epiphora*, or a continual weeping.

Rhytido'sis. Ῥυτιδωσις. Corrugation of any part. Atrophy or shrivelling up of the eye-ball.

Rib. See *Costa*.

Ribbed. See *Nervosus*.

RI'BES. (*es, is.* n.; an Arabic name properly belonging to an acid-leaved species of rheum; but which botanists, for about 200 years past, have by mistake applied to the currant and gooseberry family, and with these it now remains.) The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Monogynia*. The currant-tree.

Ribes nigrum. Black currant. This indigenous plant, *Ribes nigrum — racemis pilosis floribus oblongis*, of Linnæus, affords larger berries than those of the red, which are said to be peculiarly useful in sore throats, and to possess a diuretic power in a very considerable degree. The leaves of the black currant are extremely fragrant, and have been likewise recommended for their medicinal virtue, which Bergius states to be mundificans, pellens diuretica. The officinal preparations of the berries are, the *syrupus ribis nigri*, and the *succus ribis nigri inspissatus*.

Ribes rubrum. The red currant. *Grossularea non spinosa*. *Ribes rubrum — inerme; racemis glabris pendulis, floribus planiusculis*, of Linnæus. The white-currant tree is merely a variety of the red; the fruit of both is perfectly analogous: therefore, what is said of the one applies to the other. The red currant is abundantly cultivated in gardens; and, from its grateful acidity, is universally acceptable, either as nature presents it, or variously prepared by art, with the addition of sugar. Considered medicinally, it is esteemed to be moderately refrigerant, antiseptic, attenuant, and aperient. It may be used with considerable advantage to allay thirst in most febrile complaints, to lessen an increased secretion of bile, and to correct a putrid and scorbutic state of the fluids, especially

in sanguine temperaments; but, in constitutions of a contrary kind, it is apt to occasion flatulency and indigestion.

Ribless. See *Enervis.*

Ribwort. See *Plantago lanceolata.*

Rice. See *Oryza.*

RI'CINUS. (*us, i.* m.; said to be so called from the resemblance of its seeds to the vermin called a tick *ricinus.*) 1. The name of a genus of plants in the Linnæan system. Class, *Monœcia;* Order, *Monadelphia.*

2. The pharmacopœial name of the plant that affords the seed from which the castor-oil is prepared.

RICINUS COMMUNIS. The systematic name of the castor-oil plant. *Cataputia major. Kerva. Ricinus vulgaris. Palma christi. Ricinus communis—foliis peltatis subpalmatis serratis,* of Linnæus. This plant appears to be the Κικι, or Κροτων, of Dioscorides, who observes, that the seeds are powerfully cathartic: it is also mentioned by Aëtius, Paulus Ægineta, and Pliny. The ricinus was first cultivated in England, in the time of Turner, and is now annually reared in many gardens in the neighbourhood of London; and in that of Dr. Saunders, at Highbury, the plant grew to a state of great perfection. An oil extracted from the seeds of this plant, and known by the name of oleum ricini, palma christi, or castor oil, is the drug to which the pharmacopœias refer, and which has lately come into frequent use, as a quick but gentle purgative. The London College directs this oil to be expressed from the seeds in the same way as the oil from almonds, and without the assistance of heat, by which the oil would seem to be obtained in the purest state. However, we have some reason to believe that this method is seldom practised, and that the oil usually employed here is imported from the West Indies, where it is commonly prepared in the following manner:—"The seeds being freed from the husks, or pods, which are gathered upon their turning brown, and when beginning to burst open, are first bruised in a mortar, afterwards tied up in a linen bag, and then thrown into a large pot, with a sufficient quantity of water (about eight gallons to one gallon of the seeds), and boiled till the oil is risen to the surface, when it is carefully skimmed off, strained, and kept for use. Thus prepared, the oil is entirely free from acrimony, and will stay upon the stomach when it rejects all other medicines." Mr. Long remarks, that the oil intended for medicinal use, is more frequently cold drawn, or extracted from the bruised seeds by means of a hand-press. But this is thought more acrimonious than that prepared by coction. Dr. Brown is also of this opinion, and prefers the oil prepared by coction to that by expression. He attributes its greater mildness to the action of the fire; observing that the expressed oil, as well as the mixed juices of the seeds, are far more active and violent in their operation.

Dr. Cullen observes, that "this oil, when the stomach can be reconciled to it, is one of the most agreeable purgatives we can employ. It has this particular advantage, that it operates sooner after its exhibition than any other purgative I know of, as it commonly operates in two or three hours. It seldom gives any griping, and its operation is generally moderate, producing one, two, or three stools only. It is particularly suited to cases of costiveness, and even to cases of spasmodic colic.

In the West Indies, it is found to be one of the most certain remedies in the dry belly-ach, or colica pictonum. It is seldom found heating or irritating to the rectum; and, therefore, is sufficiently well suited to hæmorrhoidal persons.

The only inconvenience attending the use of this medicine is, that, as an oil, it is nauseous to some persons; and that, when the dose is large, it occasions sickness at the stomach for some time after it is taken. To obviate these inconveniences, several means have been tried; and it is found that the most effectual means is the addition of a little ardent spirit. In the West Indies, they employ rum; but that I might not withdraw any part of the purgative, I employ the *Tinct. sennæ comp.* This, added in the proportion of one to three parts of the oil, and very intimately mixed, by being shaken together in a phial, both makes the oil less nauseous to the taste, and makes it sit more easy on the stomach. The common dose of this oil is a table-spoonful, or half an ounce; but many persons require a double quantity."

Castor-oil possesses the general properties of the fixed vegetable oils, except that it is heavier than most of them. MM. Busy and Lecanu have obtained from it three distinct acids, the *ricinic, elaiodic,* and *margaritic.* The seeds of this plant are a drastic cathartic, though the expressed oil is so mild in its operation.

Ricinus major. See *Jatropha curcas.*

Ricinus vulgaris. See *Ricinus.*

Rickets. See *Rachitis.*

RI'CTUS. (*us, ûs.* m.; from *ringo,* to grin.) The grinning mouth or opening between the two lips of a ringent or personate flower.

RIGID. *Rigidus.* Hard, with some degree of brittleness. In *Botany,* it means inflexible, not easily bending: opposed to limber and flexible.

RI'GOR. (*or, oris.* m.; from *ῥιγεω,* to shiver.) A sudden coldness, attended by a shivering, more or less perfect,—a symptom which ushers in many diseases, especially fevers and acute inflammation of internal parts: it also is produced by nervous complaints, and by some operations, as passing a bougie, &c. &c.

RI'MA. (*a, æ.* f.) A fissure or opening.

RIMA GLO'TTIDIS. The opening of the larynx, through which the air passes in respiration.

RIMO'SUS. Full of cracks.

RI'MULA. (*a, æ.* f.; diminutive of *rima,* a fissure.) A small fissure.

Rinæus. See *Rhinæus.*

Ring. See *Annulus.*

Ring-worm. See *Porrigo.*

RI'NGENT. *Ringens.* Gaping: applied to flowers or their corollæ, which are irregular and gaping, like the mouth of an animal; as those of the nettle, &c.

A ringent flower is also called lipped or labiate by some botanists.

Risagon. See *Cassumuniar.*

Risigallum. An old name of orpiment.

RI'SUS. (*us, ûs.* m.) Laughter.

Risus caninus. See *Spasmus cynicus.*

Risus sardonicus. *Sardonic laugh. Sardiasis.* A kind of convulsive grin observed chiefly in cases of tetanus and inflammation of the diaphragm. It gives a peculiarly horrible aspect to the countenance. It is named *sardonicus* because it was said to have been produced by eating of a species of ranunculus which grew round certain fountains in Sardinia.

ROASTING. A chemical process, generally performed in crucibles, by which mineral substances are divided, some of their principles being volatilised, and others changed, so as to prepare them for other operations.

ROB. (*Rob*, dense. Arabic.) An old term for an inspissated juice.

Rob antisyphilitique. A French medicine, which consists of a rob or syrup, made of the *arundo phragmites*, sarsaparilla, and aniseed, with the addition of corrosive sublimate.

RO'BORANT. (*Roborans*; from *roboro*, to strengthen.) Synonymous with *corroborant.*

Roccella. See *Lichen roccella.*

Roch alum. Sometimes improperly called *rock* alum. See *Alum.*

Roche's embrocation. A celebrated nostrum for the hooping-cough. It consists of olive oil, mixed with about half its quantity of the oils of cloves and amber.

Rochelle salt. See *Soda tartarisata.*

Rockambole. The *Allium scorodoprasum*, of Linnæus. The root is used for pickles and high-seasoned dishes.

Rock-oil. See *Petroleum.*

Rock-samphire. See *Crithmum.*

Rocket. See *Brassica eruca.*

Rocket, Roman. See *Brassica eruca.*

Rocket, wild. See *Brassica erucastrum.*

Rod-shaped. See *Virgatus.*

ROLLER. A long narrow bandage in common use with surgeons.

Rorella. See *Drosera rotundifolia.*

ROS. (*os, oris.* m.; from the Hebrew.) Dew.

Ros calabrinus. The officinal manna is sometimes so termed.

Ros marinus. See *Rosmarinus.*

Ros solis. See *Drosera rotundifolia.*

RO'SA. (*a, æ.* f.; an ancient and popular name, derived, most probably, from the Celtic, *ros*, or *rhos*; whence comes, also, its Greek synonym ῥοδον, and the name of the same flower in various languages, *rosa, rose*, &c.) 1. The name of a genus of plants in the Linnæan system. Class, *Icosandria*; Order, *Polygynia.* The rose.

2. A name sometimes given to the erysipelas, because it begins with a redness like that of a rose.

Rosa alba. The white rose. The flowers of this species possess similar, but inferior virtues to those of the damask.

Rosa canina. The dog-rose, or wild brier, or hip-tree. *Rosa sylvestris. Cynorrhodon. Cynosbatos. Cynocyticis. Rosa canina — germinibus ovatis pedunculisque glabris, caule petiolisque aculeatis*, of Linnæus. The fruit of this tree, called heps, or hips, has a sourish taste, and obtains a place in the London Pharmacopœia, in the form of conserve. It is seldom employed but to give form to more active remedies, in pills, boluses, linctuses, &c.

Rosa centifolia. The pharmacopœial and systematic name of the damask rose. *Rosa damascena. Rosa pallida.* The pharmacopœias direct a syrup to be prepared from the petals of this rose, *Rosa centifolia — germinibus ovatis pedunculisque hispidis, caule hispido aculeato petiolis inermibus*, of Linnæus; which is found to be a pleasant and useful laxative for children, or to obviate costiveness in adults. Most of the roses, though much cultivated in our gardens, are far from being distinctly characterised. Those denominated varieties are extremely numerous, and often permanently uniform; and the specific differences, as hitherto pointed out, are, in many respects, so inadequate to the purpose of satisfactory discrimination, that it becomes a difficult matter to distinguish which are species and which are varieties only. The damask rose seems to be another species, widely different from the centifolia, as appears from the description given of it by Du Roi and Miller.

The petals are directed for medicinal use: they are of a pale red colour, and of a very fragrant odour, which, to most people, is extremely agreeable; and therefore this, and most of the other roses, are much used as nosegays. We may remark, however, that, in some instances, they have, under certain circumstances, produced alarming symptoms. The petals impart their odorous matter to watery liquors, both by infusion and distillation. Six pounds of fresh roses impregnate, by distillation, a gallon or more of water strongly with their fine flavour. On distilling large quantities, there separates from the watery fluid a small portion of a fragrant butyraceous oil, which liquefies by heat, and appears yellow, but concretes in the cold into a white mass. A hundred pounds of the flowers, according to the experiments of Tachenius and Hoffmann, afforded scarcely half an ounce of oil. The smell of the oil exactly resembles that of roses, and is therefore much used as a perfume. It possesses very little pungency, and has been highly recommended for its cordial and analeptic qualities. These flowers also contain a bitterish substance, which is extracted by water along with the odorous principle, and remains entire in the decoction after the latter has been separated by distillation or evaporation.

This fixed sapid matter of the petals manifests a purgative quality; and it is on this account that the flowers are received in the Materia Medica.

Rosa damascena. See *Rosa centifolia.*

Rosa gallica. The pharmacopœial and systematic name of the red rose. *Rosa rubra.* The flowers of this species, *Rosa gallica — germinibus ovatis pedunculisque hispidis, caule petiolisque hispido aculeatis*, of Linnæus, are valued for their astringent qualities, which are most considerable before the petals expand; and therefore, in this state they are chosen for me-

licinal use, and ordered by the pharmacopœias n different preparations, as those of a conserve, r confection, a honey, an infusion, and a syrup. The infusion of roses is a grateful, cooling subastringent, and useful in hæmoptysis, and other æmorrhagic complaints: its efficacy, however, depends chiefly on the sulphuric acid added.

Rosa pallida. See *Rosa centifolia.*

Rosa rubra. See *Rosa gallica.*

Rosa sylvestris. See *Rosa canina.*

ROSA'CEÆ. A natural family of plants, of which the rose is the type.

ROSA'CEUS. Rose-like. 1. Applied to corolla which spread like a rose; as those of the Dryas.

2. The term *gutta rosacea* is applied to little rosy-coloured spots upon the face and nose.

ROSACIC ACID. *Acidum rosacicum.* There is deposited from the urine of persons labouring under gout and inflammatory fevers a sediment of a rose colour, occasionally in reddish crystals. This was first discovered to be a peculiar acid by M. Proust, and afterwards examined by M. Vauquelin. This acid is solid, of a lively cinnabar hue, without smell, with a faint taste, but reddening litmus very sensibly. On burning coal it is decomposed into a pungent vapour, which has not the odour of burning animal matter. It is very soluble in water, and it even softens in the air. It is soluble in alkohol. It forms soluble salts with potash, soda, ammonia, barytes, strontites, and lime. It gives a slight rose-coloured precipitate with acetate of lead. It also combines with lithic acid, forming so intimate a union, that the lithic acid, in precipitating from urine, carries the other, though deliquescent substance, down along with it. It is obtained pure by acting on the sediment of urine with alkohol.

ROSA'LIA. (*a, æ.* f.) A name which seems to have been applied both to measles and scarlatina.

Rose. See *Rosa.*

Rose, Christmas. See *Helleborus niger.*

Rose, damask. See *Rosa centifolia.*

Rose, dog. See *Rosa canina.*

Rose, red. See *Rosa gallica.*

Rose, white. See *Rosa alba.*

Rose-root. See *Rhodiola.*

Rosea radix. See *Rhodiola.*

Rosebay willow-herb. See *Epilobium angustifolium.*

Rosemary. See *Rosmarinus.*

ROSE'OLA. (*a, æ.* f.; from *rosa*, a rose: so called from the colour of the rash.) A rose-coloured efflorescence, variously figured, without wheals, or papulæ, and not contagious. It is mostly symptomatic, occurring in connection with different febrile complaints, and requiring no deviation from the treatment respectively adapted to them.

Its principal varieties are comprised under the seven following heads: —

1. The *Roseola æstiva* appears first on the face and neck, and in the course of a day or two is distributed over the whole body, producing a considerable degree of itching and tingling. It is distributed into separate small patches, of various figure, but larger and more irregular forms than in the measles. It is at first red, but soon assumes its deep roseate hue. The fauces are tinged with the same colour, and a slight roughness of the tonsils is felt in swallowing.

The rash continues vivid through the second day; after which it declines in brightness, slight specks only remaining of a dark hue on the fourth day; which, with the constitutional affection, wholly disappear on the fifth.

The efflorescence sometimes is partial, extending only over portions of the face, neck, and upper part of the breast and shoulders, in patches, slightly elevated, and itching considerably; but in this form the disease continues a week or longer, the rash appearing and disappearing several times; sometimes from taking warm liquors, and sometimes without any apparent cause. The retrocession is usually accompanied with disorder of the stomach, headach, and faintness, which are immediately relieved on its appearance. It commonly occurs in females of irritable constitution in summer. Light diets and acidulated drinks, with occasional laxatives, palliate the symptoms.

2. The *Roseola autumnalis* occurs in children in the autumn, in distinct circular or oval patches, which gradually increase to the size of a shilling, and are of a dark damask rose hue. It appears chiefly on the arms, sometimes desquamating, and its decline seems to be expedited by the internal use of sulphuric acid.

3. The *Roseola annulata* occurs on almost every part of the body, in rose-coloured rings, with central areas of the usual colour of the skin. When accompanied with fever, its duration is short: at other times, without any constitutional disorder, it continues for a considerable and uncertain period. The rings are, at first, from a line to two lines in diameter, but, gradually dilating, leave a larger central space, sometimes of the diameter of half an inch. The efflorescence is less vivid (and in the chronic form usually fades) in the morning, but increases in the evening or night, and produces a heat and itching in the skin. When it becomes very faint in colour for several days, the stomach is disordered, and languor, giddiness, and pains of the limbs ensue, which are relieved by the use of the warm bath.

Sea-bathing and the mineral acids afford much relief in the chronic forms of this rash.

4. *Roseola infantilis* is a closer rash, occurring in infants during the irritation of dentition, of disordered bowels, and in fevers. It is very irregular in its appearances, sometimes continuing only for a night, sometimes appearing and disappearing for several successive days, with violent disorder, and sometimes arising in single patches in different parts of the body successively. It is alleviated by the remedies adapted to relieve bowel complaints, painful dentition, and other febrile affections with which it is connected.

5. *Roseola variolosa* occurs previously to the eruption both of the natural and inoculated small-pox, but seldom before the former. It appears in the inoculated disease, on the second

day of the eruptive fever, which is generally the ninth or tenth after inoculation. It is first seen on the arms, breast, and face; and on the following day it extends over the trunk and extremities.

Sometimes it is distributed in oblong irregular patches, sometimes diffused with numerous interstices, and sometimes it forms an almost continuous redness over the whole body, being in some parts slightly elevated. It continues about three days; on the second or last of which the variolous pustules may be distinguished, in the general redness, by their rounded elevation, hardness, and whiteness of their tops.

6. *Roseola vaccina* appears generally in a congeries of dots and small patches, but sometimes diffuse, like the former; it takes place on the ninth or tenth day after vaccination, at the place of inoculation, and at the same time with the areola that is formed round the vesicle, from whence it spreads irregularly over the whole surface of the body.

It is usually attended with a very quick pulse, white tongue, and great restlessness.

7. *Roseola miliaris* often accompanies an eruption of miliary vesicles after fever. It is sometimes connected with attacks of the gout, and of the febrile rheumatism, accompanied with considerable fever, extreme languor and depression of spirits, total loss of appetite, and torpid bowels, and terminates on the seventh day by desquamation.

RO'SEUS. (From *rosa*, the rose.) Of a rose-red colour. See *Colour*.

Rosewood. A beautiful wood well known in commerce. It is said by Don to be the produce of the *Physocalymnia floribunda*. The powder has been used as an errhine.

Rosewort. See *Rhodiola*.

Rosin. See *Resina*.

ROSMARI'NUS. (*us*, *i.* m. No probable derivation has been given of this word.) 1. The name of a genus of plants in the Linnæan system. Class, *Diandria*; Order, *Monogynia*.

2. The pharmacopœial name of the common rosemary. See *Rosmarinus officinalis*.

Rosmarinus hortensis. See *Rosmarinus officinalis*.

Rosmarinus officinalis. The systematic name of the common rosemary. *Rosmarinus hortensis. Libanotis coronaria. Dendrolibanus.* The leaves and tops of this plant have a fragrant aromatic smell, and a bitterish pungent taste. Rosemary is reckoned one of the most powerful of those plants which stimulate and corroborate the nervous system; it has therefore been recommended in various affections supposed to proceed from debility, or defective excitement of the brain and nerves, as in certain headachs, deafness, giddiness, and in some hysterical and dyspeptic symptoms. The officinal preparations of rosemary are, an essential oil from their leaves, or from the herb in flower, a conserve of the flowers, and a spirit formerly called Hungary water, from the flowery tops. The tops are also used in the compound spirit of lavender and soap liniment.

Rosmarinus sylvestris. See *Ledum*.

ROSTE'LLUM. (*um*, *i.* n.) A little beak. Applied to that part of the seed of a plant which is pointed, penetrates the earth, and becomes the root. See *Corculum*.

ROSTRA'TUS. Rostrate: having a bill or beak. Applied to parts of plants, as the pod of the *Sinapis alba*.

ROS'TRUM. (*um*, *i.* n.; from *rodo*, to gnaw: because birds use it to tear their food with.) 1. A beak.

2. The piece of flesh which hangs between the division of the hare-lip is called *rostrum leporinum*.

3. Applied, in *Botany*, to some elongation of a seed-vessel, originating from the permanent style, as in *Geranium*; though it is also applied to similar prolongations of naked seeds, as in *Scandix*.

Rosy-drop. See *Acne*.

ROTA'CEÆ. (From *rota*, a wheel.) The name of an order of plants in Linnæus's Fragments of a Natural Method, consisting of those which have one flat wheel-shaped petal.

ROTA'CEUS. Rotaceous, or wheel-like.

ROTACI'SMUS. (*us*, *i.* m.) The harsh or aspirated vibration of the letter *r* or *ρ*, which is very common in the northern parts of England. It is commonly called a *burr*.

Rotang. See *Calamus rotang*.

ROTA'TOR. (*or*, *oris.* m.; from *roto*, to turn.) A muscle the office of which is to rotate the part upon which it acts.

ROTA'TUS. Rotate, or wheel-like. Applied to the corols, nectary, &c.; as the nectary of the *Cyssampelos*, the corolla of the *Borago officinalis*.

ROTIFERA. An order of infusory animals. See *Animal kingdom*.

RO'TULA. (*a*, *æ.* f.; diminutive of *rota*, a wheel: so called from its shape.) See *Patella*.

Rotundus. See *Round*.

Rouge. See *Carthamus tinctorius*.

ROUND. *Rotundus.* Many parts of animals and vegetables receive this trivial name from their shape; as round ligaments, round foramen, &c., and leaves, stems, seeds, &c.; as the seeds of the *Pisum*, *Brassica*, &c.

Round-leaved sorrel. See *Rumex scutatus*.

Round ligament. *Ligamentum rotundum*. A bundle of vessels and fibres contained in a duplicature of the peritonæum, that proceeds one from each side of the uterus, through the abdominal rings, and disappears in the pudenda.

Rousseau's drops. *Gouttes de l'Abbe Rousseau. Laudanum Abbatis Rousseau. Vinum opii fermentatione paratum.* Take of honey ℥xij.; warm water, lbiij.; set it in a warm place till it begins to ferment, then add opium ℥iv. dissolved in ℥xij. of water; let it ferment for a month; evaporate it to ℥x.; strain and add rectified alkohol, ℥iv. ss.

Royal preventive. A quack lotion, consisting of a solution of acetate of lead. It is sold as a preventive against the venereal disease.

Royal stitch. An old operation for the cure of inguinal hernia, which consisted in putting a ligature round the neck of the sac whereby adhesive inflammation was excited.

RUBE'DO. (*o, inis.* f.; from *ruber*, red.) A diffused, but not spotted, redness in any part of the skin; such as that which arises from blushing.

RUBEFA'CIENT. (*Rubefaciens*; from *rubefacio*, to make red.) Any substance is so called which, when applied a certain time to the skin, induces a redness without blistering.

RUBE'OLA. (*a, æ.* f.; from *ruber*, red; or from *rubeo*, to become red.) The measles; called also, *Morbilli*. This disease is known by inflammatory fever, hoarseness, dry cough, sneezing, drowsiness; about the fourth day, eruption of small red points, discernible by the touch, which, after three days, end in mealy desquamation. The blood, after venesection, exhibits an inflammatory crust. In addition to the symptoms already related, it is remarkable, that the eyes and eyelids always show the presence of this disease, being somewhat inflamed and suffused with tears. The fever continues during the whole progress of the disease. In systems of nosology, several varieties of measles are mentioned, but they may all be comprehended under two heads: the one attended with more or less of the symptoms of general inflammation; the other accompanied by a typhoid diathesis.

The measles may prevail at all seasons of the year as an epidemic, but the middle of winter is the time they are usually most prevalent; and they attack persons of all ages, but children are most liable to them. They prove most unfavourable to such as are of a plethoric or scrofulous habit. Like the small-pox, they very seldom affect persons more than once in their life: their contagion appears to be of a specific nature. The eruption is usually preceded by a general uneasiness, chilliness, and shivering; pain in the head, in grown persons; but in children, a heaviness and soreness in the throat; sickness and vomiting, with other affections, such as happen in most fevers; but the chief characteristic symptoms are, a heaviness about the eyes, with swelling, inflammation, and a defluxion of sharp tears, and great acuteness of sensation, so that they cannot bear the light without pain, together with a discharge of serous humour from the nostrils, which produces sneezing. The heat, and other febrile symptoms, increase very rapidly; to which succeeds a frequent and dry cough, a stuffing, great oppression, and oftentimes retching to vomit, with violent pains in the loins, and sometimes a giddiness; at other times there is great sweating, the tongue foul and white, the thirst very great, and, in general, the fever runs much higher than in the milder sort of the regular small-pox. The eruptions appear about the fourth or fifth day, and sometimes about the end of the third. On the third or fourth day from their first appearance, the redness diminishes, the spots, or very small papulæ, dry up, the cuticle peels off, and is replaced by a new one. The symptoms do not go off on the eruption, as in the small-pox, except the vomiting; the cough and headach continue, with the weakness and defluxion on the eyes, and a considerable degree of fever. On the ninth or eleventh day, no trace of redness is to be found, but the skin assumes its wonted appearance; yet, unless there have been some considerable evacuations, either by the skin or by vomiting, the patient will hardly recover strength, but the cough will continue, the fever return with new violence, and bring on great distress and danger.

In the more alarming cases, spasms of the limbs, subsultus tendinum, delirium, or what more frequently happens, coma, supervene. This last symptom so frequently attends the eruptive fever of measles, that by some practitioners it is regarded as one of its diagnostics.

In measles, as in other febrile diseases, the symptoms generally suffer some remission towards the morning, returning, however, in the evening with increased severity.

The measles, even when violent, do not generally manifest a typhoid tendency; but it sometimes happens that such a disposition prevails both in the course of the disease and at its termination. In such cases, petechiæ are to be observed interspersed among the eruptions; and these last become livid, or assume almost a black colour. Hæmorrhages break out from different parts of the body; the pulse becomes frequent, feeble, and perhaps irregular; universal debility ensues; and the patient is destroyed.

In those cases where there is much fever, with great difficulty of breathing, and other symptoms of pneumonic inflammation, or where there is great debility, with a tendency to putrescency, there will always be considerable danger; but the consequences attendant on the measles are in general more to be dreaded than the immediate disease; for although a person may get through it, and appear for a time to be recovered, still hectic symptoms and pulmonary consumption may afterwards arise, and destroy him, or a troublesome ophthalmia perhaps ensue.

Measles, as well as small-pox, not unfrequently call into action a disposition to scrofula, where such happens to exist in the habit. Another bad consequence of the measles is, that the bowels are often left by them in a very weak state; a chronic diarrhœa remaining, which has sometimes proved fatal. Dropsy has also been known as a consequence of measles.

The morbid appearances to be observed on dissections of those who die of measles are pretty much confined to the lungs and intestines, the former of which always show strong marks of inflammation, and sometimes a tendency to sphacelus. Where the patient dies under the eruption, the trachea and its branches, as in the small pox, are often covered with it, which may account for the increase of the cough after the appearance of the eruption.

In the treatment of this disorder, as it usually appears, the object is to moderate the accompanying fever, and attend to the state of certain organs, particularly the lungs and the bowels. When there are no urgent local symptoms, it will be commonly sufficient to pursue the general antiphlogistic plan (avoiding, however, too free or sudden exposure to cold,) keeping the bowels open, and encouraging diaphoresis by mild antimonials, &c. Sometimes, however,

in plethoric habits, especially where the lungs are weak, it will be proper to begin by a moderate abstraction of blood. Where the eruption has been imprudently checked, much distress usually follows, and it will be advisable to endeavour to bring it out again by the warm bath, with other means of increasing the action of the cutaneous vessels. Should an inflammatory determination to the lungs occur, more active evacuations must be practised, as explained under the head of *Pneumonitis*. The cough may be palliated by opium, joined with expectorants, demulcents, &c.; and an occasional emetic will be proper, when there is much wheezing. Where diarrhœa takes place, it is better not to attempt to suppress it at once; but, if troublesome, moderate it by small doses of opium, assisted perhaps by astringents. At the decline of the disorder, much attention is often required to prevent phthisis pulmonalis supervening. Should the disorder ever put on a typhoid character, the general plan pointed out under *Typhus* must be pursued.

Ruber. Red. See *Colour*.

RU'BIA. (*a, æ.* f.; from *ruber*, red: so called from its red roots.) 1. The name of a genus of plants in the Linnæan system. Class, *Tetrandria;* Order, *Monogynia*.

2. The pharmacopœial name of the madder plant. See *Rubia tinctorum*.

Rubia tinctorum. The madder plant. Dyer's madder. *Erythrodanum. Rubia major. Radix rubra. Rubia — foliis annuis, caule aculeato*, of Linnæus. The roots of this plant have a bitterish, somewhat austere taste, and a slight smell, not of an agreeable kind. It was formerly considered as a deobstruent detergent, and diuretic, but it is now very seldom used.

RUBI'GO. (*o, inis.* f.; *a colore rubro*, from its red colour.) Rust.

Rubigo cupri. See *Verdigris*.

Rubigo ferri. See *Ferri sesquioxydum*.

Rubi'nus. (From *ruber*, red: so named from its colour.) See *Anthrax*.

Rubinus verus. See *Anthrax*.

RU'BULA. (*a, æ.* f.; a diminutive of *rubus*, a blackberry, or raspberry.) The specific name, in Good's Nosology, of the yaws. — *Anthracia rubula*.

RU'BUS. (*us, i.* m.; from *ruber*, red: so called from its red fruit.) The name of a genus of plants in the Linnæan system. Class, *Icosandria;* Order, *Polygynia*.

Rubus arcticus. The systematic name of the shrubby strawberry. *Rubus arcticus — foliis alternatis, caule inermi unifloro*. The berries, *Baccæ norlandicæ*, are recommended by Linnæus as possessing antiseptic, refrigerant, and antiscorbutic qualities.

Rubus cæsius. The systematic name of the dewberry plant, the fruit of which resembles the blackberry in appearance and qualities.

Rubus chamæmo'rus. The systematic name of the cloudberry tree, and knot-berries. *Chamæmorus. Chamærubus foliis ribis Anglicæ. Rubus palustris humilis. Vaccinium Lancastrense. Rubus alpinus humilis Anglicus.* The ripe fruit of this plant, *Rubus chamæmorus — foliis simplicibus lobatis, caule interno unifloro*, of Linnæus, is prepared into a jam; and is recommended to allay thirst, &c. in fevers, phthisical diseases, hæmoptysis, &c. As an antiscorbutic, it is said to excel the scurvy-grass, and other vegetables of that tribe in common use.

Rubus fruticosus. The systematic name of the common bramble, which affords blackberries. The berries are eaten in abundance by children, and are wholesome and gently aperient. Too large quantities, however, when the stomach is weak, produce vomiting and great distension of the belly, from flatus.

Rubus idæus. The systematic name of the raspberry. *Batinon. Moron. Rubus idæus — foliis quinato-pinnatis ternatisque, caule aculeato, petiolis canaliculatis*, of Linnæus. The fruit of this plant has a pleasant sweet taste, accompanied with a peculiar grateful flavour, on account of which it is chiefly valued. Its virtues consist in allaying heat and thirst, and promoting the natural excretions. A grateful syrup prepared from the juice was formerly officinal.

RU'CTUS. (*us, ús.* m.) An eructation.

Rue. See *Ruta graveolens*.

Rue, goat's. See *Galega*.

Rue, wall. See *Asplenium murale*.

Rufi pilulæ. Rufus's pills. A compound very similar to the aloëtic pills with myrrh. See *Pilula aloes cum myrrhâ*.

Ru'fus. Of a brownish-red orange or carrot colour.

RUGO'SUS. Rugged; wrinkled: applied to a leaf, when the veins are tighter than the surface between them, causing the latter to swell into little inequalities; as the various species of sage. The seeds of the *Lithospermum arvense* are rugose.

RUM. *Spiritus Jamaicensis.* A spirituous liquor, the produce of the sugar-cane. See *Alkohol*.

RU'MEX. (*ex, icis.* m.; a sort of pike spear, or halberd, which the shape of the leaves in various species much resembles.) The name of a genus of plants in the Linnæan system. Class, *Hexandria;* Order, *Trigynia*. The dock.

Rumex acetosa. The systematic name of the common sorrel. Sour-dock. *Acetosa. Acetosa vulgaris. Acetosa pratensis. Acetosa agrensis. Rumex acetosus — foliis, oblongis sagittatis, floribus diœciis*, of Linnæus. The leaves of the plant are sour, but not the root, which is bitter. It grows in the meadows and common fields.

Rumex acutus. The systematic name of the sharp-pointed wild-dock. *Oxylapathum. Lapathum. Rumex acutus — floribus hermaphroditis, valvulis dentatis graniferis, foliis cordato-oblongis acuminatis*, of Linnæus. The decoction of the root of this plant is used in Germany to cure the itch; and it appears to have been used, in the time of Dioscorides, in the cure of leprous and impetiginous affections, both alone and boiled with vinegar.

Rumex alpinus. The systematic name of the plant which affords the monks' rhubarb. The root is laxative.

Rumex aquaticus. See *Rumex hydrolapathum*.

Rumex crispus. The systematic name of

the crisp-leaved dock, which was formerly used as an antiscorbutic.

Rumex hydrolapathum. The systematic name of the water-dock. *Hydrolapathum. Rumex aquaticus. Herba Britannica. Lapathum aquaticum. Rumex hydrolapathum — floribus hermaphroditis, valvulis integris graniferis, foliis lanceolatis*, of Linnæus. The leaves of this plant manifest considerable acidity, and are said to possess a laxative quality. The root is strongly astringent, and has been much employed, both externally and internally, for the cure of some diseases of the skin, as scurvy, lepra, lichen, &c. The root, powdered, is said to be an excellent dentifrice.

Rumex patientia. The systematic name of the garden patience. *Lapathum sativum. Hippolapathum. Patientia.* The root of this plant, and that of the *Rumex alpinus*, according to Professor Murray, is supposed to possess the virtues of rhubarb, but in an inferior degree. It is obviously more astringent than rhubarb, but comes very far short of its purgative virtue.

Rumex sanguineus. The systematic name of the bloody dock, the root of which has an austere and astringent taste, and is sometimes given by the vulgar in the cure of dysentery.

Rumex scutatus. The systematic name of the French sorrel. Roman, or garden sorrel. Sometimes called *acetosa rotundifolia* in the shops. *Acetosa Romana. Acetosa rotundifolia hortensis. Rumex scutatus — foliis cordato-hastatis, ramis divergentibus, floribus hermaphroditis*, of Linnæus. It is common in our gardens, and in many places is known by the culinary name of green-sauce. Its virtues are similar to those of common sorrel. See *Rumex acetosa*.

RUMINA'TION. (*Ruminatio, onis.* f.) A second mastication, or the chewing of the food that has been swallowed and is again brought back into the mouth. It is commonly called chewing the cud. Among quadrupeds this function is peculiar to the order of animals called *pecora* by Linnæus and *Ruminantia* by Cuvier. All *Pecora* have a plurality of stomachs, some two, others three, and some four. In all of them, the stomach is compound, and more complicated, both in structure and appearance, than in any other order of mammalia. Taking the *ox* for a general example of the structure of this organ, the *first* stomach is the *ventriculus*, or *paunch*, which occupies a great part of the abdomen, especially in the left side. It is by much the largest of the four. It has two sacs or appendices externally, and is slightly divided into four apartments internally. The inner surface is covered with innumerable papillæ, of different size in different parts.

The *second* stomach is termed *reticulum, bonnet*, or *honey-comb bag*, and appears as a globular appendage of the paunch. It is placed at the left side of the œsophagus, and anterior part of the first, and has generally a thicker muscular coat than the former. Its inner surface is arranged into regular pentagonal cells, and covered with fine papillæ.

The *third* is the smallest, and called *omasum, many plies*. It is situated on the right side of the paunch, is of a globular form, and has a thinner muscular coat than the two former. It consists of numerous broad laminæ sent off from the internal coat, running in a longitudinal direction, alternately varying in breadth, and covered with small granulous papillæ.

The *fourth* stomach, the *abomasum, ventriculus intestinalis, caille* or *red*, has a pyriform appearance, and is next in size to the paunch. It has large longitudinal rugæ, covered with villi, in which circumstance it is somewhat like the stomach of the *dog*. The muscular coat is still thinner than that of the former. The fourth stomach, in the fœtus, with milk curdled in it, forms the *runnet*; but it is observed that in all animals, there is only one digestive stomach, and this has also the power of curdling milk. The inner surface of the three first stomachs is covered only with a fine cuticle, while that of the fourth has the appearance of being a real mucous or secreting membrane.

Upon examining the openings of the stomachs, the œsophagus is observed to open into the right of the paunch, and at the same place by a gutter, into the second and third stomachs. The third leads in, by a narrow opening, to the fourth; and this terminates in the duodenum, which has a pylorus at its origin.

In the different individuals of this order, the stomach varies in proportion as the animal advances towards maturity. While it is young, and fed upon milk, its fourth stomach is the largest. The milk passes at once into this cavity, very little going into the other three. As soon as the creature begins to eat solid food, it acquires the power of ruminating. It lays hold of the grass, &c. by pressing it with the tongue, against the roof of the mouth, and, by the gums of the upper and teeth of the under jaw, assisted by a twist of the head, tears it across. After a slight mastication, the aliment passes into the paunch, and from that, by small portions, into the second stomach. When a considerable quantity has been swallowed, a morsel is thrown back with velocity from the stomach into the mouth, where it is accurately ruminated, and then carried directly to the third stomach, the groove being contracted between this and the two first. This process is continued till the whole of the food has undergone the same operation. In the third and fourth stomachs, a more complete digestion takes place.

The stomachs of the other horned *ruminants* differ little in their nature from that of the *ox*. In the *deer*, the paunch has three pouches appearing externally, and the papillæ are less conspicuous than in the *ox*.

In the *dromedary, camel*, and *lama*, there are four stomachs, as in horned *ruminants*, but the structure is different. In the *camel* and *lama*, there are numerous cells in the substance of the first and second stomachs, formed by strong muscular bands crossing each other at right angles. By the action of these, it is supposed the animals can open or contract at pleasure the mouths of the cells, which serve as reservoirs of the drink, so as to expel the contained fluids, or retain them even for several days. The water they take in is observed to be rendered turbid in

the first stomach, by the mixture with the food, but becomes pure in the second. After rumination, the animal can draw the third stomach to the œsophagus, and receive the ruminated food, without polluting the water in the cells.—*Fyfe.*

A less perfect kind of rumination is observed in some fish, and, as a morbid phenomenon, it sometimes occurs in the human species.

RUNCINA'TUS. (From *runcina*, a saw.) Runcinate: notched. Applied to leaves which are shaped like the tooth of a lion: that is, cut into several transverse acute segments, pointing backwards; as in *Leontodon taraxacum*, called, from the shape of its leaf, *dens de lion*, and hence dandelion.

Rundle. See *Umbel.*

Rundlet. See *Umbellule.*

Runner. See *Sarmentum.*

RUPELLENSIS SAL. (From *Rupella, Rochelle*, where it was first made.) See *Soda tartarizata.*

RUPIA. (*a, æ.* f.; from ῥυπος, *sordes*, as indicative of the ill smell and sordid condition of the diseased parts.) An eruptive disease, characterised by an appearance of broad and flattish vesicles, in different parts of the body, which do not become confluent: they are slightly inflamed at the base, slow in their progress, and succeeded by an ill-conditioned discharge, which concretes into thin and superficial scabs, that are easily rubbed off, and presently regenerated; which circumstance serves to mark the distinction between rupia and ecthyma, independently of the pustular form, and highly inflamed hard base, of the latter: for the scab of Ecthyma is hard, deeply indented, and surrounded by a deep-seated hardness in the muscular flesh, especially in the larger forms of it. It appears under some varieties of form, which may be included under the following heads: —

1. *Rupia simplex* consists of little vesications, containing, on their first appearance, a clear lymph, and appearing on many parts of the body. In a short time, the fluid included in them begins to thicken, and becomes at length opake and somewhat puriform; a slight ulceration of the skin takes place, with a sanious discharge, followed by scabbing; and, when this heals, it leaves the surface of a livid or blackish colour, as if from a thickening of the rete mucosum.

2. *Rupia prominens* is distinguished by elevated, conical scabs, which are gradually formed upon the vesicated bases. A fluted scab is first generated, and with some rapidity, (*e. g.* in the course of the night), as the fluid of the vesication concretes. This extends itself by the successive small advancement of the red border, upon which a new scab arises, raising the concretion above it, so as ultimately to form a conical crust, not unlike the shell of a small limpet. This scab is quite superficial, and, if it be rubbed off, a new incrustation covers the excoriated spot in the space of six hours. The ulceration, however, is not phagedenic, but at length heals; although it often proves very tedious, especially in old and intemperate persons, in whom, and in young persons of delicate constitution, it most commonly occurs.

These varieties of rupia are to be combated by the means recommended for the cure of ecthyma; *i. e.* by supporting the system, by means of good, light, nutritious diet, and by the use of alterative and tonic medicines; such as Plummer's pill, cinchona, and sarsaparilla.

3. *Rupia escharotica* affects only infants and young children, when in a cachectic state, whether induced by previous diseases, especially the small-pox, or by imperfect feeding and clothing, &c.; whence, among the poor, where it is commonly seen, it often terminates fatally. The vesicles generally occur on the loins, thighs, and lower extremities, and appear to contain a corrosive sanies: many of them terminate with gangrenous eschars, which leave deep pits.

Ruptura. See *Hernia.*

Rupture. See *Hernia.*

Rupture-wort. See *Herniaria.*

RU'SCUS. (ος, *i.* m.; *à russo colore*, from the carnation colour of its berries.) 1. The name of a genus of plants in the Linnæan system. Class, *Diœcia;* Order, *Syngenesia.*

2. The pharmacopœial name of the butcher's-broom. *Ruscus aculeatus.*

RUSCUS ACULEATUS. The systematic name of butcher's-broom, knee-holly. Alexandrian laurel, or wild myrtle. *Bruscus. Oxymyrrhine. Oxymyrsine. Myrtacantha. Myacantha. Scopa regia.* A small evergreen shrub, the *Ruscus aculeatus—foliis supra floriferis nudis*, of Linnæus. It grows in woods and thickets in this country. The root, which is somewhat thick, knotty, and furnished with long fibres, externally brown, internally white, and of a bitterish taste, has been recommended as an aperient and diuretic in dropsies, urinary obstructions, and nephritic cases. It is seldom used in this country.

RUSCUS HYPOGLOSSUM. The systematic name of the *Uvularia.* This plant was formerly used against relaxation of the uvula, but is now laid aside for more astringent remedies.

Rush. See *Arundo.*

Rush-nut. See *Cyperus esculentus.*

Rush, sweet. See *Andropogon schœnanthus* and *Acorus calamus.*

RUSPINI'S STYPTIC. According to Dr. A. Thomson this consists chiefly of a solution of gallic acid in alkohol, diluted with rose-water.

RUSPINI'S TINCTURE. This consists of orris root, cloves, and ambergris, digested in alkohol. It is intended to preserve the teeth.

RUSSIA ASHES. The impure potash, as imported from Russia.

RUST. The powder or crust which forms on metals, especially iron, when exposed to the air.

RU'TA. (*a, æ.* f.; from ῥυω, to defend, because it preserves health. (?)) 1. The name of a genus of plants in the Linnæan system. Class, *Decandria;* Order, *Monogynia.*

2. The pharmacopœial name of the common rue. See *Ruta graveolens.*

RUTA GRAVE'OLENS. The systematic name of the common rue. *Ruta graveolens—foliis decompositis, floribus lateralibus quadrifidis*, of Linnæus. Rue has a strong unpleasant smell and a bitter, hot, penetrating taste; the leaves

re so acrid, that by much handling they have been known to irritate and inflame the skin; nd the plant, in its natural or uncultivated tate, is said to possess these sensible qualities till more powerfully. The imaginary quality f the rue, in resisting and expelling contagion, s now disregarded. It is doubtless a powerful timulant, and is considered, like other medi- ines of the fœtid kind, as possessing attenuat- ng, deobstruent, and antispasmodic powers. n the older London Pharmacopœias it was irected in the form of an extract; and was lso an ingredient in the *pulvis è myrrhâ comp.*, ut these are now omitted. The dose of the eaves is from fifteen grains to two scruples.

Ruta muraria. See *Asplenium murale.*

RUTA'CEÆ. A natural family of plants, of which the genus *Ruta* is the type.

RUTA'CEUM. An infusion of rue in vinegar.

RU'TULA. (From *ruta*, rue.) A small species of rue.

RUYSCHIA'NA TU'NICA. The internal surface of the choroid membrane of the human eye, which Ruysch imagined was a distinct lamina from the external surface.

Ryas. See *Rhœas.*

Rye. See *Secale cereale.*

Rye, spurred. See *Secale cornutum.*

RYMER'S CARDIAC TINCTURE. This consists of capsicum, camphor, cardamom seeds, rhubarb, aloes, and castor, infused in proof spirit, with the addition of a very small quantity of sulphuric acid.

S.

S. A. The contraction of *secundum artem.*

S, or *ss.* Immediately following any quan- ty, imports *semis*, or half.

Sabadilla. See *Cevadilla.*

Sabadilline. See *Veratria.*

SABI'NA. (*a*, *æ*. f.; named from the Sa- nes, whose priests used it in their religious remonies.) See *Juniperus sabina.*

SA'BULOUS. (*Sabulosus*; from *sabulum*, e gravel.) Gritty; sandy. Applied par- ularly to the calcareous matter in urine.

SABU'RRA. (*a*, *æ*. f.) Dirt; sordes; filth. oulness of the stomach, of which authors men- on several kinds, as the acid, the bitter, the pyreumatic, the insipid, the putrid.

SACCA'TUS. Saccated: encysted, or con- ned in a bag-like membrane. Applied to opsical tumours, &c.

Sacchari acidum. See *Mucic acid.*

SA'CCHARUM. (*um*, *i*. n.; Σακχαρον, m *sacchar*, Arabic.) 1. The name of a nus of plants in the Linnæan system. Class, *riandria*; Order, *Digynia*. The sugar-cane. 2. The sweet substance called sugar. See *charum officinale.*

SACCHARUM ACERNUM. Maple sugar. See *er.*

SACCHARUM ALBUM. Refined sugar.

SACCHARUM ALUMINIS. Alum mixed with gon's blood and dried.

SACCHARUM CANADENSE. Maple sugar. See *er.*

SACCHARUM CANDIDUM. Sugar candy.

SACCHARUM NON PURIFICATUM. Brown or purified sugar.

SACCHARUM OFFICINALE. The systematic ne of the cane from which sugar is obtained. *undo saccharifera*, of Sloane. *Saccharum offi- rum. Suchar. Succhar. Sutter. Zuchar. Zu- o. Zozar* of the Arabians. Σακχαρ and σακ- ον, of the Greeks. Sugar is prepared in the st and East Indies from the expressed juice of this plant, boiled with the addition of quick- lime or common vegetable alkali. It may be extracted also from a number of plants, as the maple, birch, wheat, corn, beet-root, skirret, parsnips, and dried grapes, &c. by digesting in alkohol. The alkohol dissolves the sugar, and leaves the extractive matter untouched, which falls to the bottom. It may be taken into the stomach in very large quantities, without producing any bad consequences, although proofs are not wanting of its mischievous effects, by relaxing the stomach and thus inducing disease. It is much used in pharmacy, as it forms the basis of syrups, lozenges, and other preparations. It is very useful as a medicine, although it cannot be considered to possess much power, to favour the solution or suspension of resins, oils, &c. in water, and is given as a purgative for infants. Dr. Cullen classes it with the attenuantia, and Bergius states it to be saponacea, edulcorans, relaxans, pectoralis, vulneraria, antiseptica, nutriens. In catarrhal affections, both sugar and honey are frequently employed: it has also been advantageously used in calculous complaints; and, from its known power in preserving animal and vegetable substances from putrefaction, it has been given with a view to its antiseptic effects. Sugar-candy, by dissolving slowly in the mouth, is well suited to relieve tickling coughs and hoarseness. Sugar is every where the basis of that which is called sweetness, except, perhaps, in the instance of manna, the sweet principle of which is supposed to be peculiar. See *Mannite.* Its presence is previously necessary in order to the taking place of vinous fermentation. Its extraction from plants, which afford it in the greatest abundance, and its refinement for the common uses of life, in a pure state, are among the most important of the chemical manufactures.

Molasses, or treacle, is the uncrystallisable

part of the juice of the sugar cane which is the refuse of the process for extracting the sugar.

The Indians likewise extract sugar from the pith of the bamboo.

The beet has lately been much cultivated in Germany, for the purpose of extracting sugar from its root. For this the roots are taken up in autumn, washed clean, wiped, sliced lengthwise, strung on threads, and hung up to dry. From these the sugar is extracted by maceration in a small quantity of water; drawing off this upon fresh roots, and adding fresh water to the first roots, which is again to be employed the same way, so as to get out all their sugar, and saturate the water as much as possible with it. This water is to be strained and boiled down for the sugar. Some merely express the juice from the fresh roots, and boil this down; others boil the roots; but the sugar extracted in either of these ways is not equal in quality to the first.

Sugar is very soluble in water, and is a good medium for uniting that fluid with oily matters. It is much used for domestic purposes, and appears, on the whole, to be a valuable and wholesome article of food, the uses of which are most probably restricted by its high price.

It appears that sugar has the property of rendering some of the earths soluble in water.

The union of sugar with the alkalis has been long known; but this is rendered more strikingly evident by carbonated potash or soda, for instance, decomposing the solutions of lime and strontia in sugar, by double affinity.

Kirchoff, an ingenious Russian chemist, accidentally discovered that starch is convertible into sugar, by being boiled for some time with a very dilute sulphuric acid. Saussure showed, that 100 parts of starch yield 110 of sugar.

The varieties of sugar are, — cane sugar, maple sugar, liquid sugar of fruits, sugar of figs, sugar of grapes, starch sugar, the mushroom sugar of Braconnot, manna, sugar of gelatine, sugar of honey, and sugar of diabetes.

All honeys contain two species of sugar; one similar to sugar of the grape, another like the uncrystallisable sugar of the cane (molasses). These, combined and mingled in different proportions with an odorant matter, constitute the honeys of good quality. Those of inferior quality contain, besides, a certain quantity of wax and acid: the honeys of Brittany contain even an animal secretion (*couvain*), to which they owe their putrescent quality. A slight washing with a little alkohol separates the uncrystallisable sugar, and leaves the other, which may be purified by washing with a very little more alkohol.

Saccharum officinarum. See *Saccharum officinale.*

Saccharum purificatum. Refined or loaf-sugar.

Saccharum saturni. See *Plumbi acetas.*

Saccho-lactic acid. (*Acidum saccho-lacticum*; from *saccharum*, sugar, and *lac*, milk.) See *Mucic acid.*

Saccholactate. (*Saccholactas, atis.* f.) A salt formed by the combination of the saccholactic acid with salifiable bases; as saccholate of iron, saccholate of ammonia, &c. &c.

SA'CCULUS. (*us, i.* m.; diminutive of *saccus*, a bag.) A little bag.

Sacculi adiposi. The bursæ mucosæ of the joints.

Sacculus chyliferus. See *Receptaculum chyli.*

Sacculus cordis. The pericardium.

Sacculus lachrymalis. The lachrymal sac. See *Lachrymal apparatus.*

SA'CCUS. (*us, i.* m.) A bag.

Saccus lachrymalis. The lachrymal sac. See *Lachrymal apparatus.*

SA'CER. (From *sagur*, secret, Heb.) Sacred. Applied to some diseases which were supposed to be immediately inflicted on mankind by the Divinity or his ministers: hence *morbus sacer*, the epilepsy; *ignis sacer*, the erysipelas, &c.

A bone is called the *os sacrum*, because it was once offered in sacrifices. See *Sacrum.*

SACK. (This word is probably derived from *sec*, dry.) A wine used by our ancestors, which some have taken to be Rhenish, and others Canary wine. Probably it was what is called dry mountain, or some Spanish wine of that sort. Howell, in his French and English Dictionary, 1650, translated sack by the words vin d'Espagne, vin sec.

SACLA'CTATE. A combination of saccho-lactic acid with a salifiable basis.

SACLA'CTIC. *Saclacticus.* An abbreviation of saccharo-lactic; and so called, because it is obtained from sugar of milk. Of or belonging to the peculiar acid to which the term is applied.

Saclactic acid. See *Saccholactic acid.*

Sacra herba. See *Verbena officinalis.*

Sacra tinctura. Made of aloes, canella alba, and mountain wine.

SA'CRAL. *Sacralis.* Of or belonging to the sacrum; as sacral arteries, veins, nerves, &c.

Sa'cro-coccygæ'us. A muscle arising from the sacrum, and inserted into the os coccygis.

Sa'cro-lumba'lis. *Sacro-lumbaris*, of authors. A long muscle, thicker and broader below than above, and extending from the os sacrum to the lower part of the neck, under the serrati postici, rhomboideus, trapezius, and latissimus dorsi. It arises, in common with the longissimus dorsi, tendinous without, and fleshy within, from the posterior part of the os sacrum; from the posterior edge of the spine of the ilium; from all the spinous processes; and from near the roots of the transverse processes of the lumbar vertebræ. At the bottom of the back it separates from the longissimus dorsi, with which it had before formed, as it were, only one muscle, and ascending obliquely outwards, gradually diminishes in thickness, and terminates above in a very narrow point. From the place where it quits the longissimus dorsi, to that of its termination, we find it fleshy at its posterior, and tendinous at its anterior edge. This tendinous side sends off as many long and thin tendons as there are ribs. The lowermost of these tendons are broader, thicker, and shorter than those above: they are inserted into the inferior edge of each rib, where it begins to be curved forwards towards the sternum, excepting only the

uppermost and last tendon, which ends in the posterior and inferior part of the transverse process of the last vertebra of the neck. From the upper part of the five, six, seven, eight, nine, ten, or eleven lower ribs (for the number, though most commonly seven or eight, varies in different subjects), arise as many thin bundles of fleshy fibres, which, after a very short progress, terminate in the inner side of this muscle, and have been named by Steno, *musculi ad sacro lumbalem accessorii*. Besides these, we find the muscle sending off a fleshy slip from its upper part, which is inserted into the posterior and inferior part of the transverse processes of the five inferior vertebræ of the neck, by as many distinct tendons. This is generally described as a distinct muscle. Diemerbroeck, and Douglas and Albinus after him, call it *cervicalis descendens;* Winslow names it *transversalis collateralis colli*. Morgagni considers it as an appendage to the sacro-lumbalis. The uses of this muscle are to assist in erecting the trunk of the body, in turning it upon its axis or to one side, and in drawing the ribs downwards. By means of its upper slip, it serves to turn the neck obliquely backwards, or to one side.

Sa'cro-scia'tic ligaments. The ligaments which connect the ossa innominata with the os sacrum.

SA'CRUM. (*um*, *i.* n.; so called from *sacer*, sacred: because it was formerly offered in sacrifices.) *Os sacrum. Os basilare.* The os sacrum derives its name from its being offered in sacrifice by the ancients, or perhaps from its supporting the organs of generation, which they considered as sacred. In young subjects it is composed of five or six pieces, united by cartilage; but in more advanced age it becomes one bone, in which, however, we may still easily distinguish the marks of the former separation. Its shape has been sometimes compared to an irregular triangle; and sometimes, and perhaps more properly, to a pyramid flattened before and behind, with its basis placed towards the lumbar vertebræ, and its point terminating in the coccyx. We find it convex behind, and slightly concave before, with the inferior portion bent a little forwards. Its anterior surface is smooth, and affords four, and sometimes five transverse lines, of a colour different from the rest of the bone. These are the remains of the intermediate cartilages by which its several pieces were united in infancy. Its posterior convex surface has several prominencies, the most remarkable of which are its spinous processes: these are usually three in number, and gradually become shorter, so that the third is not so long as the second, nor the second as the first. This arrangement enables it to sit with ease. Its transverse processes are formed into one oblong process, which becomes gradually smaller as it descends. At the superior part of the bone we observe two oblique processes, of a cylindrical shape, and somewhat concave, which are articulated with the last of the lumbar vertebræ. At the base of each of these oblique processes is a notch, which, with the like another in the vertebræ above it, forms a passage for the twenty-fourth spinal nerve. In viewing this bone, either before or behind, we observe four, and sometimes five holes on each side, situate at each extremity of the transverse lines which mark the divisions of the bone. Of these holes, the anterior ones, and of these again, the uppermost, are the largest, and afford a passage to the nerves. The posterior holes are smaller, covered with membranes, and destined for the same purpose as the former. Sometimes at the bottom of the bone there is only a notch, and sometimes there is a hole common to it and the os coccygis. The cavity between the body of this bone and its processes, for the lodgment of the spinal marrow, is triangular, and becomes smaller as it descends, till at length it terminates obliquely on each side at the lower part of the bone. Below the third division of the bone, however, the cavity is no longer completely bony, as in the rest of the spine, but is defended posteriorly only by a very strong membrane; hence a wound in this part may be attended with the most dangerous consequences. This bone is articulated above, with the last lumbar vertebræ; laterally, it is firmly united, by a broad irregular surface, to the ossa innominata, or hip-bones; and below it is joined to the os coccygis. In women the os sacrum is usually shorter, broader, and more curved than in men, by which means the cavity of the pelvis is more enlarged.

Safety lamp. See *Carburetted hydrogen.*

Safflower. See *Carthamus.*

Saffron. See *Crocus.*

Saffron, bastard. See *Carthamus.*

Saffron flower. See *Carthamus.*

Saffron, meadow. See *Colchicum.*

Saffron of steel. A red oxide of iron.

SAGAPE'NUM. (*um*, *i.* n.; the name is derived from some eastern dialect.) *Serapinum.* It is conjectured that this concrete gummi-resinous juice is the production of an umbelliferous plant. What that plant is, remains unknown. Sagapenum is brought from Persia and Alexandria, in large masses, externally yellowish, internally paler, and of a horny clearness. Its taste is hot and biting, its smell of the alliaceous and fœtid kind, and its virtues are similar to those which have been ascribed to assafœtida, but weaker, and consequently it is less powerful in its effects.

Sage. See *Salvia.*

Sage of Bethlehem. See *Pulmonaria.*

Sage of Jerusalem. See *Pulmonaria.*

Sage of virtue. See *Salvia hortensis minor.*

SAGI'TTAL. (*Sagittalis;* from *sagitta*, an arrow.) Shaped like an arrow.

Sagittal suture. (*Sutura sagittalis;* so named from its lying between the coronal and lambdoidal sutures, as an arrow betwixt the string and the bow.) *Sutura virgata, obelica, rhabdoides.* The suture which unites the two parietal bones.

SAGITTA'RIA. (*a*, *æ.* f.; so called from *sagitta*, an arrow, in allusion to the shape of the leaves in the original species and some others.) The name of a genus of plants in the Linnæan system. Class, *Monœcia;* Order, *Polyandria.*

Sagittaria alexipharmaca. The systematic name of the plant, — called also, *Malacca,*

Canna indica, and *Arundo indica*, — cultivated with great care in the West Indies, for its root, which is supposed to be a remedy for the wounds of poisoned arrows. The root of this species, called *radix malacca*, is sometimes used medicinally.

SAGITTARIA SAGITTIFOLIA. The systematic name of the common arrow-head, the roots of which are esculent, but not very nutritious.

SAGITTA'TUS. (From *sagitta*, an arrow.) Arrow-shaped: applied to leaves, &c. which are triangular and hollowed out very much at the base; as the leaves of the *Sagittaria sagittifolia*.

Sago. See *Cycas circinalis*.

Sagu. See *Cycas circinalis*.

St. Anthony's fire. See *Erysipelas*.

St. Ignatius's bean. See *Ignatia amara*.

St. James's wort. See *Senecio jacobæa*.

St. John's wort. See *Hypericum*.

St. Peter's wort. See *Hypericum*.

St. Vitus's dance. See *Chorea*.

SAL. (*al*, *alis*. m. and, rarely, neut.; from the Greek ἁλς, salt.) Salt. This term has been usually employed to denote a compound, in definite proportions, of acid matter, with an alkali, earth, or metallic oxide. When the proportions of the constituents are so adjusted, that the resulting substance does not affect the colour of infusion of litmus, or red cabbage, it is then called a neutral salt. When the predominance of acid is evinced by the reddening of these infusions, the salt is said to be acidulous, and the prefix, *super*, or *bi*, is used to indicate this excess of acid. If, on the contrary, the acid matter appears to be in defect, or short of the quantity necessary for neutralising the alkalinity of the base, the salt is then said to be with excess of base, and the prefix *sub* is attached to its name. The discoveries of Sir H. Davy have, however, taught chemists to modify their opinions concerning the constitution of salts. Many bodies, such as culinary salt, and muriate of lime, to which the appellation of *salt* cannot be refused, have not been proved to contain either acid or alkaline matter; but must, according to the strict logic of chemistry, be regarded as compounds of chlorine with metals.

Sal absinthii. See *Potassæ carbonas*.

Sal acetosellæ. See *Oxalis acetosella*.

SAL ÆGYPTIACUM. Nitre.

Sal alembroth. See *Alembroth*.

Sal alkalinus fixus. See *Alkali fixum*.

Sal alkalinus volatilis. See *Ammonia*.

SAL AMMONIAC. (So called, because it was found in Egypt, near the temple of Jupiter Ammon.) See *Ammoniæ murias*.

Sal ammoniacum acetosum. See *Ammoniæ acetatis liquor*.

Sal ammoniacum liquidum. See *Ammoniæ acetatis liquor*.

Sal ammoniacum martiale. See *Ferri ammonio-chloridum*.

Sal ammoniacum secretum glauberi. See *sulphas ammoniæ*.

Sal ammoniacum vegetabile. See *Ammoniæ acetatis liquor*.

SAL AMMONIACUS FIXUS. The muriate of lime was formerly so termed.

Sal ammoniacus nitrosus. See *Nitras ammoniæ*.

SAL ANTIMONII. Tartar emetic.

SAL ARGENTI. Nitrate of silver.

Sal catharticus amarus. See *Magnesiæ sulphas*.

Sal catharticus Anglicanus. See *Magnesiæ sulphas*.

Sal catharticus Glauberi. See *Sodæ sulphas*.

SAL CHALYBIS. Salt of steel. Sulphate of iron.

Sal communis. See *Sodii chloridum*.

Sal cornu cervi volatilis. See *Ammoniæ subcarbonas*.

Sal culinaris. See *Sodii chloridum*.

Sal de duobus. See *Potassæ sulphas*.

SAL DIGESTIVUS. Muriate of potash.

SAL DIGESTIVUS SYLVII. Acetate of potash.

Sal diureticus. See *Potassæ acetas*.

Sal epsomensis. See *Magnesiæ sulphas*.

SAL FEBRIFUGUS SYLVII. Muriate of potash.

Sal fontium. See *Sodæ murias*.

Sal fossilis. See *Sodæ murias*.

Sal gemmæ. See *Sodæ murias*.

Sal glauberi. See *Sodæ sulphas*.

Sal herbarum. See *Potassæ carbonas*.

Sal marinus. See *Sodii chloridum*.

Sal martis. See *Ferri sulphas*.

Sal martis muriaticum sublimatum. See *Ferri ammonio-chloridum*.

SAL MICROCOSMICUS. Microcosmic salt. The compound saline matter obtained by inspissating human urine.

Sal mirabilis Glauberi. See *Sodæ sulphas*.

Sal muriaticus. See *Sodii chloridum*.

SAL PERLATUM. Phosphate of soda.

Sal plantarum. See *Potassæ carbonas*.

Sal polychrestus. See *Potassæ sulphas*.

Sal polychrestus Glaseri. See *Potassæ sulphas*.

Sal polychrestus Seignetti. See *Soda tartarizata*.

SAL PRUNELLÆ. Nitrate of potash, cast into flat cakes or round balls.

Sal Rupellensis. See *Soda tartarizata*.

Sal saturni. See *Plumbi acetas*.

Sal sedativus. See *Boracic acid*.

SAL SEIDLICENSIS. Sulphate of magnesia. See *Sedlitz*.

Sal Seignetti. See *Sodæ tartarizata*.

Sal succini. See *Succinic acid*.

Sal tartari. See *Tartaric acid*.

Sal thermarum carolinarum. See *Magnesiæ sulphas*.

Sal vegetabilis. See *Potassæ tartras*.

Sal volatilis. See *Spiritus ammoniæ aromaticus*, and *Ammoniæ subcarbonas*.

Sal volatilis salis ammoniaci. See *Ammoniæ subcarbonas*.

SALEP. *Salap*. See *Orchis morio*.

SALICA'RIA. (*a*, *æ*. f.; from *salix*, a willow from the resemblance of its leaves to those of the willow.) See *Lythrum salicaria*.

SA'LICINE. *Salicina*. An alkali discovered by M. Leroux in the bark of several species of willow. It is an intense bitter, and for a time gained reputation as a substitute for quinine in ague, which, however, it has failed to maintain. It is a very valuable stomachic bitter, and often

rees with the stomach where quinine proves o stimulating.

SALICO'RNIA. (*a*, *æ*. f.) The name of genus of plants in the Linnæan system. lass, *Monandria*; Order, *Monogynia*.

SALICORNIA EUROPÆA. The systematic name the jointed glasswort. This plant is gathered the country-people, and sold for samphire. forms a good pickle with vinegar, and is ttle inferior to the samphire.

SALIFI'ABLE. Having the property of rming a salt. The alkalis, and those earths d metallic oxides which have the power of utralising acidity, entirely or in part, and oducing salts, are called salifiable bases.

SALI'NE. (*Salinus*; from *sal*, salt.) Of a lt nature. The number of saline substances very considerable, and they possess peculiar aracters by which they are distinguished from ier substances. These characters are founded certain properties, which, it must be conssed, are not accurately distinctive of their ie nature. All such substances, however, as ssess several of the four following properties considered as saline: — 1. A strong tenncy to combination, or a very strong affinity composition. 2. A greater or lesser degree sapidity. 3. A greater or lesser degree of ubility in water. 4. Perfect incombustiity.

Salinuca. See *Valeriana celtica*.

SALI'VA. (*a*, *æ*. f.; so called, *à salino ore*, from its salt taste, or from σιαλος, spit-) The fluid which is secreted by the salivary nds into the cavity of the mouth. The *retory organ* is composed of three pair of vary glands: —

1. The *parotid glands*, which evacuate their va by means of the *Stenonian duct*, behind middle dens molaris of the upper jaw.

2. The *submaxillary glands*, which pour out ir saliva through the *Warthonian ducts*, on h side of the frenulum of the tongue, by a row osculum.

3. The *sublingual glands*, situated between the rnal surface of the maxilla and the tongue, ch pour out their saliva through numerous inian *ducts* at the apex of the tongue.

The saliva in the cavity of the mouth has ed with it, 1. The *mucus of the mouth*, ch exhales from the labial and genal glands. A *rosicl vapour*, from the whole surface of cavity of the mouth. The saliva is conally swallowed with or without masticated l, and some is also spit out. It has no ur nor *smell*; it is *tasteless*, although it conis a little salt, to which the nerves of the gue are accustomed. Its *specific gravity* is ewhat greater than water. Its *consistence* ather plastic and spumous, from the enled atmospheric air. The *quantity* of twelve nds is supposed to be secreted in twelve rs. During mastication and speaking, the etion is augmented, from the mechanical sure of the muscles upon the salivary ds. Those who are hungry secrete a great ntity, from the sight of agreeable food. It nperfectly dissolved by water; somewhat gulated by alkohol; and congealed with more difficulty than water. It is inspissated by a small dose, and dissolved in a large dose, of mineral acids. It is also soluble in carbonated alkali. Caustic alkali and quicklime extract volatile alkali from saliva. It corrodes copper and iron; and precipitates silver and lead from containing muriatic acid. It assists the spirituous fermentation of farinaceous substances; hence barbarous nations prepare an inebriating drink from the chewed roots of the *Jatropha manihot* and *Piper methisticum*. It possesses an antiseptic virtue, according to the experiments of the celebrated Pringle. It easily becomes putrid in warm air, and gives off volatile alkali.

Constituent principles. Saliva appears to consist, in a healthy state of the body, of water, which constitutes at least four fifths of its bulk, mucilage, albumen, muriate of soda, phosphate of soda, phosphate of lime, and phosphate of ammonia.

The use of the saliva. 1. It augments the taste of the food, by the evolution of sapid matter. 2. During mastication, it mixes with, dissolves, and resolves into its principles, the food, and changes it into a pultaceous mass, fit to be swallowed: hence it commences chymification. 3. It moderates thirst, by moistening the cavity of the mouth and fauces.

SALI'VAL. (*Salivalis*; from *saliva*, the spittle.) Of or belonging to the saliva.

SALIVAL DUCTS. The excretory ducts of the salival glands. That of the parotid gland is called the *Stenonian* duct; those of the submaxillary glands, the *Warthonian* ducts; and those of the sublingual, the *Rivinian* ducts.

SALIVAL GLANDS. Those glands which secrete the saliva are so termed. See *Saliva*.

SALI'VANS. (From *saliva*, spittle.) Productive of salivation.

SALIVA'RIA. (*a*, *æ*. f.; from *saliva*, the spittle: so called because it excites a discharge of saliva.) See *Anthemis pyrethrum*.

Salivaris herba. See *Anthemis pyrethrum*.

SA'LIVARY. The same as *salival*.

SALIVA'TION. (*Salivatio*, *onis*. f.; from *saliva*, the spittle.) See *Ptyalism*.

SA'LIX. (*ix*, *icis*. f.; from *sala*, Heb.) 1. The name of a genus of plants in the Linnæan system. Class, *Diœcia*; Order, *Diandria*. The willow.

2. The pharmacopœial name of *Salix*. See *Salix fragilis*.

Salix alba. See *Salix fragilis*.

SALIX CAPREA. The systematic name of a species of willow, the bark of the branches of which possesses the same virtues with that of the fragilis.

Salix Ægyptica. See the *Supplement*.

SALIX FRAGILIS. The systematic name of the common crack willow. The bark of the branches of this species manifests a considerable degree of bitterness to the taste, and is very astringent. It is recommended as a good substitute for Peruvian bark, and is said to cure intermittents and other diseases requiring tonic and astringent remedies. Not only the bark of this species of salix, but those also of several others, possess similar qualities, particularly of

the *Salix alba* and *Salix pentandra*, both of which are recommended in the foreign pharmacopœias. But Dr. Woodville is of opinion that the bark of the *Salix triandra* is more effectual than that of any other of this genus; at least its sensible qualities give it a decided preference. The trials Dr. Cullen made were with the bark of the *Salix pentandra*, taken from its branches, the third of an inch diameter, and of four or five years' growth. Nevertheless, he adds, in intermittent fevers, Bergius always failed with this bark. Willow bark contains a peculiar alkali. See *Salicine*.

Salix pentandra. The bark of the branches of this species of willow possesses the same virtues as that of the fragilis.

Salix vitulina. The bark of the branches of this species of willow may be substituted for the fragilis.

SA'LMO. (*o, onis.* m.; so called *à salicndo.*) The name of a genus of fishes, of the order *Abdominales*. The salmon.

Salmo alpinus. The red charr. This beautiful and delicate little fish, and the *Salmo carpio*, or gilt charr, are found in our lakes of Westmorland, in Wales, and Scotland. They are very rich, and hard of digestion.

Salmo eperlanus. The smelt. A beautiful little fish, found in great abundance in the Thames and river Dee, and in the European seas, between November and February. It is a great delicacy when in season, but not easy of digestion in weak stomachs.

Salmo fario. The common fresh-water trout, the flesh of which is very delicate and rich, but hard of digestion.

Salmo lacustris. The lake-trout.

Salmo salar. The common salmon. This fish is considered as one of the greatest delicacies. It is rich, and of difficult digestion to weak stomachs, and with some whose stomachs are not particularly feeble, it uniformly disagrees. The pickled, salted, and smoked, though much eaten, are only fitted for the very strong and active.

Salmo salmulus. The samlet: the least of the British species of the salmo genus. It is found in the river Wye, and up the Severn.

Salmo thymallus. The grayling salmon, which is somewhat like the trout. It inhabits the rivers of Derbyshire, and some of the north, and near Christchurch in Hampshire. It is much esteemed for the delicacy of its flesh, which is white, firm, and of a fine flavour; and is considered as in the highest season in the depth of winter.

Salmo trutta. The bill trout.

Salmon. See *Salmo salar.*

Salpi'ngo-pharynge'us. (From σαλπιγξ, a trumpet, and φαρυγξ, the pharynx.) This muscle is composed of a few fibres of the palato-pharyngeus, which it assists in dilating the mouth of the Eustachian tube.

Salpi'ngo-staphili'nus. (From σαλπιγξ, a trumpet, and σταφυλη, the uvula.) See *Levator palati.*

Salpingo-staphilinus internus. See *Levator palati.*

Salsafy. See *Tragopogon pratense.*

SALSO'LA. (*a, æ.* f.; so called from its saline properties; hence the English word saltwort, most of the species affording the fossile alkali.) The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Digynia.*

Salsola kali. *Kali spinosum cochleatum. Tragus sive Tragum Matthioli.* Snail-seeded glass-wort or salt-wort. The systematic name of a plant which affords the mineral alkali. See *Soda.*

Salsola sativa. The systematic name of a plant, which also affords the mineral alkali. See *Soda.*

Salsola soda. The systematic name of a plant which likewise affords mineral alkali. See *Soda.*

Salt. See *Sal.*

Salt, acid. 1. A salt which has an acid for one of its constituents.

2. A salt in which there is some free acid, which is known by its sour taste when diluted with water.

Salt, alkaline. One which has an alkali as one of its constituents. See *Alkali.*

Salt, ammoniacal fixed. Muriate of lime.

Salt, bitter purging. Sulphate of magnesia.

Salt, cathartic. See *Magnesiæ sulphas*, and *Sodæ sulphas.*

Salt, common. See *Sodæ murias.*

Salt, digestive. The muriate of potash.

Salt, diuretic. The acetate of potash.

Salt, Epsom. See *Magnesiæ sulphas.*

Salt, febrifuge of Sylvius. The muriate of potash.

Salt, fossil. The muriate of soda found in the earth.

Salt, fusible. Phosphate of ammonia.

Salt, fusible, of urine. A triple phosphate of soda and ammonia.

Salt, microcosmic. A triple phosphate of soda and ammonia.

Salt, nitrous ammoniacal. Nitrate of ammonia.

Salt, neutral. Under the name of neutral or secondary salts are comprehended such matters as are composed of two primitive saline substances, combined together in a certain proportion. These salts are called neutral, because they do not possess the characters of primitive salts; that is to say, they are neither acid nor alkaline; such as Epsom salts, nitre, &c. But in many secondary salts the qualities of one ingredient predominate; thus tartar, or supertartrate of potash, has an excess of acid; borax, or subborate of soda, an excess of base. The former are termed acidulous, the latter subalkaline salts.

Salt of amber. Succinic acid.

Salt of benzoin. Benzoic acid.

Salt of colcothar. Sulphate of iron.

Salt of Saturn. Acetate of lead.

Salt of Sedlitz. Sulphate of magnesia.

Salt of sorrel. Superoxalate of potash.

Salt, Rochelle. See *Soda tartarizata.*

Salt, sea. See *Sodii chloridum.*

Salt of steel. See *Ferri sulphas.*

Salt, polychrest. Sulphate of potash.

Salt, secondary. See *Neutral salt.*
Salt, sedative. Boracic acid.
Salt, spirit of. Muriatic acid.
Salt of vitriol. Sulphate of zinc.
Salt of wisdom. Sal alembroth.
Salt, primitive. Under this order is comehended those salts which are thought to be mple or primitive, and which are occasionally lled simple salts. This order is divided into ree genera, comprehending saline terrestrial bstances, alkalis, and acids.
Saltpetre. See *Nitre.*
Saltwort. See *Salsola kali.*

SALVATE'LLA. (From *salus*, health; cause the opening of this vein was formerly ought to be of singular use in melancholy.) is vein runs along the little finger, unites on the back of the hand with the cephalic of e thumb, and empties its blood into the interll and external cubital veins.

Salve. The common name for an ointment. e *Unguentum.*
Salver-shaped. See *Hypocrateriform.*

SA'LVIA. (*a*, *æ*. f.; *à salvendo.*) 1. The me of a genus of plants in the Linnæan sysm. Class, *Diandria*; Order, *Monogynia.* Sage. 2. The pharmacopœial name of the common ge. See *Salvia officinalis.*

Salvia hortensis minor. The small sage, sage of virtue. A variety of the officinal e, possessing similar virtues.
Salvia lyrata. See the *Supplement.*
Salvia officinalis. The systematic name the garden sage: called also, *Elelisphacos. via —foliis lanceolato ovatis integris crenulatis, ibus spicatis, calicybus acutis,* of Linnæus. ancient times sage was celebrated as a remedy great efficacy, as would appear from the foing lines of the school of Salernum: —

"*Cur moriatur homo, cui salvia crescit in horto?*
Contra vim mortis, non est medicamen in hortis?
Salvia salvatrix, naturæ conciliatrix.
Salvia cum ruta faciunt tibi pocula tuta."

t at present it is not considered as an article much importance. It has a fragrant strong ll; and a warm, bitterish, aromatic taste, other plants containing an essential oil. It aid to have the property of resisting the puaction of animal substances, and is in frequent among the Chinese as a tonic, in the form ea, in debility of the stomach and nervous em.

Salvia sclarea. The systematic name of garden clary, called *Horminum* in the pharopœias, and anciently *Bisermas*, and *Sclarea anica.* The leaves and seeds are recomded as corroborants and antispasmodies, icularly in leucorrhœas and hysterical weakes. They have a bitterish, warm taste, and rong smell, of the aromatic kind. The s are infused in white wine, and imitate cadel.
Salvia vitæ. See *Asplenium murale.*

SAMARA. (*a*, *æ*. f.; the name, according Pliny, of the fruit of the elm.) 1. The e of a genus of plants in the Linnæan m. Class, *Tetrandria*; Order, *Monogynia.*

2. A species of capsule of a compressed form, and dry coriaceous texture, with one or two cells, never bursting, but falling off entire, and dilated into a kind of wing at the summit or sides. In *Fraxinus*, it goes from the summit of the seed: in *Acer* and *Batula*, from the side: in *Ulmus campestris*, it goes all round.

SAMBU'CUS. (*us*, *i*. f.; from *sabucca*, Heb. a musical instrument formerly made of this tree.) Elder. 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Trigynia.*

2. The pharmacopœial name of the elder-tree. See *Sambucus nigra.*

Sambucus e/bulus. The systematic name of the dwarf-elder, or dane-wort; called also, *Ebulus, Chamæacte, Sambucus humilis,* and *Sambucus herbacea.* The root, interior bark, leaves, flowers, berries, and seeds of this herbaceous plant, *Sambucus — cymis trifidis, stipulis foliaceis, caule herbaceo,* of Linnæus, have all been administered medicinally, in moderate doses, as resolvents and deobstruents, and, in larger doses, as hydragogues. The plant is chiefly employed by the poor of this country, amongst whom it is in common use as a purgative; but Dr. Cullen speaks of it as a violent remedy.

Sambucus nigra. The systematic name of the elder tree; which is also called, *Sambucus vulgaris, Sambucus arborea, Acte,* and *Infelix lignum.* The *Sambucus — cymis quinquepartitis, foliis pinnatis, caule arboreo,* of Linnæus. This indigenous plant has an unpleasant narcotic smell, and some authors have reported its exhalations to be so noxious, as to render it unsafe to sleep under its shade. The parts of this tree that are proposed for medicinal use in the pharmacopœias are the inner bark, the flowers, and the berries. The first has scarcely any smell, and very little taste: on first chewing, it impresses a degree of sweetness, which is followed by a very slight but durable acrimony, in which its powers seem to reside. From its cathartic property it is recommended as an effectual hydragogue by Sydenham and Boerhaave: the former directs three handfuls of it to be boiled in a quart of milk and water, till only a pint remains, of which one half is to be taken night and morning, and repeated for several days: it usually operates both upwards and downwards, and upon the evacuation it produces its utility depends. Boerhaave gave its expressed juice in doses from a drachm to half an ounce. In smaller doses it is said to be an useful aperient and deobstruent in various chronic disorders. The flowers have an agreeable flavour; and infusions of them, when fresh, are gently laxative and aperient. When dry, they are said to promote chiefly the cuticular excretion, and to be particularly serviceable in erysipelatous and eruptive disorders. Externally they are used in fomentations, &c.; and in the London Pharmacopœia are directed in the form of an ointment. The berries in taste are somewhat sweetish, and not unpleasant; on expression they yield a fine purple juice, which proves an useful aperient and resolvent in some chronic diseases, gently loosening the belly, and promoting the urine and perspiration.

Samphire. See *Crithmum.*

Sampsu'chus. See *Sampsuchum.*

SAMPSUCHUM. (From σαω, to preserve, and ψυχη, the mind; because of its cordial qualities.) See *Amaracum.*

SA'NATIVE. (From *sano*, to cure.) That which cures diseases.

Sancti Antonii ignis. See *Erysipelas.*

SANCTUM SEMEN. The wormseed, or santonicum.

SANDALIFO'RMIS. Sandal or slipper-like: applied to the nectary of the *Cypripedium calceolus.*

SA'NDARACH. (*Sandaracha, æ. f.*; from *saghad narak*, Arabic.) This name has been given to a kind of gum resin, and also to realgar, or sulphuret of arsenic.

SANDARA'CHA A'RABUM. Gum sandarach. See *Juniperis communis.*

SANDARACHA GRÆCORUM. Realgar, or sulphuret of arsenic.

Sandbath. See *Bath.*

Sanders. See *Pterocarpus santalinus.*

Sandrack. See *Sandarach.*

SA'NDYX. (Σανδυξ; from *sani duk*, red, Arabian.) Cerusse burnt till it becomes red.

SANGUIFICA'TION. (*Sanguificatio*; from *sanguis*, blood, and *facio*, to make.) A natural function of the body, by which the chyle is changed into blood. The uses of sanguification are, the generation of blood, which serves to fill the blood-vessels, to irritate and stimulate the heart and arteries, to generate or cause heat, to secrete the humours, and to excite the vital actions.

SANGUINA'LIS. (From *sanguis*, blood: so named from its use in stopping bleedings.) The *Polygonum aviculare*, or knot-grass, is sometimes so called.

SANGUINA'RIA. (From *sanguis*, blood: so named from its use in stopping bleedings.) 1. The herb knot-grass. See *Polygonum aviculare.*

2. The name of a genus of plants.

SANGUI'NARINE. An alkaline principle, discovered by Dana in the root of the *Sanguinaria canadensis.*

SANGUI'NEOUS. (*Sanguineus*; from *sanguis*, blood.) Bloody; appertaining to the blood. 1. In *Natural History*, applied very generally to designate a red or blood colour. See *Colour.*

2. In *Physiology* and *Pathology*, applied to certain conditions of the body, to diseases, and to appearances of the solids and fluids; as sanguineous temperament, sanguineous apoplexy.

Sanguineous apoplexy. See *Apoplexy.*

SANGUIPU'RGIUM. (From *sanguis*, blood, and *purgo*, to purge.) A gentle fever, or such a one as by its discharges was supposed to purify the blood.

SA'NGUIS. (*is, inis.* m.) The blood. The nutritious fluid which circulates through every part of the living frame, supplying it with the power and the materials of life. It is warm and red in the vertebral animals; but cold, and generally white in the invertebral.

The blood in the human subject is a slightly alkaline fluid, of a red colour; of a peculiar odour; its taste is rather saline and nauseous; its temperature about 96° of Fahrenheit; it is glutinous to the touch; its specific gravity, though different in different individuals, may be generally estimated at 1050, water being 1000. Blood from arteries is florid, and from veins of a dark red, which the translucence of the venous coats renders bluish when seen through them: and the specific gravity of the former is said by Dr. John Davy to be 1049, and in the latter 1051. When fresh drawn and received into a vessel, it exhibits the following appearances: —

At first, especially while still warm, it emits a vapour which, if collected in a bell glass, forms drops resembling dew, of a *watery* nature, but affording a nidorous smell, which is most remarkable in the blood of carnivorous animals, is peculiar, and truly animal. Much of this watery liquor still remains united with the other parts of the blood, hereafter to be mentioned.

In the mean time the blood begins to separate into two portions. A coagulum is first formed, from the surface of which exudes, as it were, a fluid of a yellowish slightly red colour denominated *serum*: the more abundantly this exudes, the greater is the contraction of the glutinous coagulum, which has received the appellations of *crassamentum*; and, from some resemblance to the liver in colour and texture of hepar sanguineum; of placenta; and, from the circumstance of its being surrounded by the serum, of insula.

Some have thought that heat is evolved during its coagulation; others have denied this. M. Raspail says that the temperature falls.

The crassamentum may, by agitation or repeated ablution, be easily separated into two constituent parts, — the *cruor*, which gave the blood its purple colour — and the *fibrin*, which on washing is forsaken by the cruor, and called, from its greater solidity, the basis of the crassamentum.

Besides the watery fluid first mentioned, there are the three constituents of the blood, viz. the *serum*, the *cruor*, and the *fibrin*, each of which we shall presently treat more particularly. These, however, while perfectly recent, and in possession of their native heat, are intimately mixed, and form an equable, homogeneous fluid. Their relative proportions are astonishingly diversified, according to age, temperament, diet, and similar circumstances which constitute the peculiar health of each individual.

The quantity of blood in a well-formed adult is estimated by "Allen, Mullen, and Abildgaard, at little more than 8 pounds; by Harvey at 9; Borelli, 20; Haller, 30; Riolan, 40; Hamberger, 80; and Keil, 100. The former are evidently nearer the truth." M. Le Canu says, that the quantity of its *water*, in a healthy person, varies from 853·135 to 778·625 in 1000 parts, and the medium quantity is greater in females and in the phlegmatic temperament; of its *albumen*, from 78·270 to 57·890, and has no relation to sex, age, or temperament: of its *fibrin* dry, from 1·360 to 2·236, is the greatest in the young or middle-aged, in the sanguine temperament, and in the inflammatory state.

least in the phlegmatic temperament, the aged, and under congestion or hæmorrhage: of its *globules*, from 148·450 to 68·349 — being the most remarkable variation — is greatest in males, the same between the ages of twenty and sixty, much greater in the sanguineous than the phlegmatic temperament, and much less after losses of blood, which do not affect the quantity of the albumen.

The *blood*, according to M. Le Canu, consists of the following constituents: —

	1st Analysis.	2d Analysis.
Water	780·145	786·500
Fibrin	2·100	3·565
Albumen	65·090	69·415
Colouring matter	133·000	119·626
Crystallisable fatty matter	2·430	4·300
Oily matter	1·310	2·270
Extractive matter soluble in alkohol and water	1·790	1·920
Albumen combined with soda	1·265	2·010
Chloruret of sodium and potassium, alkaline phosphate, sulphate, and subcarbonates	8·370	7·304
Subcarbonate of lime and magnesia, phosphates of lime, magnesia, and iron, peroxide of iron	2·100	1·414
Loss	2·400	2·586
	1000·000	1000·000

When blood, venous or arterial, is immediately placed in the vacuum of an air-pump, or coagulates in the air, or is received from a vein into pure hydrogen, it emits a large quantity of carbonic acid gas. Professor Brande obtained two cubic inches from every ounce of blood; Sir C. Scudamore, less than half a cubic inch from six ounces. The quantity is said to be much greater after a meal, and much less if the blood is buffy.

Chevreul, Lassaigne, and others discover a yellow colouring matter like that of the bile and urine. Dumas and Prevost and others discern something like urea, which M. Raspail suggests may be the effect of their experiments, as Woehler discovers urea to be a cyanite of ammonia, and capable of artificial production by passing cyanogen (bicarburet of nitrogen) through ammoniacal gas.

"The *serum* is a peculiar fluid, the chief cause of the viscidity of the blood, and easily separable by art into different constituent principles. If subjected to a temperature of 150° Fahr., a portion is converted into a white scissile substance, resembling boiled white of egg," and is in truth albumen; the watery portion which remains was termed serosity by Cullen, and contains various substances.

If mixed with six parts of cold water, serum does not coagulate by heat.

Under the influence of the galvanic pile, soda collects at the negative wire, and the albumen coagulates at the positive, on account, M. Raspail says, probably, of the decomposition of the salts and also of the waters, and the consequent oxygenation of every thing at the positive pole, where the oxygen collects; and of the increase of temperature attending the decomposition of organised bodies.

M. Le Canu gives the following analysis of serum: —

	1st Analysis.	2d Analysis.
Water	906·00	901·00
Albumen	78·00	81·20
Animal matter soluble in water and alkohol	1·69	2·05
Albumen combined with soda	2·00	2·55
Crystallisable fatty matter	1·20	2·10
Oily matter	1·00	1·30
Muco-extractive matter	—	—
Extractive matter soluble in alkohol and acetate of soda	—	—
Hydro-chlorate of soda and potash	6·00	5·32
Subcarbonate and phosphate of soda and sulphate of potass	2·10	2·00
Phosphate of lime, magnesia, and iron, with subcarbonate of lime and magnesia	0·91	0·87
Loss	1·00	1·61
	1000·00	1000·00

The *cruor* consists of globules; and Mr. Hewson asserts that they have a nucleus and an enveloping colouring portion. The nucleus is said to be colourless: perhaps about $\frac{1}{5000}$ of an inch in diameter, and the whole globule nearly one fourth larger. M. Raspail says, that, though the form and dimensions of the particles are different in different species, and nearly the same in the same individual, they still vary within very narrow limits in individuals, and the dimensions in even the same drop of blood, especially if not examined immediately that the blood is taken from the vessels. In man, he says, they are from $\frac{1}{100}$ to $\frac{1}{200}$ of a millimètre, flat and circular. MM. Prevost and Dumas believe that the internal portion is spherical, but the outer or vesicular, as Hewson noticed, flattened. The inner part, according to these enquirers, rolls in the outer, and, in the frog's web and bat's wing, at least, the whole particle is carried, steadily balanced, in the current of blood, sometimes flat, sometimes oblique, sometimes gently turning upon itself, and lengthening if driven into a vessel of diameter hardly sufficient for its admission; the old assertion of Reichel being thus corroborated. Kalk, Treviranus, and others, have noticed a rotatory motion of the entire particles, each at a distance from the other; and Professor Schultz of Berlin has confirmed their observations. But M. Raspail considers these motions as accidental and mechanical results, such as have deceived so many microscopic investigators. Mr. Bauer says he has discovered a third set of smaller colourless globules in the blood, $\frac{1}{2800}$ of an inch in diameter, which appear to belong to the fibrin, and are accordingly denominated

lymph globules; and it is thought probable that the central globule of the red particles is the same, and thus really fibrin. Colourless globules gradually form also in serum. It is also asserted that the globules of pus form gradually, and that pus is originally an homogeneous fluid.

The globules of the blood, independent of their covering of red substance, M. Raspail regards as mere particles of albumen not dissolved in the serum, and, after proving their albuminous nature, shows how albumen dissolved in an excess of concentrated hydrochloric acid forms minute, spherical, equal globules, in proportion as the decanted acid *spontaneously* evaporates, scarcely distinguishable from the globules of the blood. One takes breath while reading M. Raspail, after the strange and varying statements of so many experimenters, especially of those who use microscopes.

If arterial blood is exposed to ammoniacal gas, it becomes of a cherry red; if to gaseous oxide of carbon, the deutoxide of azote, or carburetted hydrogen, of a violet red; if to carbonic acid, though covered by two inches depth of serum, azote, hydrogen, or protoxide of azote, of a brown red; if to arseniuretted or sulphuretted hydrogen, of a deep violet inclining to a greenish brown; if to hydrochloric gas, of a chesnut brown; if to sulphureous gas, of a blackish brown; and if to chlorine, of a blackish brown inclining to greenish white. These gases are of course partly absorbed or decomposed. The dark colour produced in arterial blood by carbonic acid or azotic gas takes place if blood is placed in vacuo, though less rapidly and deeply than if exposed to hydrogen gas, and in vacuo, though covered by two inches and a half of serum. Arterial blood extravasated or included between two ligatures in an artery, nay, left in contact with oxygen, gradually acquires the same dark colour, and no oxygen will afterwards render it scarlet. Acids, if stronger than just enough to neutralise a weak salt, and alkalis, darken arterial blood. If deprived of all saline matter by washing, the reddest clot of blood becomes black, and will not grow florid by oxygen: whereas if saline matter is added, it becomes florid, even in an atmosphere of carbonic acid.

Venous blood acquires a florid colour by exposure to oxygen or atmospheric air (and it does so even when covered by a bladder, provided this is moistened), carbonic acid gas is formed, and an equal volume of oxygen gas disappears, and this the more if the temperature is high. If exposed to nitrous oxide, it becomes of a brighter purple, and much of the gas is absorbed; carbonic acid gas renders it darker, and is a little absorbed: nitrogen and hydrogen have the same effect. Electricity blackens the blood, and, according to Dr. Stevens, the poison of the rattle-snake, and other poisons, though floating only in the air. Putrefaction makes the blood dark. Alkaline and some other neutral salts make venous blood florid; and this, if added in considerable quantities, even when the blood is exposed, not to oxygen or air, but to a blackening gas.

Dr. Stevens seems to have proved that the colouring matter of the blood is really black, and acquires redness only by the action of the salts upon the hematosine; and that venous blood is of a dark red through the presence of carbonic acid, and but for the salts would be black. If blood is black from want of salts, very little of them will make it florid; if it is black from the presence of carbonic acid, azote, &c., the quantity of salts requisite will be proportionate to the quantity of the blackening agent. Oxygen indirectly renders blood florid, by removing the carbonic acid gas, and thus allowing the salts of the serum to brighten it; for if these are washed away, we see that oxygen has no effect, and we see that in proportion to the disappearance of oxygen is carbonic acid evolved. The same interchange of carbonic acid takes place in hydrogen, and the blood remains black; but then hydrogen blackens blood as well as carbonic acid. It is possible that oxygen may have the property of making blood florid, just as hydrogen, nitrogen, carbonic acid, &c. have to make it dark. But if it have, still it does not make the blood florid unless salts be present, and carbonic acid always appears; and when blood is darkened by putrefaction, so that air will not make it florid, the addition of most neutral salts instantly brightens it. Such are the statements of Dr. Stevens.

Berzelius finds the colouring particles only concerned in these changes. Prevost and Dumas found more fibrin and red particles in arterial than in venous blood; and the venous must contain a larger quantity of carbonic acid, and the arterial an abundance of oxygen: Macaire and Marcet, on *ultimate* analysis, find about five per cent. more oxygen in arterial, and five per cent. more carbon in venous, blood.

It is in the red covering of the particles, or hematosine, as the colouring matter is now called, that the iron of the blood exists. Berzelius informs us that serum, although able to dissolve a small portion of the oxides, not indeed of the phosphates, of iron, does not acquire a red colour by their addition, and that he has never discovered iron nor lime in the entire blood, although both are so abundant in its ashes. He concludes that the blood contains the *elements* of phosphate of iron and of lime and of carbonate of lime, and also of phosphate of magnesia, united in a manner different from their combination in the salts. M. Raspail seven years ago, showed that certain coagulable substances will protect a metal from the strongest re-agent — that a mixture of oil and the salts of iron will afford no signs of the metal till some days after it has been placed in acidulated ferrocyazate of potass. Rose obtained the same result on mixing albumen or gelatine with peroxide of iron. But Dr. Engelhart has shown iron to exist in blood, by the usual liquid tests after passing a stream of chlorine through a solution of red particles.

The last constituent principle of the blood to be noticed, is the plastic *lymph*, formerly confounded with the serum. This has been called the basis of the crassamentum, the glutinous

part, the fibre or fibrous matter of the blood. t is now termed *fibrin*.

It is properly denominated plastic, because affords the chief materials from which the imilar parts, especially the muscles, are immediately produced; nourishes the body throughut life; repairs wounds and fractures in an xtraordinary manner; fills up the areæ of large lood-vessels when divided; and forms those ecretions which accompany inflammations, nd that remarkable deciduous membrane found n the recently impregnated uterus for the atachment of the ovum.

We will now consider the coagulation of the brin more minutely.

Blood coagulates when it has escaped from e body, whether warm or cold, in the air or vacuo, diluted within certain limits, or unluted, at rest or in motion. Within the vesls, rest, which causes a cessation of intercourse tween the motionless portion and the general ass, always disposes it to coagulate. Yet its agulation, after escape from the body, is said be accelerated by motion, a high temperature, d a vessel calculated to preserve its temperare, by a vacuum, and by the stream from the ood-vessel being slow, and *vice versâ*: in short, every circumstance which favours the escape carbonic acid gas, and to be proportioned to e quantity of carbonic acid gas evolved; this as evolved during the coagulation, and ceasg to escape when the coagulation is complete. alvanism and oxygen gas raise its temperare and hasten coagulation, while carbonic acid s, azote, and hydrogen, have the opposite efts. Dilute mineral acids coagulate the blood: alis and their carbonates retain its fluid.

The coagulation of the blood is ascribed by Hunter to its life; by Mr. Thackrah, on the trary, to its death, as the separation of a tion from the mass, by escape from a vessel, likely to kill it if alive; as every change ly to impair life promotes coagulation, for mple, debility, fainting; and as blood frozen, ll therefore likely to be killed if alive, and in thawed, instantly coagulates. But the gulation appears, in most instances, if Sir Scudamore's experiments be accurate, though ers have not found the same results, attriable merely to the escape of carbonic acid; l as coagulated blood or fibrin (and the coulated part of effused blood is fibrin) bemes vascular, one can hardly, if the fluid is e, regard a coagulum as necessarily dead.

Large quantities of blood are found fluid in ry dead body, showing that simple loss of lity is not sufficient to cause coagulation. reed, the blood of the various parts of the rt and vessels is found, most frequently, in posite states, fluid in one part, coagulated in ther; yet it is all equally dead. From all se contradictory circumstances, the coagula- of the blood may possibly be quite uncon- ed with its vitality or lifelessness, and entirely emical result. That it, however, is influenced he vital properties of the containing vessels ossible, but these may operate upon the od, in this respect, as a mere chemical com- nd; and even, if it be alive, and they influence its life, still the influence, as far as respects coagulation, may in effect be chemical.

The blood generally coagulates in the living body on escaping from its vessels, and even in its vessels if its motion be prevented by ligatures; and when it does not, its subsequent escape from the body almost always produces instant coagulation. It almost always coagulates also in the vessels running through healthy parts to others in a state of mortification, and in large vessels adjoining a pulmonary abscess; in which cases, the final cause or purpose — prevention of hæmorrhage, is evident. The efficient cause, however, in all these examples, is unknown. In all, the blood is in contact with living parts: in the last two it is perhaps not at rest till it coagulates. J. Hunter, after mentioning that in a mortification of the foot and leg he found the crural and iliac arteries completely filled with strongly coagulated blood, adds, that this could not have arisen from rest, because the same thing ought then to happen in amputation, or in any case where the larger vessels are tied up. Besides, coagulation after extravasation, or when a quantity is included in a vessel between two ligatures, is not an invariable occurrence.

These facts, in addition to those stated above, show that fluidity or coagulation is not dependent on the simple presence or absence of vitality. Whatever connexion coagulation out of the body may have with the escape of carbonic acid gas, there is no proof of it in the case of internal coagulation.

Some have imagined the globules to be not only endowed, through vitality, with spontaneous motion, but with repulsion, which ceases with life, and thus by their death to run together and produce the phenomenon of coagulation. But M. Raspail contends, as we have noticed, that such spontaneous motion is a microscopic accident, and that, so far from being organised, they are merely minute precipitations of albumen; and he shows that, when the blood coagulates, the globules are seen under the microscope enveloped in the coagulum, which, therefore, cannot be a mere union of them. He asserts that fibrin and albumen are identical, and that the fibrin is preserved liquid by the alkalis of the blood, — soda and ammonia; which, if they become saturated by the carbonic acid of the atmosphere and that which forms in blood when exposed to the air, can no longer act as a solvent, and the fibrin accordingly coagulates. The escape of the ammonia and of a certain quantity of the water of the blood augments this effect, and blood coagulates the sooner in proportion as it is less watery. Coagulation within the blood-vessels he regards as produced by the escape of some of the water of the blood through the coats of the vessels. Some glutinous saps, as that of the *chara hispida* (stone-wort), coagulate, like the blood, chyle, and milk, and they all have albumen in the state of globular precipitation and solution, have the same salts, and their coagulation ceases when the solvent of the albumen is saturated, evaporated, or weakened. In sap, the solvent is acetic acid.

The fibrin may be separated from the red particles by agitation, and in inflammatory diseases it very frequently separates when drawn. Some conceive, that in health the cruor has a greater affinity for fibrin than for the serum, and therefore unites with it in preference. But to suppose any affinity of the red particles for either the fibrin or the serum is erroneous. Leeuwenhoek and Hartsoeker long since proved that serum merely suspends them; for if, when separated, they are triturated in some serum, part of them is taken up and the serum assumes a red colour; but, if the fluid is allowed to settle in a cylindrical glass, they slowly precipitate themselves to the bottom, and the serum above becomes clear as before. When blood is drawn, the serum easily separates on the coagulation of the fibrin. But the fibrin coagulates before the colouring particles have time to fall to the bottom, and entangling them acquires a red colour, forming the crassamentum: if, however, the fibrin coagulates slowly and is thinner, as in the phlogistic diathesis and pregnancy, the greater specific gravity of the cruor detaches it very considerably from the fibrin, which remains colourless above, constituting what is called the inflammatory coat, crust, or buff. Berzelius even believes the fibrin to be in a state of solution in the serum, while the cruor is simply suspended in this solution. In the phlogistic diathesis both the fibrin and the serum are more abundant, and the blood lighter.

Thinness of the blood and a disposition to slow coagulation generally co-exist. But the rapidity of the stream greatly affects the rate of coagulation, so that one portion of the same blood coagulates slowly that is drawn quickly, and another quickly that is drawn slowly.

The appearance of the buffy coat does not arise from the slow coagulation, though increased by it; because, of two portions of the same blood, one has afforded no buffy coat, although it remained fluid at least ten minutes after the buffy coat began to be formed on the other, proving too, if the buffy coat arise from thinness of the fibrin, as appears from Mr. Hewson's experiments, the red particles continuing of their usual weight, that slow coagulation is not altogether dependent on mere thinness of the blood, though generally connected and proportional with it. Yet rapid coagulation, by means of a slow stream when the blood is thin, may prevent the buffy coat, by not allowing time for the difference in the weight of the fibrin and red particles to have effect. Stirring such blood, or receiving it into a shallow vessel, has the same consequence, and the slower the coagulation of thin blood, occasioned, for instance, by rapid bleeding, the greater will be the buffy coat.

If one portion of the same blood is received into a shallow, and another into a deep vessel, the coagulum of the former is looser and spongy, and the quantity of separated serum less.

The different cups of blood drawn in an inflammatory disease may vary as to the buffy coat, according to accidental variations in the stream; but generally it is the first cup that abounds in buff, and the last frequently has none. This occurs when there is no difference in the stream. Therefore, if the buff arise from thinness of the fibrin, we must conclude with Hewson that its qualities may be changed even during bleeding. Sir C. Scudamore finds much more fibrin in buffy blood; and, consequently, that not merely the thinness, as Hewson observed, but the quantity of fibrin may vary during the flow of blood.

The greater the strength of the patient and the intensity of the inflammation, the firmer is the coagulum of fibrin and the more cupped its appearance.

Sir C. Scudamore did not find a buffy coat in blood drawn immediately after violent exercise.

Fibrin is inodorous and tasteless, whitish, insoluble in alcohol and acids, slightly soluble in boiling water long applied; coagulates, as already said, when separated from the body; dries hard, brittle, and semitransparent.

Albumen is inodorous, tasteless, colourless, soluble in water, and coagulates by a temperature of 150°, by pure potass, the mineral acids, tannin, and many metallic salts, especially by bichloride of mercury, and by prussiate of potass if a little dilute acid is previously mixed with it. Acetic and some other acids dissolve it, and even render it to a certain point soluble in alcohol and boiling water, according to M. Raspail; who also, under the microscope, discovers albumen to consist of two substances, the one an insoluble and organised tissue, the other a fluid contained in the cells of this. The insoluble portion, however, forms gradually only, and in fresh eggs can scarcely be distinguished from the soluble; just as is the case with the woody fibres of vegetables, that gradually form from a gum. Dr. Wollaston stated that the soda of albumen prevents it from all coagulating by heat, and the addition of an acid by neutralising the alkali, renders it completely coagulable. Raspail says, "alkaline solutions, even alkaline carbonates," prevent heat from coagulating albumen. Mr. Brande thinks it liquid only through alkali.

Chemists all allow that fibrin, albumen, and colouring matter afford, on decomposition, the same saline and gaseous products. Berzelius views them all three as modifications of the same substance. Albumen contains a greater proportion of oxygen than fibrin, and has sulphur for a constituent part, which, however, cannot be detected while the albumen is entire, any more than the iron while the cruor is entire. The chief differences between the colouring matter and fibrin are, colour; the spontaneous coagulation of fibrin at all temperatures, while the colouring matter may be dried without losing its solubility in water and becomes insoluble only at a certain temperature; and the peculiarity in the latter of not diminishing in volume like fibrin during exsiccation. According to most chemists, albumen is intermediate between the two; and its only character of distinction from fibrin is, that it does not coagulate spontaneously, but requires a high temperature or some chemical agent. M. Raspail maintains that albumen and fibrin are identical; and the

the slight differences between the two are referable to the natural and adventitious salts of albumen, varying according to the organs from which it is obtained. The following results are given by Gay-Lussac and Thénard, in regard to them and gelatine: —

	Carbon.	Hydrogen.	Oxygen.	Nitrogen.
Gelatine ..	47·881	7·924	27·207	16·998
Albumen ..	52·883	7·540	23·872	15·705
Fibrin	53·360	7·021	12·685	19·934

Besides which, they, as well as the colouring matter of the blood, contain a very minute portion of the earthy phosphates.

We formerly saw that Dr. Prout is of opinion, at present, that, when oxygen and hydrogen exist united, it is in the form of actual water, as an essential constituent of unazotised vegetable bodies, one atom of carbon being united with one of water. Now M. Raspail makes it highly probable that the nitrogen of vegetable gluten, of albumen, fibrin, gelatine, and other animal matters, exists combined with another portion of hydrogen in the form of ammonia, which again is combined, as a base, with some acid, making an ammoniacal salt. The remaining small quantity of the hydrogen, not united with oxygen into water, is united with carbon into carburetted hydrogen; so that substances called azotised are really not azotised. He shows that the numbers given by Thénard are such as will give so much water, ammonia, and carburetted hydrogen, with pure carbon. Vegetable substances have been hitherto considered as ternary compounds of oxygen, hydrogen, and carbon: animal substances, and vegetable gluten, quaternary compounds of oxygen, hydrogen, carbon, and nitrogen; for most animal substances usually record nitrogen, and but few vegetable substances excepting gluten. In M. Raspail's views, organised bodies consist of water, ammonia, carbon, and salts. And here it must be remarked, that the alkaline, earthy, and other substances, found in minute quantities in animal and vegetable compounds, and which have usually been regarded as foreign and unimportant, are, with great reason, considered by Dr. Prout as integrants in the compounds, and chiefly productive of the striking differences observed in substances having otherwise the same essential composition. The importance of minute quantities of matter is known, he remarks, in the experiments of Sir John Herschel, who found that a power, not less than 50,000 times greater than the power of gravity, is constantly generated (under the galvanic influence, for example) by the alloy of mercury and a millionth part of its weight of sodium. Dr. Prout regards these incidental particles as in a state of mutual repulsion, because, instead of being equally diffused as they are, they would otherwise be collected into a mass or crystal.

Dr. Prout also says, that it may perhaps be laid as a general law, that no substance, entering into the composition of a living plant or animal, is so pure as to be capable of assuming a regularly crystallised form. Instead, therefore, of being defined by straight lines and angles, all solid organised substances are more or less rounded, and their intimate structure is any thing but crystallised. The composition of organised fluids is equally heterogeneous; and, though the basis of nearly every one of such fluids is water, many of them contain a variety of other matters.

M. Raspail remarks further, that the constituents of organic solids or fluids are not combined in definite proportions, like those of inanimate bodies, but are ever variable, so that the varieties of each compound are infinite. — *Elliotson.*

Sanguis draconis. See *Dragon's blood.*

SANGUISO'RBA. (*a, æ.* f.; probably so named originally from the blood-red colour of its flowers, although, the juice of this plant being astringent, the medicinal properties it possesses of stopping hæmorrhages may be a better warrant for its name.) The name of a genus of plants in the Linnæan system. Class, *Tri-andria;* Order, *Monogynia.*

SANGUISORBA OFFICINALIS. The systematic name of the Italian pimpinel, which was formerly much esteemed as an astringent, but is not now in use.

SANGUISU'GA. (*a, æ.* f.; from *sanguis*, blood, and *sugo*, to suck.) The leech or blood-sucker. See *Leech.*

SANGUISUGUM. A barbarous term for a congestion of blood in the heart.

Sanicle. See *Sanicula.*

Sanicle, Yorkshire. See *Pinguicula.*

SANI'CULA. (*a, æ.* f.; from *sano*, to heal: so called from its virtues in healing.) 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Digynia.*

2. The pharmacopœial name of sanicle.

Sanicula Eboracensis. See *Pinguicula.*

SANICULA EUROPÆA. The systematic name of the sanicle: called, also, *Cucullata, Dodecatheon, Cortusa, Symphytum petræum, Sanicula mas,* and *Diapensia cortusa.* This herb was formerly recommended as a mild astringent, and received its name from its supposed vulnerary qualities. Its sensible qualities are a bitterish and somewhat austere taste, followed by an acrimony which chiefly affects the throat. It is only in use in the present day amongst the country-people.

Sanicula mas. See *Sanicula europæa.*

SA'NIES. (*es, ei.* f.) A thin unhealthy discharge, with or without an admixture of blood or pus, from fistulæ or ill-conditioned sores.

SA'NTALUM. (*um, i.* n.; from *zandal*, Arabic.) The name of a genus of plants in the Linnæan system. Class, *Tetrandria;* Order, *Monogynia.* Saunders.

SANTALUM ALBUM. The systematic name of the white and yellow saunders: called, also, *Santalum citrinum* and *Santalum pallidum.* White saunders wood is of a pale white colour, often with a yellowish tinge, and, being destitute of taste or odour, it is superseded by the santalum citrinum, which is of a brownish yellow colour, of a bitterish aromatic taste, and of a pleasant smell, approaching to that of the rose. Both kinds are brought from the East Indies in billets, consisting of large thick pieces, which, according to Rumphius, are sometimes taken from the same, and sometimes from different, trees. For though the white and yellow saunders are

the wood of the same species of tree, yet the latter, which forms the central part of the tree, is not always to be found in sufficient quantity to repay the trouble and expense of procuring it, especially unless the trees be old; while the white, which is the exterior part of the wood, is always more abundant, and is, consequently, much cheaper.

Yellow saunders, distilled with water, yields a fragrant essential oil, which thickens in the cold to the consistence of a balsam, approaching in smell to ambergris, or a mixture of ambergris and roses; the remaining decoction, inspissated to the consistence of an extract, is bitterish and slightly pungent. Rectified spirit extracts, by digestion, considerably more than water; the colour of the tincture is a rich yellow. The distilled spirit is slightly impregnated with the flavour of the wood; the remaining brownish extract has a weak smell, and a moderate balsamic pungency. The wood is valued highly on account of its fragrance: hence the Chinese are said to fumigate their clothes with it, and to burn it in their temples in honour of their gods. Though still retained in the Materia Medica, it cannot be thought to possess any considerable share of medicinal power. Hoffmann considers its virtues as similar to those of ambergris: and some others have esteemed it in the character of a corroborant and restorative.

Santalum rubrum. See *Pterocarpus.*

SANTOLI'NA. (*a, æ.* f.; from *santalum*, saunders: because it smells like the saunders wood.) See *Artemisia santonica.*

Santolina chamæ-cyparissus. The systematic name of the lavender cotton.

Santo'nicum. (From *Santonia*, its native place.) See *Artemisia santonica.*

Santori'ni fissu'ræ. The fissures or interruptions in the cartilaginous portion of the meatus auditorius externus are so named, after Santorini.

Santorini tubercula. The little projections on the top of the arytenoid cartilages which support the ligaments of the glottis.

Santorini venæ emissoriæ. See *Emissoria santorini.*

Saphada. A name given by Paracelsus to a scaly disease of the hairy scalp, resembling tinea, except that the scales are reddish.

SAPHE'NA. (*a, æ.* f.; from *σαφης*, conspicuous.) *Vena saphena.* The large vein of the leg, which ascends along the little toe over the external ankle, and evacuates part of the blood from the foot into the popliteal veins.

SAPI'NDUS. (*us, i.* f.; that is, *Sapo Indus*, Indian soap: the rind of the fruit serving instead of soap to cleanse linen; but not without hazard of injury to the texture of the cloth.) The name of a genus of plants. Class, *Octandria*; Order, *Digynia.* The soap-tree.

Sapindus saponaria. The systematic name of the plant which affords the soap-nuts, or soap-berries; called, also, *Baccæ bermudenses.* A globular fruit, about the size of a cherry, the cortical part of which is yellow, glossy, and so transparent as to show the spherical black nut which rattles within, and which includes a white kernel. The tree grows in Jamaica. It is said that the cortical part of this fruit has a bitter taste, and no smell; that it raises a soapy froth with water, and has similar effects with soap in washing; that it is a medicine of singular and specific virtue in chlorosis. It is not known in the shops of this country.

SA'PO. (*o, onis.* m.) Soap. A compound, in definite proportions, of certain principles in oils, fats, or resins, with a salifiable base. When this base is potash or soda, the compound is used as a detergent in washing clothes. When an alkaline earth, or oxide of a common metal, as litharge, is the salifiable base, the compound is insoluble in water. The first of these combinations is scarcely applied to any use, if we except that of linseed-oil with lime-water, sometimes prescribed as a liniment against burns; and the last is known only in surgery as the basis of certain plasters. Concerning the chemical constitution of soaps, and saponification, no exact ideas were entertained prior to Chevreuil's researches. An abstract of these will be found in the article *Adeps.*

When fat is treated with a hot ley of potash or soda, the constituents re-act on one another, so as to generate the solid pearly matter, *margaric acid*, and the fluid matter, *oleic acid*, both of which enter into a species of saline combination with the alkali; while the third matter that is produced, the *sweet principle*, remains free. We must, therefore, regard our common soap as a mixture of an alkaline margarate and oleate, in proportions determined by the relative proportions of the two acids producible from the peculiar species of fat.

The specific gravity of soap is, in general, greater than that of water. Its taste is faintly alkaline. When subjected to heat it speedily fuses, swells up, and is then decomposed. Exposed to the air in thin slices it soon becomes dry; but the whole combined water does not leave it, even by careful desiccation on a sand-bath.

Soap is much more soluble in hot than in cold water. This solution is instantly disturbed by the greater number of acids, which, seizing the alkali, either separate the fatty principles, or unite with them into an acido-soapy emulsion. The solution is likewise decomposed by almost all the earthy and metallic salts, which give birth to insoluble compounds of the oleic and margaric acids with the salifiable bases.

Soap is soluble in alkohol, and in large quantity, by the aid of heat. When boiling alkohol is saturated with soap, the liquid, on cooling, forms a consistent transparent mass of a yellow colour. When this mass is dried it still retains its transparency, provided the soap be a compound of tallow and soda; and in this state it is sold by the perfumers in this country.

Good soap possesses the property of removing from linen and cloth the greater part of fatty substances which may have been applied to them.

The medicinal soap, *sapo amygdalinus*, is made with oil of sweet almonds and half its weight of caustic alkali. Common or soft soap, *sapo mollis*, is made of potash and oil or tallow. Spanish, or Castile soap, *sapo durus*, of oil of olives and soda or barilla. Black soap is a composition of

train-oil and an alkali; and green soap, of hemp, linseed, or rape-oil, with an alkali. The white Spanish soap, being made of the finer kinds of olive-oil, is the best, and therefore preferred for internal use. Soap was imperfectly known to the ancients. It is mentioned by Pliny as made of fat and ashes, and as an invention of the Gauls. Aretæus and others inform us that the Greeks obtained their knowledge of its medical use from the Romans. Its virtues, according to Bergius, are detergent, resolvent, and aperient; and its use recommended in jaundice, gout, calculous complaints, and obstruction of the viscera. The efficacy of soap in the first of these diseases was experienced by Sylvius, and since recommended very generally by various authors who have written on this complaint; and it has also been thought of use in supplying the place of bile in the primæ viæ. The utility of this medicine in icterical cases was inferred chiefly from its supposed power of dissolving biliary concretions; but this medicine has lost much of its reputation in jaundice, since it is now known that gall-stones have been found in many after death who had been daily taking soap for several months, and even years. Of its good effects in urinary calculous affections we have the testimonies of several, especially when dissolved in lime-water, by which its efficacy is considerably increased; for it thus becomes a powerful solvent of mucus, which an ingenious modern author supposes to be the chief agent in the formation of calculi. It is, however, only in the incipient state of the disease that these remedies promise effectual benefit, though they generally abate the more violent symptoms where they cannot remove the cause. With Boerhaave soap was a general medicine; for, as he attributed most complaints to viscidity of the fluids, he, and most of the Boerhaavian school, prescribed it, in conjunction with different resinous and other substances, in gout, rheumatism, and various visceral complaints. Soap is also externally employed as a resolvent, and gives names to several officinal preparations.

Sapo terebi'nthinæ. Starkey's soap. This is made of one part of dried and warm subcarbonate of potash, and three parts oil of turpentine. The heated alkali is to have the oil of turpentine gradually blended with it in a warm mortar. Indolent swellings were formerly rubbed with this application, and, perhaps, some chronic affections of the joints might still be benefited by it.

SAPONA'RIA. (*a, æ.* f.; from *sapo*, soap; so called because its juice, like soap, cleans cloths.) 1. The name of a genus of plants in the Linnæan system. Class, *Decandria*; Order, *Digynia*.

2. The pharmacopœial name of the soap-wort. See *Saponaria officinalis*.

Saponaria nu'cula. The soap nut. See *Sapindus*.

Saponaria officinalis. The systematic name of the soap-wort: called also, bruise-wort, and *Struthium*, *Lanaria*, *Lychnis sylvestris*, and *Ibixuma*. The root of this plant *Saponaria—calycibus cylindricis, foliis ovato-lanceolatis*, of Linnæus, is employed medicinally; it has no peculiar smell; its taste is sweetish, glutinous, and somewhat bitter. On being chewed for some time, it is said to discover a degree of acrimony, which continues to affect the mouth a considerable time. According to Newman, two ounces of the root yielded eleven drachms of watery extract; but Cartheuser, from a like quantity, only obtained six drachms and twenty-four grains. This extract manifested a sweetish taste, followed by an acrid quality. The spirituous extract is less in quantity, but of a more penetrating acrid taste. Decoctions of the root, on being sufficiently agitated, produce a saponaceous froth: a similar soapy quality is observable, also, in the extract, and still more manifestly in the leaves, insomuch that they have been used by the mendicant monks as a substitute for soap for washing their clothes; and Bergius, who made several experiments with the saponaria, declares that it had all the effects of soap itself.

From these peculiar qualities of the saponaria, there can be little doubt of its possessing a considerable share of medical efficacy, which Dr. Woodville says he could wish to find faithfully ascertained.

The diseases for which the saponaria is recommended, as syphilis, gout, rheumatism, and jaundice, are not, perhaps, the complaints in which its use is most availing; for a fancied resemblance of the roots of saponaria with those of sarsaparilla seems to have led physicians to think them similar in their effects; and hence they have both been administered with the same intentions, particularly in fixed pain, and venereal affections. Bergius says, "in arthritide, cura mercuriale, &c. nullum aptiorem potum novi." However, according to several writers, the most inveterate cases of syphilis were cured by a decoction of this plant, without the use of mercury.

Haller informs us that Boerhaave entertained a high opinion of its efficacy in jaundice and other visceral obstructions.

Sapo'nea. The name of a pectoral medicine, prepared with infusion of violets, sugar, and oil of almonds.

SAPONULE. *Saponulus.* A combination of a volatile or essential oil with different bases; as *saponule of ammonia*, &c.

Sapo'ta. (The West Indian name of several sorts of fruits of the plum kind.) See *Achras sapota*.

Sappan lignum. See *Cæsalpinia*.

Saracen's consound. See *Solidago*.

SARATO'GA. The name of a country in America, in the state of New York, celebrated for its springs of mineral water, which are numerous, throughout a circuit of several miles, near the centre of that country. The ground throughout this circuit is, generally speaking, flat, and in two or three places is covered with extensive sheets of limpid water, which are fed by streams that take their origin in the neighbouring mountains of granite and gneiss. The soil in which the springs rise is sandy, and rests upon a bed of compact limestone, or argillaceous slate, or grey wacke; and they are apparently more numerous where these specimens of the transition and secondary formation are as-

certained to meet. There is more variety in the degree of mineral impregnation at two points, about seven miles distant from each other, where accommodation has been more liberally provided for visitors, and which have taken the names of Saratoga and Ballston Spa. The former of these seems to have been known to the Indians before the formation of European settlements, and was pointed out by them to Sir William Johnson, in 1767. It was called in their language the *Spring of Life*, and is in temperature about 50° of Fahrenheit. Most of the American chemists have made the analysis of the Saratoga water an object of inquiry and publication; and, though one or two of them differ as to the existence of some of the more trifling impregnations, they agree, generally, that it contains carbonic acid gas, muriate of soda, carbonate of soda, carbonate of lime, carbonate of iron, and carbonate of magnesia.

In two or three of the springs there is, besides, sulphuretted hydrogen gas, and in one, at least, traces of silica and alumina. These incidental varieties give rise to slight differences in the medicinal effects of the springs; but, as a general rule for guiding strangers in their selection, it may be stated, that the more abundant the muriate of soda, and carbonates of soda, lime, and magnesia, the more aperient and diuretic will be the water: while the greater the quantity of carbonic acid and of iron, in proportion to the former ingredients, the more powerful will be its tonic effects.

The Saratoga springs and those of Ballston are much frequented.

The diseases in which the Saratoga waters have been found to be productive of the best effects, are dyspepsia, cutaneous diseases, scrofulous tumours, dropsy, chlorosis and other affections peculiar to the female sex, nephritic disorders, and gravel.

SARCIMINA'LIS. The allantoid membrane is sometimes so called. See *Allantoid.*

SARCI'TES. (From σαρξ, flesh.) See *Anasarca.*

SA'RCIUM. (*um, ii.* n.; diminutive of σαρξ, flesh.) A caruncle, or small fleshy excrescence.

SARCOCE'LE. (*e, es.* f.; from σαρξ, flesh, and κηλη, a tumour.) *Hernia carnosa.* This is a disease of the body of the testicle, and, as the term implies, consists, in general, in such an alteration made in the structure of it as produces a resemblance to a hard fleshy substance, instead of that fine, soft, vascular texture of which it is, in a natural and healthy state, composed.

The ancient writers have made a great number of distinctions of the different kinds of this disease, according to its different appearances, and according to the mildness or malignity of the symptoms with which it may chance to be attended. Thus, the *sarcocele*, the *hydro-sarcocele*, the *scirrhus*, the *cancer*, the *caro adnata ad testum*, and the *caro adnata ad vasa*, which are really little more than descriptions of different states and circumstances of the same disease, are reckoned as so many different complaints, requiring a variety of treatment, and deriving their origin from a variety of different humours.

Every species of sarcocele consists, primarily, in an enlargement, induration, and obstruction of the vascular part of the testicle; but this alteration is, in different people, attended with such a variety of circumstances as to produce several different appearances, and to occasion the many distinctions which have been made.

If the body of the testicle, though enlarged and indurated to some degree, be perfectly equal in its surface, void of pain, has no appearance of fluid in its tunica vaginalis, and produces very little uneasiness, except what is occasioned by its mere weight, it is usually called a simple sarcocele, or an indolent scirrhus; if, at the same time that the testis is enlarged and hardened, there be a palpable accumulation of fluid in the vaginal coat, the disease has, by many, been named a *hydro-sarcocele;* if the lower part of the spermatic vessels and the epididymis were enlarged, hard, and knotty, the old surgeons supposed it to be a fungous accretion, and called it the *caro adnata ad vasa;* if the testicle itself was unequal in its surface, but at the same time not painful, they distinguished it by the title of *caro adnata ad testem;* if it was tolerably equal, not very painful, nor frequently so, but at the same time hard and large, they gave it the appellation of an occult or benign cancer; if it was ulcerated, subject to frequent acute pain, to hæmorrhage, &c., it was known by that of a malignant or confirmed cancer. These different appearances, though distinguished by different titles, are really no more than so many stages (as it were) of the same kind of disease, and depend a great deal on several accidental circumstances, such as age, habit, manner of living, &c. It is true, that many people pass several years with this disease under its most favourable appearances, and without encountering any of its worst; but, on the other hand, there are many who, in a very short space of time, run through all its stages. They who are most conversant with it know how very convertible its mildest symptoms are into its most dreadful ones, and how very short a space of time often intervenes between the one and the other.

There is hardly any disease affecting the human body which is subject to more variety than this is, both with regard to its first manner of appearance, and the changes which it may undergo.

Sometimes the first appearance is a mere simple enlargement and induration of the body of the testicle, void of pain, without inequality of surface, and producing no uneasiness or inconvenience, except what is occasioned by its mere weight. And some people are so fortunate to have it remain in this state for a very considerable length of time, without visible or material alteration. On the other hand, it sometimes happens that, very soon after its appearance in this mild manner, it suddenly becomes unequal and knotty, and is attended with very acute pains, darting up to the loins and back, but still remaining entire, that is, not bursting through the integuments. Sometimes

the fury of the disease brooks no restraint, but, making its way through all the membranes which envelope the testicle, it either produces a large, foul, stinking, phagedænic ulcer, with hard edges, or it thrusts forth a painful gleeting fungus, subject to frequent hæmorrhage.

Sometimes an accumulation of water is made in the tunica vaginalis, producing that mixed appearance called the *hydro-sarcocele*.

Sometimes there is no fluid at all in the cavity of the tunica vaginalis; but the body of the testicle itself is formed into cells, containing either a turbid kind of water, a bloody sanies, or a purulent fœtid matter. Sometimes the disorder seems to be merely local, that is, confined to the testicle, not proceeding from a tainted habit, nor accompanied with diseased viscera, the patient having all the general appearances and circumstances of health, and deriving his local mischief from an external injury. At other times, a pallid, leaden countenance, indigestion, frequent nausea, colicky pains, sudden purgings, &c. sufficiently indicate a vitiated habit and diseased viscera, which diseased viscera may also sometimes be discovered and felt.

The progress, also, which it makes from the testis upward, toward the process, is very uncertain; the disease occupying the testicle only, without affecting the spermatic process, in some subjects, for a great length of time; while in others it totally spoils the testicle very soon, and almost as soon seizes on the spermatic cord.

SARCOCO'LLA. (*a*, *æ*. f.; from σαρξ, flesh, and κολλα, glue: because of its supposed power of gluing together wounds.) See *Penæa mucronata*.

SARCOCO'LLINE. A peculiar principle which exists in *sarcocolla*, of which it forms the greater part. It may be obtained by evaporating to dryness an alkoholic or watery solution of sarcocolla.

SA'RCOEPIPLOCE'LE. An omental herni acomplicated with a fleshy tumour.

SARCO'LOGY. (*Sarcologia*, *æ*. f.; from σαρξ, flesh, and λογος, a discourse.) The anatomy of the soft parts.

SARCO'MA. (*a*, *atis*. n.; from σαρκοω, *carneum reddo*.) A fleshy tumour or excrescence.

SARCO'MATOUS. *Sarcomatosus*. Fleshy tumours are called *sarcomatous tumours*.

SARCO'MPHALUS. (*us*, *i*. m.; from σαρξ, flesh, and ομφαλος, the navel.) A fleshy excrescence about the navel.

SARCOPHYI'A. (From σαρξ, flesh, and φυω, to grow.) A fleshy excrescence.

SARCO'SIS. (*is*, *is*. f.; σαρκωσις.) 1. The generation of flesh.

2. A fleshy tumour.

SARCOSTO'SIS. The same as *Osteosarcoma*.

SARCO'TICUS. (From σαρκοω, to incarnate.) Synonymous with incarnative. Sarcotic: that which promotes the generation of flesh in wounds.

Sardi'asis. See *Risus sardonicus*.

SARDIUS LAPIS. *Sarda*. Cornelian, so called because it was found in Sardinia. It was formerly used in medicine as a cordial.

Sardonic laugh. See *Risus sardonicus*.

SARFAR. An alchemical name of iron.

SARMA'TICA LU'ES. The *Plica polonica*.

SARMENTA'CEÆ. (From *sarmentum*, a runner.) The name of a natural order of Linnæus's *Fragmenta*, embracing the plants with twining or trailing stems.

SARMENTA'CEUS. Sarmentaceous: having twigs or runners.

SARMENTO'SUS. (From *sarmentum*, a twig or trailing stalk.) Trailing, or having runners: applied to a creeping stem, barren of flowers, thrown out from the root for the purpose of increase.

SARME'NTUM. (*um*, *i*. n.; from *sarpio*, to prune, lop, or cut off.) A twig, a runner.

SARSAPARI'LLA. (*a*, *æ*. f.; from *zarza*, a briar, and *parilla*, a little vine, Spanish — a thorny little vine.) See *Smilax sarsaparilla*.

Sarsaparilla Germanica. See *Carex hirta*.

SARTO'RIUS. (From *sartor*, a tailor: because tailors cross their legs with it.) *Sartorius seu longissimus femoris* of Cowper. This flat and slender muscle, which is the longest of the human body, and from an inch and a half to two inches in breadth, is situated immediately under the integuments, and extends obliquely, from the upper and anterior part of the thigh, to the upper, anterior, and inner part of the tibia, being enclosed by a thin membraneous sheath, which is derived from the adjacent *fascia lata*. It arises, by a tendon of about half an inch in breadth, from the outer surface and inferior edge of the anterior superior spinous process of the ilium, but soon becomes fleshy, and runs down a little way obliquely inwards, and then for some space upon the rectus, nearly in a straight direction; after which it passes obliquely over the vastus internus, and the lower part of the adductor longus, and then, running down between the tendons of the adductor magnus and the gracilis, is inserted, by a thin tendon, into the inner part of the tibia, near the inferior part of its tuberosity, and for the space of an inch or two below it. This tendon sends off a thin aponeurosis, which is spread over the upper and posterior part of the leg. This muscle serves to bend the leg obliquely inwards, or to roll the thigh outwards, and at the same time to bring one leg across the other; on which account Spigelius first gave it the name of *sartorius*, or the tailor's muscle.

SA'SSAFRAS. (*Quasi saxifraga*; from *saxum*, a stone, and *frango*, to break: so called because a decoction of its wood was supposed good for the stone; or, which is most probable, from the river Sassefras, in America, on the banks of which it grows in abundance.) See *Laurus sassafras*.

SATANUS DEVORANS. Antimony.

SATE'LLITES. The veins which accompany the arteries are called *venæ satellites*.

SA'THE. Σαθη. The penis.

SATURA'NTIA. Medicines which neutralise acid in the stomach.

SATURA'TION. (*Saturatio*, *onis*. f.) A term employed, in *Chemistry* and *Pharmacy*,

to express that state of a body in which it has dissolved as much of another body as it is capable of doing. Some substances unite in all proportions. Such, for example, are acids in general, and some other salts, with water, and many of the metals with each other. But there are, likewise, many substances which cannot be dissolved in a fluid at a certain temperature, in any quantity beyond a certain proportion. Thus, water will dissolve only about one third of its weight of common salt, and, if more be added, it will remain solid. A fluid, which holds in solution as much of any substance as it can dissolve, is said to be saturated with it. But saturation with one substance does not deprive the fluid of its power of acting on and dissolving some other bodies; and in many cases it increases this power. For example, water saturated with salt will dissolve sugar; and water saturated with carbonic acid will dissolve iron, though without this addition its action on this metal is scarcely perceptible.

The word saturation is likewise used in another sense by chemists. The union of two principles produces a body, the properties of which differ from those of its component parts, but resemble those of the predominating principle. When the principles are in such proportion that neither predominates, they are said to be saturated with each other; but, if otherwise, the most predominant principle is said to be sub-saturated or under-saturated, and the other, super-saturated or over-saturated.

SATUREI'A. (*a, æ.* f.; from *σατυροι*, the satyrs: because it is said to make those who eat it lascivious.) 1. The name of a genus of plants in the Linnæan system. Class, *Didynamia*; Order, *Gymnospermia.*

2. The pharmacopœial name of the summer savory.

Satureia capitata. The systematic name of the ciliated savory: called in the shops *Thymus creticus.* It possesses similar virtues to our thyme, but in a stronger degree.

Satureia hortensis. The systematic name of the summer savory: called, also, *Satureia sativa, Culina sativa Plinii,* and *Thymbra.* This low shrub is cultivated in our gardens for culinary purposes. It has a warm, aromatic, penetrating taste, and smells like thyme, but milder. It is an ingredient in most of the warm stews and made dishes.

Satureia sativa. See *Satureia hortensis.*

SATU'RNUS. (From the planet of that name.) Saturn. The old chemical name of lead.

SATYRI'ASIS. (*is, is.* m.; from *σατυρος*, a satyr: because they are said to be greatly addicted to venery.) Excessive and violent desire for coition in men.

Saty'rion. (*on, ii.* n.; from *σατυρος*, a satyr: so called because it was supposed to excite venery if only held in the hand.) See *Orchis mascula.*

Saty'rium. See *Orchis mascula.*

Sauce-alone. See *Erysimum alliaria.*

Saucer. See *Scutella.*

Saunders. See *Santalum album.*

Saunders, red. See *Pterocarpus.*

Sau'nia. The name of an old demulcent medicine, prepared with sweet almonds, sugar, starch, oil of almonds, and violet water, made into square cakes.

Saur-kraut. Cabbage preserved in brine. An article of food common in Germany, like our pickled cabbage.

Savine. See *Juniperus sabina.*

Savine ointment. See *Ceratum sabinæ.*

Savina. See *Juniperus sabina.*

Savory. See *Satureia.*

SAXI'FRAGA. (*a, æ.* f.; from *saxum*, a stone, and *frango*, to break: so called because it was supposed to be good against the stone in the bladder.) The name of a genus of plants in the Linnæan system. Class, *Decandria*; Order, *Digynia.*

Saxifraga alba. See *Saxifraga granulata.*

Saxifraga anglica. See *Peucedanum.*

Saxifraga crassifolia. The root of this species of saxifrage is extolled, by Professor Pallas, as an antiseptic.

Saxifraga granulata. The systematic name of the white saxifrage. *Saxifraga alba.* Called, by Oribasius, *Besto. Sanicula sedum.* Linnæus describes the taste of this plant to be acrid and pungent, which we have not been able to discover: neither the tubercles of the root nor the leaves manifest to the organs of taste any quality likely to be of medicinal use; and, therefore, though this species of saxifrage has been long employed as a popular remedy in nephritic and gravelly disorders, yet we do not find, either from its sensible qualities, or from any published instances of its efficacy, that it deserves a place in the Materia Medica. The superstitious doctrine of signatures suggested the use of the root, which is a good example of what Linnæus has termed radix granulata. The bulbs or tubercles of such roots answer an important purpose in vegetation, by supplying the plants with nourishment and moisture, and thereby enabling them to resist the effects of that drought to which the dry soils they inhabit peculiarly expose them.

Saxifraga rubra. See *Spiræa.*

Saxifraga vulgaris. See *Peucedanum.*

Saxifrage. See *Saxifraga.*

Saxifrage, burnet. See *Pimpinella.*

Saxifrage, English. See *Peucedanum.*

Saxifrage, meadow. See *Peucedanum.*

Saxifrage, white. See *Saxifraga.*

Saxon blue. See *Blue, Saxon.*

Saxo'nicus pu'lvis. A powder formerly in vogue as an alexipharmic. It consisted of the roots of wild and cultivated angelica, of vincetoxicum, marsh-mallow, polypody of the oak, nettle, and valerian, with the bark of mezereon root, and seeds of herb Paris.

SCAB. A hard substance covering superficial ulcerations, and formed by a concretion of the fluid discharged from them.

SCA'BER. Rough to the touch, from any little rigid inequalities: applied to several parts of plants.

SCA'BIES. (*es, ei.* f.; from *scabo*, to scratch.) *Psora.* The itch. This disease is characterised by an eruption of pustules, or of

small vesicles, which are subsequently intermixed with, or terminate in, pustules; it is accompanied by constant and importunate itching, but not with fever; and is in all its varieties contagious. It appears occasionally on every part of the body, the face only excepted; but most abundantly about the wrists and fingers, the fossa of the nates, and the flexures of the joints.

Among the varieties which the disease assumes, four have been distinguished with considerable accuracy by the vulgar, who have, indeed, the most ample opportunities of becoming acquainted with its character; and to these they have given the epithets of *rank*, *watery*, *pocky*, and *scorbutic* itch. Their division was adopted by Dr. Willan, with the appropriate titles of papuliform, lymphatic, purulent, and cachectic.

1. The *Scabies papuliformis*, or *rank* itch, consists in an extensive eruption of minute itching vesicles, which are slightly inflamed and acuminated, resembling papulæ when examined by the naked eye. They commonly arise first about the bend of the wrist and between the fingers, or in the epigastrium; on which parts, as well as about the axillæ and nates, and in the flexures of the upper and lower limbs, they are at all periods most numerous, and often intermixed with a few phlyzacious pustules, containing a thick yellow matter. The itching is extremely troublesome in this form of scabies, more especially when the patient becomes warm after getting into bed. The appearance of the disease is modified by the abrasion of the tops of the vesicles and pustules, and even of the rest of the skin, by the frequent scratching, which cannot be withheld. Hence long red lines are here and there left; and the blood and humour concrete upon the vesicles into little brown or blackish scabs.

These mixed appearances, partly belonging to the disease, and partly the result of abrasion by the nails, being in some measure common to the lichen and prurigo, where much scratching is also often employed, render the diagnosis of the scabies papuliformis more difficult than it would be from the mere similarity in the form of the eruption. But, as the most effectual remedy for the scabies is detrimental in the latter affections, the distinction is of great practical importance.

With respect to the eruption itself, the unbroken elevations in scabies papuliformis, when carefully examined, are found to be vesicular, and not papular: they are often intermixed, in particular situations, with pustules; and, when they break, are succeeded by scabs: whereas, in lichen, the papulæ terminate spontaneously in scurfy exfoliations. In scabies the eruption is unconnected with any constitutional or internal disorder, and the itching is severe: but in lichen there is commonly some constitutional affection, and a tingling sensation, as well as itching. The highly contagious nature of scabies will, in many cases, have already manifested itself, and remove all doubt; for the lichen is not thus communicable.

In prurigo, the papulæ, where no friction has been applied, retain the usual colour of the skin, are commonly flatter, or less acuminated, and present no moisture or scab, except when their tops have been forcibly abraded: they are not particularly numerous in the parts above mentioned; and they remain long distinctly papular, without showing any contagious property.

2. The *Scabies lymphatica*, or *watery* itch, is distinguished by an eruption of transparent vesicles, of a considerable size, and without any inflammation at their base. They arise in succession, with intense itching, chiefly round the wrists, between the fingers, on the back of the hands, and on the feet and toes: they often occur, also, about the axillæ, the hams, the bend of the elbows, and fossa of the nates, where they are intermixed with pustules: but they do not frequently appear, like the papuliform species, over the breast and epigastrium, nor on the thighs and upper parts of the arms.

In a day or two the vesicles break, and some of them heal, under the little scab that concretes upon them. But others inflame, and become pustules, which discharge, at length, a yellow matter, and extend into small ulcerated blotches, over which a dark scab is ultimately formed. — So that, during the progress of the eruption, all these appearances are intermixed with each other: the vesicles, and pustules, the excoriated blotches discharging pus, the minute dry scabs, and the larger ones succeeding the ulceration, may be observed at the same time. This circumstance constitutes one of the points of diagnosis between this and other vesicular diseases.

3. The *Scabies purulenta*, or *pocky* itch, is often mistaken by those who confine their notion of the disease to the ordinary small and ichorous vesicle of the two former species. The eruption consists of distinct, prominent, yellow pustules, which have a moderate inflammation round their bases, and which maturate and break in two or three days, and then ulcerate, with increasing pain and inflammation. These pustules commonly appear first, and attain the largest size, on the hands and feet, especially about the knuckles and roots of the toes, between the fingers, and particularly between the fore-finger and thumb, and round the wrists. In these situations, the pustules often exceed two lines in diameter, and assume a prominent globular form: whence, from their general resemblance to the large well-maturated pustules of smallpox, and not from any allusion to syphilis, as some have erroneously supposed, the popular term *pocky* has been applied to them. If the disease continue a few weeks, the pustules begin to appear on the other parts of the body which scabies usually attacks, especially about the axillæ, on the back and shoulders, and on the arms and thighs, near the joints of the knee and elbow, in the fossa of the nates, and sometimes, though of a smaller size, even about the epigastrium. In several of these situations, where the pustules are largest and numerous, they coalesce, and form irregular blotches, which ulcerate to some extent, with hardness and elevation of the surface; but at

length hard and dry scabs are formed, which adhere tenaciously for a considerable time.

4. *Scabies cachectica.* This variety of scabies exhibits, in different parts of the body, all the appearances which belong to the three foregoing species. It is occasionally, also, combined with patches resembling lichen, psoriasis, or impetigo, especially in adults, or young persons approaching the term of puberty; whence it assumes an ambiguous character. In several instances, this form of scabies has been obviously contagious in its double character; and, after the scabious affection has disappeared, the impetiginous patches have remained for some time, in a drier form, and yielded very slowly to medicine. For, although this form of scabies does not so readily spread by contagion, it is much more obstinate, under the use of remedies, than the preceding.

Another peculiarity of the scabies cachectica is, that it often originates, independently of contagion, in weakly children, and also in adults, when the constitution is suffering under some chronic malady, or debilitated by some previous acute disease; and, however it is produced, it is liable to return at intervals, especially in the spring and autumnal seasons, after it has been, to all appearance, cured.

The most ordinary cause of scabies is contagion; the virus being communicated by the actual contact of those already affected with it, or of their clothes, bedding, &c.; especially where there is much close intercourse. It seems to originate, however, in crowded, close, and uncleanly houses; and is, therefore, extremely prevalent in workhouses, gaols, and hospitals, where the means of great cleanliness are not easily obtained, and is most easily seen among the families of the poor. When the contagion has been introduced, however, into families, where every attention to cleanliness is enforced, it will frequently spread to all the individuals, children and adults, and continue, in spite of the utmost cleanliness, until the proper remedies are resorted to.

Some writers have ascribed the origin of the itch, in all cases, to the presence of a minute insect, breeding and burrowing in the skin; while others have doubted the existence of such an insect. Both these opinions appear to be incorrect; and, probably, that of Sauvages is right, who considers the insect as generated only in some cases of scabies, and, therefore, speaks of a scabies *vermicularis* as a separate species.

The existence of such an insect, in some cases of scabies, has been fully demonstrated; but the breeding of these acari in the scabious skin is a rare and casual circumstance; and the contagious property of scabies exists in the fluid secreted in the pustules, and not in the transference of insects.

Among the remedies appropriated to the cure of scabies, sulphur has long been deemed to possess *specific* powers. The common people treated the disease with this substance alone a century ago, administering it internally in milk, and applying it externally in butter. In the less violent degrees of scabies, and in the purulent species affecting the hands and wrists, perhaps no improvement can be made upon this practice. The latter species, when it occurs in children, is often readily removed by the internal use of this medicine alone, or in combination with a neutral salt, independently of any external application; and there are few cases of scabies which will not yield to the steady employment of the sulphur ointment, continued a sufficient time, and rubbed on the parts affected, nightly, with assiduity. Five or six applications are commonly sufficient for the cure of the disease; but sometimes it is necessary to persevere in the inunction for the space of a fortnight, or even longer, from which no detriment ensues to the constitution.

The disgusting odour of the sulphur, however, has led practitioners to resort to various other stimulating applications, some of which have been recommended from ancient times for the cure of scabid and pruriginous eruptions. Both the smell and sordid appearance of the sulphur ointment may be in a considerable degree obviated by the following combination: —

℞ Potassæ subcarbonatis, ℥ss.
Aquæ rosæ, ℥j.
Hydrarg. sulphurati rubri, ℥j.
Olei essent. bergamot, ℥ss.
Sulphuris-sublimati,
Adipis suillæ, aa ℥ix. Misce secundum artem.

SCABIO'SA. (*a*, *æ*. f.; from *scaber*, rough: so called from its rough hairy surface.) 1. The name of a genus of plants in the Linnæan system. Class, *Tetrandria*; Order, *Monogynia*.

2. The pharmacopœial name of the common scabious. See *Scabiosa arvensis*.

Scabiosa arvensis. The systematic name of the common field scabious. This herb, *Scabiosa — corollis quadrifidis radiantibus; foliis pinnatifidis, incisis; caule hispido*, of Linnæus, and its flowers, are sometimes used medicinally. The whole plant possesses a bitter and subastringent taste, and was formerly much employed in the cure of some leprous affections, and diseases of the lungs.

Scabiosa succisa. The systematic name of the devil's-bit scabious. It has similar properties with the preceding species.

Scabri'deæ. (From *scaber*, rough.) The name of an order of plants in Linnæus's Fragments of a Natural Method, consisting of plants with rough leaves, incomplete and inelegant flowers.

SCABRI'DEUS. Rough: applied to plants.

SCABRI'TIES. Roughness.

SCA'LA. A ladder or staircase.

Scala ty'mpani. The superior spiral cavity of the cochlea. See *Auris*.

Scala vesti'buli. The inferior spiral cavity of the cochlea. See *Auris*.

Scald. See *Ambustio*.

Scald-head. See *Porrigo favosa*.

SCALE. *Squama.* 1. In *Natural History*, the small laminæ, called *scales*, which cover the surface of fishes, serpents, &c., are appendages of the cuticle analogous to nails and horns. In

fishes they consist of alternate layers of membrane and phosphate of lime; in serpents of a horny membrane without earthy matter. Scales are also found on the stems, involucres, and other parts of plants.

2. In *Pathology*, a lamina of morbid cuticle, hard, thickened, whitish, and opake, of a very small size, and irregular, often increasing into layers, denominated crusts. Both scales and crusts repeatedly fall off, and are reproduced in a short time.

SCALE'NUS. (From σκαληνος, irregular, or unequal.) A muscle about which anatomical writers have differed greatly in their descriptions. It is situated at the side of the neck, between the transverse processes of the cervical vertebræ and the upper part of the thorax. The ancients, who gave it its name from its resemblance to an irregular triangle, considered it as one muscle. Vesalius and Winslow divide it into two, Fallopius and Cowper into three, Douglas into four, and Albinus into five portions, which they describe as distinct muscles. Without deviating in the least from anatomical accuracy, it may be considered as one muscle divided into three portions. The anterior portion arises commonly from the transverse processes of the six inferior vertebræ of the neck, by as many short tendons, and, descending obliquely outwards, is inserted, tendinous and fleshy, into the upper side of the first rib, near its cartilage. The axillary artery passes through this portion, and sometimes divides it into two slips, about an inch and a half above its insertion. The middle portion arises, by distinct tendons, from the transverse processes of the four last vertebræ of the neck, and, descending obliquely outwards and a little backwards, is inserted, tendinous, into the outer and upper part of the first rib, from its root to within the distance of an inch from its cartilage. The space between this and the anterior portion affords a passage to the nerves going to the upper extremities. It is in part covered by the third or posterior portion, which is the thinnest and longest of the three. This arises from the transverse processes of the second, third, fourth, and fifth vertebræ of the neck by distinct tendons, and is inserted into the upper edge of the second rib, at the distance of about an inch and a half from its articulation, by a broad flat tendon. The use of the scalenus is to move the neck to one side, when it acts singly, or to bend it forwards, when both muscles act; and, when the neck is fixed, it serves to elevate the ribs, and dilate the chest.

Scalenus primus. See *Scalenus.*

Scalenus secundus. See *Scalenus.*

Scalenus tertius. See *Scalenus.*

Scallop. See *Ostrea maxima.*

SCALPE'LLUM. (*um, i.* n.; from *scalpo*, to scratch or carve.) A scalpel or common dissecting knife.

SCA'LPRUM. A denticular raspatory, used in trepanning.

Scaly. See *Squamosus.*

SCAMMO'NIUM. (*um, ii.* n.; a corruption of the Arabic word *chamozah.*) See *Convolvulus scammonia.*

Scammony. See *Convolvulus.*

Scammony, Montpellier. See *Cynanchum montpeliacum.*

SCA'NDENS. Climbing: applied to stems, &c. of plants which climb, either with spiral tendrils for support, or by adhesive fibres; as the stems of the *Vitis vinifera*, and *Bryonia dioica.*

SCA'NDIX. (*ix, icis.* f.) The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Digynia.*

SCANDIX CEREFOLIUM. The systematic name of the officinal chervil. *Cerefolium. Chærophyllum. Chærefolium. Chervillum. Daucus sepinius.* Chervil. This plant, *Scandix — seminibus nitidis, ovato-subulatis; umbellis sessilibus, lateralibus*, of Linnæus, is a salubrious culinary herb, sufficiently grateful both to the palate and stomach, slightly aromatic, gently aperient, and diuretic.

SCANDIX ODORATA. The systematic name of the sweet cicely, *myrrhis*, which possesses virtues similar to the common chervil. See *Scandix cerefolium.*

SCA'PHA. (*a, æ.* f.; a skiff, or cockboat: from σκαπτω, to make hollow, because formerly it was made by excavating a large tree.) 1. The cavity of the external ear, between the helix and antihelix.

2. The name of a double-headed roller.

SCA'PHOID. (*Scaphoides*; from σκαφη, a little vessel, or boat, and ειδος, resemblance.) Boat-like. See *Naviculare os.*

SCA'PULA. (*a, æ.* f.; from the Hebrew *schipha.*) *Omoplata. Os homoplatæ. Scoptula. Epinotion.* The shoulder-blade. This bone, which approaches nearly to a triangular figure, is fixed, not unlike a buckler, to the upper, posterior, and lateral part of the thorax, extending from the first to about the seventh rib. The anterior and internal surface is irregularly concave, from the impression, not of the ribs, as the generality of anatomists have supposed, but of the sub-scapularis muscle. Its posterior and external surface is convex, and divided into two unequal fossæ by a considerable spine, which, rising small from the posterior edge of the scapula, becomes gradually higher and broader, as it approaches the anterior and superior angle of the bone, till at length it terminates in a broad and flat process, at the top of the shoulder, called the *processus acromion.* On the anterior edge of this processus acromion we observe an oblong, concave, articulating surface, covered with cartilage, for the articulation of the scapula with the clavicle. At its lower part the acromion is hollowed, to allow a passage to the supra and infra spinati muscles. The ridge of the spine affords two rough flat surfaces, for the insertion of the trapezius and deltoid muscles. Of the two fossæ into which the external surface of the bone is divided by the spine, the superior one, which is the smaller, serves to lodge the supra spinatus muscle; and the inferior fossa, which is much larger than the other, gives origin to the infra spinatus. The triangular shape of the scapula leads us to consider its angles and its sides. The upper posterior angle is neither so thick, nor has so rough a

surface, as the inferior one; but the most remarkable of the three angles of this bone is the anterior one, which is of great thickness, and formed into a glenoid cavity of an oval shape, the greatest diameter of which is from below upwards. This cavity, in the recent subject, is furnished with cartilage, and receives the head of the os humeri. The cartilaginous crust, which surrounds its brims, makes it appear deeper in the fresh subject than in the skeleton. A little beyond this glenoid cavity, the bone becomes narrower, so as to give the appearance of a neck; and above this rises a considerable process, which, from being thick at its origin, becomes thinner, and, in some degree, flattened at its extremity. This process projects considerably, and is curved downwards. From its supposed resemblance to a beak of a bird it is called the *caracoid* process. From the whole external side of this process a strong and broad ligament is stretched to the processus acromion, becoming narrower as it approaches the latter process, so as to be of a somewhat triangular shape. This ligament, and the two processes with which it is connected, are evidently intended for the protection of the joint, and to prevent a luxation of the os humeri upwards. Of the three sides of the scapula, the posterior one, which is the longest, is called the *basis*. This side is turned towards the vertebræ. Its other two sides are called *costæ*. The superior costa, which is the upper and shortest side, is likewise thinner than the other two, having a sharp edge. It is nearly horizontal, and parallel with the second rib; and is interrupted, near the basis of the caracoid process, by a semicircular niche, which is closed by a ligament that extends from one end of it to the other, and affords a passage to vessels and nerves. Besides this passage, there are other niches in the scapula for the transmission of vessels; viz., one between the caracoid process and the head of the bone, and another between its neck and the processus acromion. The third side of the scapula, or the inferior costa, as it is called, is of considerable thickness, and extends obliquely from the neck of the bone to its inferior angle, reaching from about the third to the eighth rib. The scapula has but very little cellular substance, and is of unequal thickness, being very thin at its middle part, where it is covered by a great number of muscles, and having its neck, the acromion, and caracoid process of considerable strength. In the fœtus, the basis and the neck of the scapula, together with its glenoid cavity, acromion, caracoid process, and the ridge of the spine, are so many epiphyses with respect to the rest of the bone, to which they are not completely united till a considerable time after birth. The scapula is articulated to the clavicle and os humeri, to which last it serves as a fulcrum; and, by altering its position, it affords a greater scope to the bones of the arm in their different motions. It likewise affords attachment to a great number of muscles, and posteriorly serves as a defence to the thorax.

SCAPULA'RIA. (*a, æ.* f.; from *scapula*, the shoulder bone.) A scapulary. A bandage for the shoulder blade.

SCA'PULARY. (*Scapularis;* from *scapula*, the shoulder bone.) Belonging to the scapula; as the scapulary arteries and veins, which are branches of the subclavian and axillary.

SCA'PUS. (*us, i.* m.; from *σκηπτω*, to lean or rest upon: because it rests, as it were, on the root or base. (?)) The scape, or a stalk which springs from the root, and bears the flowers and fruit, but not the leaves. The primrose and cowslip are good examples of it.

The following are the principal varieties: —

1. *Round;* as in *Plantago major.*
2. *Angular;* as in *Plantago lanceolata.*
3. *Ventricose,* hollow at the bottom; as in *Allium cepa.*
4. *Flexuose;* as in *Orchis flexuosa.*
5. *Two-edged;* as *Allium angulosum.*
6. *Filiform;* as *Bellis bellidioides.*
7. *Three-sided;* as *Allium triquetrum.*
8. *Spiral;* as *Anthericum spirale,* and that wonderful plant, *Valisneria spiralis.*
9. *Pentagonal;* as *Ophris paludosa.*
10. *Articulate;* as *Statice echioides.*
11. *Erect;* in *Tulipa gesneriana.*
12. *Ascending;* in *Sisymbrium vimineum.*
13. *Declinate;* as *Astragalus incanus.*
14. *Decumbent;* as *Potentilla sabacaulis.*
15. *Dichotomous;* as *Statice tartarica.*
16. *Nude;* as *Convallaria majalis.*
17. *Leafy;* as *Ophris insectifera.*
18. *Bracteate;* as most of the *Orchides.*
19. *Imbricate;* as *Tussilago farfara.*
20. *Setaceous;* as *Schœnus bulbosus.*
21. *Vaginate;* as *Arethusa bulbosa.*

When several species of the same plant have a scapus, and it is wanting in one of the same species, it is termed *excapus;* as in *Astragalus excapus.*

Scar. See *Cicatrix.*

SCARBOROUGH. The name of a town in Yorkshire, noted for its ferruginous springs. There are two species of chalybeate water found in this spot, and they differ considerably in their composition, though they rise nearly contiguous to each other. The one is a simple carbonated chalybeate, similar to the Tunbridge water; the other, which is better known and more frequented, and more particularly distinguished as Scarborough water, has, in conjunction with the iron, an admixture of sulphate of lime, and of sulphate of magnesia, which gives it a purgative quality. The diseases in which it is ordered are similar to those in which Cheltenham water is prescribed, only it is necessary to increase the purgative effect of this water by adding similar salts. It is, therefore, chiefly as an alterative that this water can be employed in its natural state.

Scarborough has an advantage of situation which Cheltenham does not possess, that of affording an opportunity for sea-bathing, the use of which will, in many cases, much assist in the plan of cure for many of the disorders for which the mineral water is resorted to.

Scarf-skin. See *Cutis.*

SCARIFICA'TION. (*Scarificatio;* from *scarifico,* to scarify.) A superficial incision made with a lancet, or a chirurgical instrument called a scarificator, for the purpose of taking away blood, or letting out fluids, &c.

SCARIFICA'TOR. An instrument used by surgeons and cuppers to evacuate blood. It is made in form of a box, in which are fitted ten, twelve, or more lancets, all perfectly in the same plane. The instrument is so constructed that the depth to which the lancets penetrate may be made greater or less at the option of the operator. Immediately before the application of the scarificator to the part, the lancets are all, as it were, cocked by means of a spring, and all discharged at the same time, by pulling a kind of trigger, and thus they are driven equally within the skin. See *Cupping*.

Scari'ola. See *Lactuca scariola.*

Scariola gallorum. See *Lactuca.*

SCA'RIOUS. *Scariosus.* Applied, in *Botany*, to any part of a plant which is thin, dry, and semi-transparent.

SCARLATI'NA. (*a*, *æ*. f.; from *scarlatto*, the Italian for a deep red.) The scarlet fever. A disease characterised by contagious fever, the face swelling, and a scarlet eruption appearing on the skin in patches, which, after three or four days, ends in the desquamation of the cuticle. It has two species: —

1. *Scarlatina simplex*, the mild.

2. *Scarlatina cynanchica*, or *anginosa*, with ulcerated sore throat.

Dr. Willan has added to these a third, called *maligna*, which is now generally believed to be the same disease with the *cynanche maligna*, or malignant sore throat. See *Tonsillitis.*

Some have asserted that scarlatina never attacks the same person a second time: more extensive observation has confuted this opinion. It seizes persons of all ages, but children and young persons are most subject to it; and it appears at all seasons of the year; but it is more frequently met with towards the end of autumn, or beginning of winter, than at any other periods, at which time it very often becomes a prevalent epidemic. It is, beyond all doubt, a very contagious disease.

The malady to which it bears the greatest resemblance is the measles; but from this it is generally to be distinguished by the absence of the cough, watery eye, running at the nose, and sneezing, which are the predominant symptoms in the early stage of the measles, but which do not usually attend on scarlet fever, or, at least, in any high degree. In some cases, however, the diagnosis is very difficult; so much so that the disease almost appears to be hybrid between scarlet fever and measles.

It begins, like other fevers, with languor, lassitude, confusion of ideas, chills, and shiverings, alternated by fits of heat. The thirst is considerable, the skin dry, and the patient is often incommoded with anxiety, nausea, and vomiting. About the third day, the scarlet efflorescence appears on the skin, which seldom produces, however, any remission of the fever. On the departure of the efflorescence, which usually continues out only for three or four days, a gentle sweat comes on, the fever subsides, the cuticle or scarf-skin then falls off in small scales, and the patient gradually regains his former strength and health.

On the disappearance of the efflorescence, in scarlatina, it is, however, no uncommon occurrence for an anasarcous swelling to affect the whole body; but this, in most cases, yields easily to proper treatment. See *Anasarca.*

Scarlatina anginosa, in several instances, approaches very near to the malignant form. The patient is seized, not only with a coldness and shivering, but likewise with great languor, debility, and sickness, succeeded by heat, nausea, vomiting of bilious matter, soreness of the throat, inflammation and ulceration in the tonsils, &c., a frequent and laborious breathing, and a quick and small depressed pulse. When the efflorescence appears, which is usually on the third day, it brings no relief; on the contrary, the symptoms are much aggravated, and fresh ones arise.

In the progress of the disease, one universal redness, unattended, however, by any pustular eruption, pervades the face, body, and limbs, which parts appear somewhat swollen. The eyes and nostrils partake likewise more or less of the redness, and, in proportion as the former have an inflamed appearance, so does the tendency to delirium prevail.

On the first attack the fauces are often much inflamed; but this is usually soon succeeded by greyish sloughs, which give the parts a speckled appearance, and render the breath more or less fœtid. The patient is often cut off in a few days: and, even if he recovers, it will be by slow degrees; dropsical swellings, or tumours of the parotid and other glands, slowly suppurating, being very apt to follow.

Scarlatina maligna. The symptoms at first are pretty much the same as in the preceding; but some of the following peculiarities are afterwards observable: — The pulse is small, indistinct, and irregular; the tongue, teeth, and lips, covered with a brown or black incrustation; a dull redness of the eyes, with a dark red flushing of the cheeks, deafness, delirium, or coma; the breath is extremely fœtid; the respiration rattling and laborious, partly from viscid phlegm clogging the fauces; the deglutition is constricted and painful; and there is a fulness and livid colour of the neck, with retraction of the head. Ulcerations are observed on the tonsils and adjoining parts, covered with dark sloughs, and surrounded by a livid base; and the tongue is often so tender as to be excoriated by the slightest touch. An acrid discharge flows from the nostrils, causing soreness, or chaps, nay even blisters, about the nose and lips; the fluid discharged being at first thin, but afterwards thick and yellowish. The rash is usually faint, except in a few irregular patches, and it presently changes to a dark or livid red colour: it appears late, is very uncertain in its duration, and often intermixed with petechiæ: it sometimes disappears suddenly a few hours after it is formed, and comes out again at the expiration of two or three days. In an advanced stage of the disease, where petechiæ, and other symptoms characteristic of putrescency, are present, hæmorrhages frequently break forth from the nose, mouth, and other parts.

When scarlatina is to terminate in health, the fiery redness abates gradually, and is suc-

ceeded by a brown colour, the skin becomes rough, and peels off in small scales, the tumefaction subsides, and health is gradually restored. On the contrary, when it is to terminate fatally, the febrile symptoms run very high from the first of its attack, the skin is intensely hot and dry, the pulse is very frequent, but small, great thirst prevails, the breath is very fetid, the efflorescence makes its appearance on the second day, or sooner, and about the third or fourth is probably interspersed with large livid spots; and a high degree of delirium ensuing, or hæmorrhages breaking out, the patient is cut off about the sixth or eighth day. In some cases a severe purging arises, which never fails to prove fatal. Some again, where the symptoms do not run so high, instead of recovering, as is usual, about the time the skin begins to regain its natural colour, become dropsical, fall into a kind of lingering way, and are carried off in the course of a few weeks.

Scarlatina, in its inflammatory form, is not usually attended with danger, although a considerable degree of delirium sometimes prevails for a day or two; in some cases, however, it passes into a malignant form by a very rapid transition, so that it cannot at any time be considered as entirely divested of danger. On dissection of those who die of this disease, the fauces are inflamed, suppurated, and gangrenous; and the trachea and larynx are likewise in a state of inflammation, and lined with a viscid fetid matter. In many instances, the inflammatory affection extends to the lungs themselves. Large swellings of the lymphatic glands about the neck, occasioned by an absorption of the acrid matter poured out in the fauces, are now and then to be found. The same morbid appearances which are to be met with in putrid fever present themselves in other parts of the body.

The plan to be pursued will differ according to the form of the disease. In the scarlatina simplex little is required, except clearing the bowels, and observing the antiphlogistic regimen. But where the throat is affected, and the fever runs higher, more active means become necessary, varying according to the type of this, whether synochial or typhoid. In general, we may begin by exhibiting a nauseating emetic, which, besides its effect on the fever, may be useful in checking inflammation in the throat; and occasionally the repetition of such a remedy, after a time, may answer a good purpose: but commonly it will be better to follow up the first by some cathartic remedy of sufficient activity. Then, so long as the strength will allow, we may endeavour to moderate the fever by mercurial and antimonial preparations, or other medicines promoting the several secretions, by steadily pursuing the antiphlogistic regimen, and occasionally applying cold water to the skin, when this is very hot and dry. Sometimes severe inflammation in the throat, at an early period, may render it advisable to apply a few leeches externally, or blisters behind the ears; and gargles of nitrate of potash, the mineral acids, &c. should be used from time to time. But where the disorder exhibits the typhoid character, with ulcers in the throat, tending perhaps to gangrene, it is necessary to support the system by a nutritious diet, with a moderate quantity of wine, and tonic or stimulant medicines, as the cinchona, calumba, ammonia, capsicum, &c.; the acids will also be very proper, from their antiseptic as well as tonic power; and stimulant antiseptic gargles should be frequently employed, as the mineral acids sufficiently diluted, with the addition of tincture of myrrh, or these mixed with decoction of bark, &c. Besides the general measures, thus varied according to the character of the disease, particularly alarming symptoms may require to be palliated; as vomiting by the effervescing draught, and occasionally a blister to the stomach, if there be tenderness on pressure; diarrhœa, by small doses of opium, &c. The management of these, however, as well as of the dropsical swellings, and other sequels of the disease, will be understood from what is said under those heads respectively.

Scarlet fever. See *Scarlatina.*

Scarred. See *Cicatrisatus.*

SCELOTY'RBE. (*e, es.* f.; from σκελος, the leg, and τυρβη, tumult, disturbance.) The name of a disease, described by Galen as a species of atony or paralysis, in which a man is incapable of walking straight on, and is turned round to the left when the right leg is put forward, and to the right when the left is put forward, or alternately. Sometimes he is incapable of raising the foot, and hence drags it awkwardly, as those that are climbing up steep cliffs. This disease has been considered by some as identical with *chorea.* Others have regarded it as symptomatic of scurvy. According to some critics, the word scelotyrbe, as used by Pliny, is synonymous with scurvy. Sauvages makes *scelotyrbe* an order of diseases, including chorea, shaking palsy, and three other species.

Scheele's green. Arsenite of copper, used as a pigment.

Scheelium. A name sometimes given to the metal more generally called Tungsten, because Scheele discovered the tungstic acid from which it is obtained.

Schinelæ'um. (From σχινος, mastich, and ελαιον, oil.) Oil of mastich.

SCHI'NUS. A genus of plants of the order *Terebinthinæ.*

Schinus molli. The plant which yields the Peruvian mastich, of which it is so full that the resinous juice flows from the leaves spontaneously, especially after rain, diffusing a delightful fragrance. A kind of wine is made from the berries of the plant. The specific name is sometimes improperly written *molle* instead of *molli.*

Schneider's membrane. (So called from its discoverer.) See *Membrana Schneiderma.*

Schœnan'thus. (*us, i.* m.; from σχοινος, a rush, and ανθος, a flower.) See *Andropogon schœnanthus.*

Schœnolagu'rus. (From σχοινος, a rush, λαγως, a hare, and ουρα, a tail: so called from its resemblance to a hare's tail.) Hare's tail, the *Trifolium arvense.*

SCIA'TIC. (*Sciaticus;* from *ischiaticus.*) Belonging to the ischium.

Sciatic artery. See *Ischiadic artery.*

Sciatic nerve. See *Sacrosciatic nerve.*

Sciatic notch. See *Innominatum os.*

SCIA'TICA. Two very different diseases have been confounded under this name,—rheumatism or rheumatic gout in the hip-joint, and neuralgia of the sacro-sciatic nerve.

Sciatica cresses. See *Lepidium iberis.*

SCI'LLA. (*a*, *æ*. f.; from σκιλλαω, to dry: so called from its property of drying up humours.) 1. The name of a genus of plants in the Linnæan system. Class, *Hexandria*; Order, *Monogynia.*

2. The pharmacopœial name of the medicinal squill. See *Scilla maritima.*

Scilla hispanica. The Spanish squill.

Scilla maritima. The systematic name of the officinal squill: called, also, *Ornithogalum maritimum. Pancratium. Squilla. Scilla—nudiflora, bracteis refractis*, of Linnæus. A native of Spain, Sicily, and Syria, growing on the sea-coast. The red-rooted variety has been supposed to be more efficacious than the white, and is therefore still preferred for medicinal use. The root of the squill, which appears to have been known as a medicine in the early ages of Greece, and has so well maintained its character ever since, as to be deservedly in great estimation and of very frequent use at this time, seems to manifest a poisonous quality to several animals. In proof of this, we have the testimonies of Hillefield, Bergius, Vogel, and others. Its acrimony is so great that, even if much handled, it exulcerates the skin; and if given in large doses, and frequently repeated, it not only excites nausea, tormina, and violent vomiting, but it has been known to produce strangury, bloody urine hypercatharsis, cardialgia, hæmorrhoids, convulsions, with fatal inflammation, and gangrene of the stomach and bowels. But as many of the active articles of the Materia Medica, by injudicious administration, become equally deleterious, these effects of the scilla do not derogate from its medicinal virtues: on the contrary, we feel ourselves fully warranted, says Dr. Woodville, in representing this drug, under proper management, and in certain cases and constitutions, to be a medicine of great practical utility and real importance in the cure of many obstinate diseases. The acrimony of the squill, like that of the arum, seems to depend on some unknown volatile principle, and is entirely dissipated if the drug be long kept or exposed to a high temperature. According to Vogel's analysis, squill consists of gum, a bitter principle, named *scillitine*, tannin, citrate of lime, saccharine matter, and woody fibre. Its effects, as stated by Bergius, are incidens, diuretica, emetica, subpurgans, hydragoga, expectorans, emmenagoga. In dropsical cases it has long been esteemed the most certain and effectual diuretic with which we are acquainted; and in asthmatic affections, or dyspnœa, occasioned by the lodgment of tenacious phlegm, it has been the expectorant usually employed. The squill, especially in large doses, is apt to stimulate the stomach, and to prove emetic; and it sometimes acts on the intestines, and becomes purgative; but, when these operations take place, the medicine is prevented from reaching the blood-vessels and kidneys, and the patient is deprived of its diuretic effects, which are to be obtained by giving the squill in smaller doses, repeated at more distant intervals, or by the joining of an opiate to this medicine, which was found by Dr. Cullen to answer the same purpose. The doctor further observes, that, from a continued repetition of the squill, the dose may be gradually increased, and the interval of its exhibitions shortened; and when, in this way, the dose comes to be tolerably large, the opiate may be most conveniently employed to direct the operation of the squill more certainly to the kidneys. In cases of dropsy, that is, when there is an effusion of water into the cavities, and therefore less water goes to the kidneys, we are of opinion that neutral salt, accompanying the squill, may be of use in determining this fluid more certainly to the kidneys; and, whenever it can be perceived that it takes this course, we are persuaded that it will be always useful, and generally safe, during the exhibition of the squills, to increase the usual quantity of drink.

The diuretic effects of squills have been supposed to be promoted by the addition of some mercurial; and the less purgative preparations of mercury, in the opinion of Dr. Cullen, are best adapted to this purpose: he therefore recommends a solution of corrosive sublimate as being more proper than any other, because most diuretic. Where the primæ viæ abound with mucous matter, and the lungs are oppressed with viscid phlegm, this medicine is likewise in general estimation.

As an expectorant, the squill may be supposed, not only to attenuate the mucus in the follicles, but also to excite a more copious secretion of it from the lungs, and thereby lessen the congestion upon which the difficulty of respiration very generally depends. Therefore, in all pulmonic affections, excepting only those of actual or violent inflammation, ulcer, and spasm, the squill has been experienced to be a useful medicine. The officinal preparations of squills are, a conserve, dried squills, a syrup, and vinegar, and oxymel, and pills. Practitioners have not, however, confined themselves to these. When this root was intended as a diuretic, it has most commonly been used in powder, as being, in this state, less disposed to nauseate the stomach; and to the powder it has been the practice to add neutral salts, as nitre, or crystals of tartar, especially if the patient complained of much thirst: others recommend calomel; and, with a view to render the squills less offensive to the stomach, it has been usual to conjoin an aromatic. The dose of dried squills is from one to four or six grains once a day, or half this quantity twice a day; afterwards to be regulated according to its effects. The dose of the other preparations of this drug, when fresh, should be five times this weight; for this root looses in the process of drying four fifths of its original weight, and this loss is merely a watery exhalation.

Scilla nutans. This plant was, until very lately, called *Hyacinthus non scriptus.* It is well known by the name of blue-bells, and is

common in our hedges in spring. The roots are bulbous; the flowers agreeably scented. Galen considered the root as a remedy in jaundice. It is ranked among the astringents, but of very inferior power.

Scilli'tes. (From σκιλλα, the squill.) A wine impregnated with squills.

SCI'LLITINE. *Scillitina.* A white, transparent, acrid substance, extracted by Vogel from squills.

SCI'NCUS. (*us, i.* m.; σκιγγος, from *sheque*, Hebrew.) The skink. This amphibious animal is of the lizard kind, and caught about the Nile, and thence brought dried into this country, remarkably smooth and glossy, as if varnished. The flesh of the animal, particularly of the belly, has been said to be diuretic, alexipharmic, aphrodisiac, and useful in leprous disorders.

Scirrho'ma. (*a, atis.* n.; from σκιρροω, to harden.) See *Scirrhus.*

SCI'RRHUS. (*us, i.* m.; from σκιρροω, to harden.) *Scirrhoma. Scirrhosis.* This term has been applied to any very hard glandular tumour, but it is now usually restricted to the early or occult stage of cancer. See *Cancer.*

SCITAMINE'US. (From *scitamentum*, a dainty: so called because they are warm cordial luxuries.) Scitamineous: dainty. Applied to several plants which are considered as dainties.

Scitamine'æ. The name of an order of plants in Linnæus's Fragments of a Natural Method, consisting of those which have an herbaceous stalk, broad leaves, and the germen obtusely angled under an irregular corolla; as *Amomum, Canna, Musa*, &c.

SCLA'REA. (*a, æ.* f.; from σκληρος, hard: because its stalks are hard and dry.) Blanch. See *Salvia sclarea.*

Sclarea hispanica. See *Salvia sclarea.*

SCLERI'ASIS. (From σκληροω, to harden.) *Scleroma. Sclerosis.* A hard tumour or induration; a scirrhus.

SCLEROPHTHA'LMIA. (*a, æ.* f.; from σκληρος, hard, and οφθαλμος, the eye.) A dry painful state of the eye and eyelids, accompanied with swelling and hardness.

Sclerosarcoma. (From σκληρος, hard, and σαρκωμα, a fleshy tumour.) A hard fleshy excrescence.

Sclerosis. See *Scleriasis.*

SCLERO'TIC. (*Scleroticus;* from σκληροω, to harden.) Hard: applied to a membrane of the eye.

Sclerotic coat. *Tunica sclerotica. Membrana sclerotica. Sclerotis.* The membrane of the eye, situated immediately under the conjunctiva. See *Oculus.*

Sclerotis. See *Sclerotic coat.*

Sclopetaria aqua. (From *sclopetum*, a gun: so called from its supposed virtues in healing gun-shot wounds.) The arquebusade water has been so called. See *Eau d'arquebusade.*

Sclopetopla'ga. (*a, æ.* f.; from *sclopetum*, a gun, and *plaga*, a wound.) A gun-shot wound.

SCOLI'ASIS. (From σκολιοω, to twist.) A distortion of the spine.

Scolloped. See *Crenatus.*

SCOLOPAX. (*ax, acis.* f.) A genus of birds of the order *Grallæ.* It includes curlews and woodcocks.

Scolopax gallina'go. The common snipe. The flesh of this bird approaches that of the woodcock in flavour, but is reckoned less digestible.

Scolopax rusti'cola. The woodcock. The flesh of this bird is tender and easy of digestion; but the entrails, which generally come to table, sometimes disagree with weak stomachs.

Scolope'ndria. (*a, æ.* f.) See *Asplenium ceterach.*

SCOLOPE'NDRIUM. (*um, ii.* n.; from σκολοπενδρα, the earwig: so called because its leaves resemble the earwig.) The name of a genus of plants. Class, *Cryptogamia;* Order, *Filices.* Hart's-tongue, spleenwort.

Scolopendrium vulgare. *Phyllitis. Lingua cervina. Scolopendrium. Asplenium scolopendrium. Blechnium linguifolium.* This indigenous plant, *Asplenium —frondibus simplicibus, cordato lingulatis, integerrimis; stipitibus hirsutis,* of Linnæus, grows on most shady banks, walls, &c. It has a slightly astringent and mucilaginous sweetish taste. When fresh, and rubbed, it imparts a disagreeable smell. Hart's-tongue, which is one of the five capillary herbs, was formerly much used to strengthen the viscera, restrain hæmorrhages and alvine fluxes, and to open obstructions of the liver and spleen, and for the general purposes of demulcents and pectorals.

Scoloromachæ'rium. (From σκολωπαξ, the woodcock, and μαχαιρα, a knife: so called because it is bent a little at the end, like a woodcock's bill.) An incision-knife.

Sco'lymus. (*us, i.* m.; from σκολος, a thorn: so named from its prickly leaves.) See *Cinara scolymus.*

SCO'MBER. (*er, bri.* m. Σκομβρος.) The name of a genus of fishes, of the order *Thoracici.*

Scomber scomber. The systematic name of the common mackarel, a beautiful fish of easy digestion, which frequents our shore, in vast shoals, between the months of April and July.

Scomber thynnus. The systematic name of the tunny-fish, which frequents the shores of the Mediterranean, and, though a coarse fish, was much esteemed by the Greeks and Romans, and is still considered a delicacy by some.

Scopa regia. See *Ruscus aculeatus.*

SCORBU'TUS. (*us, i.* m.; from *schorboet*, Germ.) *Porphyra* of Dr. Good. The scurvy. A disease characterised by extreme debility; complexion pale and bloated; spongy gums; livid spots on the skin; breath offensive; œdematous swellings in the legs; hæmorrhages; foul ulcers; fœtid urine; and extremely offensive stools. The scurvy is a disease of an adynamic character, much more prevalent in cold climates than in warm ones, and which chiefly affects sailors, and such as are shut up in besieged places, owing, as is supposed, to their being deprived of fresh provisions, and a due quantity of ascescent food, assisted by the prevalence of cold and moisture, and by such other causes as depress the nervous energy, as intemperance, confinement, want of exercise, neglect of cleanliness, much labour and fatigue,

sadness, despondency, &c. These several debilitating causes, with the concurrence of a diet consisting principally of salted or putrescent food, will be sure to produce this disease. It seems, however, to depend more on a defect of nourishment than on a vitiated state; and the reason that salted provisions are so productive of the scurvy is, most probably, because they are drained of their nutrious juices, which are extracted and run off in brine. As the disease is apt to become pretty general amongst the crew of a ship when it has once made its appearance, it has been supposed by many to be of a contagious nature; but the conjecture seems by no means well founded.

A preternatural saline state of the blood has been assigned as its proximate cause. It has been contended, by some physicians, that the primary morbid affection in this disease is a debilitated state of the solids, arising principally from the want of aliment. The scurvy comes on gradually, with heaviness, weariness, and unwillingness to move about, together with dejection of spirits, considerable loss of strength, and debility. As it advances in its progress, the countenance becomes sallow and bloated, respiration is hurried on the least motion, the teeth become loose, the gums are spongy, the breath is very offensive, livid spots appear on different parts of the body, old wounds, which have been long healed up, break out afresh, severe wandering pains are felt, particularly by night, the skin is dry, the urine small in quantity, turning blue vegetable infusions to a green colour; and the pulse is small, frequent, and, towards the last, intermitting; but the intellect is, for the most part, clear and distinct. By an aggravation of the symptoms, the disease, in its last stage, exhibits a most wretched appearance. The joints become swelled and stiff, the tendons of the legs are rigid and contracted, general emaciation ensues, hæmorrhages break forth from different parts, fœtid evacuations are discharged by stool, and a diarrhœa or dysentery arises, which soon terminates the life of the patient.

Scurvy, as usually met with on shore, or where the person has not been exposed to the influence of the remote causes before enumerated, is unattended by any violent symptoms: slight blotches, with scaly eruptions on different parts of the body, and a sponginess of the gums, are the chief ones to be observed.

In forming our judgment as to the event of the disease, we are to be directed by the violence of the symptoms, by the situation of the patient with respect to a vegetable diet, or other proper substitutes, by his former state of health, and by his constitution having been impaired by previous diseases or otherwise.

Dissections of scurvy have always discovered the blood to be in a very dissolved state. The thorax usually contains more or less of a watery fluid, which, in many cases, possesses so high a degree of acrimony as to excoriate the hands by coming in contact with it; the cavity of the abdomen contains the same kind of fluid; the lungs are black and putrid; and the heart itself has been found in a similar state, with its cavity filled with a corrupted fluid. In many instances the epiphyses have been found divided from the bones, the cartilages separated from the ribs, and several of the bones themselves dissolved by caries. The brain seldom shows any disease.

In the cure as well as the prevention of scurvy much more is to be done by regimen than by medicines, obviating, as far as possible, the several remote causes of the disease, but particularly providing the patient with a more wholesome diet, and a large proportion of fresh vegetables; and it has been found that those articles are especially useful which contain a native acid, as oranges, lemons, &c. Where these cannot be procured, various substitutes have been proposed, of which the best appear to be the inspissated juices of the same fruits, or the crystallised citric acid. Vinegar, saur-kraut, and farinaceous substances, made to undergo the acetous fermentation, have likewise been used with much advantage: also brisk fermenting liquors, as spruce-beer, cider, and the like. Formerly many plants of the class *Tetradynamia*, as mustard, horse-radish, &c., likewise garlic, and others of a stimulant quality, promoting the secretions, were much relied upon, and, no doubt, proved useful to a certain extent. The spongy state of the gums may be remedied by washing the mouth with some of the mineral acids sufficiently diluted, or perhaps mixed with the decoction of cinchona. The stiffness of the limbs which remains may be removed by the warm bath and friction with the flesh brush: in hot climates the earth bath is said to have been sometimes very efficacious.

Sco'rdium. (*um*, *i.* n.; from σκοροδον, garlic: so called because it smells like garlic.) See *Teucrium scordium*.

SCO'RIÆ. (*a*, *æ.* f.; from σκωρ, excrement.) Dross. The refuse or useless parts of any substance.

Scoro'doprasum. (*um*, *i.* n.; from σκοροδον, garlic, and πρασον, the leek.) The wild garlic, a species of allium.

SCO'RODUM. (*um*, *i.* n. Απο του σκωρ οζειν, from its filthy smell.) Garlic.

Scorpioi'des. (From σκορπιος, a scorpion, and ειδος, a likeness: so called because its leaves resemble the tail of a scorpion.) The *Myosurus scorpioides*.

SCORPIU'RUS. (From σκορπιος, a scorpion, and ουρα, a tail.) 1. The name of a genus of plants. Class, *Diadelphia*; Order, *Decandria*.

2. See *Myosurus scorpioides*.

SCORZONE'RA. (*a*, *æ.* f.; from *scurzo*, an old Spanish word for a viper: so called because it is said to be effectual against the bite of all venomous animals.) 1. The name of a genus of plants in the Linnæan system. Class, *Syngenesia*; Order, *Polygamia æqualis*.

2. The pharmacopœial name of the viper's-grass. See *Scorzonera humilis*.

Scorzonera hispanica. The systematic name of the esculent viper's-grass. *Serpentaria hispanica*. The root of this plant is mostly sold for that of the *humilis*.

Scorzonera humilis. The systematic name

of the officinal viper's-grass. Goat's-grass. Viper's-grass. *Escorzonera. Viperaria.* The roots of this plant, *Scorzonera — caule submudo, unifloro; foliis lato-lanceolatis, nervosis, planis,* of Linnæus, have been sometimes employed medicinally as alexipharmics, and in hypochondriacal disorders and obstructions of the viscera. The *Scorzonera hispanica* mostly supplies the shops; the root of which is esculent, oleraceous, and, against diseases, inefficacious.

SCOTODI'NUS. (*us, i.* m.; σκοτοδινος, from σκοτος, darkness, and δινος, a giddiness.) *Scotodinia. Scotoma. Scotodinos. Scotodine.* Giddiness, with impaired sight. This may arise from some disease of the brain; but it is most commonly symptomatic of disorder of the digestive organs. It is frequently accompanied with ringing in the ears.

Scoto'ma. See *Scotodinus.*

SCROBICULA'TUS. (From *scrobiculus,* a little ditch, or furrow.) Hollowed, having deep round foramina. Applied to parts of plants, as the receptacle of the *Helianthus annuus.*

SCROBI'CULUS. (*us, i.* m.; diminutive of *scrobs,* a ditch.) A hollow: the pit of the stomach is called *scrobiculus cordis.*

Scro'fa. The sow. See *Sus scrofa.*

SCRO'FULA. (*a, æ.* f.) The Greeks denominated this disease χοιρας; the nosologists of recent times, *scrofula:* thus literally translating the Greek, and importing *swine evil, swine swellings,* from a notion that pigs were particularly subject to this disease. Scrofula is a disease very difficult to define: it consists in hard indolent tumours of the conglobate glands in various parts of the body, but particularly in the neck, behind the ears, and under the chin, which, after a time, suppurate and degenerate into ulcers, from which, instead of pus, a white curdled matter, somewhat resembling the coagulum of milk, is discharged.

The first appearance of the disease is most usually between the third and seventh year of the child's age; but it may arise at any period between this and the age of puberty; after which it seldom makes its first attack.

Scrofula is a very prevalent disease in climates which are moist, rather cold, and very changeable, like those of England and Holland, while it is rare in hot climates, and in very cold ones, where the air is generally dry.

The scrofulous diathesis, when strongly marked, is generally indicated by certain external peculiarities of appearance. The greater part of scrofulous persons have a fair and soft skin, and fine rosy complexion, large blue eyes, and a tumid upper lip; their constitution is languid and yet irritable; the muscles are slender and deficient in tone, and there is a general irritability of the mucous membranes, indicated by a disposition to catarrh, diarrhœa, ophthalmia, &c. A smaller class of scrofulous individuals are characterised by a dark sallow complexion, black hair, a harsh skin, and a torpid constitution. This rarer aspect of scrofula is indicative of a disposition to its worst forms; and the disease, when it appears in such subjects, is very inveterate and intractable. Although scrofula be most frequently met with in one or other of the constitutions just noticed, it is by no means confined to them, nor is there any variety of temperament or habit exempt from its attacks.

Scrofula is by no means a contagious disease, but, beyond all doubt, is of an hereditary nature, and is often entailed by parents on their children. There are, indeed, some practitioners who wholly deny that this or any other disease can be acquired by hereditary transmission; but that a peculiar temperament of body, or predisposition in the constitution of some diseases, may extend from both father and mother to their offspring is very clearly proved.

Where there is any predisposition in the constitution to scrofula, and the person happens to contract a venereal taint, this frequently excites into action the causes of the former as soon as the virus is destroyed by mercury. Dr. Cullen supposed scrofula to depend upon a peculiar constitution of the lymphatic system. Whatever may be the proximate cause of scrofula, the most certain indication of its existence is the deposition of that kind of morbid matter called *tuberculous matter,* the nature of which is described in the article *Tubercle.* There is scarcely any organ of the body which is not occasionally the seat of scrofulous tubercle. In children, the lymphatic and mesenteric glands are most frequently affected. In those past puberty the lungs are most liable to tubercles, which give rise to the disease called *tubercular phthisis.* See *Phthisis.*

The remote causes of scrofula are all of a debilitating nature, and embrace every thing that lowers or reduces the tone of the living fibre, and puts the system out of that state of firm and vigorous action which keeps the scrofulous diathesis most effectually in a state of subjection; and hence the common debilitating powers of cold and damp, low and unwholesome food, want of cleanliness, and a close and suffocating atmosphere, are the most usual incidental sources of scrofula. But for these causes the scrofulous predisposition might be overcome, or remain dormant in the constitution through life, and show itself in the next generation, without having in the least disturbed the present. But the moment any other occasional causes become adjuncts with the scrofulous diathesis, scrofula, rather than any other disease which they may also be calculated to promote, will make its appearance, and commence its ravages. The attacks of the disease seem much affected or influenced by the periods of the seasons. They begin usually some time in the winter and spring, and often disappear, or are greatly amended, in summer and autumn. The first appearance of the disorder is commonly in that of small oval or spherical tumours under the skin, unattended by any pain or discolouration. These appear, in general, upon the sides of the neck, below the ear, or under the chin; but, in some cases, the joints of the elbows or ankles, or those of the fingers and toes, are the parts first affected. In these instances we do not, however, find small moveable swellings; but, on the contrary, a tumour almost uni-

formly surrounding the joint, and interrupting its motion.

After some length of time, the tumours become larger and more fixed; the skin which covers them acquires a purple or livid colour, and, being much inflamed, they at last suppurate and break into little holes, from which, at first, a matter, somewhat puriform, oozes out; but this changes, by degrees, into a kind of viscid serous discharge, much intermixed with small pieces of a white substance, resembling the curd of milk.

The tumours subside gradually, whilst the ulcers at the same time open more, and spread unequally in various directions. After a time some of the ulcers heal, but other tumours quickly form in different parts of the body, and proceed on, in the same slow manner as the former ones, to suppuration. In this manner the disease goes on for some years; and appearing at last to have exhausted itself, all the ulcers heal up, without being succeeded by any fresh swellings, but leaving behind them an ugly puckering of the skin, and a scar of considerable extent. This is one of the mildest forms under which scrofula presents itself. In more virulent cases, the eyes are particularly the seat of the disease, and are affected with ophthalmia, giving rise to ulcerations in the tarsi, and inflammation of the tunica adnata, terminating not unfrequently in an opacity of the transparent cornea.

In similar cases the joints become affected; they swell and are incommoded by excruciating deep-seated pain, which is much increased upon the slightest motion. The swelling and pain continue to increase, and the muscles of the limb become at length much wasted. Matter is soon afterwards formed; and this is discharged at small openings made by the bursting of the skin. If the progress of the disease be not arrested, it extends to the ligaments and cartilages, and produces a caries of the neighbouring bones. Hectic fever at last arises, and, in the end, often proves fatal.

When scrofula is confined to the external surface, it is by no means attended with danger, although, on leaving one part, it is apt to be renewed in others; but when the ulcers spread, erode, and become deep, without showing any disposition to heal; when deep-seated collections of matter form amongst the small bones of the hands and feet, or in the joints, or tubercles in the lungs, with hectic fever, arise, the consequences will be fatal.

On opening the bodies of persons who have died of this disease, many of the viscera are usually found in a diseased state, but more particularly the glands of the mesentery, which are not only much tumefied, but often ulcerated. The lungs are frequently discovered beset with a number of tubercles or cysts, which contain matter of various kinds.

Scrofulous glands, on being examined by dissection, feel somewhat softer to the touch than in their natural state, and, when laid open, they are usually found to contain a soft curdy matter, mixed with pus. Cullen distinguishes four species of scrofula: —

1. *Scrofula vulgaris*, when it is without other disorders, external, and permanent.

2. *Scrofula mesenterica*, when internal, with loss of appetite, pale countenance, swelling of the belly, and an unusual fœtor of the excrements. See *Tabes mesenterica*.

3. *Scrofula fugax*. This is of the most simple kind: it is seated only about the neck, and, for the most part, is caused by absorption from sores on the head.

4. *Scrofula Americana*, when it is joined with the yaws.

In conducting the treatment of this disease, we must always recollect that it is one of debility, so that our chief dependence must be on a tonic and stimulating plan, so modified as to meet the patient's age, idiosyncrasy, and manner of life.

It is of the utmost importance to select a dry and salubrious situation, so defended as not to be keen for the lungs; but the higher and drier the better for the most part. Such a situation by the sea-side is most desirable, as the sea air is very beneficial.

The clothing should be calculated to ensure a regular circulation on the surface, without being oppressive, or suffering the person to feel chilly.

The diet should be as invigorating as the stomach will bear, and consist of a free use of tender beef and mutton, dilute wine, and malt liquor.

Tonic and stimulant medicines are to be exhibited regularly, either alone or in combination with alkalis or acids, or some of the antiscrofulous remedies which will presently be noticed.

Tonics and Stimulants.

1. *Cinchona*. All of this family may be given, but the best is the *cinchona lancifolia*, of which, as of the other species, powders, infusions, decoctions, tinctures, and extracts may be made and given in their compounded states, varying them from time to time, and combining other medicines. An infusion of bark in lime-water has been found very serviceable. Bark combined with acids is in many cases useful; with the alkalis also, and more especially with the bicarbonates of soda and potash. Bark and steel together are frequently found beneficial, when neither have done any good separately. With most of the anti-scrofulous medicines, the Peruvian barks may also be exhibited.

2. *Chalybeates*. Of these, Dr. Griffiths' steel medicine, the mistura ferri cum myrrhâ, and pilula ferri composita, of the London Pharmacopœia, are the best. The tinctura ferri muriatis is also an excellent medicine against some forms, and in some constitutions which will not bear the others.

3. *Mercurials*. These are exhibited in alterative doses. With some constitutions they agree, and are of infinite service; whilst, on the other hand, they debilitate and increase the disease with others; and it cannot, *à priori*, be said in what cases they are likely to disagree and be injurious. The mercurial oxides are to be selected, in very small doses, and never so as to affect the

gums; for a mercurial salivation has, in almost every instance, been productive of great mischief.

A combination of submuriate of mercury and precipitated sulphuret of antimony, in what has been long called Plummer's pill, is, occasionally, an excellent medicine in the cure of many forms of scrofula.

4. The *Alkalis.* Whether or not an acrimonious principle exists primarily, or is generated when the disease is in an aggravated state, it is difficult to determine. This opinion, however, has had, and still has, many able advocates, who seem, accordingly, to have resorted to the use of the alkalis.

Soda, in the state of bicarbonate, is decidedly the best, because it agrees best with the stomach. Burnt sponge contains this alkali with carbon and iodine, and has been found useful, especially against bronchocele. The next is the bicarbonate of potash. The volatile alkali, though praised by some, has disappointed many.

All these preparations of the alkalis are to be exhibited in full doses: a drachm daily to an adult: and the patient must avoid every thing acid, or tending to an acid or acescent state, in the stomach.

5. The *Acids.* The best of these against scrofula are the muriatic and nitric. The oxygenated muriatic acid and the nitro-muriatic acid, and also the chloride of soda, have been found very serviceable in many cases.

6. *Mineral Waters.* The chalybeate and sulphureous spring waters are not without their efficacy in some cases, especially the chalybeates of Tunbridge Wells, Hampstead, Cheltenham, Leominster, and Harrowgate.

The Narcotics.

1. Conium, or hemlock, stands the first on the list; and a decidedly good medicine it is in some cases. All, however, depends not merely on its genuineness, but also on its preparation. It should be given in full doses, but so as never to cause any uneasiness of the head. Henbane is mostly exhibited as a quieter of irritation. Very little is now thought of the efficacy of any of the Solanum tribe. Digitalis is of no use whatever in the cure of scrofula.

Anti-scrofulous Specifics.

Sarsaparilla has long been esteemed as highly beneficial; so much so, that few cases of this disease have not been treated with it. Here, again, every thing depends on having the root of the true plant, and there is not, perhaps, one in the materia medica which is more adulterated; so much so, that little dependence can be placed on any of its preparations, unless they be made under proper inspection, or obtained from some trustworthy source. It is usual, when sarsaparilla is given, to exhibit the powder, or the decoction, or the extract; but the latter is very apt to lose its virtue by a strong fire, and should be prepared in *balneo mariæ.* A milk and vegetable diet is insisted on occasionally with it, but a generous diet will assist it much more.

Sarsaparilla, when of no utility alone, occasionally proves beneficial when combined with soda; and Peruvian bark, with sarsaparilla, is occasionally serviceable.

Coltsfoot, or the *Tussilago farfara,* is now seldom or ever given; although Dr. Cullen affirms that, when some ounces were given every day, it in several instances occasioned the healing of scrofulous sores.

Lime-water, the once extolled muriates of baryta and of lime, and oxide of zinc, are seldom exhibited in the present day.

Lastly, *iodine,* which has been given very generally, and very largely, has been found, in some instances beneficial from its powers as a general stimulant, and has very frequently promoted the absorption of scrofulous tumours; but it has failed altogether to realise the expectations which some practitioners entertained of its effects as a specific.

Of the External Applications.

When scrofula on the surface is tumid and inflamed, the antiphlogistic applications are all useful, especially the liquor plumbi acetatis dilutus, the liquor ammoniæ acetatis, well diluted; very dilute spirit of wine; very dilute acetic acid; sea-water; weak solutions of muriate of soda, to imitate sea-water; and these cold, so long as there is no pus formed. It is a subject that requires great consideration, whether warm applications should ever be applied; and also, when the suppuration or tumour is matured, whether the lancet should be used, unless it is in parts where nature should not be trusted to, lest the abscess burst into important viscera, or will not burst at all. The applications which some are very partial to, are, bread poultices, with a little vinegar or salt-water; poultices of sea-wrack, the *Fucus vesiculosus,* sea-tang, the sal-solas, &c.; all of which act by the saline matters, and probably also of the iodine they contain.

In the more indolent scrofulous tumours and ulcerations, iodine and the hydriodate of potash are useful stimulants.

It is of great importance, in the application and use of the several internal remedies, to begin always with small doses, carefully guarding against stimulating the system but in the gentle way, and afterwards augmenting the dose with due caution: for if the system be stimulated violently, more debility results, and the mischief is increased. Scrofula is strictly a chronic disease: it never has been, nor ever can be cured rapidly; and wherever any good has been produced upon it, it has always been by lenient means, and steady and patient perseverance.

Scrophula. See *Scrofula.*

SCROPHULA'RIA. (*a*, *æ*. f.; from *scrofula,* the king's evil: so called from the unequal tubercles upon its roots, like scrofulous tumours.) The name of a genus of plants in the Linnæan system. Class, *Didynamia;* Order, *Angiospermia.* The figwort.

Scrophularia aquatica. Greater water-figwort. Water betony. *Betonica aquatica.* The leaves of this plant, *Scrophularia—foliis cordatis obtusis, petiolatis, decurrentibus; caule membranis angulato; racemis terminalibus,* of Linnæus, are celebrated as correctors of the ill flavour of senna. They were, also, formerly in high estimation against piles, tumours of a scrofulous nature, inflammations, &c.

Scrophularia minor. See *Ranunculus ficaria.*

Scrophularia nodosa. The figwort. *Scrophularia vulgaris. Millemorbia. Scrophularia.* Common figwort or kernel-wort. The root and leaves of this plant, *Scrophularia — foliis cordatis, trinervatis; caule obtusangulo,* of Linnæus, have been celebrated both as an internal and external remedy against inflammations, the piles, scrofulous tumours, and old ulcers; but they are now only used by the country people.

Scrophularia vulgaris. See *Scrophularia nodosa.*

SCRO'TAL. *Scrotalis.* Belonging to the scrotum.

Scrotal hernia. A protrusion of any of the contents of the abdomen into the scrotum. See *Hernia.*

Scrotifo'rmis. (From *scrotum,* the covering of the testicle, and *forma.*) Scrotiform: purse-like; bag-like. Applied to the nectary of the genus *Satyrium.*

Scrotoce'le. (*e, es.* f.; from *scrotum,* and κηλη, a tumour.) A scrotal hernia.

SCRO'TUM. (*um, i.* n.; *quasi scorteum,* a leather coat.) *Bursa testium. Oscheus. Oscheon. Orchea,* of Galen. The bag of common integuments which covers the testicles.

Scrotum cordis. The pericardium.

SCRU'PULUS. (Diminutive of *scrupus,* a draught man.) A scruple, or weight of twenty grains.

SCURF. *Furfura.* Small exfoliations of the cuticle, or scales like bran, which occur naturally on the scalp, and take place after some eruptions on the skin, a new cuticle being formed underneath during the exfoliation.

Scurvy. See *Scorbutus.*

Scurvy-grass. See *Cochlearia officinalis.*

Scurvy-grass, lemon. See *Cochlearia.*

SCU'TIFORM. (*Scutiformis;* from *scutum,* a shield, and *forma,* likeness. Shield-like.

Scutiform cartilage. See *Thyroid cartilage.*

SCUTE'LLA. A little dish or cup. Applied to the round, flat, or shallow conceptacle of lichens, as in *Lichen stellaris.*

SCUTELLA'RIA. (*a, æ.* f.; from *scutella,* a small dish, or saucer, apparently in allusion to the little concave appendage which crowns the calyx. Some have thought it to be more directly derived from *scutellum,* a little shield, to which they have compared the appendage.) The name of a genus of plants in the Linnæan system. Class, *Didynamia;* Order, *Gymnospermia.*

Scutellaria galericula'ta. The systematic name of the scull-cap. *Tertianaria.* The *Scutellaria — foliis cordato-lanceolatis, crenatis; floribus axillaribus,* of Linnæus, which is common in the hedges and ditches of this country. It has a bitter taste and a garlic smell, and is said to be serviceable against that species of ague which attacks the patient every other day.

Scutellaria lateriflo'ra. This plant, according to Dr. Lyman Spalding, of New York, is prophylactic against the effects of the bite of a mad dog.

Scute'llum. (*um, i.* n.) A little shield: sometimes used for the fructification of lichens, instead of *scutella.*

SCY'BALUM. (*um, i.* n. Σκυβαλον.) Dry hard excrement: applied to such as has become hard, and formed into small rounded nodules, like sheep's dung, or larger. There are two kinds of scybala noticed: —

1. *Feculent.* These are small balls, varying in size from a pea to a walnut, formed of excrement which has become dry, and can be cut into pieces, when they are found to be of the same material throughout.

2. *Oleaginous.* These are obviously of a fatty consistence; are mostly round, of a cream-colour, slightly translucent. May not this species be a modification of, or a mixture with, cholesterine?

Scymetar-shape. See *Acinaciformis.*

SCY'PHIFORM. Goblet-shaped; as the fructification of some of the lichens.

Scythica radix. Liquorice root.

SCYTODE'PSIC. (*Scytodepsicus.* Σκυτοδεψικος; from σκυτοδεψεω, to tan hides, from σκυτος, a hide and δεφω, to excoriate.) Appertaining to the business of a tanner. Tannin has been called the *scytodepsic principle,* and gallic acid has been called *scytodepsic acid.*

Scytodepsic acid. See *Scytodepsic.*

Scytodepsic principle. See *Scytodepsic.*

SEA. *Mare.* The air of the sea, the effects produced on the system by the motion of a vessel, the water of the ocean, and its contents, all come under the attention of the physician.

1. *Sea-air* is prescribed in a variety of complaints, being considered as more medicinal and salubrious than that on land, though not known to possess in its composition a greater quantity of oxygen. This is a most powerful and valuable remedy. It is resorted to with the happiest success against most cases of debility, and particularly against scrofulous diseases affecting the external parts of the body.

2. *Sea sickness.* An intense nausea with violent retching, which varies, in respect of duration, in different persons upon their first going to sea, and which seems to arise from a depressing effect on the brain produced by the motion of the vessel; though why this should be we know not. With some it continues only for a day or two; while with others it remains throughout the voyage; and in a few cases has been so severe and long-continued as to prove fatal. Various remedies have been proposed for sea-sickness, but the only one which is of any use is lying perfectly still with the head low, by which an increased quantity of blood is thrown on the brain.

3. *Sea-water.* This is arranged amongst the simple saline waters. Its chemical analysis gives a proportion of one of saline contents to about twenty-three and one fourth of water; but on our shores it is not greater than one of salt to about thirty of water. Sea-water on the British coast may therefore be calculated to contain in the wine pint, of muriated soda 186·5 grains, of muriated magnesia 51, of selenite 6 grains; total 243½ grains, or half an ounce and 3½ grains of saline contents. Bathing in the sea is one of the powerful tonics we possess, and owes its efficacy no less to the free exposure of the body to the brasing sea-breeze, than to the quality of the water. See *Balneum.* The disorders for which the internal use of sea-water has been and

may be resorted to, are, in general, the same for which all the simple saline waters may be used. The peculiar power of sea-water and sea-salt as a discutient, employed either internally or externally, in scrofulous habits, is well known, and is attended with considerable advantage when judiciously applied.

Sea-belts. (So called from the supposed resemblance of its leaves to a belt or girdle.) See *Fucus saccharinus.*

Sea green. See *Glaucous.*

Sea-holly. See *Eryngium.*

Sea-moss. See *Conferva rupestris*, and *Corallina officinalis.*

Sea-oak. See *Fucus vesiculosus.*

Sea-onion. See *Scilla.*

Sea-salt. See *Sodii chloridum.*

Sea-wrack. See *Fucus vesiculosus.*

Sealed earth. See *Sigillata terra.*

Seam. See *Sutura.*

Searching. See *Sounding.*

SEBA'CEOUS. (*Sebaceous;* from *sebum*, suet.) Suety: applied to glands, which secrete a suety humour, and to the matter secreted.

SEBA'CIC. (*Sebacicus;* from *sebum*, suet.) Of or belonging to suet, or such fatlike substances.

Sebacic acid. (*Acidum sebacicum;* so called because found largely in suet.) The sebacic acid may be obtained by distilling suet, lard, &c.; it is inodorus; its taste is slight, but it perceptibly reddens litmus paper; its specific gravity is above that of water, and its crystals are small white needles of little coherence. Exposed to heat, it melts like fat, is decomposed, and partially evaporated. The air has no effect upon it. It is much more soluble in hot than in cold water; hence boiling water saturated with it, assumes a nearly solid consistence on cooling. It combines with earthy, alkaline, and metallic bases, and forms salts called sebates.

Sebadilla. See *Cevadilla.*

SE'BATE. (*Sebas, atis.* f.; from *sebum*, suet.) The name of the neutral compound of the acid of fat with a salifiable base.

Sebel. An Arabic name for the disease of the eye, called *pannus.*

Sebesten. (An Egyptian word.) See *Cordia myxa.*

SECA'LE. (*e, i.* neut.; a name in Pliny, which some etymologists, among whom is De Theis, derive from the Celtic *segal.* This, says he, comes from *sega*, a sickle, in the same language, and thence *seges*, the Latin appellation of all grain that is cut with a similar instrument. Those who have looked no farther for an etymology than the Latin *seco*, to cut or mow, have come to the same conclusion.) 1. The name of a genus of plants in the Linnæan system. Class, *Triandria;* Order, *Digynia.* Rye.

2. The common name of the seed of the *Secale cereale* of Linnæus.

Secale cereale. The systematic name of the rye plant. Rye corn is principally used as an article of diet, and, in the northern countries of Europe, is employed for distilling an ardent spirit. Rye-bread is in common use in the northern parts of Europe. Rye is less nourishing than wheat, but a sufficiently nutritive and wholesome grain. It is, more than any other grain, strongly disposed to acescency: hence it is liable to ferment in the stomach, and to produce purging, which people on the first using it commonly experience.

Secale cornutum. *Secale corniculatum. Clavus secalinus. Mutterkorn kornzapfen*, of the Germans. *Ergot; Seigle ergote* of the French. A black, curved, morbid, excrescence, like the spur of a fowl, which is found in the spike of the *Secale cereale* of Linnæus, especially in hot climates, when a great heat suddenly succeeds to much moisture. The seed, which has this diseased growth, gives off, when powdered, an odour which excites sneezing, and titillates the nose, like tobacco. It has a mealy, and then a rancid, nauseous, and biting taste, which remains a long time, and causes the mouth and fauces to become dry; which sensation is not removed by watery fluids, but is soon relieved by milk. The cause of this excrescential disease in rye appears to be an insect which penetrates the grain, feeds on its amylaceous part, and leaves its poison in the parenchyma: hence it is full of small foramina or perforations made by the insect.

The secale cornutum has a singular effect on the animal economy. The meal or flower sprinkled on a wound, coagulates the blood, excites a heat and then a numbness in the part, and soon after in the extremities. Bread, which contains some of it, does not ferment well, nor bake well, and is glutinous and nauseous. The bread when eaten produces intoxication, lassitude, a sense of something creeping on the skin, weakness of the joints, with convulsive movements occurring periodically. This state is what is called *raphania*, and *convulsiones cerealcs.* Of those so affected, some can only breathe in an upright posture; some become maniacal; others epileptic; or tabid, and some have a thirst not to be quenched; and livid eruptions and cutaneous ulcers are not uncommon. The disease continues from ten days to two or three months, and longer. Those who have formication, pain, and numbness of the extremities in the commencement, generally lose the feeling in these parts, and the skin, from the fingers to the fore-arm, or from the toes to the middle of the tibia, becomes dry, hard, and black, as if covered with soot. This species of mortification is called *Necrosis cerealis.*

As a medicine, the secale cornutum is given internally to excite the action of the uterus in an atonic state of that organ, producing amenorrhœa, &c.; and, during parturition, to excite the contraction of the uterus when this is insufficient. The accounts of this specific operation of the ergot on the uterus were for some time received with scepticism, and properly so, since it is well known that there is no organ more under the control of the imagination than the uterus during labour; whence a number of perfectly inert substances have acquired reputation for expediting delivery: the reality of such a power in the ergot seems, however, to be now established by a great mass of testimony. It is observed that the uterine contractions, brought on by the use of

this medicine, are quite different in their character from ordinary labour-pains, being highly spastic, and continued almost without intermission till delivery is effected. It is of the utmost importance in the use of this powerful agent, that the position of the child be natural, or at least such as to admit of its free expulsion; that is, the head must present in the normal position, or the feet must be coming down. In all cross births the administration of the ergot would not only be entirely ineffectual as to the expulsion of the child, but would have a direct tendency to rupture the uterus. It is of equal importance that the shape and capacity of the pelvis be such as to admit of the free expulsion of the child by the efforts of the uterus, otherwise there is the same danger of rupture of the organ. The ergot has been used in powder, tincture, decoction, and infusion. The powder is given in the dose of from gr. x. to ʒss., in any appropriate vehicle. The decoction may be made with ʒ iij. to ʒ xij. of water, boiled down to one half, and given in doses of ʒ i. at intervals, according to the effect. The infusion, which is the form generally preferred, may be made with half a drachm to half a pint of boiling water, and one half administered at a time. The tincture is little used. The medicine must be fresh, and well preserved in close vessels, or it will have lost its efficacy. A great part of the ergot found in the shops is good for nothing.

The antidote to the ill effects produced in the mouth and fauces by eating bread which has this poison, is milk. Against the convulsions, vomits, saline purgatives, glysters, submuriate of mercury as a purgative, are first to be given; and, after the primæ viæ have been duly cleaned, stimulants of camphire, ammonia, and ether with opium. In the necrosis, rectified oil of turpentine is very beneficial in stopping its progress, and then warm stimulating fomentations and poultices.

SECONDARY. Something that acts as second or in subordination to another. Thus, in diseases, we have *secondary symptoms*.

Secondary amputation. When, in cases of compound fracture, or other severe injury, amputation is immediately performed, it is called *primary amputation*; but when it is deferred till the immediate effects of the injury on the constitution have passed away and suppuration is established, it is called *secondary amputation*.

Secondary fever. That febrile affection which arises after a crisis, or the discharge of some morbid matter, as after the declension of the small-pox or the measles.

Secondary hæmorrhage. Hæmorrhage occurring after wounds or operations, not immediately, but at a time when, supposing a healthy state of the parts, it would not have happened. Thus, after amputation, when the arteries have been tied, the stump has been dressed, and the patient been in bed some hours, a hæmorrhage will sometimes take place from the small vessels. Again after the ligature of an aneurismal artery, the vessel may ulcerate, and hæmorrhage ensue. These cases are called *secondary hæmorrhage*.

SECRE'TION. (*Secretio, onis*, f.) A function in a living body, arranged by physiologists under the head of natural actions. It is by this function that a part of the blood escapes from the organs of circulation, and diffuses itself without or within; either preserving its chemical properties, or dispersing after its elements have undergone another order of combinations.

The animal secretions are arranged by Bostock into the *aqueous*, *albuminous*, *mucous*, *gelatinous*, *fibrinous*, *oleaginous*, *resinous*, and *saline*. Magendie's arrangement is into three sorts: —

1. The *exhalations*.
2. The *follicular secretions*; and,
3. The *glandular secretions*.

EXHALATIONS.

The exhalations take place as well within the body as at the skin, or in the mucous membranes: thence their division into *external* and *internal*.

Internal Exhalations. — Whenever large or small surfaces are in contact, an exhalation takes place; whenever fluids are accumulated in a cavity without any apparent opening, they are deposited there by exhalations: the phenomenon of exhalation is also manifested in almost every part of the animal economy. It exists in the serous, the synovial, the mucous membranes; in the cellular tissue, the interior of vessels, the adipose cells, the interior of the eye, of the ear, the parenchyma of many of the organs, such as the thymus, thyroid glands, the *capsulæ suprarenales*, &c., &c. It is by exhalation that the watery humour, the vitreous humour, the liquid of the labyrinth, are formed and renewed.

Serous Exhalation. — All the viscera of the head, of the chest, and the abdomen are covered with a serous membrane, which also lines the sides of these cavities, so that the viscera are not in contact with the sides, or with the adjoining viscera, except by the intermediation of this same membrane; and, as its surface is very smooth, the viscera can easily change their relation with each other, and with the sides. The principal circumstance which keeps up the polish of their surface is the exhalation of which they are the seat: a very thin fluid constantly passes out of every point of the membrane, and mixing with that of the adjoining parts, forms with it a humid layer that favours the frictions of the organs.

It appears that this facility of sliding upon each other is very favourable to the action of the organs; for as soon as they are deprived of it by any malady of the serous membrane, their functions are disordered, and they sometimes cease entirely.

In the state of health, the fluid secreted by the serous membranes appears to be the serum of the blood, a certain quantity of albumen excepted. Independently of the serosity, a fluid is found in many parts of the cellular tissue of a very different nature, which is the fat.

Under the relation of the presence of the fat, the cellular tissue may be divided into three sorts: that which contains it always; that which contains it sometimes; and that which never contains it. The orbit, the sole of the foot, the pulp of the fingers, that of the toes, always present fat; the subcutaneous cellular tissue, and

that which covers the heart, the veins, &c. present it often; lastly, that of the scrotum, of the eyelids, of the interior of the skull, never contain it.

The fat is contained in distinct cells that never communicate with the adjoining ones. It has been supposed, from this circumstance, that the tissue that contains, and that forms the fat, was not the same as that by which the serosity is formed; but as these fatty cells have never been shown, except when full of fat, this anatomical distinction seems doubtful. The size, the form, the disposition of these cells, are not less variable than the quantity of fat which they contain. In some individuals scarcely a few ounces exist, whilst in others there are several hundred pounds.

According to the last researches, the human fat is composed of two parts, the one fluid, the other concrete, which are themselves compounded, but in different proportions, of two new proximate principles.

Round the moveable articulations a thin membrane is found, which has much analogy with the serous membranes; but which, however, differs from them by having small reddish prolongations that contain numerous blood-vessels. These are called *synovial fringes*: they are very visible in the great articulations of the limbs.

Serous exhalation takes place in the cellular membrane, the chambers of the eye, and the hyaloid membrane.

Bloody exhalations. — This takes place in the cavernous bodies of the penis and of the clitoris, the urethra and the glands, the spleen and the breasts. Many other interior exhalations exist also; as those of the cavities of the internal ear, of the parenchyma, of the thymus, of the thyroid gland; that of the cavity of the *capsulæ suprarenales*, &c. But the fluids formed in these different parts are scarcely understood: they have never been analysed, and their uses are unknown.

External exhalations. — These are composed entirely of the exhalations of the *mucous membranes*, and of that of the skin, or *cutaneous transpiration*.

Exhalations of Mucous Membrane. — There are two mucous membranes: the one covers the surface of the eye, the lachrymal ducts, the nasal cavities, the sinuses, the middle ear, the mouth, all the intestinal canal, the excretory canals which terminate in it; lastly, the larynx, the trachea, and the bronchia. The other mucous membrane covers the organs of generation and of the urinary apparatus.

Cutaneous Transpiration. — A transparent liquid, of an odour more or less strong, salt, acid, usually passes through the innumerable openings of the epidermis. See *Perspiration*.

FOLLICULAR SECRETIONS.

The follicles are divided into *mucous* and *cutaneous*, and into *simple* and *compound*. The simple mucous follicles are seen upon nearly the whole extent of the mucous membranes, where they are more or less abundant: however, there are points of considerable extent of these membranes where they are not seen.

The bodies that bear the name of fungous papillæ of the tongue, the tonsils, the glands of the cardia, the prostate, &c. are considered by anatomists as collections of simple follicles. The fluid that they secrete is little known: it appears analogous to the mucus, and to have the same uses. In almost all the points of the skin, little openings exist, which are the orifices of small hollow organs, with membraneous sides, generally filled with an albuminous and fatty matter, the consistence, the colour, the odour, and even the savour of which are variable, according to the different parts of the body, and which is continually spread upon the surface of the skin. These small organs are called the follicles of the skin; one of them, at least, exists at the base of each hair, and generally the hairs traverse the cavity of a follicle in their direction outwards.

The follicles form that mucous and fatty matter which is seen upon the skin of the cranium and on that of the pavillion of the ear: the follicles also secrete the *cerumen* in the auditory canal. That whitish matter, of considerable consistence, that is pressed out of the skin of the face in the form of small worms, is also contained in follicles: it is the same matter which, by its surface being in contact with the air, becomes black, and produces the numerous spots that are seen upon some persons' faces, particularly on the sides of the nose and cheeks.

The follicles also appear to secrete that odorous, whitish matter, which is always renewed at the external surface of the genital parts.

By spreading on the surface of the epidermis, of the hair of the head, of the skin, &c. the matter of the follicles support the suppleness and elasticity of those parts, renders their surface smooth and polished, favours their frictions upon one another. On account of its unctuous nature, it renders them less penetrable by humidity, &c.

GLANDULAR SECRETIONS.

The number of glands is considerable: the action of each bears the name of glandular secretion. There are six secretions of this sort: that of the tears, of the saliva, of the bile, of the pancreatic fluid, of the urine, of the semen, and, lastly, that of the milk. We may add the action of the mucous glands, and of the glands of Cowper.

It was at one time the common doctrine among physiologists, as well chemical as mechanical, that all the vast variety of animal productions which are traced in the different secretory organs, whether wax, or tears, or milk, or bile, or saliva, were formerly contained in the circulating mass; and that the only office of these organs was to *separate* them respectively from the other materials that entered into the very complex crasis of the blood; whence, indeed, the name of *secerments* or *secretories*, which mean nothing more than *separating powers*. This action was by the chemists supposed to depend on peculiar attractions, or the play of affinities, which was the explanation advanced by some; or on peculiar ferments, conveyed by the blood to the secernent organ, or pre-existing in it, which was the opinion of others. The mechanical physiologists, on the contrary, ascribed the

separation to the peculiar figure or diameter of the secretory vessels, which, by their make, were only fitted to receive particles of a given form, as prisms where the vessels were triangular, and cubes where they were square. Such was the explanation of Des Cartes; while Boerhaave, not essentially wandering from the same view, supposed the more attenuate secretions to depend upon vessels of a finer bore, and the more viscid upon those of a larger diameter.

Modern chemistry, however, has completely exploded all these and many other hypotheses founded upon the same common principle, by proving that most of the secerned materials are not formally existent in the blood; and, consequently, that it is not, strictly speaking, by an act of separation, but of new arrangement or recomposition, that they are produced out of its elements. And hence physiologists have been led to a critical enquiry into the fabric of the secerning organ, but hitherto without much satisfaction. In its simplest state it seems, as far as it can be traced, to consist of nothing more than single vessels possessing a capillary orifice, as in the Schneiderian membrane. In a somewhat more compound form we find this orifice opening into a follicle, or minute cavity, of an elliptic shape; and, in a still more complicated make, we meet with a glandular apparatus, more or less glomerate, consisting of a congeries of secernent vessels, with or without follicles, and occasionally accompanied with a basin or reservoir for a safe deposit of the secreted or elaborated matter against the time of its being wanted, of which the gall-bladder furnishes us with a well-known example. But in none of these instances are we able to discover any peculiar effect produced by this complication of machinery, beyond that of affording the means of accumulation: for, large as is the organ of the liver, it is in the penicilli, or the pori biliarii alone, that the bile is formed and completely elaborated: the liver is a vast bundle or combination of these, and hence affords an opportunity for a free formation of bile in a collective state, but it has not been ascertained that it affords any thing more. And although in the gall-bladder we find this fluid a little varied after its deposit, and rendered thicker, yellower, and bitterer, the change is nothing more than what must necessarily follow from absorption, or the removal of a part of the finer particles of the bile. The conglomerate glands of the mammæ offer us the same results; for the milk here secreted is as perfect milk in every separate lactiferous tube, as when it flows in an accumulated form from the nipple. And hence follicles themselves may be nothing more than minute reservoirs for the convenient accumulation of such fluids as are deposited in them till they are required for use. Mucus and sebum are inspissated by retention, but they rarely undergo any other change. We are obliged, therefore, to conclude, with Sir Everard Home, that the "organs of secretion are principally made up of arteries and veins; but there is nothing in the different modes in which these vessels ramify that can in any way account for the changes in the blood out of which secretions arise."

These organs, however, are largely supplied with twigs of small nerves, and it has been an idea long entertained by physiologists that secretion is chiefly effected through their instrumentality. Sir Everard Home, in his paper inserted in the volume of the Philosophical Transactions, has observed, "that in fishes which are capable of secreting the electric fluid, the nerves connected with the electrical organs exceed those that go to all the other parts of the fish, in the proportion of twenty to one:" and, in confirmation of this view of the subject, it may be remarked, that there are no parts of the body more manifestly affected, and few so much so, as the secretory organs, by mental emotion. The whole surface of the skin is sometimes bedewed with drops of sweat, and even of blood, by a sudden paroxysm of agony of mind: grief fills the eyes with tears: fear is well known to be a powerful stimulant to the kidneys, and very generally to the alvine canal: anger gives an additional flow, perhaps an additional acrimony, to the bile, and, if urged to violence, renders the saliva poisonous; and disappointed hope destroys the digestion, and turns the secreted fluids of the stomach acid.

All this should seem to prove that the secretory organs are chiefly influenced by the sensorial system; yet Haller has long ago observed that the larger branches of the nerves seldom enter into them, and seem purposely to avoid them: the secernent glands have little sensibility; and the secretions of plants, which have no nervous system, are as abundant and diversified, and as wonderful in every respect, as those of animals.

The means, therefore, by which the very extensive and important economy of secretion is affected, seem hitherto, in a very considerable degree, to have eluded all investigation. We behold, nevertheless, the important work proceeding before us, and are in some degree acquainted with its machinery.

The most simple, and, at the same time, perhaps, the most copious of the fluids, which are in this manner separated from the blood, is that discharged by very minute secernent vessels, supposed to be terminal or exhalent arteries, which open into all the cavities of the body, and pour forth a fine breathing vapour, or halitus, as it is called, which keeps their surfaces moist, and makes motion easy — an effluvium which must have been noticed by every one who has ever attended the cutting up of a bullock in a slaughter-house. It is well known that arteries terminate in two ways — in minute veins, and in exhalent vessels. The former termination can often be followed up by injections, and occasionally traced by the microscope; but no microscopic experiment has hitherto enabled the anatomist to discover the orifices of the exhalent branches of arteries. Their existence, however, is proved, as Mr. Cruikshank has observed, by their sometimes, and especially when enlarged in diameter or acted upon by a more than ordinary *vis à tergo*, pouring forth blood instead of vapour, of which we have a striking instance in bloody sweat; as also in the

menstrual flux, which, though not blood itself, proceeds from the mouths of the exhalent arteries of the uterus, periodically altered in their diameter and secernent power.

In different periods of life, many of the secretions vary considerably in their sensible properties, or relative quantity. Thus the bile of the fœtus is sweet, and only acquires a bitter taste after birth. In infancy perspiration flows more profusely than during manhood; and the testes, which secrete nothing before the age of puberty, at this time acquire activity, and again lose their power in old age.

There are also many of the secernent organs that, in case of necessity, become a substitute for each other. Thus the perspirable matter of the skin, when suppressed by a sudden chill or any other cause, is often discharged by the kidneys; the catamenia by the lungs; and the serum, accumulated in dropsies, by the intestines.

The secretions are, moreover, very much affected and increased by any violent commotion of the system generally. In hysteria the flow of urine is greatly augmented, while the absorption of bile seems diminished; and hence the discharge is nearly colourless. In violent agitation of the mind, we have already observed that the juices of the stomach become acid; and sometimes the secernents of the skin, and sometimes those of the larger intestines, are stimulated into increased action; whence colliquative perspiration, looseness, or both. The heat and commotion of a fever will sometimes produce the same effect, and sometimes a contrary; the skin being dry, parched, and pricking.

There are some parts of the body that waste and become renewed far more rapidly than others; the fat than the muscles; the muscles than the bones; and probably the bones than the skin.

It is from this mysterious power of reproduction, appertaining to every part of the system, that we are so often able to renew the substance and function of parts that have been wasted by fevers or atrophy, or abruptly destroyed or lopped off by accident.

In the progress of this general economy, every organ and part of the body secretes for itself the nutriment it requires, from the common pabulum of the blood which is conveyed to it, or from secretions which have already been obtained from the blood, and deposited in surrounding cavities, as fat, gelatine, and lymph. And it is probable that the several organs of secretion, like the eye, the ear, and the other distinct organs of sense, are peculiarly affected by peculiar stimulants, and excited to some diversity of sensation.

In Germany, this idea has been pursued so far as, in some hypotheses, and particularly that of M. Hubner, to lay a foundation for the doctrine of a sixth sense, to which has been given the name of "self-feeling," or "general feeling." The sensations, however, we are at present alluding to, are not so much general on those of the whole self, as particular or limited to the organs in which they originate; and seem rather to be a result of different modifications of the fluid that causes the common sense of touch, than produced by distinct sensorial secretions. In most parts of the system these modifications are so inconsiderable as to elude our notice, but in others we have the fullest proof of such an effect; for we see the stomach evincing a sense of hunger, the fauces of thirst, the genital organs of venereal orgasm. And, in like manner, we find the bladder stimulated by cantharides, and the intestinal canal by purgatives; and we may hence conjecture that every other part of the system, where any kind of secretion is going forwards, is endowed with a like peculiarity of irritability and sensibility, though not sufficiently keen to attract our attention.

It is hence we meet with that surprising variety of secretions which are furnished not only by different, but even by the same animal in different parts of the body. Hence sugar is secreted by the stomach, and sometimes by the kidneys; sulphur by the brain; wax by the ears; lime by the salivary glands, the secretories of the bones, and, in a state of disease, by the lungs, the kidneys, the arteries, and the exhalents of the skin; milk by the breasts; semen by the testes; the menstrual fluid by the uterus; urine by the kidneys; bile by the liver; muriate of soda by the secernents of almost every organ; and sweat from every part of the surface.

Hence some animals, as the bee, secrete honey; others, as the *coccus ilicis*, a large store of wax; others, as the viper and scorpion, gum, which is the vehicle of their poison; others thread, as the spider and some species of slug; and many silk, as the silk-worm and the *Pinna*, or nacre; whence Réaumur denominates the pinna the sea silk-worm: it is common to some of the Italian coasts, and its silky beard or byssus is worked at Palermo into very beautiful silk stuffs. There are great numbers of worms, insects, and fishes, that secrete a very pure, and some of them a very strong phosphorescent light, so as, in some regions, to enkindle the sea, and in others the sky, into a bright blaze at night. Many animals secrete air: man himself seems to do so under certain circumstances, but fishes of various kinds more largely, as those furnished with air-bladders, which they fill or exhaust at pleasure, and the *Sepia* or cuttle-fish, with numerous other sea-worms; and by this power they raise or sink themselves as they have occasion. The cuttle-fish secretes also a natural ink, which it evacuates when pursued by an enemy, and thus converts it into an instrument of defence; for, by blackening the water all around it, it obtains a sufficient concealment and easily effects its escape. Other animals, and these also chiefly fishes, secrete a very large portion of electric matter, so as to convert their bodies into a powerful battery. The torpedo-ray was well known by the Romans to possess this extraordinary power; and the *Gymnotus electricus*, or electric-eel, has since been discovered to possess it in a much larger proportion. The genus tetradon, in one species, secretes an electric fluid; in another, an irritating fluid that stings the hand that touches it;

and, in a third, poisonous matter diffused through the whole of its flesh.

From the same cause we meet with as great and innumerable a variety of secretions among plants; as camphires, gums, balsams, resins: and, as in animals, we often meet with very different secretions, in very different parts of the same plant. Thus the *Mimosa nilotica* secerns from its roots a fluid as offensive as that of assafœtida; in the sap of its step an astringent acid; its glands give forth gum arabic; and its flowers an odour of a very grateful fragrance.

Sectio Cæsarea. See *Cæsarian operation*

SE'CUNDINES. The after-birth, and membranes which are expanded from its edge, and which form a complete involucrum of the fœtus and its waters, go under the name of secundines. See *Placenta.*

SECUNDUM ARTEM. According to art. A term frequently used in prescription, and denoted by the letters S. A., which are usually affixed when the making up of the recipe in perfection requires some uncommon care and dexterity.

SECU'NDUS. Applied, by botanists, to leaves and parts of the fructification which are unilateral, all leaning towards one side; as the leaves and flowers of the *Convallaria majalis.*

Securida'ca. (From *securis*, an axe: so called because its leaves resemble a small axe.) A genus of plants. Class, *Diadelphia;* Order, *Decandria.* Axe-wort. Hatchet vetch.

SECU'RIFORM. (*Securiformis;* from *securis*, an axe, and *forma*, resemblance.) Shaped like an axe. Applied to leaves, &c.

SE'DATIVE. (*Sedati'vus;* from *sedo*, to ease or assuage.) Applied adjectively and substantively to medicines or other means which diminish the animal energy, without destroying life. Medicines which possess this power are arranged into *sedativa soporifica*, as opium, papaver, hyoscyamus; and *sedativa refrigerantia*, as neutral salts, acids, &c.

Sedative salt. See *Boracic acid.*

Sedentaria ossa. The bones on which we sit, — the os coccygis and ischia.

Sedge. See *Iris pseudacorus.*

SE'DIMENT. The heavy parts of liquids which fall to the bottom.

Sediment, lateritious. See *Lateritious.*

SE'DLITZ. *Seidlitz. Seydschutz.* The name of a village of Bohemia, in the circle of Saartz, where Hoffmann discovered a simple saline mineral water. *Aqua Sedlitziana.* It contains a large quantity of sulphate of magnesia; sulphates of soda and lime, carbonic acid, carbonates of lime and magnesia, and resinous matter. The diseases in which this water is recommended are. crudities of the stomach, hypochondriasis, amenorrhœa, and the anomalous complaints succeeding the cessation of the catamenia, œdematous tumours of the legs in literary men, hæmorrhoidal affections, and scorbutic eruptions.

Sedlitz powders. These consist of two different kinds of powders, one of which is sold wrapped up in blue papers, and the other in white, in order to distinguish them. One powder consists of a mixture of tartrate of soda ʒij, and bicarbonate of soda ℈ij; the other consists of tartaric acid, grs. xxxv. For a dose, dissolve the former powder in half a pint of water, and the latter in a wine-glassful; then mix the solutions, and drink while effervescing. This, when, taken before breakfast, acts as a gentle cooling purgative. Its operation is pretty certain if it be taken on an empty stomach; but not otherwise. It is rendered more certain by dissolving the salts in luke-warm water. The Sedlitz powders do not, as their name would imply, bear any resemblance to the saline ingredients of the mineral waters of Sedlitz.

SE'DUM. (*um, i.* n.; from *sedo*, to assuage.) so called because it allays inflammation.) The name of a genus of plants in the Linnæan system. Class, *Decandria;* Order, *Pentagynia.*

Sedum acre. Wall-pepper. Stone-crop. *Illecebra. Vermicularis. Piper murale. Sedum minus.* The plant thus called is, in its recent state, extremely acrid, like the hydropiper: hence, if taken in large doses, it acts powerfully on the primæ viæ, proving both emetic and cathartic; applied to the skin as a cataplasm, it frequently produces vesications and erosions. Boerhaave therefore imagines that its internal employment must be unsafe; but experience has discovered that a decoction of this plant is not only safe, but of great efficacy in scorbutic complaints. For which purpose, a handful of the herb is directed, by Below, to be boiled in eight pints of beer, till they are reduced to four, of which three or four ounces are to be taken every, or every other morning. Milk has been found to answer this purpose better than beer. Not only ulcers simply scorbutic, but those of a scrofulous or even cancerous tendency, have been cured by the use of this plant; of which Marquet relates several instances. He likewise found it useful, as an external application, in destroying fungous flesh, and in promoting a discharge in gangrenes and carbuncles. Another effect for which this plant is esteemed, is that of stopping intermittent fevers.

Sedum majus. See *Sempervivum.*

Sedum minus. See *Sedum acre.*

Sedum telephium. The systematic name of the orpine. *Faba crassa. Telephium. Fabaria crassula. Anacampseros.* The plant which bears these names in various pharmacopœias, is the *Sedum — foliis planiusculis serratis, corymbo folioso, caule erecto,* of Linnæus. It was formerly ranked as an antiphlogistic, but is now forgotten.

Seed. See *Semen.*

Seed-bud. See *Germen.*

Seed-coats. See *Arillus.*

Seed-lobes. See *Cotyledon.*

Seed-vessel. See *Pericarpium.*

SEEDS, COLD. In the old pharmacy there were certain seeds which were denominated cold, from their supposed refrigerating properties. The seeds of cucumber, gourd, melon, and water-melon, were called *the four cold seeds:* the seeds of endive, lettuce, purslane, and succory, were called the *four lesser cold seeds.*

SEEDS, HOT. The old pharmaceutists called the seeds of anise, caraway, cummin, and fennel, *the four greater hot seeds:* the seeds of bishop's weed, stone parsley, smallage, and wild carrot, were called *the four lesser hot seeds.*

Seeing. See *Vision.*

SE'GMENT. *Segmentum.* Applied in botany to the parts of divided leaves, calyces, &c.

SEGMOID VALVES. The valves of the pulmonary artery have been so called from their resembling segments of circles.

SEGREGATA. Applied to the last order of the Class *Syngenesia*, in which the flowers are doubly compound, each floret or assemblage of florets having a partial calyx. See *Syngenesia.*

SELAA. A barbarous name for an encysted abscess.

Sela'go. See *Lycopodium selago.*

SELATUS. *Solat.* An alchemical name of quicksilver.

SELE'NIC ACID. *Acidum selenicum.* If selenium be heated to dryness, it forms, with nitric acid, a volatile and crystallisable compound, called selenic acid, which unites with some of the metallic oxides producing salts, called *seliniates.*

SELE'NIUM. (*um, ii.* n.) An elementary body, extracted by Berzelius from the pyrites of Fahlun, which, from its chemical properties, he places between sulphur and tellurium, though it has more properties in common with the former than with the latter substance. He named it *selenium*, after σελην̣η, the moon: because he at first mistook it for *tellurium*, which is named after the earth.

Self-heal. See *Prunella.*

SELI'BRA. (*a, æ.* f.) Half a pound.

SELI'NE. (*e, es.* f.; from σελην̣η, the moon: because it is opake, and looks like a little moon.) A disease of the nails, in which white spots are occasionally seen in their substance.

SELINI'TES. Wine impregnated with parsley. — *Dioscorides.*

SELI'NUM. (*um, i.* n.; Σελινον, the Greek name of parsley; said to be derived from παρα το εν ελει φυεσθαι, on account of its growing in mud; whence Homer's ελεοθρεπτον σελινον. De Theis says, that *selinum* is derived from σελην̣η, the moon, because of the shape of its growing seeds; and that it is the foundation of many other compound names of umbelliferous plants among the Greeks, as ορεοσελινον, πετροσελινον, &c.) The name of a genus of plants. Class, *Pentandria;* Order, *Digynia.*

SE'LLA TU'RCICA. (So called from its supposed resemblance to a Turkish saddle.) *Ephippium. Sella equina.* A cavity in the sphenoid bone, containing the pituitary gland, surrounded by the four clinoid processes.

SELTZER. The name of a place in Germany, Neider Seltzer, about ten miles from Frankfort on the Maine, where there is a mineral water containing muriate of soda, carbonates of magnesia, soda, and lime; and a large quantity of free carbonic acid. It is said to be particularly serviceable in relieving some of the symptoms that indicate a morbid state of the lungs; in slow hectic fever, eruptions on the skin, foulness of the stomach, bilious vomiting, acidity and heartburn, spasmodic pains in any part of the alimentary canal, and bloody or highly offensive stools. On account of its relieving spasmodic pains, and from its rapid determination to the kidneys, and perhaps its alkaline contents, it has been sometimes employed with great advantage in diseases of the urinary organs, especially those that are attended with the formation of calculus. A large proportion of the Seltzer water, either genuine or artificial, that is consumed in this country is for the relief of these disorders. Even in gonorrhœa, either simple or venereal, Hoffmann asserts that advantage is to be derived from this medicine. The usual dose is from half a pint to a pint.

SEMBE'LLA. (*a, æ.* f.) Half a pound. — *Varro.*

SEMECA'RPUS. (*us, i.* m.; from σημειοω, to mark, and καρπος, a fruit; a name evidently derived from the use that is made of its nut in the East Indies to mark table-linen and articles of apparel.) The name of a genus of plants. Class, *Pentandria;* Order, *Trigynia.*

SEMECARPUS ANACARDIUM. The marking-nut tree. This tree was supposed to afford the Malacca bean, which, however, is found to be the produce of the *Anacardium Indicum.*

SEMEIO'SIS. (From σημειοω, to notify.) See *Semeiotice.*

SEMEIO'TIC. (*Semeioticus*, from *semeiotice.*) *Semeiosis.* Relating to the signs of disease.

SEMEIO'TICE. (*e, es.* f.; from σημειον, a sign.) Semeiotics. That part of medicine which considers the signs of disease. It considers the nature of the symptoms of diseases, their degree of violence, their mode of accession, their continuance and course, in order that, by considering them and other circumstances connected with them, the judgment may be formed respecting the condition of the disease, and the probable tendency and termination of it. All the circumstances, therefore, of the persons, constitution, and habits; the knowledge of what may have formerly taken place and what now exists, form a part of semeiotics: for, without such enquiry and consideration, the judgment is not likely to be correctly formed, as to the probable tendency, duration, or termination of a disease. It is divided, therefore, into,

1. The *diagnosis*, or consideration of the signs or nature of the symptoms, with a view of ascertaining what the disease is; and these signs, which thus tell us what the disease is, are called diagnostic.

2. The *prognosis*, or the judgment respecting the course, tendency, and termination of a disease.

SE'MEN. (*en, inis.* n.; from *sero*, to sow.) 1. The seed or prolific liquor of animals secreted in the testicles, and carried through the epididymis and vas deferens into the vesiculæ seminales, to be emitted *sub coitu* into the female vagina, and there, by its aura, to penetrate and impregnate the ovulum in the ovarium.

In castrated animals, and in eunuchs, the vesiculæ seminales are small and contracted; and a little lymphatic liquor, but no semen is found in them. The semen is detained for some time in the vesiculæ seminales, and rendered thicker from the continual absorption of its very thin part, by the oscula of the lymphatic vessels. In lascivious men, the semen is sometimes, though rarely, propelled by nocturnal pollution from the vesiculæ seminales, through the ejaculatory ducts (which arise from the vesiculæ seminales, perforate the urethra transversely, and open themselves by narrow and very nervous mouths at the sides of the caput gallinaginis,) into the urethra, and from it to some distance. But in chaste men the greatest part is again gradually absorbed from the vesiculæ seminales through the lymphatic vessels, and conciliates strength to the body. The smell of semen is specific, heavy, affecting the nostrils, yet not disagreeable. The same odour is observed in the roots of the orchis, the iuli of chestnuts, and the antheræ of many plants. The smell of the semen of quadrupeds, when at heat, is so penetrating as to render their flesh fœtid and useless, unless castrated. Thus the flesh of the stag, *tempore coitus*, is unfit to eat. The taste of semen is fatuous, and somewhat acrid. In the testes its consistence is thin and diluted; but in the vesiculæ seminales, viscid, dense, and rather pellucid: and by venery and debility it is rendered thinner.

Specific gravity. The greatest part of the semen sinks to the bottom in water, yet some part swims on its surface, which it covers like very fine threads mutually connected together in the form of a cobweb.

Colour. In the testicles it is somewhat yellow, and in the vesiculæ seminales it acquires a deeper hue. That emitted by pollution or coition, becomes white from its mixture with the whitish liquor of the prostate gland during its passage through the urethra. In those people who labour under jaundice, and from the abuse of saffron, the semen has been seen yellow, and, in an atrabiliary young man, black.

Quality. Semen exposed to the atmospheric air, loses its pellucidity, and becomes thick, but after a few hours it is again rendered more fluid and pellucid than it was immediately after its emission. This phænomenon cannot arise from water or oxygene attracted from the air. At length it deposits phosphate of lime, and forms a corneous crust.

Experiments with semen prove that it turns the syrup of violets green, and dissolves earthy, neutral, and metallic salts. Fresh semen is insoluble in water, until it has undergone the above changes in atmospheric air. It is dissolved by alkaline salts. By ætherial oil it is dried into a pellucid pellicle, like the cortex of the brain. It is dissolved by all acids, except the oxymuriatic, by which it is coagulated in the form of white flakes. It is also acted upon by alkohol of wine.

It is found to be composed of water, 900; animal mucilage, 60; soda, 10; and phosphate of lime, 30.

Examined by the microscope, a multitude of animalcula are observed in it, which appear to have a round head and a long tail: these animalcula move with considerable rapidity; they seem to fly the light, and to seek the shade. It has also an odorous principle, which flies off immediately from fresh semen. It appears to consist of a peculiar vital principle, and by the ancients was called *aura seminis*.

Use. 1. Emitted into the female vagina, *subcoitu*, it possesses the wonderful power of impregnating the ovulum in the female ovarium. The odorous principle, or aura spermatica only, appears to penetrate through the cavity of the uterus and Fallopian tubes to the female ovarium, and there to impregnate the albuminous latex of the mature ovulum by its vital power. The other principles of the semen appear to be only a vehicle of the seminal aura. 2. In chaste men, the semen returning through the lymphatic vessels into the mass of the blood, gives strength to the body and mind: hence the bull is so fierce and brave, the castrated ox so gentle and weak; hence every animal languishes *post coitum*; and hence tabes dorsalis from Onanism. 3. It is by the stimulus of the semen absorbed at the age of puberty into the mass of the humours that the beard and hair of the pubes, but in animals the horns, are produced; and the weeping voice of the boy changed into that of the man.

II. The seeds of plants, or nucleus formed in the germen of a plant, for the purpose of propagating its species,—the sole "end and aim" of all the organs of fructification. Every other part is in some manner subservient to the forming, perfecting, or dispersing of these.

A seed consists of several parts, some of which are more essential than others; viz.

1. The *hilum*, or scar.
2. The *funiculus umbilicalis*, or filament, by which the immature seed is connected to the receptacle.
3. The *testa*, or *tunica seminis*.
4. The seed-lobes, or *cotyledons*. These parts are beautifully seen by macerating the seeds of a kidney, or other bean, or of the gourd, in water.

The less essential parts are,

1. The *arillus*.
2. The *pappus*.
3. The *cauda*.
4. The *capsula*.
5. The *ala*.

From the difference in the form, surface, situation, and number, arise the following distinctions of seeds:—

1. *Semina arillata*; as in *Jasminum*.
2. ——— *papposa*; as in *Leontodon taraxacum*.
3. ——— *caudata*; as in *Clematis vitalba*.
4. ——— *calyculata*, covered with a bony calyx; as in *Coix lachryma*.
5. ——— *alata*; as in *Bignonia*.
6. ——— *hamosa*, furnished with one or three hooks; as in *Daucus muricatus*.
7. ——— *lanata*, covered with wool; as in *Bombax*, *Gossipium*, and *Anemone hortensis*.
8. ——— *rotunda*; as in *Pisum* and *Brassica*.
9. *Semina rotundo-compressa*; as *Ervum lens*.
10. ——— *oblonga*; as in *Boerhaavia dif. fusa*.

11. *Semina conica;* as in *Bellium.*
12. ——— *ovata;* as in *Quercus robur.*
13. ——— *triquetra;* as in *Rheum,* and *Rumex.*
14. ——— *lanceolata;* as in *Fraxinus.*
15. ——— *acuminata;* as in *Cucumis sativus.*
16. ——— *reniformia;* as in *Phaseolus.*
17. ——— *aculeata;* as *Ranunculus arvensis.*
18. ——— *cochleata;* as in *Salsola.*
19. ——— *cymbiformia;* as in *Calendula officinalis.*
20. ——— *linearia;* as in *Crucianella.*
21. ——— *aristata;* as in *Holcus saccharatus.*
22. ——— *echinata;* as in *Verbena lapulacea.*
23. ——— *hispida;* as *Daucus carota.*
24. ——— *hirsuta;* as in *Scandix trichosperma.*
25. ——— *muricata;* as *Ranunculus parviflorus.*
26. ——— *glabra;* as in *Galium montanum.*
27. ——— *rugosa;* as in *Lithospermum arvense.*
28. ——— *callosa;* as in *Citrus medica.*
29. ——— *lapidea;* as in *Lithospermum.*
30. ——— *colorata;* as in *Chærophyllum aureum.*
31. ——— *striata;* as in *Conium maculatum.*
32. ——— *sulcata;* as in *Scandix odorata.*
33. ——— *transversim sulcata;* as in *Picris.*
34. ——— *nuda;* as in the gymnospermous plants.
35. ——— *tecta;* as in angiospermous plants.
36. ——— *nidulantia,* adhering to the external surface; as in *Fragaria vesca.*
37. ——— *pendula,* suspended by a filament external to the seed-vessel; as in *Magnolia grandiflora.*
38. ——— *pauca,* when few in number.
39. ——— *plurima,* many; as in *Papaver.*

The parts of a seed when germinating are,

1. *Cotyledones.*
2. *Corculum.*

The variety of forms of seeds are not without their uses; and the various modes by which seeds are dispersed, cannot fail to strike an observing mind with admiration. "Who has not listened," says Sir James Smith, "in a calm and sunny day, to the crackling of furze-bushes, caused by the explosion of their little elastic pods; nor watched the down of innumerable seeds floating on the summer breeze, till they are overtaken by a shower, which, moistening their wings, stops their further flight, and at the same time accomplishes its final purpose, by immediately promoting the germination of each seed in the moist earth? How little are children aware, as they blow away the seeds of dandelion, or stick burs, in sport, on each others' clothes, that they are fulfilling one of the greatest ends of Nature! Sometimes the calyx, beset with hooks, forms the bur; sometimes hooks encompass the fruit itself. Pulpy fruits serve quadrupeds and birds as food, while their seeds, often small, hard, and indigestible, pass uninjured by them through the intestines, and are deposited, far from their original place of growth, in a condition peculiarly fit for vegetation. Even such seeds as are themselves eaten, like the various sorts of nuts, are hoarded up in the cracked ground, and occasionally forgotten, or the earth swells and encloses them. The ocean itself serves to waft the larger kinds of seeds from their native soil to far distant shores."

Semen adjowaen. A seed imported from the East, of a pleasant smell, a grateful aromatic taste, somewhat like savory. It possesses exciting, stimulating and carminative virtues, and is given in the East in nervous weakness, dyspepsia, flatulency, and heartburn. It is the produce of the *Ammi copticum.*

Semen agave. An East Indian seed exhibited in atonic gout.

Semen contra. See *Artemisia.*

Semen sanctum. See *Artemisia.*

Semen veneris. Scales of brass. — *Ruland.*

SE'MI-AMPLEXICA'ULIS. Applied to a leaf, which half, or in part only, embraces the stem.

Semicircular canals. These canals are three in number, and take their name from their figure. They belong to the organ of hearing, are situated in the petrous portion of the temporal bone, and open into the vestibulum. See *Auris.*

SEMICU'PIUM. (*um, ii.* n.) A half-bath, or such as receives only the hips or extremities.

SE'MICYLI'NDRICAL. *Semicylindricalis.* Flat on one side, round on the other; as the leaves of the *Conchium gibbosum.*

SE'MIFLOSCULO'SUS. A compound flower is so termed when its florets have the limb of the corolla produced in a ligulate shape on the outer side only.

Semi-interosseus indicis, See *Abductor indicis manus.*

SEMILU'NAR. *Semilunaris.* Half-moon shaped. The ganglia formed by the great symphatic nerve on its entrance into the abdomen, from which nerves are sent to all the viscera. See *Intercostal nerve.*

Semilunar valves. The three valves at the beginning of the pulmonary artery and aorta ars so termed, from their half-moon shape.

SE'MI-MEMBRANO'SUS. A muscle of the thigh, so called from the long flat membrane like tendon at its upper part. It arises from the outer surface of the tuberosity of the ischium, by a broad flat tendon which is three inches in length. It then begins to grow fleshy, and runs at first under the long head of the biceps, and afterwards between that muscle and the semi-tendinosus. At the lower part of the thigh it becomes narrower again, and terminates in a short tendon, which is inserted chiefly into the upper and back part of the head of the tibia, but some of its fibres are spread over the posterior surface of the capsular ligament of the knee. Between this capsular ligament and the tendon of the muscle we find a small bursa mucosa. The tendons of this and the last-described muscle form the inner ham-

string. This muscle bends the leg, and seems likewise to prevent the capsular ligament from being pinched.

Semi-nervosus. See *Semi-tendinosus.*

Seminis cauda. See *Cauda seminis.*

Seminis ejaculator. See *Accelerator urinæ.*

SE'MI-ORBI'CULAR. *Semiorbicularis.* Having the shape of half a globe.

Semi-orbicularis oris. See *Orbicularis oris.*

SEMI-SPINALIS COLLI. *Semi-spinalis sive transverso-spinalis colli,* of Winslow. *Spinalis cervicis,* of Albinus. *Spinalis colli,* of Douglas. *Transversalis colli,* of Cowper. A muscle situated on the posterior part of the neck, which turns the neck obliquely backwards, and a little to one side. It arises from the transverse processes of the uppermost six vertebræ of the back by as many distant tendons, ascending obliquely under the complexus, and is inserted into the spinous processes of all the vertebræ of the neck, except the first and last.

SEMI-SPINALIS DORSI. *Semi-spinalis externus seu transverso-spinalis dorsi,* of Winslow. *Semispinatus,* of Cowper. A muscle situated on the back, which extends the spine obliquely backwards. It arises from the transverse processes of the seventh, eighth, ninth, and tenth vertebræ of the back, by as many distinct tendons, which soon grow fleshy, and then become tendinous again, and are inserted into the spinous processes of all the vertebræ of the back above the eighth, and into the lowermost of the neck, by as many tendons.

Semi-spinalis externus. See *Semi-spinalis dorsi.*

Semi-spinatus. See *Semi-spinalis dorsi.*

SEMI-TENDINOSUS. This muscle, which is the *semi-nervosus,* of Douglas and Winslow, is situated obliquely along the back part of the thigh. It arises tendinous and fleshy from the inferior, posterior, and outer part of the tuberosity of the ischium, in common with the long head of the biceps cruris, to the posterior edge of which it continues to adhere, by a great number of oblique fibres, for the space of two or three inches. Towards the lower part of the os femoris, it terminates in a round tendon, which passes behind the inner condyle of the thigh-bone, and, becoming flat, is inserted into the upper and inner part of the ridge of the tibia, a little below its tuberosity. This tendon sends off an aponeurosis, which helps to form the tendinous fascia that covers the muscles of the leg. This muscle assists in bending the leg, and at the same time draws it a little inwards.

SEMPE'RVIRENS. Evergreen. Applied to leaves which are permanent through one, two, or more winters, so that the branches are never stripped; and to plants possessed of such leaves as the laurel, holly, ivy, &c.

SEMPERVI'VUM. (*um, i.* n.; from *semper,* always, and *vivo,* to live: so called because it is always green.) The name of a genus of plants in the Linnæan system. Class, *Dodecandria;* Order, *Polygynia.*

SEMPERVIVUM ACRE. The stone-crop is occasionally so termed. See *Sedum acre.*

SEMPERVIVUM TECTORUM. The systematic name of the house-leek, or sengreen; called also, *Sedum majus, Æonion, Aizoum, Aizoon,* and *Barba Jovis.* The leaves of this plant have no remarkable smell, but discover to the taste a slight subacid austerity: they are frequently applied by the vulgar to bruises and old ulcers.

SENE'CIO. (*o, onis.* m.; from *senesco,* to grow old: so called because it has a greyish down upon it, like the beard of old men.) 1. The name of a genus of plants in the Linnæan system. Class, *Syngenesia;* Order, *Polygamia superflua.*

2. The pharmacopœial name of the *Senecio vulgaris.*

SENECIO JACOBÆA. St. James's wort. Ragwort. *Jacobæa.* The leaves of this common plant have a roughish, bitter, subacrid taste, extremely nauseous. A decoction is said to have been of infinite service in the cure of epidemic camp dysentery. A poultice made of the fresh leaves is said to have a surprising effect in removing pains of the joints, and to remove the sciatica, or hip-gout, in two or three applications, when ever so violent. The root is of an astringent nature. A decoction of it was formerly deemed good for wounds and bruises.

Senecio madraspatanus. See *Senecio pseudo-china.*

SENECIO PSEUDO-CHINA. Bastard. China. *China supposita. Senecio madraspatanus.* This tree grows in Malabar. The root greatly resembles the China root in appearance and qualities.

SENECIO VULGARIS. Groundsel. *Erigerum. Senecio. Erigeron.* This very common plant is frequently applied bruised to inflammations and ulcers, as a refrigerant and antiscorbutic.

Senectæ anguium. See *Anguium senectæ.*

Senectus. See *Age.*

SE'NEGA. (*ka,* and *ga, æ.* f.; so called because the Seneca or Senegaw Indians use it against the bite of the rattlesnake.) See *Polygala senega.*

Senegal gum. See *Acacia vera.*

Senegaw milkwort. See *Polygala senega.*

SE'NEGINE. An alkaline principle found in the root of the *Polygala senega.*

Seneka. See *Senega.*

Sengreen. See *Sempervivum.*

SE'NNA. (*a, æ.* f.; from *senna,* an Arabic word, signifying acute: so called from its sharp-pointed leaves.) The senna of commerce is the produce of several plants. That which yields the best grows in the valleys of Nubia, where it is named *Abyreyga;* flowering in July and August. It rises with an erect branching stem, about two feet in height. At the base of the leaves, which are pinnate, and placed in alternate order, are two narrow pointed stipules: the leaflets, of which each leaf has five or six pair, are sessile, oblique at the base, oval, pointed, scarcely an inch in length, rather more than one-fourth of an inch broad, and of a yellowish green colour. The flowers are yellow, in loose axillary spikes: the calyx is deciduous, consisting of five narrow, obtuse, concave leaflets; the petals are roundish, concave, entire; the three lower ones larger than the two upper: the undermost filaments also are longer than the

others, and furnished with large rostrated curved anthers; and the germen is long and flat, with a short incurved style terminated by an obtuse stigma. The fruit is an ovate, reniform, membranous, leafy, compressed legume, torose and marked with capillary, transverse, parallel striæ; bivalve, with six or nine cells, divided by very thin transverse partitions, and each containing one oblong heart-shaped seed.

The best senna, named in Nubia *guebelly*, or *sena mekke*, grows wild, and yields two crops of leaves, the abundance of which depends on the periodical rains. The first crop is collected after the first rains about the middle of September; the second in the following March, at which time the fruit is at its full maturity. The plants are cut when the flowers begin to fall, and exposed on the rocks to dry in the sun. The leaves are then picked, packed up in bales, and sent to Boulac, the great entrepôt of senna, where they are mixed with two other species of cassia; one the *C. senna* of Forskal, with obtuse leaves; the other probably the *C. angustifolia* of Willdenow, the leaves of which are longer, narrower, and sharper pointed than those of the proper senna, and come from Mocha; but the leaf with which senna is chiefly adulterated is that of the *Cynanchum oleafolium*, known in Egypt by the name of *argel* or *arguel*. The proportions, according to Dr. Calloden, are five hundred parts lance-leafed senna, two hundred of obovate senna, and two hundred of argel. The two first are equally good, but the last is truly an adulteration. It can be readily distinguished by attending to the following rules: — 1. The leaf of argel is an inch or fourteen lines long, while that of senna never exceeds nine lines. 2. The leaf of argel has a straight side; and the lateral nerves are not seen on the under disk, while those of senna are conspicuous. 3. The leaf of argel is regular at its base, the two sides terminating at the same point on the petiole: but the senna leaflet is oblique, one of the sides being larger, and produced lower on the petiole than the other. There is also reason for thinking that it is further adulterated with the leaves of *Colutea arborescens*, bladder senna, and of box: but these are easily distinguished from senna leaves. The senna, after being thus mixed, is repacked in bales at Alexandria, whence it is exported to Europe. A good deal of senna has been imported from Calcutta, under the name of East Indian senna. It is evidently the *Cassia lanceolata*. It was formerly taken to India from the Persian Gulph, and was the growth of Mecca; but much of it is now cultivated at Tinnivelly, on the Malabar coast. It is called senna mecki and Tinnivelly senna, in the Indian bazaars. The officinal senna of America is the *Cassia marilandica*, or *Chamæ senna marilandica*.

Qualities. — The odour of senna-leaves is faint, rather disagreeable, and sickly; the taste slightly bitter, aromatic, sweetish, and nauseous. Boiling water extracts about one-third of the weight of the leaves employed, but it requires a pint of boiling water to extract all the active matter from ℥j. of senna leaves. The infusion has a deep reddish-brown colour, with the odour and taste of the leaves. This infusion, when exposed to the atmosphere, deposits a lemon-yellow colour, insoluble matter; and a precipitate is produced by the strong mineral acids, oxalic acid, the carbonates of the alkalies, and several other substances. (See *Infusum sennæ*, among the preparations.) Alkohol and sulphuric ether, digested on the powdered leaves, acquire a deep olive-green colour. When the ethereal tincture is poured on the surface of pure water, a dark olive pellicle remains after the evaporation of the ether, which is almost insipid, and has all the properties of resin; and a golden yellow colour is communicated to the water. The alkoholic tincture is rendered only slightly milky by the addition of water, and scarcely any precipitate is produced; but a copious one is thrown down by oxymuriatic acid. The active principle of senna, according to the experiments of M. M. Lassaigne and Fenuelle, is a saline substance, which they have named *cathartine* (cathartia). It is uncrystallisable, of a reddish-yellow colour, and has a bitter, nauseous taste. It is soluble in alkohol and in water, but insoluble in ether. According to Bouillon Lagrange, the residue of the watery infusion, evaporated to dryness and burnt, yields potass, sulphate of potass, carbonate of lime, magnesia and silica.

Medical properties and uses. — Senna is purgative, generally operating under four hours after it is taken; and is well adapted for all cases in which the bowels require to be certainly, yet moderately, evacuated. In many habits it is apt to occasion griping, and therefore requires the addition of some aromatic, as carraway or cardamom-seeds, or ginger; and its operation to be assisted by drinking plentifully of weak broths or gruel. The griping seems to be occasioned by the resinous matter, as the infusion made with cold water does not gripe, although it purges. Senna may be given in substance powdered; but the more usual form is that of infusion. Decoction is a bad form, as the activity of the medicine is much impaired by the boiling; owing, according to Gren, to the total dissipation of the nauseous and volatile principles; but, in our opinion, it is owing to the oxidisement of the extractive, which also accounts for the severe gripings induced by the decoction. The dose of the powder of the leaves is from ʒj. to ʒj.; but it is seldom given alone.

Officinal preparations. *Confectio sennæ*, L. E. *Electuarium sennæ*, D. *Extractum cassiæ sennæ*, E. *Infusum sennæ compositum*, L. D. *Infusum tamarindi cum senna*, E. D. *Tinctura sennæ composita*, L. E. D. *Syrupus sennæ*, L. — *A. T. Thomson.*

Senna alexandrina. See *Cassia.*

Senna italica. See *Cassia senna.*

Senna pauperum. Bastard senna, or milk-vetch, — the *Colutea arborescens* of Linnæus, the leaves of which purge and vomit.

Senna scorpium. The scorpion senna. Now named *Coronilla emerus*

SENSATION. *Sensatio.* When an impression made on the extremity of a nerve is

communicated to the sensorium, so as to excite the consciousness of the mind, it is called a sensation. See *Mind*. When the impression is produced by the action of a foreign body on an external part, it is called an *external sensation*; when it proceeds from some change taking place within the living system, and arising from its own actions, it is termed an *internal sensation*: thus the impression communicated to the mind by the effect of light on the retina, or the painful sensation produced by a blow, are external sensations; the feeling of hunger or of restlessness are internal sensations. This distinction is common in physiological writings; but there are sensations which it would not be easy to refer to either of these classes. Thus, if a person were to swallow a lump of lead, he would feel an uneasy sensation in his stomach: should this be called an external or an internal sensation? It resembles the external sensations with reference to the mode of its production, but is internal with reference to its seat. The external organs by which those impressions which cause sensation are primarily received, are called the organs of the senses; these are the eye, which ministers to vision; the ear, which receives the impressions of sound; the pituitary membrane lining the nasal cavities, which affords expansion to the olfactory nerve, by means of which we smell; the tongue, palate, &c., which constitute the organ of taste; and the extremities of nerves, dispersed under the common integuments, which give rise to the common sensation, feeling, or touch: the sense, more particularly called *touch*, is merely the exaltation of the common sensation in the nervous papilla at the ends of the fingers, aided by impressions derived from the consciousness of muscular action. See *Senses*.

SENSES. The channels of communication by which the mind derives the materials of thought from the external world, and the exercise of which depends on the property of sensibility modified by particular organs to especial ends. Man is generally considered to be endowed with five senses, namely, *sight*, *hearing*, *smell*, *taste*, and *touch*. See *Vision*, *Auris*, *Smell*, *Taste*, and *Touch*. Besides these, we have a very distinct consciousness of the action of our own muscles, or a *muscular sense*, which was first pointed out and ingeniously commented on by Dr. Browne, the late Professor of Moral Philosophy at Edinburgh. This, however, may perhaps be referrible to the sense of touch excited in the muscles by the pressure of their fibres on each other in the act of contracting. Several modifications of ordinary sensation have been, at different times, brought forward as a *sixth sense*, which, however (unless the muscular sense be considered as such), has evidently no existence. The several powers of the mind, as memory, imagination, judgment, the passions, &c., have been called *internal senses*.

SENSIBILITY. *Sensibilitas*. That faculty of living parts by which they are capable of receiving impressions, which increase, diminish, alter, or suspend their actions. Sensibility is usually divided into *animal sensibility*, which gives rise to sensations, and *organic sensibility*, which calls into action the organic contractility. For a shrewd remark of M. Broussais, on the subject of organic sensibility, see *Contractility*. Some parts are endowed with a high degree of animal sensibility, and hence any injury of such parts gives rise to acute pain; other parts possess hardly any animal sensibility, and hence, in common language, are said to be insensible.

Sensibility is infinitely variable: in certain persons it is very obtuse; in others it is very elevated: generally a good organisation keeps between the extremes.

Sensibility is vivid in infancy and youth; it continues in a degree something less marked until past the age of manhood; in old age it suffers an evident diminution; and very old persons appear quite insensible to all the ordinary causes of sensations.

SENSORIAL. Appertaining to the *sensorium*.

SENSO'RIUM. (*um*, *ii*. n.) The common centre, at which all the impressions of sense are received. This common centre is the brain.

Sensorium commune. The brain.

SE'NSUS. (*us*, *ûs*. m.; *à sentiendo*.)

Sentico'sæ. The name of an order of plants in Linnæus's Fragments of a Natural Method, consisting of such as resemble the bramble, rose, &c.

SENTICO'SUS. (From *sentis*, a brier.) Thorny; brier-like.

SE'NTIENT. *Sentiens*. This term is applied to those parts which are more susceptible of feeling than others; as the sentient extremities of the nerves, &c.

SENTIS. A thorn: applied to plants of the brier kind, which are prickly.

Sentis caninus. See *Rosa canina*.

SEPARATE. In the language of botany, the stamens and pistils of monœcious plants are said to be separate when they are found upon the same plant, but in different flowers. Thus, in *Cucumis*, *Buxus*, and other genera, some of the flowers contain stamens, and others have pistils, but none of them contain both together.

Separato'rium. (From *separo*, to separate.) 1. An instrument for separating the pericranium from the skull.

2. A chemical vessel for separating essential parts of liquids.

SE'PIA. (*a*, *æ*. f.) The name of a genus of cephalopodous mollusca. The cuttle-fish.

Sepia officinalis. The cuttle-fish. *Sepium*. *Præcipitans magnum*. The bone, or, more properly, the internal shell of this animal consists of membranous layers hardened by carbonate of lime. It was formerly used in medicine, but is now only employed as a dentifrice.

Sepiæ os. See *Sepia officinalis*.

SEPIA'RIE. (From *sepes*, a hedge.) The name of an order of plants in Linnæus's Fragments of a Natural Method, consisting of woody plants, which form a hedge-like appearance: the flowers are mostly a thyrsus or panicle.

Sepium. See *Sepia officinalis*.

Septfoil. See *Tormentilla*.

SE'PTIC. (*Septicus*; from σηπω, to putrefy.) Relating to putrefaction.

SE'PTUM. (*um, i.* n.; from *septo*, to separate.) A partition: applied to membranes, bones, &c. which divide parts; as *septum narium*, &c.

Septum cerebelli. A process of the dura mater, dividing the cerebellum perpendicularly into two principal parts.

Septum cerebri. The falciform process of the dura mater is sometimes so called. See *Falciform process.*

Septum cordis. The partition between the two ventricles of the heart.

Septum lucidum. *Septum pellucidum.* The thin and tender portion of the brain, dividing the lateral ventricles from each other.

Septum narium. The partition between the nostrils.

Septum pellucidum. See *Septum lucidum.*

Septum thoracis. See *Mediastinum.*

Septum transversum. See *Diaphragm.*

SEQUE'STRUM. (*um, i.* n.; from *sequestro*, to detach.) The dead portion of bone cast off by necrosis.

SERA'PIAS. (*as, adis.* f.; from *Serapis*, a lascivious idol: so called because it was thought to promote venery; or from the testiculated shape of its roots.) 1. The name of a genus of plants in the Linnæan system. Class, *Gynandria;* Order, *Diandria.*

2. The dried root of the *Orchis morio*, called salep.

Serapinum. See *Sagapenum.*

Serene-drop. See *Amaurosis.*

SE'RICEUS. Silky.

SERI'CUM. 1. Silk: a well-known substance produced by several animals, but principally by the silk-worm, *Bombyx mori.* Silk was formerly used in medicine as a cordial and alexipharmic. When burnt, it had a place in the dispensatories, under the name of *Sericum tostum.*

2. A species of hairy pubescence of plants, which consists of a white shining silkiness: thus the leaves of the *Potentilla anserina*, *Alchemilla alpina*, &c. are called *folia sericea.*

Sericum tostum. See *Sericum.*

Seris. Σερις. Endive.

Sermountain. See *Laserpitium.*

Serosity. Synonymous with serum.

SE'ROUS. (*Serosus;* from *serum.*) Relating to serum.

Serous apoplexy. See *Apoplexy.*

Serous plethora. See *Plethora.*

SERPENTA'RIA. (*a, æ.* f.; so called from the resemblance of the roots of the plant which first bore this name to the tail of the rattle-snake.) See *Aristolochia serpentaria.*

Serpentaria Gallorum. See *Arum.*

Serpentaria Hispanica. See *Scorzonera.*

Serpentaria Virginiana. See *Aristolochia serpentaria.*

Serpentum lignum. See *Ophioxylum.*

Serpentum radix. See *Ophiorrhiza.*

SERPI'GO. (From *serpo*, to creep: because it creeps on the surface of the skin by degrees.) A ringworm, or tetter. See *Herpes.*

Serpy'llum. (*um, i.* n.; from *serpo*, to creep, on account of its creeping mode of growth.) See *Thymus serpyllum.*

Serpyllum citratum. See *Thymus serpyllum.*

Serpyllum vulgare. See *Thymus vulgaris.*

Serra'ta. (*a, æ.* f.; from *serra*, a saw: so called from its serrated leaves.) See *Serratula.*

SERRA'TULA. (*a, æ.* f.; from *serra*, a saw: so called from its serrated leaves.) The name of a genus of plants in the Linnæan system. Class, *Syngenesia;* Order, *Polygamia æqualis.*

Serratula amara. The systematic name of a species of saw-wort, which is said to cure agues.

Serratula arvensis. The common creeping way-thistle. *Carduus arvensis. Carduus hæmorrhoidalis. Cirsium arvense. Ceanothus.* This plant was formerly used as an application to resolve scirrhous tumours, and is now considered useful against piles.

SERRA'TUS. (From *serra*, a saw.) Serrated. 1. Applied to leaves when the teeth are sharp, and resemble those of a saw, pointing towards the extremity of the leaf, as in *Urtica;* and to *petals*, as those of the *Dianthus arboreus*, and *Cystus polyfolius.*

Some leaves are called *duplicato-serrate:* these are doubly serrate, having a series of smaller serratures, intermixed with the larger; as in *Campanula trachelium.*

2. In *Anatomy*, applied to muscles and other parts, from their serrated appearance.

Serratus anticus. See *Pectoralis minor.*

Serratus magnus. *Serratus major anticus*, of Douglas and Cowper. *Serratus major*, of Winslow. This muscle is so named by Albinus. Douglas calls it *Serratus major anticus*, but improperly, as it is seated at the side, and not at the anterior part of the thorax. It is a broad fleshy muscle, of a very irregular shape, and is in part covered by the subscapularis, pectoralis, and latissimus dorsi. It arises by fleshy digitations, from the eight superior ribs, and is inserted fleshy into the whole basis of the scapula internally, between the insertion of the rhomboides and the origin of the subscapularis, being folded, as it were, about the two angles of the scapula. This muscle may easily be divided into two or even three portions. The latter division has been adopted by Winslow. The first of these portions is the thick and short part of the muscle that arises from the first and second ribs, and is inserted into the upper angle of the scapula, its fibres ascending obliquely backwards. The second portion arises from the second rib, behind the origin of the first portion, and likewise from the third and fourth ribs: this portion is thin and short, and its fibres run nearly in a horizontal direction, to be inserted into the basis of the scapula. The third, and most considerable portion, is that which arises from the fifth, sixth, seventh, and eighth ribs, and is inserted into the lower angle of the scapula. The serratus magnus serves to move the scapula forwards; and it is chiefly by the contraction of this muscle that the shoulder is supported, when loaded with any heavy weight. The ancients, and even many of the moderns, particularly Douglas and Cowper, supposed its chief use to be to dilate the thorax, by elevating

the ribs; but it can only do this when the scapula is forcibly raised.

Serratus major anticus. See *Serratus magnus.*

Serratus minor anticus. See *Pectoralis minor.*

Serratus posticus inferior. This is a thin muscle, of considerable breadth, situated at the bottom of the back, under the middle part of the latissimus dorsi. It arises by a broad thin tendon, in common with that of the last-mentioned muscle, from the spinous processes of the two, and sometimes of the three, inferior dorsal vertebræ, and from three, and sometimes four, of those of the lumbar vertebræ. It then becomes fleshy, and, ascending a little obliquely outwards and forwards, divides into three, and sometimes four, fleshy slips, which are inserted into the lower edges of the three or four inferior ribs, at a little distance from their cartilages. Its use seems to be to pull the ribs downwards, backwards, and outwards.

Serratus superior posticus. This is a small, flat, and thin muscle, situated at the upper part of the back, immediately under the rhomboideus. It arises, by a broad thin tendon, from the lower part of the ligamentum colli, from the spinous process of the last vertebræ of the neck, and the two or three uppermost of the back, and is inserted into the second, third, fourth, and sometimes fifth, ribs, by as many distinct slips. Its use is to expand the thorax, by pulling the ribs upwards and outwards.

SERRULA'TUS. (From *serrula*, a little saw.) Serrulate or minutely serrate: applied to such saw-like edged leaves which have their teeth very fine; as in *Polygonum amphibium.*

Serrula campana. See *Trifolium melilotus.*

SE'RUM. (*um, i.* n.; from *serus*, late: because it is the remainder of the milk, after its better parts have been taken from it.) 1. The whey of milk.

2. The yellow and somewhat greenish fluid, which separates from the blood when cold and at rest. See *Sanguis.*

Serum aluminosum. Alum whey. Made by boiling ʒ ij. of alum in a pint of cow's milk, and straining. This was formerly esteemed as an astringent in the different profluvia. It is not much used at present. The dose is a quarter of a pint three or four times a day.

Serum catharticum. Purging whey. Take of fresh damask rose buds picked, an ounce; put them into two pounds of common whey over night, and strain and drink it next morning.

"This," says Quincy, "is a mighty purge with some of our country people; it will work very kindly and thoroughly, and is therefore good to cleanse the first passages."

Serum lactis. See *Whey.*

Serum scorbuticum. Take of the leaves of succory and sorrel, of each twelve handfuls; fir tops, scurvy grass, and watercresses, of each four ounces; coriander seeds, one ounce. When bruised, add to them of orange juice four ounces, and common whey four pounds. Let them stand for a little, then press out the liquor, sweeten it with a little refined sugar, and clarify for use. This used to be drunk as an antiscorbutic, in the quantity of two or three pints a day. It will not keep, and, therefore, must be made as it is wanted.

Serum sinapinum. Mustard whey. This is made by boiling a pint of milk, with half an ounce of bruised mustard seed, and straining. This is sometimes used as a diuretic in dropsy, in the dose of a quarter of a pint three times a day.

Service-tree. See *Sorbus aucuparia.*

SE'SAMOID. (*Sesamoideus;* from σησαμη, a kind of grain, and ειδος, likeness.) Like the sesamum seed. Applied in Anatomy to several parts, from their shape.

Sesamoid bones. *Ossa sesamoidea.* The little bones which are found at the articulations of the great toes, and sometimes at the joints of the thumbs; now and then we meet with them upon the condyles of the os femoris, at the lower extremity of the fibula, under the os cuboides of the tarsus, &c. They do not exist in the fœtus; but, as we advance in life, begin first to appear in a cartilaginous state, and, at length, in adult subjects, are completely ossified. Age and hard labour seem to add to the number and size of these bones, and, being most commonly found wherever the tendons and ligaments are most exposed to pressure from the action of the muscles, they are now generally considered by anatomists as the ossified parts of tendons and ligaments. These bones are usually smooth and flat on the side of the bone on which they are placed; their upper surface is convex, and, in general, adheres to the tendon that covers it, and of which it may, in some measure, be considered as a part. Although their formation seems to be owing to accidental circumstances, yet, as the two at the first joint of the great toe are much larger than the rest, and are seldom wanting in an adult, it would seem as if these bones were of some utility; perhaps, by removing the tendons farther from the centre of motion, and thus increasing the power of the muscles. The ossa sesamoidea of the great toe and thumb seem likewise to be of use, by forming a groove for lodging the flexor tendons secure from compression.

Sesamoidea corpora. See *Corpora sesamoidea.*

SE'SAMUM. (*um, i.* n.; an Egyptian word.) 1. The name of a genus of plants in the Linnæan system.

2. The pharmacopœial name of the oriental sesamum. See *Sesamum orientale.*

Sesamum orientale. *Sesamum.* The seeds of this plant are in much esteem in South Carolina, where they are called *oily grain;* they are made into soups and puddings, after the manner of rice. Toasted over the fire, they are mixed with other ingredients, and stewed into a delicious food. The fresh seed affords a considerable quantity of a warm pungent oil, otherwise not unpalatable. In a year or two the pungency leaves it, when the oil is used for salad, &c. The seeds of the *Sesamum indicum* are used in the same manner. The leaves are also used medicinally in some countries, being of a mucilaginous quality.

SE'SELI. (Gen. *Seseleos;* n. Σεσελι. The herb hart-wort.) 1. The name of a genus of plants. Class, *Pentandria;* Order, *Digynia.*

2. An old name of the hart-wort. See *Laserpitium siler.*

SESELI CRE'TICUM. There is great confusion amongst the species of the seseli. The plant which bears this epithet in the pharmacopœias is the *Tordylium officinale*, of Linnæus. The seeds are said to be diuretic.

Seseli Marsiliense. See *Seseli tortuosum.*

SESELI TORTUOSUM. The hart-wort of Marseilles. *Seseli Marsiliense.* The seeds of this plant are directed for medicinal use, and have a warm biting taste, and a greater degree of pungency than those of the *Laserpitium.*

SE'SQUI. This word, joined with any number, weight, measure, &c., signifies one integer and a half; as *sesqui granum*, a grain and a half. In the doctrine of definite proportions, it is used to designate compounds, in which an equivalent and a half of one ingredient is combined with one equivalent of another; thus, *sesqui-oxide of iron, sesqui-carbonate of ammonia*, &c. See *Combination, chemical.*

SE'SSILE. (*Sessilis*; setting close.) A term applied to any part of a plant that is not elevated on any kind of stalk: hence *flores sessiles, folia sessilia*, &c.

SE'TA. (*a, æ.* f.; from χαιτα, a bristle.) A bristle.

I. In *Anatomy*, a long rigid hair, such as is on the neck of swine.

II. A bristle, as applied in botanical language to a hollow, rigid, sharp-pointed pubescence, which either wounds the finger when it is pressed upon it, or gives a very harsh, scabrous, or prickly character to the surface of the stem, or of the leaves when the finger is rubbed over them.

Bristles are often arranged into *aculei* in elementary works, but they have more affinity to hairs. They are simple and compound.

1. *Setæ simplices* are of two kinds, awl-shaped and spindle-shaped.

a. The *subulate* is the most common of the simple bristles: it is slightly curved, and gradually tapering from the base to the apex, which is rigid and very sharp. These bristles, when they all incline in the same direction, produce the scabrous character of some leaves, as in *Symphytum orientale.* A variety of the awl-shaped bristle, found on the stem and branches of the sensitive plant, is barbed on its sides; and another variety, as exemplified on the leaves of the *Borago officinalis*, is seated on a vesicular tubercle containing a fluid, which is ejected through the bristle when it is compressed, so as to wound the finger, and which, being left in the wound, excites inflammation in the part. But the sting of the nettle is the best example of this form of bristle.

b. The *fusiform* is, as its name implies, thickest in the centre, and acuminated at each end. It lies parallel to the surface of the leaf, to which it is affixed by a very small footstalk, is hollow, and contains a coloured liquid, which apparently enters it through the footstalk. This form of bristle is peculiar to the genus *Malpighia.*

2. *Setæ compositæ.* These are almost always solid. The term comprehends two species of bristles, *furcatæ* and *fasciculatæ.*

a. The forked are, in some instances, merely rigid hair-like bodies, terminating in two or three diverging points, as in *Thrincia hispida*; but in other instances, as the stems and leaves of the hop plant, the stalk of the bristle, which is supported on a firm cellular tubercle, is very short, and its forking extremities resemble two flattish awl-shaped bristles, pointing in opposite directions.

b. The *fasciculated* consist of a number of simple, straight bristles, diverging from a papillary knob; as in *Cactus flagelliformis.*

There is still another species of pubescence which cannot properly be arranged with the pilus or seta: it is found on a species of houseleek, extending like a very fine thread, stretching from the tip of one leaf to that of another, and resembling so exactly a spider's web, that the plant has been named *Arachnoideum.* — *Thompson.*

Bristles are also distinguished into *erect*, as in *Leontodon hirtum*; *hamose*, as in the pericarp of the *Arctium lappa*; *stellate* and *plumose.* The bristles of plants have received other denominations: —

1. *Striga*, that variety of the subulate which is seen in *Borago officinalis.*

2. *Hamus*, that which is hooked at its extremity; as in *Galium aperine, Caucalis daucoides*, &c.

3. *Clochis*, when several sharp tooth-like processes are turned back from the apex of the bristle.

4. *Arista*, a long bristle proceeding from the husk of grasses; as in *Hordeum vulgare.*

c. The fruitstalk of mosses, which is either solitary, aggregate, terminal, axillary, or lateral.

SETA'CEUM. (*um. i.* n.; from *seta*, a bristle: because horse-hairs were first used to keep open the wound.) See *Seton.*

SETA'CEOUS. *Setaceus.* Bristly. Applied to various parts of plants; as the petals of *Tropæolum majus.*

SETIFO'RMIS. Setiform: bristly. Applied to parts of plants; as the nectary of the *Periploca græca.*

SE'TON. *Setaceum.* An artificial sinus made under the skin by means of an instrument called the seton-needle, which carries with it a portion of thread or silk, a portion of which is drawn through daily, and thus keeps up a constant irritation.

SETO'SUS. Setose: bristly. Applied to parts of plants; as the receptacle of the *Echinops sphærocephalus*, and of *Centaurea.*

Setterwort. See *Helleborus fœtidus.*

SE'VUM. Suet. The fat of the omentum. That of the sheep and ox is in common use for various purposes.

Sevum ceti. See *Physeter macrocephalus.*

SEVUM OVILE. *Sevum cetillum.* Mutton suet.

SEXUAL. *Sexualis.* Appertaining to the sexes.

SEXUAL ACTIONS. Sexual functions. Those functions proper to each sex, by which the species is propagated; as the excretion of semen in men; menstruation, conception, the evolution of the fœtus, parturition, &c., in women.

Sexual organs. See *Generation, organs of, Stamen,* and *Pistillum.*

Sexual system of plants. This system, invented by the immortal Linnæus, is founded on the parts of fructification. See *Vegetable Kingdom.*

Seydschutz. See *Sedlitz.*

SHADDOCK. So named after the captain who first brought it into the West Indies from China. The fruit of the *Citrus decumana.* It is very large. It is inferior in flavour to the orange, but keeps longer, and is hence an useful fruit at sea on long voyages.

Shaft. See *Stylus.*

Shaggy. See *Hirsutus,* and *Chorion.*

Shaking palsy. See *Synclonus agitans.*

SHALLOT. Eschalotte. The *Allium ascalonicum,* of Linnæus; an useful esculent root, possessing all the virtues of garlic, with less pungency.

Sharp-pointed dock. See *Rumex acutus.*

Sheath. See *Vagina,* and *Spatha.*

Sheathing. See *Vaginans.*

Shedding. See *Caducus.*

Shedding-teeth. See *Teeth.*

SHELL. The hard covering or external skeleton of testaceous and crustaceous animals, and of insects. The shells of the *testaceous mollusca* consist of carbonate of lime and animal matter; those of the *crustacea* of a mixture of carbonate and phosphate of lime, with animal matter.

SHERBE'T. (An Arabic word.) A cooling summer drink, prepared with the juice of fruits and water variously sweetened and flavoured. Sherbets are much used in the East.

Shield-laver. See *Ulva umbilicalis.*

Shingles. (Probably a corruption of the Latin *Cingulum,* a girdle.) See *Herpes.*

Shoot. See *Surculus.*

Short-sightedness. See *Myopia.*

Shrimp. See *Cancer crangon.*

SHRUB. 1. A low bushy tree. See *Frutex.*

2. A liquor, consisting of acid fruits, sugar, and various substances to give flavour, digested in rum or brandy.

Shrubby. See *Fruticosus.*

SI'AGON. Σιαγων. The jaw.

Siago'nagra. (From σιαγων, the jaw, and αγρα, a seizure.) The gout in the jaw.

SIA'LAGOGUE. (*Sialago'gus;* from σιαλον, saliva, and αγω, to expel.) Medicines are so called which excite an uncommon flow of saliva: such are mercurial preparations, pyrethrum, &c. They are divided into *sialagoga topica,* as scilla, nicotiana, piper, &c.; and *sialagoga interna,* as the various preparations of mercury.

SI'BBENS. *Sivens.* A disease which is endemic in some of the western counties of Scotland. It strikingly resembles the yaws in many respects, but entirely differs in others. It is propagated, like syphilis, by the direct application of contagious matter. This disease has not yet been thoroughly investigated.

Si'ccans. (From *sicco,* to dry.) Having a drying property: applied to medicines.

Sicchasia. (Σιχχασια; from σιχχος, weak, weary.) The lassitude, debility, and anorexia, peculiar to women with child.

SICKNESS. 1. A disease of any kind: in which sense, however, the word is little used in the present day.

2. A particular state of the stomach, which occurs under three forms, — nausea, retching, and vomiting.

Nausea is a tendency to vomit, but there is no rejection. It depends on a disposition in the peristaltic motion of the bowels and stomach to become inverted: if the inversion take place, *retching* and *vomiting* result; but if it do not, the effect is merely a nausea. These affections may exist separately; for the cause may be of a kind or strength sufficient to throw the stomach at once into a state of violent inversion, and, consequently, to produce vomiting without the intermediate changes. It is nevertheless curious, and of great importance, to observe the different and opposite effects produced on the animal frame by these stages of one and the same thing. Nausea lowers the pulse, contracts the small vessels, occasions cold perspiration, severe rigors, and trembling, and diminishes, as long as it lasts, the actions, and even the general powers of life. The act of retching, and vomiting, more especially, on the contrary, rouses rather than depresses, puts to flight all the preceding symptoms, and often restores the system to itself.

Nausea and vomiting are sometimes idiopathic affections, but more frequently symptomatic and sympathetic: hence they occur in colic, cholera, in the accession of fevers, repelled gout, many affections of the head.

From such a variety of causes, it is but natural to conclude the remedies must be very various. The sympathetic and symptomatic affections require the removal of the primary disease. The best palliatives against all nausea and vomiting are carbonic acid gas, in form of an effervescing saline draught, and small doses of opium. Lemon ice, or very cold lemonade, is often serviceable, and more especially if made with a strong infusion of the *Mentha viridis.*

Sickness, country. See *Nostalgia.*

Sickness, home. See *Nostalgia.*

Sickness, love. See *Pathemata animi.*

Si'cula. (Diminutive of *sica,* a short sword: so called from its dagger-like root.) The beet.

Sicye'don. (From σικυος, a cucumber.) A transverse fracture, like a cucumber broken in two parts.

Sicyo'ne. (From σικυος, a cucumber or gourd: so named from its resemblance to a gourd.) A cucurbit.

SI'DA. A genus of malvaceous plants.

Sida abu'tilon. This plant is mentioned by Avicenna. It is mucilaginous.

SIDERA'TIO. (*o, onis.* f.; from *sidus,* a planet: because it was thought to be produced by the influence of the planets.) An apoplexy. A palsy. A slight erysipelas.

Siderum. A name given by Bergman to phosphuret of iron, which he first examined, and believed to be a new metal.

SIGESBE'CKIA. (*a, æ.* f.; so named by Linnæus in memory of his antagonist, Dr. J. G. Sigesbeck, Superintendent of the Physic Garden at Petersburg, who raised various objections against the sexes of plants.) The name

of a genus of plants. Class, *Syngenesia*; Order, *Polygamia superflua*.

Sigesbeckia orientalis. The systematic name of a plant which is said to be useful in removing strangury, and in calculous diseases, gout, and fluor albus.

Sight. See *Vision.*

Sight by day. See *Hemeralopia.*

Sight by night. See *Nyctalopia.*

Sight, dimness of. See *Caligo.*

Sight, lateral. See *Dysopia.*

SIGILLA'TUS. Sealed: applied formerly to several earths, which were formed into little cakes and stamped or sealed, and were called *terræ sigillatæ.*

SIGI'LLUM. (*um, i.* n.; diminutive of *signum*, a sign.) A seal or image.

Sigillum beatæ mariæ. An old name of black briony, or *Tamus communis.*

Sigillum hermeticum. See *Hermetic seal.*

Sigillum solomonis. (Called *sigillum*, because there is the resemblance of an impression on the root.) See *Convallaria polygonatum.*

SI'GMOID. (*Sigmoides*; from the Greek letter Σ, *sigma*, and εἶδος, a likeness.) Resembling the Greek letter sigma. Applied to several parts; as the valves of the heart, the cartilages of the trachea, the semilunar cavities of the bones, and the flexure of the colon.

Sigmoid flexure. See *Intestine.*

Sigmoid valves. The semilunar valves of the aorta and pulmonary artery.

Signa critica. See *Crisis.*

Signa diagnostica. See *Diagnosis.*

SI'GNUM. A sign: the symptom of a disease. See *Semeiotice.*

Siler. See *Laserpitium siler.*

Silex. (*ex, icis.* m. and f.; from χαλιξ.) Flint. See *Silica.*

SI'LICA. (*a, æ.* f.; from *silex*, flint.) One of the primitive earths, and the principal constituent part of the silex or flint, and of a very great number of the compound earths and stones forming the immense mass of the solid nucleus of the globe. It is the basis of almost all the scintillating stones, such as *flint, rock crystal, quartz, agate, calcedony, jasper*, &c. The sand of rivers, and of the sea-shore, chiefly consist of it. It is deposited in vegetable substances, forming petrified wood, &c. It is likewise precipitated from certain springs in a stalactitic form. It has been discovered in several waters in a state of solution, and is found in many plants, particularly grasses and equisetums. A good method of obtaining silica exceedingly pure, is to separate it from fluoric acid.

The only acid that dissolves silica is the hydrofluoric. See *Fluosilicic acid.* Silica is soluble in alkaline solutions, and combines with many of the metallic oxides; hence it is regarded by some chemists as an acid, and called *Silicic acid.*

In consequence of Sir H. Davy's researches on the metallic bases of the alkalis and earths, this earth has been recently regarded as a compound of a peculiar combustible principle with oxygen. If we ignite powdered quartz with three parts of pure potash in a silver crucible, dissolve the fused compound in water, add to the solution a quantity of acid, sufficient to saturate the alkali, and evaporate to dryness, we shall obtain a fine gritty powder, which, being well washed with hot water, and ignited, will leave pure silica. By passing the vapour of potassium over silica in an ignited tube, Sir H. Davy obtained a dark-coloured powder, which he supposed to contain *silicium*, or the basis of the earth. This has since been obtained in a pure state by Berzelius, who places it among the simple nonmetallic combustibles. It appears to have a great analogy to boron.

Si'licate. (*Silicas, atis.* f.) A compound of the silicic acid, with a base. See *Silica.*

Sili'cium. The base of silica. See *Silica.*

SILI'CULA. (*a, æ.* f.; a diminutive of *siliqua.*) A pouch, or pod, that is scarcely longer than broad. It is,

1. *Orbiculate*, in *Thlaspi arvense.*
2. *Cordate*, in *Isatis Armena.*
3. *Obcordate*, in *Thlaspi bursa pastoris, alpestre*, and *Myagrum perfoliatum.*
4. *Lanceolate*, in *Lepidium alpinum*, and *Isatis tinctoria.*
5. *Angulate*, in *Myagrum Ægyptiacum.*
6. *Emarginate*, in *Cochlearia.*
7. *Drupaceous*, if the membrane is double, soft externally, and hard within; as in *Erucago*, and *Bunias.*

SILICULO'SA. The name of the first order of the class *Tetradynamia*, of the Linnæan system of plants, containing such as have a broad short pod.

SI'LIQUA. (*a, æ.* f.; from *silo*, one who has a turned up nose.) A long, dry, membranaceous pericarpium, pod, or seed-vessel, of two valves, separated by a linear receptacle, along the edges of each of which the seeds are arranged alternately. The dissepiment is a partition dividing a siliqua and silicula into two loculaments, or cells. Botanists distinguish a pod into,

1. *Round*; as in *Fumaria lutea.*
2. *Compressed*, with levelled valves; as in *Cheiranthus annuus.*
3. *Four-edged*; as in *Erysimum, Cheiranthus erysimoides*, and *Brassica orientalis.*
4. *Articulate*, in *Raphanus raphanistrum.*
5. *Tortulose*, which has elevated nodes here and there; as in *Raphanas sativus.*
6. *Rostrate*, having the partition very prominent at the apex; as in *Sinapis alba.*

Siliqua dulcis. See *Ceratonia siliqua.*

Siliqua hirsuta. See *Dolichos pruriens.*

Siliqua'strum. (From *siliqua*, a pod: named from its pods.) Judas-tree. The capsicum, or Guinea pepper, was so termed by Pliny. See *Capsicum.*

SILIQUO'SA. The name of the second order of the class *Tetradynamia*, of the Linnæan system of plants, containing such as have long pods.

Siliquo'sæ. The name of an order in Linnæus's Fragments of a Natural Method, consisting of such as have a siliqua or silicula, the flower tetradynamic and cruciate.

Siliquosa indica. An American plant. Its juice is said to be alexipharmic.

SILIQUO'SUS. (From *siliqua*, a pod.) Having pods.

Silk-worm, acid of. See *Bombic acid.*

SI'LPHIUM. (*Zalaph*, Arabian.) Asafœtida, or the plant which affords it.

Silver. See *Argentum.*

Silver, nitrate of. See *Argenti nitras.*

Silver-weed. See *Potentilla.*

SIMAROU'BA. (*a*, *æ*. f.) The name of a genus of plants. Class, *Decandria*; Order, *Monogynia.*

SIMAROUBA OFFICINALIS. *Quassia simarouba.* Mountain damson. The tree which yields the simarouba bark. It is a native of Carolina, the West Indies, and South America. The medicinal part is the bark of the root; the wood, though enumerated in the Materia Medica of the Dublin college, is entirely inert. It is tonic, and contains a peculiar bitter principle named *quassina.* The dose of the powder is from ℈j. to ʒ ss.; that of the infusion one to two ounces. See *Infusum simaroubæ.*

Simiæ lapis. See *Bezoar simiæ.*

Simple affinity. See *Affinity, simple.*

Simple elective attraction. See *Affinity, simple.*

Simple leaf. See *Leaf.*

Simple substance. See *Body.*

Sinape. See *Sinapis nigra.*

SINAPELÆ'UM. (*um*, *i*. n.; from σιναπι, mustard, and ελαιον, oil.) Oil of mustard.

Sinapi. See *Sinapis nigra.*

SINA'PIS. (*is*, *is*. f., and *e*, *is*. n., and *i*. n. indeclinable: so called because, σινει ωπας, it hurts the eyes.) 1. The name of a genus of plants in the Linnæan system. Class, *Tetradynamia*; Order, *Siliquosa.* Mustard.

2. The pharmacopœial name of the black mustard. See *Sinapis nigra.*

SINAPIS ALBA. The systematic name of the white mustard plant, which is directed for medicinal use in the Edinburgh Pharmacopœia. It is somewhat less pungent than the black species. Its activity seems to depend on a crystalline matter, which contains sulphur, and has been named sulpho-sinapisine by Henri and Garot, and *sinapine* by Berzelius. See *Sinapis nigra.*

SINAPIS NIGRA. The systematic name of the common black mustard: called also *Napus*, *Eruca*, *Sinape*, and *Sinapi.*

Sinapis — siliquis glabris racemo oppressis, of Linnæus. The seeds of this species of mustard, which are directed by the London College, and those of the *Sinapis alba*, which are preferred by that of Edinburgh, manifest no remarkable difference to the taste, nor in their effects, and, therefore, answer equally well for medicinal and culinary purposes. They have an acrid, pungent taste, and, when bruised, this pungency shows its volatility by powerfully affecting the organs of smell. The active principle of the black mustard is believed to reside in a volatile oil. Mustard is considered as capable of promoting appetite, assisting digestion, attenuating viscid juices, and, by stimulating the fibres, it proves a general remedy in paralytic affections. Joined to its stimulant qualities, it frequently, if taken in considerable quantity, opens the body, and increases the urinary discharge; and hence it has been found useful in dropsical complaints. Externally, flour of mustard is frequently used, mixed with vinegar, as a stimulant or sinapism.

SINAPI'SMUS. (*us*, *i*. m.; from *sinapis*, of which it is made.) *Sinapismum. Cataplasma sinapeos.* A sinapism, or mustard poultice. A name given to a mixture of mustard and vinegar, in form of poultice, generally applied to the calves of the legs or soles of the feet, as a stimulant, and employed in low states of fevers and other diseases, and intended to supersede the use of a blister. See *Cataplasma sinapis.*

SINA'PIUM. (*um*, *ii*. n.; from σιναπι, mustard.) An infusion or decoction of mustard-seed.

SI'NCIPUT. (*ut*, *itis*. n.) The forepart of the head. See *Caput.*

SI'NE PA'RI. Several muscles, veins, arteries, &c. are so called which are without a fellow. See *Azygos.*

Single elective attraction. See *Affinity.*

SINGU'LTUS. (*us*, *ûs*. m.) The hiccough. A convulsive motion of the diaphragm and parts adjacent. The most common cause is some accidental irritation of the stomach from food or wind, and hence it is so common amongst children. It is also produced by the irritation of worms, acidity and bilious condition of the stomach. These excite the diaphragm to a spasmodic contraction, to which it must be predisposed by debility. It is usually removed in children by warm carminatives, and in youths and adults by a little cold water, camphire julep, volatile alkali, or a sudden fright.

It is sometimes, however, very troublesome, and is then mostly a symptomatic or sympathetic affection. In the latter state, it results from gall-stones, hepatic diseases, ulcers of the stomach, and many diseases of the abdominal viscera. Hiccough is one of the nervous symptoms which sometimes becomes habitual, and will not yield to remedies. An instance occurred, in a delicate young lady, whose digestive organs had been a long time in an ill condition, in which a hiccough continued for ten months, very strong and agitating during the day, but more passive during the night. During the whole of this period, there were seldom more than three hours' uninterupted sleep in the night; and the debility soon became so great as to oblige her to keep in bed. No medicines nor topical applications did any good. When opiates produced sleep, the disease returned on waking. She was at last cured by a fright. Many similar cases are on record.

SINUA'TUS. Sinuated: indented. Applied to leaves which are cut into rounded or wide openings, deeply scolloped, as it were, the lobes standing asunder, as if part of the leaf had been cut off; as that of the oak and turnip, and as in *Statice sinuata.*.

SI'NUS. (*us*, *ûs*. m.) I. A cavity or depression.

II. In *Surgery*, a long, narrow, hollow track, leading from some abscess, diseased bone, &c.

III. The veins of the dura mater are termed sinuses. They are several in number, the principal of which are, 1. The *longitudinal sinus*, which rises anteriorly from the crista galli,

ascends and passes between the two laminæ of the falciform process to where this process ends. It then opens into, 2. *Two lateral sinuses*, distinguished into right and left, which lie in the crucical spine of the os occipitis. 3. The *inferior longitudinal*, which is a small sinus situated at the acute inferior margin of the falx. 4. The *torcular Herophili*, or fourth sinus. 5. The *cavernous sinuses*.

Sinus coxæ. The acetabulum.

Sinus genæ pituitarius. See *Antrum highmorianum*.

Sinus, lateral. See *Lateral sinuses*.

Sinus, longitudinal. See *Longitudinal sinus*.

Sinus, maxillary. See *Antrum*.

Sinus muliebris. The vagina.

Sinus uteri. Sinuses of the uterus. The large veins contained within the walls of the uterus. During gestation they become immensely enlarged.

Sinus venæ portarum. The entrance into the liver.

Sinus venarum cavarum. The right auricle of the heart.

Sinus venarum pulmonalium. The left auricle of the heart.

Sinuses, frontal. See *Frontis os*.

Sinuses, vertebral. The two large veins which run the whole length of the spinal canal. See *Spinal cord*.

Siphilis. See *Syphilis*.

Siphita parva. Chorea is thus named by Paracelsus.

Sira. An alchemical name of orpiment.

Sirsa. An eschar.—*Ruland*

SIRI'ASIS. (*is, is.* f.; from σιρος, the cavity of the fontanella.) An inflammation of the brain, said to be peculiar to children, and attended with a hollowness of the eyes and depression of the fontanella.

Siricon de plumbo. Oxide of lead.—*Ruland*.

Siringa. Lime.—*Ruland*.

Si'sarum. (From *sisa*, a Hebrew word.) See *Sium sisarum*.

Si'ser. (*er, eris.* m. and n.) See *Sium sisarum*.

SI'SON. (*on, i.* n. Σισων. A name adopted by Dioscorides.) The name of a genus of plants. Class, *Pentandria*; Order, *Monogynia*.

Sison ammi. The plant which affords the *ammi verum* of the shops. The seeds of this plant, *Sison—foliis tripinnatis, radicalibus linearibus, caulinis setaceis, stipularibus longioribus*, of Linnæus, have a grateful smell, somewhat like that of origanum, and were formerly administered as a carminative.

SISY'MBRIUM. (*um, ii.* n.; from σισυθος, fringed: so named from its fringed roots.) The name of a genus of plants in the Linnæan system. Class, *Tetradynamia*; Order, *Siliquosa*.

Sisymbrium nasturtium. The systematic name of the water-cress: called also, *Nasturtium aquaticum*, *Lauer odoratum*, *Crateva sium*, *Cressi*, and *Cardamines*.

This indigenous plant, *Sysymbrium—siliquis declinatis, foliis pinnatis, foliolis subcordatis*, of Linnæus, grows plentifully in brooks and stagnant waters. The leaves have a moderately pungent taste, emit a quick penetrating smell, like that of mustard-seed, but much weaker. Water-cresses obtain a place in the materia medica for their antiscorbutic qualities, which have been long very generally acknowledged by physicians. The most pleasant way of administering them is in form of a salad.

Sisymbrium sophia. The systematic name of the herb sophia: which is also called *Sophia chirurgorum*. It is now almost banished from practice, though formerly in high estimation in the cure of wounds. It has been given internally in hysterical affections and uterine hæmorrhages, and the seeds are said to be efficacious in destroying intestinal worms.

SITIO'LOGY. (*Sitiologia, æ.* f.; from σιτος, aliment, and λογος, a discourse or treatise.) Synonymous with *dietetics*.

Sitis. (*is, is.* f.) See *Thirst*.

SI'UM. (*um, i.* n.; from σειω, to move: from its agitation in water.) 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Digynia*.

2. The pharmacopœial name of the creeping water parsnip. See *Sium nodiflorum*.

Sium aromaticum. The amomum is sometimes so called.

Sium ninsi. The systematic name of the plant, the root of which is called, *radix ninsi*, *Ninzin*, and *Nindsin*. This root was long supposed to be the same as ginseng. It now appears, however, to be the produce of this plant. It possesses similar, though weaker properties, than ginseng.

Sium nodiflorum. The systematic name of the creeping water-parsnep: called also, *Berula gallica*. This plant was admitted into the London Pharmacopœia in the character of an antiscorbutic. It is not nauseous, and children take it readily if mixed with milk.

Sium sisarum. The siser or skirret. The root of this plant is eatable, but now out of use, though cultivated in the days of Gerarde and Parkinson. Its flavour is said to be aromatic, with a sweetness not acceptable to every palate, and of a flatulent and indigestible quality.

Skate. See *Raia batis*.

SKELETON. *Sceletos*. When the bones of the body are dried and preserved in their natural situation, and deprived of the flesh, the assemblage is called a skeleton; and the assemblage of all the bones of the animal, when hung in their respective situations by means of wire, is denominated an artificial skeleton, in opposition to a natural one, when the bones are retained in their proper places by means of their natural ligaments. See *Os*.

Skin. See *Cutis*.

Skin, scarf. See *Epidermis*.

Skink. See *Scincus*.

Skirret. See *Sium sisarum*.

Skull. See *Cranium*.

Slavering. See *Drivelling*.

SLEEP. *Somnus*. That state of the body in which the exercise of the external senses is suspended according to a natural law, and independently of any diseased state. The end and design of sleep is both to renew, during the silence and darkness of the night, the vital energy which has been exhausted through the day, and to assist nutrition.

When the time of being awake has continued for sixteen or eighteen hours, we have a general feeling of fatigue and weakness; our motions become more difficult, our senses lose their activity, the mind becomes confused, receives sensations indistinctly, and governs muscular contraction with difficulty. We recognise, by these signs, the necessity of *sleep:* we choose such a position as can be preserved with little effort: we seek obscurity and silence, and sink into the arms of oblivion.

The man who slumbers loses successively the use of his senses. The sight first ceases to act by the closing of the eyelids, the smell becomes dormant only after the taste, the hearing after the smell, and the touch after the hearing; the muscles of the limbs, being relaxed, cease to act before those that support the head; and these before those of the spine. In proportion as these phenomena proceed, the respiration becomes slower and more deep; the circulation diminishes; the blood proceeds in greater quantity to the head; animal heat sinks; the different secretions become less abundant. Man, although plunged in this sopor, has not, however, lost the feeling of his existence: he is conscious of most of the changes that happen in him, and which are not without their charms: ideas, more or less incoherent, succeed each other in his mind: he ceases, finally, to be sensible of existence — he is *asleep.*

During sleep, the circulation and respiration are retarded, as well as the different secretions, and, in consequence, digestion becomes less rapid.

It is not well explained on what foundation many authors say that absorption alone acquires more energy. Since the nutritive functions continue in sleep, it is evident that the brain has ceased to act, only with regard to muscular contraction, and as an organ of intelligence; and that it continues to influence the muscles of respiration, the heart, the arteries, the secretions, and nutrition.

Sleep is *profound* when strong excitants are necessary to arrest it: it is *light* when it ceases easily.

Sleep, such as it has been described, is perfect; that is, it results from the suspension of the action of the relative organs of life, and from the diminution of the action of the nutritive functions; but it is not extraordinary for some of the relative organs of life to preserve their activity during sleep, as it happens when one sleeps standing; it is also frequent for one or more of the senses to remain awake, and transmit the impressions which it perceives to the brain; it is still more common for the brain to take cognisance of different internal sensations that are developed during sleep, as wants, desires, pain, &c. The understanding itself may be in exercise in man during sleep, either in an irregular and incoherent manner, as in most dreams, or in a consequent and regular manner, sometimes more so than in the waking state.

The turn which the ideas assume during sleep, or the nature of dreams, depends much on the state of the organs. If the stomach is overcharged with indigested food, the respiration difficult on account of position, or other causes, dreams are painful, fatiguing; if hunger is felt, the person dreams of eating agreeable food; if it is the venereal appetite, the dreams are erotic, &c. The character of dreams is no less influenced by habitual occupations of the mind: the ambitious dreams of success or disappointments, the poet makes verses, the lover sees his mistress, &c. It is because the judgment is sometimes correctly exercised in dreams, with regard to future events, that in times of ignorance the gift of divination was attributed to them.

Nothing is more curious in the study of sleep than the history of *sleep-walkers.*

Those individuals being first profoundly asleep, rise all at once, dress themselves, see, hear, speak, employ their hands with ease, perform certain exercises, write, compose, then go to bed, and preserve, when they awake, no recollection of what happened to them. What difference is there, then, between a sleep-walker of this kind and a man awake? It must be acknowledged that the ingenuity of physiologists has hitherto been exercised in vain on the solution of this question.

Many hypotheses have been offered on the proximate cause of sleep, as the depression of the laminæ of the cerebrum, the afflux of blood to the brain, &c. Sleep, which is the immediate effect of the laws of organisation, cannot depend on any physical cause of this kind. Its regular return is one of the circumstances that contributes the most to the preservation of health: its suppression, even for a short time, is often attended with serious inconvenience; and in no case can it be carried beyond certain limits.

The ordinary duration of sleep is variable; generally, it is from six to eight hours. Fatigue of the muscular system, strong exertions of the mind, lively and multiplied sensations, prolong it, as well as habits of idleness, the immoderate use of wine, and of too strong aliments. Infancy and youth, whose life of relation is very active, have need of longer repose. Riper age, more frugal of time, and tortured with cares, devote to it but a small portion. Very old people present two opposite modifications: either they are almost always slumbering, or their sleep is very light; but the reason of this latter is not to be found in the foresight they have of their approaching end.

By uninterrupted peaceable sleep, restrained within proper limits, the powers are restored, and the organs recover the facility of action; but if sleep is troubled by disagreeable dreams, and painful impressions, or even prolonged beyond measure, very far from repairing, it exhausts the strength, fatigues the organs, and sometimes becomes the occasion of serious diseases, as idiotism and madness.

Sleeplessness. See *Agrypnia.*

Sloe. See *Prunus sylvestris.*

Smallage. See *Apium graveolens.*

Small-pox. See *Variola.*

Smalt. See *Zaffre.*

SMARA'GDINUS. Smaragdine: of an emerald colour. Applied generally, in *Natural History,* to designate a pure green colour.

SMELL. *Olfactus.* There escapes from

almost every body in nature certain particles of an extreme tenuity, which are carried by the air often to a great distance. These particles constitute odours. There is one sense destined to perceive and appreciate them. Thus an important relation between animals and surrounding bodies is established.

All bodies of which the atoms are fixed are called inodorous.

The difference of bodies is very great, relative to the manner in which odours are developed. Some permit them to escape only when they are heated; others only when rubbed. Some, again, produce very weak odours, whilst others produce only those which are highly powerful. Such is the extreme tenuity of odoriferous particles, that a body may produce them for a very long time without losing weight in any sensible degree.

Every odoriferous body has an odour peculiar to itself.

As these bodies are very numerous, there have been attempts made to class them, which, however, have all failed.

Odours can be distinguished only into weak and strong, agreeable and disagreeable. We can recognise odours which are musky, aromatic, fœtid, rancid, spermatic, pungent, muriatic, &c. Some are fugitive, others tenacious. In most cases an odour cannot be distinguished but by comparing it with some known body. There have been attributed to odours properties which are nourishing, medical, and even venomous; but, in the cases which have given rise to these opinions, might not the influence of odours have been confounded with the effects of absorption? A man who pounds jalap for some time will be purged in the same manner as if he had actually swallowed part of it. This ought not to be attributed to the effects of odours, but rather to the particles which, being spread around, float in the air, and are introduced either with the saliva or with the breath. We ought to attribute to the same cause the drunkenness of persons who are exposed for some time to the vapours of spirituous liquors. The air is the only vehicle of odours: it transports them to a distance: they are also produced, however, *in vacuo*, and there are bodies which project odoriferous particles with a certain force. This matter has not yet been carefully studied: it is not known if, in the propagation of odours, there be any thing analogous to the divergence, the convergence, to the reflection, or the refraction of the rays of light. Odours mix or combine with many liquids, as well as solids. This is the means employed to fix or preserve them. Liquids, gases, vapours, as well as many solid bodies reduced to powder, possess the property of acting on the organs of smell.

Apparatus for smelling. — The olfactory apparatus ought to be represented as a sort of sieve, placed in the passage of the air, as it is introduced into the chest, and intended to stop every foreign body that may be mixed with the air, particularly the odours.

This apparatus is extremely simple: it differs essentially from that of the sight and the hearing, since it presents no part anterior to the nerve destined for the physical modification of the external impulse: the nerve is to a certain degree exposed. The apparatus is composed of the pituitary membrane, which covers the nasal cavities of the membrane which covers the *sinuses*, and of the olfactory nerve.

The pituitary membrane covers the whole extent of the nostrils, increases the thickness of the spongy bones very much, is continued beyond their edges and their extremities, so that the air cannot traverse the nostrils but in a long narrow direction. This membrane is thick, and adheres strongly to the bones and cartilages that it covers. Its surface presents an infinity of small projections, which have been considered by some as nervous *papillæ*, by others as mucous follicles, but which, according to all appearance, are vascular.

These small projections give to the membrane an appearance of velvet. The pituitary is agreeable and soft to the touch, and it receives a great number of vessels and nerves. The passages through which the air proceeds to arrive at the *fauces* deserve attention.

These are three in number. They are distinguished in anatomy by the names of inferior, middle, and superior passages. The inferior is the broadest and the longest, the least oblique and least crooked; the middle one is the narrowest, almost as long, but of greater extent from top to bottom. The superior is much shorter, more oblique, and narrower. It is necessary to add to these the interval, which is very narrow, and which separates the partition of the external side of the nostrils in its whole extent. These canals are so narrow, that the least swelling of the pituitary renders the passage of the air in the nostrils difficult, and sometimes impossible.

The two superior passages communicate with certain cavities, of dimensions more or less considerable, which are hollowed out of the bones of the head, and are called *sinuses*. These *sinuses* are the *maxillary*, the *palatine*, the *sphenoidal*, the *frontal*, and those which are hollowed out of the *ethmoid bone*, better known by the name of the ethmoidal cells.

The *sinuses* communicate only with the two superior *meatus*, or passages.

The *frontal*, the *maxillary sinus*, the anterior cells of the *ethmoid bone*, open into the middle *meatus*; the *sphenoidal*, the *palatine sinus*, the posterior cells of the *ethmoid*, open into the superior *meatus*. The *sinuses* are covered by other soft membranes, very little adherent to the sides, and which appear to be of the mucous kind. It secretes more or less abundantly a matter called *nasal mucus*, which is continually spread over the pituitary, and seems very useful in smelling. A more considerable extent of the *sinus* appears to coincide with a greater perfection of the smell. This is, at least, one of the most positive results of comparative physiology.

The olfactory nerve springs, by three distinct roots, from the posterior, inferior, and internal parts of the anterior lobe of the brain. Prismatic at first, it proceeds towards the per-

forated plate of the *ethmoid bone*. It swells all at once, and then divides itself into a great number of small threads, which spread themselves upon the *pituitary* membrane, principally on the superior part of it.

It is important to remark, that the filaments of the olfactory nerves have never been traced upon the inferior *spongy bones*, upon the internal surface of the middle *meatus*, nor in any of the *sinuses*. The *pituitary* membrane receives not only the nerves of the first pair, but also a great number of threads, which spring from the internal aspect of the *spheno-palatine ganglion*. These threads are distributed in the *meatus*, and in the inferior part of the membrane. It covers, also, for a considerable length, the ethmoidal thread of the nasal nerve, and receives from it a considerable number of filaments. The membrane which covers the sinus receives also a number of nervous ramifications.

The *nasal fossæ* communicate outwardly by means of the nostrils, the form and size of which are very variable. The nostrils are covered with hair on the inside, and are capable of being increased in size by muscular action. The nasal fossæ open into the *pharynx* by the posterior nostrils.

Mechanism of Smelling. — Smell is exerted essentially at the moment when the air traverses the nasal fossæ in proceeding towards the lungs. We very rarely perceive any odour when the air proceeds from the lungs; it happens sometimes, however, particularly in organic diseases of the lungs.

The mechanism of smell is extremely simple. It is only necessary that the odoriferous particles should be stopped upon the pituitary membrane, particularly in the places where it receives the threads of the olfactory nerves.

As it is exactly in the superior part of the nasal fossæ, where the extremes are so narrow, that they are covered with mucus, it is also natural that the particles should stop there.

We may conceive the utility of mucus. Its physical properties are such, that it appears to have a much greater affinity with the odoriferous particles than with air: it is also extremely important to the olfactory sense, that the *nasal mucus* should always preserve the same physical properties. Whenever they are changed, as it is observed in different degrees of *coryza*, the smell is either not exerted at all, or in a a very imperfect manner.

After what has been said of the distribution of the olfactory nerves, it is evident that the odours that reach the upper part of the nasal cavities will be perceived with greater facility and acuteness: for this reason, when we wish to feel more acutely, and with greater exactness, the odour of any body, we modify the air in such a manner that it may be directed towards this point. For the same reason, those who take snuff endeavour also to make it reach the upper part of the nasal fossæ. The internal face of the *ossa spongiosa* appears well disposed to stop the odours at the instant the air passes. And, as there is an extreme sensibility in this point, we are inclined to believe that here the smell is exerted, though the filaments of the first pair have not been traced so far.

Physiologists have not yet determnied the use of the external nose in smelling: it appears intended to direct the air charged with odours towards the superior part of the *nasal cavities*.

Those persons who have their noses deformed, particularly if broken, — those who have small nostrils directed forward, have in general almost no smell. The loss of the nose, either by sickness or accident, causes almost entirely the loss of smell. Such people recover the benefit of this sense by the use of an artificial nose.

The only use of the sinuses which is generally admitted, is that of furnishing the greater part of the nasal mucus. The other uses which are attributed to them are, to serve as a depôt to the air charged with odoriferous particles, to augment the extent of the surface which is sensible to odours, and to receive a portion of the air that we inspire for the purpose of putting the power of smell in action, &c. These are far from being certain.

Vapours and gases appear to act in the same manner upon the pituitary membrane as odours. The mechanism of it ought, however, to be a little different. Bodies reduced to a coarse powder have a very strong action on this membrane; even their first contact is painful; but habit changes the pain into pleasure, as is seen in the case of taking snuff. In medicine, this property of the pituitary membrane is employed for the purpose of exciting a sharp instantaneous pain.

In the history of smell, the use of those hairs with which the nostrils and the nasal fossæ are provided, must not be forgotten. Perhaps they are intended to prevent the entrance of foreign bodies along with the air into the nasal fossæ. In this case, they would bear a strong analogy to the eyelashes, and the hairs with which the ear is provided.

It is generally agreed that the olfactory nerve is especially employed in transmitting to the brain the impressions produced by odoriferous bodies; but there is nothing to prove that the other nerves, which are placed upon the pituitary membrane, as well as those near it, may not concur in the same function. — *Magendie's Physiology.*

Smellome's eye salve. This consists of half a drachm of verdigris, finely powdered, and rubbed with oil, and then mixed with an ounce of yellow basilicon.

Smelt. See *Salmo eperlanus.*

Smi'lacine. An alkaline principle detected by Folchi in the root of the *smilax sarsaparilla.*

SMI'LAX. (*ax, acis.* f.; from σμιλευω, to cut: so called from the roughness of its leaves and stalk.) The name of a genus of plants in the Linnæan system. Class, *Diœcia;* Order, *Octandria.* Rough bind-weed.

Smilax China. The systematic name of the China root tree. *China. China orientalis. Sankira. Guaquara. Smilax aspera Chinensis.* China root. It was formerly in esteem, as sarsaparilla now is, in the cure of the venereal disease, and cutaneous disorders.

Smilax, Chinese. See *Smilax china.*

Smilax sarsaparilla. The systematic name of the plant which affords the sarsaparilla. *Sarsaparilla. Smilax aspera Peruviana. Sarsa. Caririllandi. Iva pecanga. Macapatli. Zarza. Zarzaparilla. Salsaparilla. Zarcaparilla.* The root of this plant, *Smilax — caule aculeato angulato, foliis inermibus ovatis retuso mucronatis trinerviis,* of Linnæus, has a farinaceous, somewhat bitter taste, and no smell. Pallotta has found in the root of sarsaparilla an alkaline principle, which he has named parilline: the same substance has been named *smilacine* by Folchi, and *parillinic acid* by Bakta. Besides this substance, sarsaparilla root contains, according to the analysis of Thubeuf, colouring matter, resin, starch, lignin, fixed oil, wax, muriate of potash, and nitrate of potash. It is very doubtful whether the parilline is the active principle of the drug. About two centuries ago it was introduced into Spain, as an undoubted specific in syphilitic disorders; but, owing to difference of climate, or other causes, it has not answered the character which it had acquired in the Spanish West Indies. It is now considered as capable of improving the general habit of body, after it has been reduced by the continued use of mercury.

To refute the opinion that sarsaparilla possesses antisyphilitic virtues, Mr. Pearson, of the Lock Hospital, divides the subject into two distinct questions. 1. Is the sarsaparilla root, when given alone, to be safely relied on in the treatment of lues venerea? The late Mr. Bloomfield, his predecessor, and during some years his colleague, at the Lock Hospital, has given a very decided answer to this question: — "I solemnly declare," says he, "I never saw a single instance in my life where it cured that disorder without the assistance of mercury, either at the same time with it, or when it had been previously taken before the decoction was directed." Pearson's experience, during many years, coincides entirely with the observations of Bloomfield. He has employed the sarsaparilla, in powder, and in decoctions, in an almost infinite variety of cases, and feels himself fully authorised to assert, that this plant has not the power of curing any one form of the lues venerea. The sarsaparilla, indeed, like the guaiacum, is capable of alleviating symptoms derived from the venereal virus; and it sometimes manifests the power of suspending, for a time, the destructive ravages of that contagion: but where the poison has not been previously subdued by mercury, the symptoms will quickly return; and, in addition to them, we often see the most indubitable proofs that the disease is making an actual progress, during the regular administration of the vegetable remedy.

2. When the sarsaparilla root is given in conjunction with mercury, does it render the mercurial course more certain and efficacious? In replying to this query, it is necessary to observe that the phrase, "to increase the efficacy of mercury," may imply, that a smaller quantity of this mineral antidote will confer security on an infected person, when sarsaparilla is added to it; or it may mean, that mercury would be sometimes unequal to the cure, without the aid of sarsaparilla. If a decoction of this root did indeed possess so admirable a quality, that the quantity of mercury necessary to effect a cure might be safely reduced whenever it was given during a mercurial course, it would form a most valuable addition to our Materia Medica. This opinion has been, however, unfortunately falsified by the most ample experience; and whoever shall be so unwary as to act upon such a presumption, will be sure to find his own and his patient's expectations egregiously disappointed.

If the sarsaparilla root be a genuine antidote against the syphilitic virus, it ought to cure the disease when administered alone; but, if no direct proof can be adduced of its being equal to this, any arguments founded on histories where mercury has been previously given, or where both the medicines were administered at the same tine, must be ambiguous and undecisive.

It appears probable that Sir William Fordyce, and some other persons, entertained a notion, that there were certain venereal symptoms which commonly resisted the potency of mercury, and that the sarsaparilla was an appropriate remedy in these cases. This opinion, it is presumed, is not correct, for it militates against all Mr. P. has ever observed of the progress and treatment of the lues venerea. Indeed, those patients who have lately used a full course of mercury, often complain of nocturnal pains in their limbs; they are sometimes afflicted with painful enlargements of the elbow and knee joints; or they have membraneous nodes, cutaneous exulcerations, and certain other symptoms, resembling those which are the offspring of the venereal virus.

It may and does often happen, that appearances like these are mistaken for a true venereal affection, and, in consequence of this error, mercury is administered, which never fails to exasperate the disease. Now, if a strong decoction of sarsaparilla root be given to persons under these circumstances, it will seldom fail of producing the most beneficial effects: hence it has been contended, that symptoms derived from the contagion of lues venerea, which could not be cured by mercury, have finally yielded to this vegetable remedy. It must be acknowledged, that representations of this kind have a specious and imposing air; nevertheless, Mr. Pearson endeavours to prove, that they are neither exact nor conclusive. If any of the above-named symptoms should appear near the conclusion of a course of mercury, when that medicine was operating powerfully on the whole system, it would be a strange and inexplicable thing if they could possibly be derived immediately from the uncontrolled agency of the venereal virus.

This would imply something like a palpable contradiction, that the antidote should be operating with sufficient efficacy to cure the venereal symptoms, for which it was directed; while, at the same time, the venereal virus was proceeding to contaminate new parts, and to excite a new order of appearances.

One source, and a very common one, to which some of the mistakes committed upon

this subject may be traced, is a persuasion that every morbid alteration which arises in an infected person is actually tainted with the venereal virus, and ought to be ascribed to it as its true cause.

Every experienced surgeon must, however, be aware, that very little of truth and reality exists in a representation of this kind. The contagious matter and the mineral specific may jointly produce, in certain habits of body, a new series of symptoms, which, strictly speaking, are not venereal, which cannot be cured by mercury, and which are sometimes more to be dreaded than the simple and natural effects of the venereal virus.

Some of the most formidable of these appearances may be sometimes removed by sarsaparilla, the venereal virus still remaining in the system; and, when the force of that poison has been completely subdued by mercury, the same vegetable is also capable of freeing the patient from what may be called the sequelæ of a mercurial course. For a different view of this subject, see the *Supplement*.

The root of the sarsaparilla is sometimes employed in rheumatic affections, scrofula, and cutaneous complaints, where an acrimony of the fluids prevails.

SME'GMA. (*a, atis.* n. σμηγμα, from σμεω, to cleanse.) 1. Any thing used to cleanse the skin; as soap.

2. The matter secreted by the sebaceous follicles of the skin.

Smilacine. See the *Supplement*.

SMI'LE. Σμιλη. A curved bistoury sharp on both edges.

SMY'RNA. Σμυρνα. Myrrh.

Smyrnion hortense. See *Imperatoria ostruthium*.

SMY'RNIUM. (*um, ii.* n.; so called from σμυρνα, myrrh, the smell of the seed resembling that of myrrh very much.) The name of a genus of plants. Class, *Pentandria*; Order, *Digynia*.

SMYRNIUM OLUSA'TRUM. The plant called Alexanders; also denominated, *Hipposelinum, Macerona, Macedonisium, Herba Alexandrina, Gridum*, and *Agrioselinum*. This plant was formerly cultivated in our gardens, for culinary use, but is now superseded by celery. The seeds are bitter and aromatic, and the roots are more powerfully bitter. They stand recommended as resolvents, diuretics, and emmenagogues, though seldom ordered in medical prescriptions.

SMYRNIUM ROTUNDIFOLIUM. The blanched leaves of this species are said to be more agreeable than those of the olusatrum.

Snail. See *Helix*, in the *Supplement*.

Snail-seeded glasswort. See *Salsola kali*.

Snake, rattle. See *Crotalus*.

Snake-killing birthwort. See *Aristolochia anguicida*.

Snakeroot. See *Aristolochia serpentaria*, and *Polygala senega*.

Snakeweed. See *Polygonum bistorta*.

Snakewood. See *Colubrinum lignum*.

Snap-dragon. See *Antirrhinum*.

SNEEZEWORT. (So called, because the dried flowers and roots, when powdered, cause sneezing when applied to the nose.) See *Achillea ptarmica*.

SNEEZING. *Sternutatio.* A convulsive action of the muscles of the chest, arising commonly from irritation of the nostrils. It very seldom requires medical assistance. It sometimes, however, is otherwise; and cases are recorded in foreign, and particularly German works, of its having been sometimes both permanent and violent: sometimes periodical and fatal. The *Ephemerides Naturæ Curiosorum* contain one instance in which the sneezings continued for three hundred times in a single paroxysm. The most common cause of sneezing is irritation of the Schneiderian membrane from snuff, or some sharp or acrimonious gas, or some secretion from the membrane itself, as the mucus of catarrh, measles, &c. But the severest cases are usually produced by sympathy with some remote part; as the lungs, and stomach.

Sneezing, produced in the ordinary way, though convulsive, is a natural and healthy action, intended to throw off instinctively, from the delicate membrane of the nostrils, whatever irritable or offensive material may chance to be lodged there. When sneezing is frequently repeated, the nostrils should be syringed with warm water; and, if this be insufficient, a thin mucilage of acacia gum may be passed up with a pencil brush, or pellets of lint: solutions of opium are also proper; the smelling at opium and camphire, &c.

Snipe. See *Scolopax gallinago*.

Snoring. See *Stertor*.

Soap. See *Sapo*.

Soap-berry. See *Saponaria officinalis*.

Soap-wort. See *Saponaria*.

SO'DA. (*a, æ.* f.; an Arabic word.) The name now universally given to the mineral alkali.

This alkali is obtained from several sources, but principally from plants growing on the sea-coast. It occurs in the mineral kingdom, united with sulphuric, muriatic, and boracic acids; it is also found in large quantities in Egypt, combined with carbonic acid. It appears to be deposited in large impure masses, under the surface of the earth, in various countries, from which it is extracted by running waters. Thus it is found, after the spontaneous evaporation of the water, mixed with sand in the bottom of lakes in Hungary; in the neighbourhood of Bilin in Bohemia; and in Switzerland. It occurs also in China, and near Tripoli; in Syria, Egypt, Persia, and India. It frequently oozes out of walls, and crystallises on their surface. Like potash, it is procured by lixiviation from the ashes of burnt plants, but only from those which grow upon the sea-shores. The variety of plants employed for this purpose is very considerable. In Spain, soda is procured from different species of the *Salsola* and *Salicornia*, and the *Batis maritima*. The *Zostera maritima* is burnt in some places on the borders of the Baltic. In this country we burn the various species of *Fuci*, and their alkali is called *kelp*; and in France they burn the *Chenopodium maritimum*. See *Soda impura*.

The alkali thus procured is more or less pure

according to the nature of the particular plant from which it is obtained. The greatest part, however, is a subcarbonate of soda.

To procure pure soda, we must boil a solution of the pure carbonate with half its weight of quicklime, and after subsidence decant the clear ley, and evaporate in a clean iron or silver vessel, till the liquid flows quietly like oil. It must then be poured out on a polished iron plate. It concretes into a hard white cake, which is to be immediately broken in pieces, and put up, while still hot, in a phial, which must be well corked. If the carbonate of soda be somewhat impure, then, after the action of lime, and subsequent concentration of the ley, alkohol must be digested on it, which will dissolve only the caustic pure soda, and leave the heterogeneous salts. By distilling the alkohol in a silver alembic, the alkali may be obtained pure.

This white solid substance is, however, not absolute soda, but a hydrate, consisting of about 100 soda + 28 water; or of nearly 77 + 23, in 100. If a piece of this soda be exposed to the air, it softens and becomes pasty; but it never deliquesces into an oily-looking liquid, as potash does. The soda, in fact, soon becomes drier, because, by absorption of carbonic acid from the air, it passes into an efflorescent carbonate. Soda is distinguishable from potash by sulphuric acid, which forms a very soluble salt with the former, and a sparingly soluble one with the latter; by muriate of platina and tartaric acid, which occasion precipitates with potash salts, but not with those of soda.

The basis of soda is a peculiar metal, called *sodium*, discovered by Sir H. Davy in 1807, a few days after he discovered potassium, which may be procured in exactly the same manner as potassium, by electrical or chemical decomposition of the pure hydrate. A rather higher degree of heat, and greater voltaic power, are required to decompose soda than potash. Sodium resembles potassium in many of its characters. It is as white as silver, possesses great lustre, and is a good conductor of electricity. It enters into fusion at about 200° Fahr., and rises in vapour at a strong red heat. Its specific gravity is, according to Gay Lussac and Thénard, 0·972, at the temperature of 59° F. In the cold, it exercises scarcely any action on dry air, or oxygen. But when heated strongly in oxygen or chlorine, it burns with great brilliancy. When thrown upon water, it effervesces violently, but does not inflame; swims on the surface, gradually diminishes with great agitation, and renders the water a solution of soda. It acts upon most substances in a manner similar to potassium, but with less energy. It tarnishes in the air, but more slowly; and, like potassium, it is best preserved under naphtha.

Sodium forms two distinct combinations with oxygen: one is pure soda, the hydrate of which is above described; the other is the orange oxide of sodium, observed, like the preceding oxide, first by Sir Humphrey Davy in 1807, but of which the true nature was pointed out, in 1810, by Gay Lussac and Thénard.

Pure soda may be formed by burning sodium in a quantity of air, containing no more oxygen than is sufficient for its conversion into this alkali; *i. e.* the metal must be in excess: a strong degree of heat must be employed.

Pure soda, or hydrate of sodium, is of a grey colour; it is a non-conductor of electricity, of a vitreous fracture, and requires a strong red heat for its fusion. When a little water is added to it, there is a violent action between the two bodies; the soda becomes white, crystalline in its appearance, and much more fusible and volatile. It is then the substance commonly called *pure* or *caustic soda*.

The other oxide or peroxide of sodium may be formed by burning sodium in oxygen, in excess. It is of a deep orange colour, very fusible, and a non-conductor of electricity. When acted on by water, it gives off oxygen, and the water becomes a solution of soda. It deflagrates when strongly heated with combustible bodies.

The proportions of oxygen in the hydrate of sodium, and in the orange peroxide of sodium, are easily learned by the action of sodium on water and on oxygen. If a given weight of sodium, in a little glass tube, be thrown by means of the finger under a graduated inverted jar filled with water, the quantity of hydrogen evolved will indicate the quantity of oxygen combined with the metal to form soda; and when sodium is slowly burned in a tray of platina (lined with dry common salt), in oxygen in great excess, from the quantity of oxygen absorbed the composition of the peroxide may be learned. From Sir H. Davy's experiments, compared with those of Gay Lussac and Thénard, it appears that the prime equivalent of sodium is 3·0, and that of dry soda, or protoxide of sodium, 4·0; while the orange oxide or deutoxide is 5·0. The numbers given by Thénard, are for the first, 100 metal + 33·995 oxygen; and for the second, 100 metal + 67·990 oxygen.

Another oxide is described containing less oxygen; it is therefore a suboxide. When sodium is kept for some time in a small quantity of moist air, or when sodium in excess is heated with hydrate of soda, a dark greyish substance is formed, more inflammable than sodium, and which affords hydrogen by its action upon water.

Only one combination of sodium and chlorine is known. This is the important substance, *common salt*. It may be formed directly by combustion, or by decomposing any compound of chlorine by sodium. Sodium has a much stronger attraction for chlorine than for oxygen: and soda, or its hydrate, is decomposed by chlorine, oxygen being expelled from the first, and oxygen and water from the second.

Potassium has a stronger attraction for chlorine than sodium has; and one mode of procuring sodium easily, is by heating together to redness common salt and potassium. There is no known action between sodium and *hydrogen* or *azote*.

Sodium combines readily with *sulphur*, and with *phosphorus*, presenting similar phenomena to those presented by potassium. The sulphurets and phosphurets of sodium agree in their general properties with those of potassium, except that

they are are rather less inflammable. They form, by burning, acidulous compounds of sulphuric and phosphoric acid and soda.

Potassium and sodium combine with great facility, and form peculiar compounds, which differ in their properties, according to the proportions of the constituents. By a small quantity of sodium, potassium is rendered fluid at common temperatures, and its specific gravity is considerably diminished. Eight parts of potassium, and one of sodium, form a compound that swims in naphtha, and that is fluid at the common temperature of the air. Three parts of sodium, and one of potassium, make a compound fluid at common temperatures. A little potassium destroys the ductility of sodium, and renders it very brittle and soft. Since the prime of potassium is to that of sodium as 5 to 3, it will require the former quantity of potassium to eliminate the latter quantity of sodium from the chloride. The attractions of potassium for all substances that have been examined are stronger than those of sodium.

Soda is the basis of common salt, of plate and crown glass, and of all hard soaps.

The compounds of soda used in medicine are the following: —

1. Sodæ acetas
2. —— *biboras.*
3. —— carbonas.
4. —— carbonas exsiccata.
5. —— sesqui carbonas.
6. —— murias.
7. Sodæ phosphas.
8. —— sulphas.
9. —— tartras.
10. —— potassio-tartras.
11. Sapo durus.

Soda, acetate of. See *Sodæ acetas.*

Soda, borate of. See *Sodæ biboras.*

Soda boracicata. Borax.

Soda, carbonate of. See *Sodæ carbonas.*

Soda Hispanica. See *Soda impura.*

Soda Hispanica purificata. See *Sodæ carbonas.*

Soda, hyperoxymuriate of. See *Sodæ chloras.*

Soda impura. Impure soda. *Soda. Barilla. Bariglia. Barillor. Anatron. Natron. Anaton. Nitrum antiquorum. Aphronitrum. Baurach. Sal alkalinus fixus fossilis. Carbonas sodæ impurus. Subcarbonas sodæ impura.* Barilla is the term given, in commerce, to the impure mineral alkali, or imperfect carbonate of soda, imported from Spain and the Levant. It is made by burning to ashes different plants that grow on the sea-shore, chiefly of the genus *Salsola.* Many have referred it to the *Salsola kali,* of Linnæus; but various other plants, on being burned, are found to afford this alkali, and some in a greater proportion than this: these are,

1. The *Salsola sativa. Salsola sonda,* of Lofling. *Kali hispanicum supinum annuum sedi foliis brevibus. Kali d'Alicante.* This grows abundantly on that part of the Spanish coast which is washed by the Mediterranean Sea. This plant is deservedly first enumerated by Professor Murray, as it supplies all the best soda consumed in Europe, which by us is called Spanish or Alicant soda, and by the Spanish merchants Barilla de Alicante.

2. *Salsola soda. Kali majus cochleato semine. Le Salicor.* This species, which grows on the French Mediterranean coast, is much used in Languedoc for the preparation of this salt, which is usually exported to Sicily and Italy.

3. *Salsola tragus* affords an ordinary kind of soda, with which the French frequently mix that made in Languedoc. This adulteration is also practised by the Sicilians, who distinguish the plant by the term salvaggia.

4. *Salicornia herbacea* is common in salt marshes, and on the sea-shore all over Europe. Linnæus prefers the soda obtained from this plant to that of all the others; but, though the quantity of alkali which it yields is very considerable, it is mixed with much common salt.

5. *Salicornia Arabica,* and also the *Mesembryanthemum nodiflorum,* and *Plantago squarrosa.* All these, according to Alpinus, afford this alkali. It has also been procured from several of the fuci, especially *F. vesiculosus,* and distinguished here by the name of kelp. Various other marine plants might also be noticed as yielding an impure soda by combustion; but the principal are confined to the genus salsola, and that of salicornia. The salsola kali, on the authority of Rawolf, is the species from which the salt is usually obtained in eastern countries, which is brought to us in hard porous masses, of a speckled brown colour. Kelp, a still more impure alkali, made in this country by burning various sea-weeds, is sometimes called British barilla. The marine plants collected for the purpose of procuring barilla in this country, are the *Salsola kali, Salicornia europæa, Zostera maritima, Triglochen maritimum, Chenopodium maritimum, Atriplex portulacoides et littoralis, Plantago maritima, Tamarix Gallica, Eryngium maritimum, Sedum telephium, Dipsacus fullonum,* &c. &c.

It is to be regretted that the different kinds of soda which are brought to European markets have not been sufficiently analysed to enable us to ascertain with tolerable certainty the respective value of each; and, indeed, while the practice of adulterating this salt continues, any attempts of this kind are likely to prove fruitless. The best information on this subject is to be had from Jessica, Mascorelle, Cadet, Bolare, and Sestini. In those places where the preparation of soda forms a considerable branch of commerce, as on the coast of the Mediterranean, seeds of the salsola are regularly sown in a proper situation near the sea, which usually shoot above ground in the course of a fortnight. About the time the seeds become ripe, the plants are pulled up by the roots, and exposed in a suitable place to dry, where their seeds are collected; this being done, the plants are tied up in bundles, and burnt in an oven constructed for the purpose, where the ashes are then, while hot, continually stirred with long poles. The saline matter, on becoming cold, forms a hard solid mass, which is broken in pieces of a convenient size for exportation.

According to chemical analysis, the impure sodas of commerce generally contain a portion of vegetable alkali, and neutral salts, as muriate of soda, and sulphate of potash, and not unfrequently some portion of iron is contained in the mass; they are, therefore, to be considered as more or less a compound, and their goodness to be estimated accordingly. The Spanish soda, of the best sort, is in dark-coloured masses,

of a bluish tinge, very ponderous, sonorous, dry to the touch, and externally abounding with small cavities, without any offensive smell, and very salt to the taste; if long exposed to the air it undergoes a degree of spontaneous calcination. The best French soda is also dry, sonorous, brittle, and of a deep blue colour, approaching to black. The soda which is mixed with small stones, which gives out a fœtid smell on solution, and is white, soft, and deliquescent, is of the worst kind.

Soda powders. These are sold as an extemporaneous substitute for soda water, the purposes of which, however, they do not at all answer; since, when dissolved, they form a tartrate, not a carbonate of soda. They are put up in blue and white papers, the former containing half a drachm of carbonate of soda, and the latter twenty-five grains of tartaric acid. These are to be severally dissolved in water, and the solutions mixed and drunk while effervescing. They form a refreshing saline draught.

Soda water. This refreshing drink is formed by dissolving carbonate of soda in water, and super-saturating it with carbonic acid, under pressure. It affords a salutary stimulus to the stomach, and is useful in cases of debility of that organ, accompanied with acidity.

Soda, impure. See *Soda impura.*

Soda muriata. See *Sodæ murias.*

Soda, muriate of. See *Sodæ murias.*

Soda muriatica. See *Sodæ murias.*

Soda, phosphate of. See *Sodæ phosphas.*

Soda phosphorata. See *Sodæ phosphas.*

Soda, Spanish. See *Soda impura.*

Soda, subcarbonate of. See *Sodæ carbonas.*

Soda, subcarbonate of, dried. See *Sodæ carbonas exsiccata.*

Soda, sulphate of. See *Sodæ sulphas.*

Soda tartarizata. See *Sodæ potassio-tartras.*

Soda, tartarised. See *Sodæ potassio-tartras.*

Soda, tartrate of. See *Sodæ potassio-tartras.*

Sodæ acetas. Acetate of soda. A salt formed of a combination of acetic acid with the soda. Its virtues are similar to those of the acetate of potash.

Sodæ biboras. *Sodæ boras.* Biborate of soda. Borate of soda. Borax. The obsolete synonyms are *Chrysocolla, Capistrum auri, Ancinar, Borax-trion, Acestis anucar, Antincar, Tincal, Amphitane, Baurach, Nitrum factitium, Santerna, Nitrum nativum, Boras sodæ,* and *Subboras sodæ.*

It does not appear that borax was known to the ancients, their chrysocolla being a very different substance, composed of the rust of copper, triturated with urine. The word borax occurs for the first time in the works of Geber.

Borax is found in the East, and likewise in South America.

It is a biborate of soda. It was long purified, and the market supplied by the Venetians and Hollanders, who for a long time kept their processes a secret. Chaptal found, after trying all the processes in the large way, that the simplest method consists in boiling the borax strongly, and for a long time, with water. This solution being filtered, affords by evaporation crystals, which are somewhat foul, but may be purified by repeating the operation.

Purified borax, or biborate of soda, is white, transparent, rather greasy in its fracture, affecting the form of six-sided prisms, terminating in three-sided or six-sided pyramids. Its taste is styptic; it converts syrup of violets to a green; and when exposed to heat, it swells up, boils, loses its water of crystallisation, and becomes converted into a porous, white, opaque mass, commonly called calcined borax. A stronger heat brings it into a state of quiet fusion; but the glassy substance thus afforded, which is transparent, and of a greenish yellow colour, is soluble in water, and effloresces in the air. It requires about eighteen times its weight of water to dissolve it at the temperature of sixty degrees of Fahrenheit; but water at the boiling heat dissolves three times this quantity.

The biborate of soda is rarely used internally in modern practice; and, according to Murray, it does not appear to possess any activity, although it is supposed by some to be in doses of half a drachm or two scruples, diuretic and emmenagogue. It is occasionally given in cardialgia as an antacid. Its solution is in common use as a cooling gargle, in cases of apthæ. It may be used in the proportion of ʒj. to ʒij. to a pint of water. The officinal honey of borax is used in the same cases. See *Mel boracis.*

It is from this salt that the acid of borax is obtained. See *Boracic acid.*

Sodæ bicarbonas. A bicarbonate of soda may be formed by passing a stream of carbonic acid gas through a strong solution of the carbonate of soda. It is ordered in the Dublin Pharmacopœia. In its medicinal qualities it agrees with the sesqui-carbonate. It is made on a large scale in manufactories for the market. It may be prepared by saturating the solution of the preceding salt with carbonic acid gas, and then evaporating with a very gentle heat to dryness, when a white irregular saline mass is obtained. The London Pharmacopœia contains a formula for its preparation. Its constituents are 4 soda, + 5·50 carb. acid, + 1·125 water, = 10·625; or in 100 parts, 37·4 soda, + 52 acid, + 10·6 water.

Sodæ boras. See *Sodæ biboras.*

Sodæ carbonas. Carbonate of soda. Take of impure carbonate of soda, two pounds; distilled water, four pints. Boil the carbonate in the water, and strain the solution while still hot. Lastly, set it aside that crystals may form. This salt is in common use as an antacid in the dose of from grs. x. to ʒss.; combined with the resinous purgatives, it renders their action milder.

Sodæ carbonas exsiccata. Take of carbonate of soda, a pound. Expose it to a proper degree of heat in a vessel until it is dry. Then heat it to redness, and, lastly, rub it to powder. By the above process the carbonate of soda is deprived of its water of crystallisation, and, consequently, of its disposition to effloresce. Hence it can be given in the pill, which the hydrated carbonate cannot.

Sodæ chloras. See the *Supplement.*

Sodæ chlorinatæ liquor. Solution of chlorinated soda. Take of carbonate of soda, a pound; distilled water, forty-eight fluid ounces; chloride of sodium, four ounces; binoxide of manganese, three ounces; sulphuric acid, four ounces. Dissolve the carbonate of soda in two pints of water; then put the chloride of sodium and binoxide of manganese, rubbed to a powder, into a retort; and add to them the sulphuric acid, previously mixed with three fluid ounces of water, and cooled. Heat the mixture, and pass the chlorine first through five fluid ounces of water, and afterwards into the solution of carbonate of soda above directed.

The extrication of chlorine by the action of sulphuric acid upon a mixture of chloride of sodium and binoxide of manganese, has been already explained. In this case it is passed through a small quantity of water, which will combine with any hydrochloric acid that might otherwise pass into the solution of carbonate of soda.

The precise nature of this solution, usually called *Labarraque's soda disinfecting liquid,* has not been determined. When the quantity of chlorine gas liberated from the ingredients here directed is not exceeded, no carbonic acid is expelled from the carbonate of soda, and the compound form may be made to crystallise, and consists of chlorine and carbonate of soda; these crystals when re-dissolved re-produce the disinfecting liquid.

This solution is of a pale yellow colour; its taste is sharp, saline, and astringent; it first reddens and then bleaches turmeric paper. When exposed to the air it gradually evolves chlorine, and crystals of carbonate of soda are formed; its disinfecting property depends upon this gradual escape of the chlorine. — *Phillips.*

Sodæ hydriodas. See *Sodii iodidum.*

Sodæ liquor effervescens. Soda water is directed under this name in the last London Pharmacopœia. See *Soda water.*

Sodæ murias. See *Sodii chloridum.*

Sodæ phosphas. Phosphate of soda. Phosphorated soda. *Alkali minerale phosphoratum,* of Bergman. *Sal perlatum. Sal mirabile perlatum.* A compound of phosphoric acid and soda, obtained by saturating with carbonate of soda, the impure phosphoric acid separated from calcined bones by sulphuric acid, and then filtering the liquor, evaporating, and crystallising. The phosphate of soda is cathartic, and having little taste, has got the name of tasteless purging salt. The dose is from ℥ ss. to ℥ j.

Sodæ potassio-tartras. *Soda tartarizata.* Potassio-tartrate of soda. Tartarised soda; formerly known by the names of *sal rupellensis, sal polychrestum Seignetti,* and *natron tartarizatum.* Take of subcarbonate of soda, twenty ounces; supertartrate of potash, powdered, two pounds; boiling water, ten pints. Dissolve the subcarbonate of soda in the water, and add gradually the supertartrate of potash: filter the solution through paper, and evaporate it until a pellicle forms upon the surface; then set it by that crystals may form. Having poured away the water, dry these crystals upon bibulous paper. This salt consists of tartaric acid, soda, and potash, the soda only combining with the superabundant acid of the super salt: it is, therefore, a triple salt, and it has been judged by the London College more convenient to express this difference by the adjective *tartarizata,* than to introduce the three words necessary to its description. It possesses mildly cathartic, diuretic, and deobstruent virtues, and is administered in doses from one drachm to an ounce, as a cathartic, and in the dose of twenty to thirty grains in abdominal physconia, and torpidity of the kidneys.

Sodæ sesquicarbonas. *Sodæ carbonas.* Sesquicarbonate of soda. Take of carbonate of soda, seven pounds; distilled water, a gallon. Dissolve the carbonate of soda in the water, and strain; then pass carbonic acid into the solution to saturation, that the salt may subside. Dry this with a gentle heat, wrapped and pressed in cloth. The result of this process is a hydrated sesquicarbonate of soda, consisting, according to Mr. Phillips, of one equivalent and a half of carbonic acid, one of soda, and two of water. This salt is much less soluble in water than the carbonate, its taste is less alkaline and nauseous, and it does not cause a precipitate from a solution of sulphate of magnesia. When exposed to a strong heat, it loses carbonic acid and water, and becomes a dry carbonate. Its general medicinal qualities are the same as those of the carbonate.

Sodæ subboras. See *Sodæ biboras.*

Sodæ subcarbonas. See *Sodæ carbonas.*

Sodæ subcarbonas exsiccata. See *Sodæ carbonas exsiccata.*

Sodæ sulphas. Sulphate of soda. *Natron vitriolatum. Sal catharticus Glauberi.* Glauber's salt. Take of the salt which remains after the distillation of hydrochloric acid, two pounds; boiling water, two pints. Dissolve the salt in the water; then add gradually as much carbonate of soda as may be required to saturate the acid: boil the solution away until a pellicle forms upon the surface; and, after having strained it, set it by, that crystals may form. Having poured away the water, dry these crystals upon bibulous paper.

Scherer mentions another mode by Funcke, which is, making 8 parts of calcined sulphate of lime, 5 of clay, and 5 of common salt, into a paste with water; burning this in a kiln; and then powdering, lixiviating, and crystallising.

Sulphate of soda exists in large quantities under the surface of the earth in some countries, as Persia, Bohemia, and Switzerland; is found mixed with other substances in mineral springs and sea water; and sometimes effloresces on walls.

Sulphate of soda is bitter and saline to the taste. It is soluble in 2·85 parts of cold water, and 0·8 at a boiling heat. It crystallises in hexagonal prisms bevelled at the extremities, sometimes grooved longitudinally, and of very large size, when the quantity is great. These effloresce completely into a white powder if exposed to a dry air, or even if kept wrapped up in paper in a dry place; yet they retain sufficient water of crystallisation to undergo the aqueous fusion on exposure to heat, but, by

urging the fire, melt. Baryta and strontia take its acid from it entirely, and potash partially; the nitric and muriatic acids, though they have a weaker affinity for its base, combine with a part of it when digested on it. Heated with charcoal, its acid is decomposed; and it has been employed to furnish soda. Pajot des Charmes has made some experiments on it in fabricating glass: with sand alone it would not succeed; but equal parts of carbonate of lime, sand, and dried sulphate of soda, produced a clear, solid, pale yellow glass.

It is composed of 5 acid + 4 base + 11·25 water in crystals: when dry, the former two primes are its constituents.

It possesses cathartic and diuretic qualities, and is in high esteem as a mild cathartic. It is found in the mineral kingdom formed by nature, but that which is used medicinally is prepared by art. The dose is from one drachm to one ounce.

Sodii chloridum. Chloride of sodium. Muriate of soda. Common salt. This useful substance is very abundant in nature. It is found in large masses or rocks under the earth in this and other countries. In the solid form it is called *sal gemmæ* or *rock salt*. If it be pure and transparent, it may be immediately used in the state in which it is found; but if it contain any impure earthy particles, it should be previously freed from them. In some countries it is found in incredible quantities, and dug up like metals from the bowels of the earth. In this manner has this salt been dug out of the celebrated salt mines near Bochnia and Wieliczka, in Poland, ever since the middle of the 13th century, consequently, above these 500 years, in such amazing quantities, that sometimes there have been 20,000 tons ready for sale. In these mines, which are said to reach to the depth of several hundred fathoms, 500 men are constantly employed. The pure and transparent salt needs no other preparation than to be beaten to small pieces, or ground in a mill. But that which is more impure must be elutriated, purified, and boiled. That which is quite impure, and full of small stones, is sold under the name of rock salt, and is applied to ordinary uses. It may likewise be used for strengthening weak and poor brine-springs.

The waters of the ocean everywhere abound with common salt, though in different proportions. The water of the Baltic sea is said to contain one sixty-fourth of its weight of salt; that of the sea between England and Flanders contains one thirty-second part; that on the coast of Spain one sixteenth part; and between the tropics it is said, erroneously, to contain from an eleventh to an eighth part.

The water of the sea contains, besides the common salt, a considerable proportion of muriate of magnesia, and some sulphate of lime, of soda, and potash. The former is the chief ingredient of the remaining liquid which is left after the extraction of the common salt, and is called the mother water. Sea water, if taken up near the surface, contains also the putrid remains of animal substances, which render it nauseous, and in a long-continued calm cause the sea to stink.

The whole art of extracting salt from waters which contain it, consists in evaporating the water in the cheapest and most convenient manner. In England, a brine composed of sea water, with the addition of rock salt, is evaporated in large shallow iron boilers; and the crystals of salt are taken out in baskets. In Russia, and probably in other northern countries, the sea water is exposed to freeze; and the ice, which is almost entirely fresh, being taken out, the remaining brine is much stronger, and is evaporated by boiling. In the southern parts of Europe, the salt-makers take advantage of spontaneous evaporation. A flat piece of ground near the sea is chosen, and banked round, to prevent its being overflowed at high water. The space within the banks is divided by low walls into several compartments, which successively communicate with each other. At flood tide, the first of these is filled with sea water, which, by remaining a certain time, deposits its impurities, and loses part of its aqueous fluid. The residue is then suffered to run into the next compartment, and the former is again filled as before. From the second compartment, after a due time, the water is transferred into a third, which is lined with clay, well rammed and levelled. At this period, the evaporation is usually brought to that degree, that a crust of salt is formed on the surface of the water, which the workmen break, and it immediately falls to the bottom. They continue to do this until the quantity is sufficient to be raked out, and dried in heaps. This is called *bay salt*.

Besides its use in seasoning our food, and preserving meat both for domestic consumption and during the longest voyages, and in furnishing us with the muriatic acid and soda, salt forms a glaze for coarse pottery, by being thrown into the oven where it is baked; it improves the whiteness and clearness of glass; it gives greater hardness to soap; in melting metals it preserves their surface from calcination, by defending them from the air; and is employed with advantage in some assays; it is used as a mordant, and for improving certain colours, and enters more or less into many other processes of the arts.

Common salt was formerly regarded as a compound of muriatic acid and soda. It is now known to be a compound of chlorine and sodium. According to Dr. Ure's analysis, they are in the proportion 39·98 of sodium and 60·02 of chlorine, or one equivalent of each. Chloride of sodium, when dissolved in water, becomes hydrochlorate of soda. When sodium is heated in chlorine gas, it burns with a vivid flame; and chloride of sodium or common salt results. Muriate of soda possesses antiseptic, diuretic, cathartic, and resolvent qualities, and is frequently employed in form of clyster, fomentation, lotion, pediluvium, and bath, in obstipation, against worms, gangrene, scrofulous tumours, herpetic eruptions, arthritis, &c.

Sodii iodi'dum. Hydriodate of soda. This possesses nearly the same medicinal properties as the iodide of potassium, but is little employed.

SO'DIUM. (*um, ii.* n.) The metallic base of soda. See *Soda*.

SOL. (*Sol, solis.* m.) The sun. Gold was so called by the older chemists.

Sola'men. (*en, inis.* n. ; from *solor*, to comfort.) Consolation. Anise-seed has been named *solamen intestinorum*, from its carminative virtues.

SOLA'NEÆ. *Solanaceæ.* A natural family of plants, of which the genus *Solanum* is the type. It includes the deadly nightshade, henbane, belladonna, mandrake, tobacco, and many other plants.

SOLANINE. The narcotic principle of the solanum. See *Solanum dulcamara.*

SOLA'NUM. (*um, i.* n. ; from *solor*, to comfort: because it gives ease by its stupifying qualities.) 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria ;* Order, *Monogynia.*

2. The pharmacopœial name of the *Solanum nigrum.*

Solanum dulcamara. Bitter-sweet. Woody nightshade. *Dulcamara. Solanum scandens. Glycypicros, sive amaradulcis. Solanum lignosum.* Στρυχνος, of Theophrastus. *Solanum — caule inermi frutescente flexuosa ; foliis superioribus hastatis ; racemis cymosis*, of Linnæus. The roots and stalks of this nightshade, upon being chewed, first cause a sensation of bitterness, which is soon followed by a considerable degree of sweetness ; and hence the plant obtained the name of bitter-sweet. The berries have not yet been applied to medicinal use : they seem to act powerfully upon the primæ viæ, exciting violent vomiting and purging. Thirty of them were given to a dog, which soon became mad, and died in the space of three hours ; and, upon opening his stomach, the berries were discovered to have undergone no change by the powers of digestion. There can, therefore, be little doubt of the deleterious effects of these berries ; and as they are very common in the hedges, and may be easily mistaken, by children, for red currants, which they somewhat resemble, this circumstance is the more worthy of notice. The stipites, or younger branches, are directed for use in the pharmacopœia, and they may be employed either fresh or dried, making a proportionate allowance in the dose of the latter for some diminution of its powers by drying. In autumn, when the leaves are fallen, the sensible qualities of the plant are said to be the strongest ; and, on this account, it should be gathered in autumn rather than spring. Boiling water extracts all the active matter of the plant. M. Desfosses has found an alkaline substance in the berries of the dulcamara, which appears to be the narcotic principle of the plant. It is obtained by adding ammonia to the juice of the berries, drying the precipitate, which is thrown down, and digesting it in boiling alkohol : the alkaline substance called *solanine* is deposited from the alkohol on cooling. Another principle has been obtained from the stalks by Pfaff, and named *picroglycion* (bitter-sweet). Dulcamara does not manifest those strong narcotic qualities which are common to many of the nightshades : it is, however, very generally admitted to be a medicine of considerable efficacy. Murray says, it promotes all the secretions. Haller observes, that it partakes of the milder powers of the nightshade, joined to a resolvent and saponaceous quality ; and the opinion of Bergius seems to coincide with that of Murray : — " Virtus : pellens urinam, sudorem, menses, lochia, sputa ; mundificans." The diseases in which we find it recommended by different authors are extremely various ; but Bergius confines its use to rheumatisms, retentio mensium, et lochiorum. Dulcamara appears, also, by the experiments of Razoux and others, to have been used with advantage in some obstinate cutaneous affections. Dr. Cullen says, " We have employed only the stipites, or slender twigs of this shrub ; but, as we have collected them, they come out very unequal, some parcels of them being very mild and inert, and others of them considerably acrid. In the latter state, we have employed a decoction of them in the cure of rheumatism, sometimes with advantage, but at other times without any effect. Though the dulcamara is here inserted in the catalogue of diuretics, it has never appeared to us as powerful in this way ; for, in all the trials made here, it has hardly ever been observed to be in any measure diuretic." This plant is generally given in decoction, or infusion ; and, to prevent its exciting nausea, it is ordered to be diluted with milk, and to begin with small doses, as large doses have been found to produce very dangerous symptoms. Razoux directs the following : — R. Stipitum dulcam. rac. drac. ss ina quæ font. unc. 16 coquator ad unc. 8. This was taken in the dose of three or four drachms, diluted with an equal quantity of milk, every four hours. Linnæus directs two drachms, or half an ounce of the dried stipites, to be infused half an hour in boiling water, and then to be boiled ten minutes ; and of this decoction he gives two tea-cupfuls morning and evening. For the formula of a decoction of this plant, according to the London Pharmacopœia, see *Decoctum dulcamaræ.*

Solanum fœtidum. See *Datura stramonium.*

Solanum lethale. See *Atropa.*

Solanum lignosum. See *Solanum.*

Solanum lycopersicum. The love-apple plant. The fruit of this, called *Tomata*, and *love-apple*, is so much esteemed by the Portuguese and the Spaniards, that it is an ingredient in almost all their soups and sauces, and is by them considered cooling and nutritive.

Solanum melongena. The systematic name of the mad-apple plant. Its oblong egg-shaped fruit is often boiled in the countries where it grows, in soups and sauces, the same as the love-apple ; is accounted very nutritive, and is much sought after by the votaries of Venus.

Solanum nigrum. The systematic name of the garden nightshade, which is highly deleterious, and very common in waste places, and by the road-sides.

Solanum sanctum. The systematic name of the Palestine nightshade ; the fruit of which is globular, and in Egypt much eaten by the inhabitants.

Solanum tuberosum. The potato plant : called also, *Batatas, Solanum esculentum, Kippa, Kelenga, Papas Americanus, Pappus Americanus*

and *Convolvulus Indicus.* A native of Peru, first brought into Europe by Sir Francis Drake, 1486, and planted in London. The root of this plant is now in use all over Great Britain, and in most parts of Europe, as an article of diet, and is as generally eaten as bread.

Solanum vesicarium. See *Physalis alkekengi.*

SOLDANE'LLA. (*a, æ.* f.; *à solidando;* from its uses in healing fresh wounds.) The sea convolvulus. See *Convolvulus soldanella.*

Sole. See *Pleuronectes solea.*

SO'LEN. Σωλην. A tube or channel. A cradle for a broken limb.

SOLENA'RIUM. (Diminutive of σωλην, a tube.) A catheter.

SO'LEUS. (*us, i.* m.; from *solea,* a sole: from its shape being like the sole-fish.) See *Gastrocnemius internus.*

SOLIDA'GO. (*o, inis.* f.; from *solido,* to make firm: so called from its uses in consolidating wounds.) The name of a genus of plants in the Linnæan system. Class, *Syngenesia;* Order, *Polygamia superflua.* The herb comfrey.

SOLIDAGO VIRGAUREA. The golden rod. *Virga aurea. Herba doræa. Conyza coma aurea. Symphytum. Petræum. Elichrysum. Consolida saracenica* and *aurea.* Golden rod. The leaves and flowers of this plant are recommended as aperients and corroborants in urinary obstructions, ulcerations of the kidneys and bladder, and it is said by some to be particularly useful in stopping internal hæmorrhages.

SOLID. 1. In *Natural philosophy,* bodies, the particles of which cohere so firmly as not to be separated without some degree of force, are called *solids.*

2. In *Anatomy,* the solids are the bones, ligaments, membranes, muscles, nerves, and vessels.

SOLITA'RIUS. Solitary. Applied to leaves, stems, footstalks, worms in the body, &c. when either single on a plant, or only one in the same place.

SO'LIUM. (*um, ii.* n.; from *solus,* alone: so called because it infests the body singly.) A species of tape-worm. See *Tænia.*

SOLOMON'S ANTI-IMPETIGINES. A solution of corrosive sublimate.

SOLOMON'S BALM OF GILEAD. An aromatic tincture, of which brandy and cardamom seeds appear to be the principal ingredients. Some say it contains cantharides.

Solomon's seal. See *Convallaria.*

SOLSE'QUIUM. (*um, ii.* n.; from *sol,* the sun, and *sequor,* to follow: so called because it turns its flowers towards the sun.) See *Heliotropium.*

SOLUTIO SULPHATIS CUPRI COMPOSITA. *Aqua cupri vitriolati composita.* Compound solution of sulphate of copper. Take of sulphate of copper and sulphate of alumina, each, three ounces; water, two pounds; sulphuric acid, an ounce and a half. Boil the sulphates in the water that they may be dissolved; then filter through paper and add the acid. This is an Edinburgh formula. It is sometimes used as a styptic, and, when largely diluted, as an astringent collyrium.

SOLUTION. *Solutio.* An intimate commixture of solid bodies with fluids, into one seemingly homogeneous liquor. The dissolving fluid is called a menstruum or solvent.

SOLUTI'VUS. (From *solvo,* to loosen.) Laxative; gently purgative.

Solvent. See *Menstruum.*

SOMNA'MBULISM. This term is applied to sleep-walking, and also to a particular state induced by what is called animal magnetism. See *Sleep,* and *Magnetism, animal.*

SOMNI'FEROUS. (*Somniferus;* from *somnus,* sleep, and *fero,* to bring.) Having the power of inducing sleep.

SOMNOLE'NTIA. (*a, æ.* f.; from *somnus,* sleep.) Somnolency; sleepiness.

SO'MNUS. (*us, i.* m.) Sleep. See *Sleep.*

SO'NCHUS. (*us, i.* m. Παρα το σωον, χεειν; from its wholesome juice (?).) The name of a genus of plants in the Linnæan system. Class, *Syngenesia;* Order, *Polygamia æqualis.* The sow-thistle.

SONCHUS ARVENSIS. *Hieracium majus.* The greater hawkweed. A feebly astringent plant.

SONCHUS OLERACEUS. The systematic name of the sow-thistle. Most of the species of sonchus abound with a milky juice, which is very bitter, and said to possess diuretic virtues. It is sometimes employed with that intention. This plant, boiled, may be eaten as a substitute for cabbage.

Soot. See *Fuligo.*

SOPHI'A. (*a, æ.* f.; from σοφος, wise: so named from its great virtues in stopping fluxes.) See *Sisymbrium sophia.*

Sophia chirurgorum. See *Sisymbrium.*

SOPHISTICATION. *Sophisticatio.* The counterfeiting or adulterating any thing. See *Adulteration.*

SOPHO'RA. (*a, æ.* f.; a name of most whimsical origin. *Sophera* is, according to Prosper Alpinus, the Egyptian denomination of a species of cassia, the *Cassia sophera* of Linnæus, nearly related to this genus. Linnæus, spelling it *sophora,* calls it a *genus sophorum,* or of wise men; as teaching that separate stamens, in the papilionaceous family, if ever the limits of that family can be determined, afford so decisive a mark of discrimination, as almost to exclude the plants furnished with such from the same natural class, or order, with those the filaments of which are combined.) The name of a genus of plants. Class, *Decandria;* Order, *Monogynia.*

SOPHORA HEPTAPHYLLA. A shrub, the root and seeds of which are sometimes called *anticholerica:* they are both intensely bitter, and said to be useful in cholera, colic, and dysury.

SOPHRONISTE'RES. (From σωφρονιζω, to become wise: so called because they do not appear till after puberty.) The last of the grinding-teeth.

SO'PIENS. (From *sopio,* to make sleep.) Having the property of inducing sleep.

SO'POR. (*or, oris.* m.) Profound sleep.

SOPORI'FEROUS. (*Soporiferus;* from *sopor,* sleep, and *fero,* to bear.) Possessed of the power of inducing sleep.

SO'RA. (Arabic.) The nettle-rash.

SORBASTRE'LLA. (From *sorbeo,* to suck up: because it stops hæmorrhages.) See *Pimpinella saxifraga.*

SO'RBATE. (*Sorbas, atis.* f.) A compound of sorbic acid, with a base.

SORBIC ACID. (*Acidum sorbicum*; from *sorbus*, the mountain-ash, from the berries of which it is obtained.) The acid of apples, called malic, may be obtained most conveniently, and in greatest purity, from the berries of the mountain-ash, called *Sorbus*, or *Pyrus aucuparia*: and hence the present name, sorbic acid. This was supposed to be a new and peculiar acid by Donovan and Vauquelin, who wrote good dissertations upon it. But it now appears that the sorbic and *pure* malic acids are identical.

Bruise the ripe berries in a mortar, and then squeeze them in a linen bag. They yield nearly half their weight of juice, of the specific gravity of 1·077. This viscid juice, by remaining for about a fortnight in a warm temperature, experiences the vinous fermentation, and would yield a portion of alkohol. By this change it has become bright, clear, and passes easily through the filter, while the sorbic acid itself is not altered. Mix the clear juice with filtered solution of acetate of lead. Separate the precipitate on a filter, and wash it with cold water. A large quantity of boiling water is then to be poured upon the filter, and allowed to drain into glass jars. At the end of some hours, the solution deposits crystals of great lustre and beauty. Wash these with cold water, dissolve them in boiling water, filter, and crystallise. Collect the new crystals, and boil them for half an hour in 2·3 times their weight of sulphuric acid, specific gravity 1·090, supplying water as fast as it evaporates, and stirring the mixture diligently with a glass rod. The clear liquor is to be decanted into a tall narrow glass jar, and, while still hot, a stream of sulphuretted hydrogen is to be passed through it. When the lead has been all thrown down in a sulphuret, the liquor is to be filtered, and then boiled in an open vessel to dissipate the adhering sulphuretted hydrogen. It is now a solution of sorbic acid.

When it is evaporated to the consistence of a syrup, it forms mammalated masses of a crystalline structure. It still contains a considerable quantity of water, and deliquesces when exposed to the air. Its solution is transparent, colourless, void of smell, but powerfully acid to the taste. Lime and barytes waters are not precipitated by solution of the sorbic acid, although the sorbate of lime is nearly insoluble. One of the most characteristic properties of this acid is the precipitate which it gives with the acetate of lead, which is at first white and flocculent, but afterwards assumes a brilliant crystalline appearance. With potash, soda, and ammonia, it forms crystallisable salts, containing an excess of acid.

SO'RBUS. (*us, i.* f. and *um. i.* n.; from *sorbeo*, to suck up: because its fruit stops fluxes.) The name of a genus of plants in the Linnæan system. Class, *Icosandria*; Order, *Trigynia*. The service-tree.

SORBUS AUCUPARIA. The wild service-tree. The berries of this plant are astringent, and, it is said, have been found serviceable in allaying the pain of calculous affections in the kidneys.

SO'RDES. (*es, is.* f.) When the matter discharged from ulcers is rather viscid, glutinous, of a brownish-red colour, somewhat resembling the grounds of coffee, or grumous blood mixed with water, it is thus named. Other fœtid excrementious substances are also called *sordes*, as the matter which forms round the teeth in fever, &c.

SORE, BAY. The bay sore is an endemic disease at the bay of Honduras, which Dr. Mosely considers as a true cancer, commencing with an ulcer.

Sore-throat. See *Cynanche.*

Sorrel. See *Rumex acetosa.*

Sorrel, French. See *Rumex scutatus.*

Sorrel, round-leaved. See *Rumex scutatus.*

Sorrel, wood. See *Oxalis acetosella.*

SOUND. 1. An instrument which surgeons introduce through the urethra into the bladder, to discover whether there be a stone in this viscus or not.

2. The impression produced on the auditory nerve by certain vibrations. See *Auris.*

SOUNDING. *Searching.* The exploration of the bladder by means of the instrument called a sound.

Sour dock. See *Rumex acetosa.*

Southernwood. See *Artemisia abrotanum.*

Sow. See *Sus scrofa.*

Sow-bread. See *Cyclamen.*

SPA. 1. A general denomination for a mineral spring.

2. A town in France, in the department of the Ourte, famous for its mineral water, which is a very strongly acidulous chalybeate. What applies to the use of chalybeates in general will apply to this water.

SPA'DIX. (*ix, icis.* m.) An elongated receptacle or flower-bearing column, which emerges, mostly, from a spathe or sheath, as it does in *Arum maculatum*, *Calla Æthiopica*, and *palustris*; but the *Acorus calamus* has a spadix without any sheath.

The inflorescence of palms, and some other plants, is a *branched spadix*; as the *Chamærops humilis*, *Musa*, &c.

Spain, pellitory of. See *Anthemis pyrethrum.*

Spanish fly. See *Cantharis.*

Spanish liquorice. See *Glycyrrhiza.*

SPARGANO'SIS. (*is, is.* f.; from σπαργαω, to swell.) 1. A swelling.

2. A milk abscess. Dioscorides applied this term to phlegmon of the breast, and also, in a collective sense, to signify not only a milk abscess, but a variety of tumours and other diseases, supposed to depend upon an overflow, suppression, misdirection, or depraved secretion of milk.

SPA'RSUS. Dispersed; irregularly scattered. Frequently applied to eruptions, glands, leaves, flower-stalks.

SPA'RTIUM. (*um, ii.* n. Σπαρτιον, of Dioscorides: so called from σπαρτη, a rope; because of the use of the long, slender, tough branches, or bark, in making cordage.) The name of a genus of plants in the Linnæan system. Class, *Diadelphia*; Order, *Decandria.*

SPARTIUM JUNCEUM. The Spanish broom. Its medicinal properties resemble those of the common broom.

Spartium purgans. The leaves of this species are purgative, and the seeds strongly so.

Spartium scoparium. The systematic name of the common broom. *Genista.* The tops and leaves of this indigenous plant, *Spartium — foliis ternatis solitariisque, ramis inermibus angulatis,* of Linnæus, are the parts that are employed medicinally: they have a bitter taste, and are recommended for their purgative and diuretic qualities in hydropic cases.

SPA'SMA. (*a, atis.* n.; from σπαω, to draw.) That voluntary straining which takes place in any vehement exertion, contraction, or extension of a muscle, as in running, riding, or bearing heavy burdens. It differs from *spasmus,* which is an involuntary, and generally a morbid contraction of a muscle.

Spasmi. Spasmodic diseases. The third order of the class *Neuroses,* of Cullen; characterised by a morbid contraction or motion of muscular fibres.

SPASMO'DIC. *Spasmodicus.* Belonging to a spasm or convulsion.

Spasmodic asthma. See *Asthma.*

Spasmodic cholera. See *Cholera.*

Spasmodic colic. See *Colica.*

Spasmodic croup. See *Laryngismus stridulus.*

Spasmodic stricture. See *Strictura.*

SPASMO'LOGY. (*Spasmologia, æ.* f.; from σπασμος, a spasm, and λογος, a discourse.) A treatise on convulsions.

SPA'SMUS. (*us, i.* m.; from σπαω, to draw.) A cramp, spasm, or convulsion. An involuntary contraction of the muscular fibres, or that state of the contraction of muscles which is not spontaneously disposed to alternate with relaxation, is properly termed spasm. When the contractions alternate with relaxation, and are frequently and preternaturally repeated, they are called convulsions. Spasms are distinguished by authors into clonic and tonic spasms. In *clonic* spasms, which are the true convulsions, the contractions and relaxations are alternate, as in epilepsy; but in *tonic* spasms, the member remains rigid, as in locked-jaw. See *Convulsion, Tonic spasm,* and *Tetanus.*

Spasmus cynicus. *Risus caninus.* A convulsive affection of the muscles of the face and lips on one side, which involuntarily forces the muscles of those parts into a species of grinning distortion. The term is used by some authors synonymous with *risus Sardonicus.* When the masseter, buccinator, temporal, nasal, and labial muscles, are involuntarily excited to action, or contorted by contraction or relaxation, they give the expression of a malignant sneer. It sometimes arises from eating hemlock, or other acrid poisons, or succeeds to an apoplectic stroke.

SPA'THA. (*a, æ.* f.; from σπαθη, a ladle or spatula.) A sheath or covering of an immature flower, which bursts longitudinally, and is more or less remote from the flower. From the number of membranes, which are called valves, and of the flowers, and their duration, it is named, —

1. *Spatha univalvis,* having only one membraneous leaf; as in *Arum maculatum,* and *Crocus sativus.*

2. —— *bivalvis,* in *Stratiates aloides.*

3. —— *dimidiata,* or *lacera,* there being only one valve, and that covering the flower only partially; as in *Ixia uniflora,* and *Africana.*

4. *Spatha vaga,* the common sheath inclosing several partial ones; as in *Iris Germanica,* and *Helonica.*

5. —— *uniflora,* containing only one flower; as the *Narcissus poeticus, Pseudo-narcissus,* and *Amaryllis formosissima.*

6. —— *biflora,* with two; as in *Alpina racemosa,* and *Morœa virgata.*

7. —— *multiflora;* as in *Allium, Narcissus jonquilla,* and *Pancreatium carabeum.*

8. —— *persistens,* remaining with the fruit; as in *Heliconia bibai.*

9. —— *marcescens,* withering before or soon after the flowering; as in the *Allia,* and *Leucojum vernum.*

SPATHOME'LE. (From σπαθη, a sword, and μηλη, a probe.) An edged probe.

SPA'TULA. (Diminutive of *spatha,* a broad instrument.) An instrument for spreading salve.

SPATULA'TUS. Spatulate: battle-door-shaped. Applied to leaves, &c. of a roundish figure, tapering into an oblong base; as in *Silene otites.*

SPEAR. *Hasta.* A likeness to this instrument often gives a trivial name in *Natural History;* as spearmint, spearwort, &c.

Spearmint. See *Mentha viridis.*

Spear-shaped. See *Hastatus,* and *Lanceolatus.*

Spearwort, water. See *Ranunculus.*

SPECIES. (*es, ei.* f.) 1. Individual animals, plants, and minerals agreeing in their appearances or composition. Their similarity gives rise to the establishment of species. Individuals or species differing in circumstances arising from accident; in plants and animals, from soil and climate; in diseases, from constitution, &c.; in minerals from locality, are termed *varieties.* The circumstances which are common to one or more species give rise to a division, or the formation of a genus. See *Genus, Order, Class.*

2. An obsolete name for powders; as *species aromaticæ; species diambræ,* &c.

SPECIFIC. *Specificus.* Applied, 1. To that which acts on some particular organ more than on others; thus, ipecacuanha appears to have a *specific action* on *the respiratory* mucous membrane.

2. To a medicine possessed of sovereign efficacy in the cure of a particular disease; thus, sulphur may be considered as a specific for the itch, and bark for the ague.

Specific gravity. See *Gravity, specific.*

SPECI'LLUM. (*um. i.* n.; from *specio,* to examine.) A probe.

SPE'CULUM. (*um, i.* n.; from *specio,* to view.) An instrument for opening or obtaining a view of parts within each other; as *speculum oculi, speculum oris, speculum ani,* &c.

Speculum ani. An instrument for distending the anus, whilst an operation is performed upon the parts within.

Speculum matri'cis. An instrument to assist in any manual operation belonging to the womb.

Speculum oculi. An instrument by which the eyelids are kept open, and the eye fixed.

Speculum oris. An instrument to force open the mouth.

Speculum veneris. See *Achillea.*

Speech. See *Voice.*

Speechlessness. See *Aphonia.*

Speediman's pills. These consist of aloes, myrrh, rhubarb, extract of chamomile, and essential oil of chamomile.

Speedwell. See *Veronica.*

Speedwell, female. See *Antirrhinum.*

Speedwell, mountain. See *Veronica.*

Spermace'ti. (From σπερμα, seed, and κητος, the whale.) See *Physeter.*

SPERMA'TIC. (*Spermaticus;* from σπερμα, seed.) Belonging to the testicle and ovary; as the spermatic artery, chord, and veins.

Spermatic arteries. See *Testis.*

Spermatic veins. See *Testis.*

SPERMATOCE'LE. (*e, cs.* f.; from σπερμα, seed, and κηλη, a tumour.) *Epididymis distensa.* A swelling of the testicle or epididymis from an accumulation of semen. In this case the swelling is accompanied by pain extending to the loins, without inflammation.

Spermatopoe'ticus. (From σπερμα, and ποιεω, to make.) Having the property of increasing the secretion of seed.

SPERMATORRHŒ'A. (*a, æ.* f.; from σπερμα, *semen*, and ρεω, *fluo.*) Seminal flux. See *Gonorrhœa.*

SPHACELI'SMUS. (*us, i.* m.; from σφακελιζω, to gangrene.) 1. A gangrene.

2. An inflammation of the brain.

SPHA'CELUS. (*us, i.* m.; from σφακω, to destroy.) Complete mortification. See *Mortification.*

Sphænoides. See *Sphenoides.*

SPHÆRO'MA. (*a, atis.* n.; from σφαιρα, a globe.) A fleshy globular protuberance.

Spheno-staphylinus. See *Levator palati.*

SPHE'NOID. (*Sphenoides;* from σφην, a wedge, and ειδος, a likeness: because it is fixed in the cranium like a wedge.) Wedge-like: applied to a bone of the skull. See *Sphenoides os.*

SPHENOIDAL. *Sphenoidalis.* Belonging to the sphenoid bone.

Sphenoidal suture. *Sutura sphenoidalis.* The sphenoidal and ethmoidal sutures are those which surround the many irregular processes of these two bones, and join them to each other and to the rest.

Sphenoides os. This bone is also called, *Os cuneiforme, Os multiforme, Os azygos, Papillare os, Basilare os, Os polymorphos,* and *Pterygoideum.* The sphenoid bone is wedged in amidst the other bones of the head, and is of a more irregular figure than any other bone. It has been compared to a bat with its wings extended. This resemblance is but faint, but it would be difficult, perhaps, to find any thing it resembles more.

We distinguish in this bone its body or middle part, and its wings or sides, which are much more extensive than its body.

Each of its wings or lateral processes is divided into two parts. Of these the uppermost and most considerable portion, helping to form the deepest part of the temporal fossa on each side, is called the *temporal process.* The other portion makes a part of the orbit, and is therefore named the *orbitar process.* The back part of each wing, from its running out sharp to meet the os petrosum, has been called the *spinous process;* and the two processes, which stand out almost perpendicular to the basis of the skull, have been named *pterygoid* or *aliform* processes, though they may be said rather to resemble the legs than the wings of the bat. Each of these processes has two plates and a middle fossa facing backwards: of these plates the external one is the broadest, and the internal one the longest. The lower end of the internal plate forms a kind of hook, over which passes the round tendon of the *musculus circumflexus palati.* Besides these, we observe a sharp middle ridge, which stands out from the middle of the bone. The fore part of it, where it joins the nasal lamella of the ethmoidal bone, is thin and straight; the lower part of it is thicker, and is received into the vomer.

The cavities observable on the external surface of the bone, are where it helps to form the temporal, nasal, and orbitar fossæ.

It has likewise two fossæ in its pterygoid processes. Behind the edge, which separates these two fossæ, we observe a small groove, made by a branch of the superior maxillary nerve in its passage to the temporal muscle. Besides these, it has other depressions, which serve chiefly for the origin of muscles.

Its foramina are four on each side. The three first serve for the passage of the optic, superior maxillary, and inferior maxillary nerves; the fourth transmits the largest artery of the dura mater. On each side we observe a considerable fissure, which, from its situation, may be called the superior orbitar fissure. Through it pass the third and fourth pair of nerves, a branch of the fifth, and likewise the sixth pair. Lastly, at the basis of each pterygoid process, we observe a foramen which is named *pterygoidean,* and sometimes *Vidian,* from Vidius, who first described it. Through it passes a branch of the external carotid, to be distributed to the nose.

The os sphenoides on its internal surface affords three fossæ. Two of these are considerable ones: they are formed by the lateral processes, and make part of the lesser fossæ of the basis of the skull. The third, which is smaller, is on the top of the body of the bone, and is called *sella turcica,* from its resemblance to a Turkish saddle. In this the pituitary gland is placed. At each of its four angles is a process. They are called the *clinoid* processes, and are distinguished by their situation into anterior and posterior processes. The two latter are frequently united into one.

Within the substance of the os sphenoides, immediately under the sella turcica, we find two cavities, separated by a thin bony lamella. These are the sphenoidal sinuses. They are lined with the pituitary membrane, and, like the frontal sinuses, separate a mucus which passes into the nostrils. In some subjects there is only one cavity; in others, though more rarely, we find three.

In infants, the os sphenoides is composed of three pieces, one of which forms the body of the bone and its pterygoid processes, and the other two its lateral processes. The clinoid processes may even then be perceived in a cartilaginous state, though some writers have asserted the contrary; but we observe no appearance of any sinus.

This bone is connected with all the bones of the cranium, and likewise with the ossa maxillaria, ossa malarum, ossa palati, and vomer. Its uses may be collected from the description we have given of it.

SPHE'NO-MAX'ILLARY. *Spheno-maxillaris.* Relative to the sphenoid and maxillary bones.

SPHE'NO-MAX'ILLARY FISSURE. Inferior orbitary fissure. *Foramen lacerum inferius. Foramen spheno-maxillare.* A hole situated at the posterior part of the angle formed by the union of the internal and inferior parietes of the orbit. It is constituted, above, by the sphenoid bone; below, by the superior maxillary and palate bones; and before, by the malar bone; and forms a communication between the orbitar cavity and the zygomatic fossa.

SPHE'NO-MAX'ILLARY FOSSA. A depression at the union of the spheno-maxillary and pterygo-maxillary fissures.

SPHE'NO-PAL'ATINE. *Spheno-palatinus.* That which relates to the sphenoid and palate bones.

SPHE'NO-PAL'ATINE FORAMEN. A round aperture, formed by the vertical portion of the os palati and the sphenoid. It establishes a communication between the nasal fossæ and the zygomatic fossa.

SPHE'NO-PAL'ATINE AR'TERY. The termination of the internal maxillary. It enters at the posterior part of the superior meatus of the nose, through the spheno-palatine foramen, and ramifies on the pituitary membrane covering the septum, the cornua, and the meatus.

SPHE'NO-PAL'ATINE GAN'GLION. Ganglion of Meckel. A small or triangular ganglion, of variable size, situated without the foramen spheno-palatinum, in the pterygo-maxillary fissure. It seems suspended, by several nervous filaments, to the trunk of the superior maxillary nerve, and gives off *internal* or *spheno-palatine filaments, inferior* or *palatine filaments*, and a *posterior filament*, which is the *vidian* or *pterygoid nerve.*

SPHE'NO-PAL'ATINE NERVES. Lateral nasal nerves. These arise from the ganglion of Meckel, at its inner part, and enter the nasal fossæ by the spheno-palatine foramen. They are five or six in number, and distribute their filaments to the outer and inner parietes of the nasal fossæ. One of the most remarkable branches is the *Naso-palatine.*

SPHE'NO-PARI'ETAL. *Spheno-parietalis.* Belonging to the sphenoid and parietal bones.

SPHE'NO-PARI'ETAL SU'TURE. This is formed by the articulation of the extremity of the greater ala of the sphenoid with the anterior and inferior angle of the parietal bone.

SPHE'NO-TEM'PORAL. *Spheno-temporalis.* That which belongs to the sphenoid and temporal bones.

SPHE'NO-TEM'PORAL SU'TURE. The suture at the articulation of the great alæ of the sphenoid bone with the squamous portion of the temporal.

SPHINCTER. (*er, eris.* m.; from *σφιγγω*, to compress.) The name of several muscles, the office of which is to shut or close the aperture around which they are placed.

SPHINCTER ANI. *Sphincter externus*, of Albinus and Douglas. *Sphincter cutaneus*, of Winslow. A single muscle of the anus, which shuts the passage through the anus into the rectum, and pulls down the bulb of the urethra, by which it assists in ejecting the urine and semen. It arises from the skin and fat that surrounds the verge of the anus on both sides, near as far as the tuberosity of the ischium; the fibres are gradually collected into an oval form, and surround the extremity of the rectum. It is inserted by a narrow point into the perinæum, acceleratores urinæ, and transversi perinæi: and behind into the extremity of the os coccygis, by an acute termination.

Sphincter ani cutaneus. See *Sphincter ani.*

Sphincter ani externus. See *Sphincter ani.*

SPHINCTER ANI INTERNUS. Albinus and Douglas call the circular fibres of the muscular coat of the rectum, which surround its extremity, by this name.

Sphincter cutaneus. See *Sphincter ani.*

Sphincter externus. See *Sphincter ani.*

SPHINCTER GULÆ. The superior constrictor of the pharynx.

Sphincter labiorum. See *Orbicularis oris.*

Sphincter oris. See *Orbicularis oris.*

SPHINCTER VAGINÆ. *Constrictor cunni*, of Albinus. *Second muscle of the clitoris*, of Douglas. This muscle arises from the sphincter ani and from the posterior side of the vagina near the perinæum; from thence it runs up the side of the vagina, near its external orifice, opposite to the nymphæ, covers the corpus cavernosum, and is inserted into the crus and body or union of the crura clitoridis. Its use is to contract the mouth of the vagina.

SPHINGO'NTOS. (From *σφιγγω*, to bind.) Astringent.

SPHONDY'LIUM. (*um, ii.* n.; from *σπονδυλος*, a vertebra, so named from the shape of its root: or probably, because it was used against the bite of a serpent, called *σπονδυλις.*) 1. The Greek name of a plant, supposed by some to be the branckursine. See *Acanthus mollis.*

2. The specific name of a species of Heracleum. See *Heracleum sphondylium.*

Sphrongidium. See *Columnula.*

SPHY'GMICUS. Relating to the pulse.

SPHY'GMOS. (*os, i.* m.; from *σφυξειν*, to leap or rebound.) The pulse.

SPI'CA. (*a, æ.* f.) A spike. 1. A species of inflorescence, consisting of one common stalk bearing numerous flowers, all ranged along it, without any, or having very small partial stalks, as the flower-stalk of the greater plantain. From its figure, the situation of the flowers, and its vesture, it is said to be, —

1. *Cylindrical;* as in *Plantago media.*

2. *Ovate*, in *Sanguisorba officinalis.*

3. *Articulate*, with joints; as in *Salicornia herbacea*, and *Polygonum articulatum.*

4. *Conjugate*, two spikes going from the summit of the peduncle; as in *Heliotropium Europæum* and *parviflorum.*

5. *Ramose*, divided into branches; as in *Chenopodium bonus henricus*, and *Osmunda.*

6. *Imbricate*; as in *Salvia Hispanica.*

7. *Secundal*, the flowers leaning all to one side; as in *Anchusa officinalis.*

8. *Interrupted*, in separate groups; as in *Betonica officinalis.*

9. *Distichal*, or two-rowed, two series of spikes; as in *Gladiolus alopecuroides.*

10. *Terminal*; as in *Lavendula.*

11. *Axillary*; as in *Justitia spinosa.*

12. *Foliose*, leaflets between the flowers; as in *Agrimonia eupatoria.*

13. *Comose*, having a leafy bundle at the apex; as in *Lavendula stæchas.*

14. *Ciliate*, hairs between the flowers; as in *Nardus ciliaris.*

II. An ear of corn.

III. A bandage, the shape of which somewhat resembles that of an ear of corn.

Spica brevis. See *Alopecuris pratensis.*

Spica Celtica. See *Valeriana Celtica.*

Spica fœmina. Common lavender.

Spica Indica. See *Nardus Indica.*

Spica inguinalis. A bandage for ruptures in the groin.

Spica duplex. Double bandage.

Spica mas. Broad-leaved lavender.

Spica nardi. See *Nardus Indica.*

Spica simplex. A common bandage.

SPI'CULA. (*a*, *æ.* f.; a diminutive of *spica.*) A spikelet or spiket. A term applied exclusively to grasses that have many florets on one calyx, such florets ranged on a little stalk constituting the spikelet, which is therefore a part of the flower itself, and not of the inflorescence; as in *Briza minor*, and *Poa aquatica.* *Locusta* means the same as *spicula.*

SPIGE'LIA. (*a*, *æ.* f.; so called by Linnæus in commemoration of an old botanist, Adrian Spigelius, who wrote *Isagoge in rem Herbariam*, in 1606.) 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Monogynia.*

2. The name in some pharmacopœias for the *Spigelia Marilandica.*

Spigelia anthelmia. The systematic name of the spigelia of some pharmacopœias. It is directed as an anthelmintic: its virtues are very similar to those of the Indian pink. See *Spigelia Marilandica.*

Spigelia lonicera. See *Spigelia Marilandica.*

Spigelia marilandica. Perennial wormgrass, or Indian pink. *Spigelia lonicera. Spigelio—caule tetragono, foliis omnibus oppositis*, of Linnæus. The whole of this plant, but most commonly the root, is employed as an anthelmintic by the Indians and inhabitants of America. Dr. Hope has written in favour of this plant, in continued and remitting low worm fevers. Besides its property of destroying the worms in the primæ viæ, it acts as a purgative.

Spigelian lobe. See *Liver.*

Spignel. See *Æthusa meum.*

Spikelet. See *Spicula.*

Spikenard. See *Nardus Indica.*

Spike-stalk. See *Rhachis.*

SPILA'NTHUS. (*us*, *i.* m.; from σπιλος, a spot, and ανθος, a flower: because of its dotted or speckled flowers.) The name of a genus of plants. Class, *Syngenesia*; Order, *Polygamia æqualis.*

Spilanthus acmella. The balm-leaved spilanthus; called also, *Achmella* and *Achamella.* This plant possesses a glutinous bitter taste, and a fragrant smell. The herb and seed are said to be diuretic and emmenagogue, and useful in dropsies, jaundice, fluor albus, and calculous complaints, given in infusion.

Spilsbury's antiscorbutic drops. These consist of corrosive sublimate ʒij., prepared sulphuret of antimony ʒij., gentian root, orange peel, of each ʒij., shavings of red saunders ʒj.; digested with a pint of proof spirit, and strained.

SPI'LUS. (*us*, *i.* m.; from σπιλος, *macula.*) A spot or discolouration of the skin. A mother's mark has been so called when in the form of a mere spot.

SPI'NA. (*a*, *æ.* f.; *quasi spiculina*, diminutive of *spica.*) A thorn.

I. In *Anatomy.* 1. The back-bone: so called from the thorn-like processes of the vertebræ. See *Vertebræ.*

2. The shin-bone: so called on account of its sharp edge.

II. In *Botany*, a thorn of a plant. A prickly armature of plants, not easily removed by the finger, and proceeding from the woody part of the plant. It is either,

1. *Cauline*; as in *Prunus spinosa.*

2. *Terminal*, at the end of a branch; as in *Rhamnus catharticus.*

3. *Foliar*, on the surface of the leaf; as in *Carduus marianus.*

4. *Marginal*, on the margin of the leaf; as in *Ilex aquifolium.*

5. *Axillary*, going from the axilla of the leaf; as in *Gleditschia triacanthos.*

6. *Calycine*, on the calyx; as in *Carduus marianus.*

7. *Pericarpial*, on the pod; as in *Datura stramonium.*

8. *Stipular*, on the stipule; as in *Mimosa Nilotica*, and *horrida.*

9. *Straight*; as in *Mimosa nigra.*

10. *Recurve*; as in *Costus nobilis.*

11. *Decussate*; as in *Genista Lusitanica.*

12. *Setaceous*; as in *Cactus opuntia.*

13. *Subulate*; as in *Cactus tuna.*

14. *Inermous*, covered with soft and not prickly spines, also called *muricate*; as in *Convolvulus muricatus*, and *Mimosa muricata.*

15. *Simple*, when not divided; as *Genista anglica.*

16. *Germinal*; as in *Limonia trifoliata.*

17. *Ternate*; as in *Xanthium spinosum.*

18. *Ramose*; as in *Gleditschia horrida.*

Spina acida. See *Berberis.*

Spina ægyptiaca. See *Acacia vera.*

Spina bifida. See *Hydrorachis.*

Spina cervina. See *Rhamnus.*

Spina hirci. The *Astragalus tragacantha.*

Spina infectoria. See *Rhamnus catharticus.*

Spina purgatrix. See *Rhamnus catharticus.*

Spina solstitialis. See *Calcitrapa.*

Spina ventosa. (The term *spina* seems to have been applied to this disorder, because it occasions a prickling in the flesh like the puncture of thorns; and the *ventosa* is added, because, upon touching the tumour, it seems to be filled with wind, though this is not the cause of the distension.) A tumour arising from an internal caries of a bone. The term is a very vague one, and has been applied by some to abscess within a bone, by others to necrosis, and by others, again, to white swelling.

Spinacnia. See *Spinacia.*

SPINA'CIA. (*a, æ.* f.; derivation uncertain.) The name of a genus of plants. Class, *Diœcia;* Order, *Pentandria.* Spinage.

Spinacia oleracea. The systematic name of the spinach. Spinage. *Spinachia.* This plant has been employed for medicinal purposes in the cure of phthisical complaints: made into a poultice, by boiling the leaves and adding some oil, it forms an excellent emollient. As an article of food it may be considered as similar to cabbage and other oleraceous plants. It is, however, more digestible, and less apt to occasion flatulency.

Spinage. See *Spinacia.*

Spinæ ventositas. A caries of a bone.

SPINAL. *Spinalis.* Belonging to the spine of the back; as spinal nerves, spinal cord, spinal diseases, &c.

Spinal cord. *Medulla spinalis.* Spinal marrow. This is a continuation of the medulla oblongata. It begins directly behind the origin of the ninth pair of nerves, and obtains its name from being contained in the osseous canal of the spine. It is invested by the same membranes which cover the brain, and has an additional partial involucrum from the ligamentous membrane which lines the bodies of the vertebræ, and which has been already taken notice of in the description of the ligaments. On the inner side of the ligamentous lining, the dura mater is situated, which passes out of the cranium by the foramen magnum occipitis, and forms a cylindrical sheath, which loosely envelopes the spinal marrow, and extends as far as the os sacrum. It is more elastic than the dura mater of the brain, and thereby admits more readily of the different motions of the spine. At its egress from the cranium, it is intimately connected to the beginning of the above-mentioned common ligamentous lining, and is also united with the pericranium at the edge of the foramen magnum of the occipital bone. Below the first vertebra of the neck, this intimate connexion between the dura mater and inner ligament of the vertebræ is discontinued; a *cellular, fatty,* and *slimy substance,* which surrounds the dura mater throughout the rest of the canal, being interposed between that membrane and the ligament. The dura mater is only in contact with the tunica arachnoidea; and this, also, only in contact with the pia mater, and lying so loosely over the latter as to be separated from it with facility through the whole length of the spine, by making a puncture in it, and distending it with air. The spinal marrow, like the brain, consists of a cortical and medullary substance, but differs in this respect, that the cineritious matter is placed within the medullary. Upon the surface of the spinal marrow, while lying in its natural situation, many transverse wrinkles or folds are observed, which allow it to be extended in the motions of the vertebræ. It is a little flattened on its anterior and posterior surfaces, and is larger near the under part of the neck, and at the top of the loins, where the great nerves of the extremities are sent off, than in the other parts of the spine. It is divided into two lateral portions or cords, which are separated from each other externally by an anterior and posterior fissure continued from the medulla oblongata; and each of the lateral portions is in some measure subdivided by a superficial furrow, into a large anterior and small posterior cord. The lateral portions are firmly united together by fine cellular substance, but, without lacerating either, may be separated from each other, before as well as behind, to near their middle, where they are connected by a layer of cineritious matter, which passes from the one cord into the other. When the medulla spinalis is divided transversely, the cineritious substance is observed to have a cruciform appearance, corresponding with the cords of which it is composed. The body of the spinal marrow descends in the child to the twelfth dorsal, and in the adult as far as the second lumbar vertebra, and terminates there by a conical point, which is concealed by fasciculi of nerves. The spinal cord gives rise on each side to a number of nerves, the origin and distribution of which are described in the article *Nerve.*

The arteries of the spinal cord consist of anterior and posterior spinal arteries, and of many additional branches communicating with others from the adjacent vessels. The *anterior spinal arteries* arise, one on each side, from the vertebrals, near where these join to form the basilar artery. Upon the beginning of the spinal marrow, they generally unite into a common trunk, which descends in that depression on the anterior surface of the medulla, whereby it is distinguished into two lateral portions, and in this course is covered by the tunica arachnoidea. The artery continues nearly of the same size throughout, in consequence of additions it receives from the neighbouring arteries. In the neck it communicates with the vertebral, thyroid, and cervical arteries, by branches which pass through the same holes with the nerves. In the back it receives branches from the intercostal, and in the loins from the lumbar arteries; all of which go through the intervertebral holes. It terminates at the under end of the spinal marrow; the cauda equina being supplied by branches from the internal iliac artery, which enter through the anterior and posterior holes of the os sacrum. The *posterior spinal arteries* arise commonly from the inferior arteries of the cerebellum, and frequently from the trunks of the vertebral arteries within the cranium. They are equal in length to the former artery, but considerably inferior

to it in size, and continue separate through the whole of their course. They have constantly a serpentine appearance, and form frequent inosculations with each other, and with arteries, the branches of which communicate with the anterior spinal artery. The arteries of the spinal marrow are divided into minute branches, which are dispersed upon its substance, upon the membranes which inclose it, and also upon the origins of the nerves, and substance of the vertebræ. The *veins* of the spinal marrow accompany their arteries, and afterwards terminate in the sinus venosi of the spine. The *sinus venosi* consist of one on each side of the spinal marrow, which runs exterior to the dura mater; being chiefly lodged in the cellular substance, and in the ligamentous membrane which lines the fore and lateral parts of the vertebral canal. They extend from the foramen magnum of the occipital bone, to the under end of the os sacrum, and are so irregular on their surface, and so much divided and subdivided within by the openings of veins, as in many parts to have the appearance of cells. At the different vertebræ, they are joined by cross branches, which have a semilunar form, like the surface of the bones which surround them. They communicate at their superior extremity with the lateral sinuses, and with the occipital when present, and send numberless branches outwards, which open into the veins, the arteries of which anastomose with those of the spinal marrow. — *Fyfe.*

Spinal cord, diseases of the. The diseases of the spinal cord and its membranes, like those of the contents of the cranium, are so frequently consecutive on inflammation, of an acute or chronic kind, that an account of the phenomena and effects of this morbid action, when seated in the cord or its investing membranes, may suffice to give a general notion of their pathology.

1. *Acute inflammation of the spinal cord and its membranes.* The similarity of texture between the membranes of the cord and those of the brain would lead us to expect an analogy in their diseased states; and the same analogy might be expected with reference to the substance of the cord and that of the brain: accordingly, the changes of structure induced by inflammation in the parts themselves, are very analogous; but when we consider the diversity of function of these parts, we are prepared to meet with a very different train of symptoms, and very different effects on the economy. From the close proximity of the textures which form the spinal cord, inflammation seldom exists to any extent in one of them without spreading to the rest; so that the greater part of the cases which occur in practice are mixed cases; and hence there is a difficulty in determining what symptoms are diagnostic of inflammation of the membranes, and of that of the substance of the cord. It will be convenient, therefore, first to take a view of the phenomena of general inflammation of the contents of the spinal canal, and then to point out those diagnostic marks which have been supposed to indicate the particular texture implicated.

This affection is distinguished by pain, more or less acute, extending throughout the length of the spine, or confined to the cervical, dorsal, or lumbar region. It is much increased by every movement of the spine, and is said, by some authors, to be increased by external pressure on the spine, while others deny this. The pain lancinates from the origin of the spinal nerves, and extends to different parts, according to the portion of the cord affected. In many cases the pain is more or less intermittent. There is usually acute pain at the epigastrium, sometimes extending over the whole abdomen, and increased on pressure, while various parts of the surface of the body have their sensibility exalted, so that the patient shrinks from the slightest touch. The heart palpitates, and the patient has a sense of constriction and weight about the præcordia, with difficulty of breathing. The pulse is generally frequent, small, and hard; sometimes full; or small and weak. The sensorial functions are generally little disturbed. Portal says, that when delirium occurs in this affection, it is always from an extension of the inflammation to the brain. When we consider the great number of nerves, both of common sensation and of muscular motion, which have their origin from the spinal cord, we may be prepared to meet with a very Protean disease, exhibiting every conceivable variety of disordered sensation and motion.

When the commencement of the cord is chiefly affected, spasms of the pharynx occur, resembling those of hydrophobia; the jaw is locked and the voice extinct. According to Ollivier, when the tuber annulare and adjacent portion of the brain are inflamed, universal palsy ensues, followed by asphyxia and death. When the cervical portion of the cord is the seat of disease, the muscles of the neck and upper extremities, and the external muscles of respiration, are principally affected. Inflammation of the dorsal portion of the cord produces opisthotonos, and that of the lumbar portion, spasmodic or paralytic affections of the pelvic viscera; in both cases the lower limbs are generally paralysed or convulsed. When hemiplegia arises from inflammation of the spinal cord, it usually affects the side of the body corresponding with that half of the cord which is diseased. Portal, however, relates a case in which the palsy affected the left side of the body, but the right half of the cord was found on dissection to have been inflamed. The common sensibility of the surface and the sense of touch are variously exalted, abolished, or deranged; sometimes the limbs are perfectly insensible, at others the patient cannot bear to be touched; and Ollivier mentions a case in which cold water, applied to the limbs, produced a sensation of heat.

Where the inflammation is confined to the anterior or posterior columns of the cord, it may be expected that the sensibility or the power of voluntary motion will be influenced accordingly. In one case mentioned by Ollivier, in which voluntary motion was abolished, while sensibility was retained, the anterior portion of the cord was found in a state of ramolissement. The disorder of the functions,

of which a sketch has just been given, does not always exist: in a very acute case, related by Dr. Abercrombie, there was intolerable pain, but neither convulsions nor palsy.

Such are the general symptoms of acute inflammation of the contents of the spinal canal, without reference to any distinction between inflammation of the substance of the cord and that of its membranes. Such a distinction, however, doubtless exists; and the difficulty of establishing it arises from the fact, that in most cases the cord and its membranes are simultaneously affected. According to Ollivier, the sensibility of the surface is always exalted in spinal meningitis, while in inflammation of the substance of the cord it is generally diminished. On a comparison of the best marked cases, it would appear that *meningitis* is, on the whole, more frequently attended with general *tonic* spasm; while in *myelitis* the muscles of the back only are thus affected, and those of the limbs with paralysis or *clonic* spasm. In arachnitis, also, the bowels, though sometimes loose, are generally obstinately constipated, as in tetanus; while in myelitis, diarrhœa almost constantly prevails.

Inflammation of the spinal cord is liable to be mistaken for several other diseases. Thus, in acute inflammation of the membranes, all the more prominent symptoms of idiopathic tetanus are frequently present, — the trismus; the spasmodic affection of the muscles of deglutition; the constrictive pain at the epigastrium; and the universal tonic spasms. The two disorders may, however, be distinguished by the presence of fever in the one, and its absence in the other; and by the local pain which attends the inflammatory disease.

Inflammation of the *cervical* portion of the spinal cord approximates closely, in its symptoms, to *hydrophobia*; and if we conceive a person who has been bitten by a suspected dog, to be seized, from some other cause, with inflammation of the cervical portion of the spinal cord, with its accompanying spasms of the pharynx, and general clonic convulsions, it is evident that this case might not be easily distinguished from hydrophobia. The local pain, however, and the *trismus*, which very frequently occurs in the case under consideration, but very rarely, if ever, in hydrophobia, together with the different mode of accession of the two diseases, may generally suffice for their discrimination. It may be suspected, however, that certain cases of hydrophobia, reported to have been cured by *blood-letting*, may have been nothing more nor less than inflammation of the cervical portion of the spinal cord.

There are several other affections, especially *rheumatism*, with which inflammation of the spinal cord, in its acute or chronic form, may, by a possibility, be confounded; but these it is unnecessary to dwell on.

Chronic inflammation of the spinal cord and its membranes. This is generally attended with little local pain, and the chief symptoms consist in palsy, cramp, anæsthesia, disordered functions of the viscera, and rapid emaciation of the frame.

The principal causes of inflammation of the spinal cord and its membranes appear to be external injury, and exposure to cold and damp, as lying on wet grass. The chronic form seems sometimes to arise from venereal excesses, and other kinds of debauchery.

The changes of structure resulting from *spinal meningitis* are thickening and opacity of the membranes, effusions of serum, blood, or pus, and gelatinous or albuminous exudations. M. Magendie has shown that, in the healthy subject, the space between the dura mater and pia mater, within the spinal canal, contains a quantity of serum, which, therefore, must not be mistaken for the product of disease.

The substance of the cord is subject to a variety of lesions, resulting from inflammation; and these are generally similar to the morbid changes which take place in the substance of the brain. Such are, 1. *Softening*, either superficial or affecting the whole thickness of the cord. The softening is sometimes attended with *increase of volume* or hypertrophy. 2. *Induration*, which is attended with increase of volume. Softening of the cord appears to result from chronic, much more frequently than from acute inflammation; and induration of the cord seems to be always a result of chronic disease. 3. *Suppuration*, which may be more or less extensive. Dissolution of the substance of the cord into a matter resembling pus has been sometimes found to have occurred throughout the whole extent of the cord. 4. *Gangrene*, which resembles the same state as it occurs in the substance of the brain, and like it, also, is rare.

The different lesions of structure in the spinal cord are more frequently observed in the lumbar and cervical regions, than in the dorsal, which may probably arise from the larger proportion of cineritious matter in the lumbar and cervical portions, and the greater consequent vascularity.

Inflammation of the contents of the spinal canal is a highly dangerous disease, and the chronic more so than the acute.

The principles of treatment are the same with those already stated as applicable to inflammation of the brain and its membranes, with the exception of the local application of cold.

Spinal marrow. See *Spinal cord.*

Spinalis cervi'cis. This muscle, which is situated close to the vertebræ at the posterior part of the neck and upper part of the back, arises, by distinct tendons, from the transverse processes of the five or six uppermost vertebræ of the back, and ascending obliquely under the complexus, is inserted, by small tendons, into the spinous processes of the sixth, fifth, fourth, third, and second vertebræ of the neck. Its use is to extend the neck obliquely backwards.

Spinalis colli. See *Semi-spinalis colli.*

Spinalis dorsi. *Transversalis dorsi*, of Winslow. This is the name given by Albinus to a tendinous and fleshy mass, which is situated along the spinous processes of the back and the inner side of the longissimus dorsi.

It arises tendinous and fleshy from the spinous processes of the uppermost vertebræ of the

loins, and the lowermost ones of the back, and is inserted into the spinous processes of the nine uppermost vertebræ of the back.

Its use is to extend the vertebræ, and to assist in raising the spine.

Spindle-shaped. See *Fusiformis.*

Spine. See *Vertebræ.*

SPINE'SCENS. Spinescent: becoming hard and thorny. Applied to the leaf-stalk when it hardens into a thorn, and the leaf falls, as is the case in *Rhamnus catharticus,* and *Robinia spinosa;* and to the stipulæ of the *Robinia pseudacacia,* which also become thorns.

SPINO'SUS. Spinous. Applied in *Anatomy* and *Natural History* to any object resembling a spine or thorn, or beset with spines or thorns.

SPIRÆ'A. (*a, æ.* f.; from *spira,* a spire, so named from its spiral stalk.) The name of a genus of plants in the Linnæan system. Class, *Icosandria;* Order, *Pentagynia.*

Spiræa africana. A species of *Diosma,* most probably the *crenata.*

Spiræa filipendula. The systematic name of the officinal dropwort. *Filipendula. Saxifraga rubra.* The root of this plant, *Spiræa —foliis pennatis, foliolis uniformibus serratis; caule herbaceo; floribus corymbosis,* of Linnæus, possesses astringent, and, it is said, lithontriptic virtues. It is seldom used in the practice of the present day.

Spiræa ulmaria. The systematic name of the meadow-sweet. Meadow-sweet. Queen of the meadows. *Ulmaria. Regina prati. Barba capræ.* This is a beautiful and fragrant plant. The leaves are recommended as mild astringents. The flowers have a strong smell, resembling that of May: they are supposed to possess antispasmodic and diaphoretic virtues; and, as they are very rarely used in medicine, Linnæus suspects that the neglect of them has arisen from the plant being supposed to be possessed of some noxious qualities, which it seemed to betray by its being left untouched by cattle. It may be observed, however, that the cattle also refuse the Angelica and other herbs, whose innocence is apparent from daily experience.

SPIRAL. *Spiralis.* Twisted like a cork-screw.

Spiral bandage. The common roller which is wound spirally round a limb, and is the most commonly used of all bandages.

Spirit. See *Spiritus.*

SPI'RITUS. (*us, ûs.* m.; spirit.) This name was formerly given to all volatile substances collected by distillation. Three principal kinds were distinguished: inflammable or ardent spirits, acid spirits, and alkaline spirits. The word spirit is now almost exclusively confined to the various preparations of alkohol and ether.

Spiritus ætheris aromaticus. Take of cinnamon-bark bruised, three drachms; cardamon-seeds powdered, a drachm and a half; long pepper powdered, ginger-root sliced, each a drachm; spirit of sulphuric ether, a pint: macerate for fourteen days, in a closed glass vessel, and strain. An excellent stimulating and stomachic compound, which is administered in debility of the stomach and nervous affections.

Spiritus ætheris nitrici. *Spiritus ætheris nitrosi. Spiritus nitri dulcis.* Sweet spirit of nitre. Take of rectified spirits, three pounds; nitric acid, four ounces: add the acid gradually to the spirit, and mix them: then (with a gentle heat) distil thirty-two fluid ounces. An anodyne, antispasmodic, diaphoretic, and diuretic compound, mostly administered in febrile affections unattended with inflammation, in dropsy, and in dysuria. The ordinary dose is from twenty to thirty drops, but in typhoid cases it may often be given with advantage in much larger doses.

Spiritus ætheris sulphurici. *Spiritus vitrioli dulcis. Spiritus ætheris vitriolici.* Sweet spirit of vitriol. Take of sulphuric ether, half a pint; rectified spirit, a pint: mix them. This preparation has the same medicinal properties as sulphuric ether, but is less active. It is now omitted in the London Pharmacopœia, but is retained by the Edinburgh, under the name of *æther sulphuricus cum alkohole;* and by the Dublin, under that of *liquor æthereus sulphuricus.*

Spiritus ætheris sulphurici compositus. Take of sulphuric ether, eight fluid ounces; rectified spirit, sixteen fluid ounces; etherial oil, three fluid drachms: mix them. A stimulating anodyne, supposed to be similar to the celebrated *liquor mineralis anodynus,* of Hoffmann. It is exhibited in fevers, nervous affections, hysteria, &c.; and, in most cases of fever where medicines are rejected by the stomach, this is of infinite service. Dose from ʒ ss. to ʒ ij.

Spiritus ammoniæ. Spirit of ammonia. Formerly called *Spiritus salis ammoniaci dulcis;* and *Spiritus salis ammoniaci.* Take of muriate of ammonia, ten ounces; carbonate of potash, sixteen ounces; rectified spirit, water, of each three pints: mix them, and (with a gentle fire) distil three pints. A stimulating antispasmodic, occasionally exhibited in cases of asphyxia, asthenia, and in nervous diseases, but mostly used as an external stimulant against rheumatism, sprains, and bruises.

Spiritus ammoniæ aromaticus. Aromatic spirit of ammonia. Formerly known by the name of *Spiritus ammoniæ compositus; Spiritus volatilis aromaticus;* and *Spiritus salis volatilis oleosus.* Take of cinnamon-bark bruised, cloves bruised, each two drachms; lemon-peel, four ounces; carbonate of potash, eight ounces; muriate of ammonia, five ounces; rectified spirit, water, of each four pints: mix, and distil six pints. A stimulating antispasmodic and sudorific, in very general use to smell at in faintings and lowness of spirits. It is exhibited internally in nervous affections, hysteria, and weakness of the stomach. The dose is from half a drachm to a drachm.

Spiritus ammoniæ fœtidus. Fœtid spirit of ammonia. Formerly called *spiritus volatilis fœtidus.* Take of muriate of ammonia, ten ounces; carbonate of potash, sixteen ounces; rectified spirit, water, of each three pints; asafœtida, five ounces: mix; then, by a gentle fire, distil three pints. A stimulating antispasmodic, often

exhibited to children against convulsions, and to gouty and asthmatic and hysterical patients. The dose is from half to a whole fluid drachm.

Spiritus ammoniæ succinatus. Succinated spirit of ammonia. Formerly known by the names of *Eau de luce*; *Spiritus salis ammoniaci succinatus*; and *Liquor cornu cervi succinatus*. Take of mastich, three drachms; rectified spirit, nine fluid drachms; oil of lavender, fourteen minims; oil of amber, four minims; solution of ammonia, ten fluid ounces: macerate the mastich in the spirit, that it may dissolve, and pour off the clear tincture; to this add the remaining articles, and shake them together. This preparation is much esteemed as a stimulant and nervine medicine, and is employed internally and externally against spasms, hysteria, syncope, vertigo, and the stings of insects. The dose is from ten minims to half a fluid drachm.

Spiritus anisi. Spirit of aniseed. Formerly called *Spiritus anisi compositus*; and *Aqua seminum anisi composita*. Take of aniseed bruised, ten ounces; proof spirit, a gallon; water, two pints: mix, and distil a gallon by a gentle fire. A stimulating carminative and stomachic, calculated to relieve flatulency, borborygmus, colic, and spasmodic affections of the bowels. The dose is from half to a whole fluid drachm.

Spiritus armoraciæ compositus. Compound spirit of horse-radish. Formerly called *Spiritus raphani compositus*; and *Aqua raphani composita*. Take of horse-radish root fresh and sliced, dried orange-peel, of each twenty ounces; nutmegs bruised, five drachms; proof spirit, a gallon; water, two pints: mix, and distil a gallon by a gentle fire. A very warm stimulating compound, given in gouty, rheumatic, and spasmodic affections of the stomach, and in scorbutic disorders. The dose is from half a fluid drachm to half a fluid ounce.

Spiritus camphoræ. Spirit of camphire. Camphorated spirit of wine. Formerly known by the names of *Spiritus camphoratus*; *Spiritus vinosus camphoratus*; and *Spiritus vini camphoratus*. Take of camphire, four ounces; rectified spirit, two pints: mix, that the camphire may be dissolved. A stimulating medicine, used as an external application against chilblains, rheumatism, palsy, numbness, and gangrene.

Spiritus carui. Spirit of caraway. Formerly called *Aqua seminum carui*. Take of caraway-seeds bruised, twenty-two ounces; proof spirit, a gallon; water, two pints: mix, and distil a gallon by a gentle fire. The dose is from a fluid drachm to half a fluid ounce.

Spiritus cinnamomi. Spirit of cinnamon. Formerly called *Aqua cinnamomi spirituosa*; and *Aqua cinnamomi fortis*. Take of oil of cinnamon, two drachms; proof spirit, a gallon; water, a pint: mix, and distil a gallon by a gentle fire. Spirit of cinnamon is mostly used in conjunction with other carminatives to give a pleasant flavour: it may be exhibited alone as a carminative and stimulant. The dose is from a fluid drachm to half a fluid ounce.

Spiritus cornu cervi. See *Ammoniæ subcarbonas*.

Spiritus gallicus. Brandy.

Spiritus jamaicensis. Rum.

Spiritus juniperi compositus. Compound spirit of juniper. Formerly called *Aqua juniperi composita*. Take of juniper-berries bruised, fifteen ounces; caraway-seeds bruised, fennel-seeds bruised, of each two ounces; proof spirit, a gallon; water, two pints: mix, and distil a gallon by a gentle fire.

Spiritus lavendulæ. Spirit of lavender. Formerly called *Spiritus lavendulæ simplex*. Take of fresh lavender flowers, two pounds and a half; rectified spirit, a gallon; water, two pints: mix, and distil a gallon by a gentle fire. Though mostly used as a perfume, this spirit may be given internally as a stimulating nervine and antispasmodic. The dose is from a fluid drachm to half a fluid ounce.

Spiritus lavendulæ compositus. Compound spirit of lavender. Formerly called *Spiritus lavendulæ compositus matthiæ*. Take of spirit of lavender, three pints; spirit of rosemary, a pint; cinnamon bark bruised, nutmegs bruised, of each half an ounce; red saunders wood sliced, an ounce: macerate for fourteen days, and strain. An elegant and useful antispasmodic and stimulant, in very general use against nervous diseases, lowness of spirits, and weakness of the stomach, taken on a lump of sugar.

Spiritus lumbricorum. The spirit obtained by the distillation of the earth-worm is similar to hartshorn. It is therefore never obtained from this source in the present day.

Spiritus menthæ piperitæ. Spirit of peppermint. Formerly called *Spiritus menthæ piperitidis*; and *Aqua menthæ piperitidis spirituosa*. Take of oil of peppermint, three drachms; proof spirit, a gallon; water, a pint: mix, and distil a gallon by a gentle fire. This possesses all the properties of the peppermint, with the stimulating virtues of the spirit. The dose from one fluid drachm to a fluid ounce.

Spiritus menthæ pulegii. *Aqua pulegii spirituosa*. This is prepared in the same manner as the spirit of peppermint.

Spiritus menthæ viridis. Spirit of spearmint. Formerly called *Spiritus menthæ sativæ*; and *Aqua menthæ vulgaris spirituosa*. This also is prepared in the same manner.

Spiritus millepedarum. An obsolete preparation, the virtues of which are similar to hartshorn.

Spiritus mindereri. See *Ammoniæ acetatis liquor*.

Spiritus myristicæ. Spirit of nutmeg. Formerly called *Aqua nucis moschatæ*. Take of nutmegs bruised, two ounces and a half; proof spirit, a gallon; water, a pint: mix, and distil a gallon by a gentle fire. A stimulating and agreeable spirit, possessing the virtues of the nutmeg. The dose from one fluid drachm to a fluid ounce.

Spiritus nitri dulcis. See *Spiritus ætheris nitrici*.

Spiritus nitri duplex. See *Acidum nitrosum*, and *Nitric acid*.

Spiritus nitri fumans. See *Acidum nitrosum*, and *Nitric acid*.

Spiritus nitri glauberi. See *Acidum nitrosum*, and *Nitric acid*.

Spiritus nitri simplex. The dilute nitrous acid. See *Acidum nitricum dilutum*.

Spiritus nitri vulgaris. A very dilute nitric acid.

Spiritus pimentæ. Spirit of pimento. Formerly called *spiritus pimento*. This is prepared in the same manner as the *spiritus myristicæ*. A stimulating aromatic medicine, mostly employed with astringent and carminative medicines. The dose is from half a fluid drachm to half a fluid ounce.

Spiritus pulegii. See *Spiritus menthæ pulegii.*

Spiritus rector. Boerhaave, and other chemists, give this name to a very attenuated principle, in which the smell of odorant bodies peculiarly resides. It is now called *aroma.*

Spiritus rosmarini. Spirit of rosemary. Take of oil of rosemary, two drachms; proof spirit, a gallon; water, a pint: mix, and distil a gallon by a gentle fire. A very fragrant spirit, mostly employed for external purposes in conjunction with other resolvents.

Spiritus salis. Spirit of salt. Muriatic acid.

Spiritus salis ammoniaci aquosus. See *Ammoniæ subcarbonas.*

Spiritus salis ammoniaci dulcis. See *Spiritus ammoniæ.*

Spiritus salis ammoniaci simplex. See *Ammoniæ subcarbonas.*

Spiritus salis Glauberi. See *Hydrochloric.*

Spiritus salis marini. See *Hydrochloric.*

Spiritus vini rectificatus. See *Alkohol.*

Spiritus vini tenuior. Proof spirit, which is about half the strength of rectified, is much employed for preparing tinctures of resinous juices, barks, roots, &c.

Spiritus vitrioli. See *Sulphuric acid.*

Spiritus vitrioli dulcis. See *Spiritus ætheris sulphurici.*

Spiritus vitrioli tenuis. See *Acidum sulphuricum dilutum.*

Spiritus volatilis fœtidus. See *Spiritus ammoniæ fœtidus.*

Spiroid canal. The *Aquæductus Fallopii* is so named by Chaussier.

SPISSAME'NTUM. (*um, i.* n.: from *spisso*, to thicken.) A substance put into oils and ointments to make them thick.

Spitting of blood. See *Hæmoptysis.*

SPLA'NCHNIC. (*Splanchnicus*; from σπλαγχνον, an entrail.) Belonging to the entrails.

Splanchnic nerve. A branch of the great intercostal nerve. See *Intercostal nerve.*

SPLANCHNO'LOGY. (*Splanchnologia, æ.* f.; from σπλαγχνον, an entrail, and λογος, a discourse.) The doctrine of the viscera.

SPLEEN. (*Splen, enis.* m. Σπλην.) *Lien.* The spleen or milt is a spongy viscus of a livid colour, and so variable in form, situation, and magnitude, that it is hard to determine either. Nevertheless, in the normal condition, it is always placed on the left side, in the left hypochondrium, between the eleventh and twelfth false ribs. Its circumference is oblong and round, resembling an oval figure. It is larger, to speak generally, when the stomach is empty, and smaller when it is compressed, or evacuated by a full stomach.

It should particularly be remembered of this viscus, that it is convex towards the ribs, and concave internally: also, that it has an excavation, into which vessels are inserted.

It is connected with the following parts: — 1. With the stomach, by a ligament and short vessels. 2. With the omentum, and the left kidney. 3. With the diaphragm, by a portion of the peritonæum. 4. With the beginning of the pancreas, by vessels. 5. With the colon, by a ligament.

In man, the spleen is covered with one simple, firm membrane, arising from the peritonæum, which adheres to the spleen very firmly, by the intervention of cellular structure.

The internal structure of the spleen is, by some anatomists, considered as cellular, the cells communicating with each other and with the branches of the splenic vein: others deny the existence of true cells in the spleen. The mass of the spleen appears to be formed of a collection of reddish brown granules; though the red substance contains very small whitish bodies, first observed by Morgagni. They are distinct in some of the inferior animals; but, in the human subject, their existence is asserted by some anatomists and denied by others.

The vessels of the spleen are, the splenic artery, coming from the cœliac artery, which, considering the size of the spleen, is much larger than is requisite for the mere nutrition of it. This goes by serpentine movements, out of its course, over the pancreas, and behind the stomach, and, after having given off branches to the adjacent parts, it is inserted into the concave surface of the spleen. It is afterwards divided into smaller branches, which are again divided into others yet smaller, delivering their blood immediately to the veins, but emitting it nowhere else. The veins, at length, come together into one, called the splenic vein; and having received the larger coronary vein of the stomach, besides others, it constitutes the left principal branch of the vena portæ.

The nerves of the spleen are small; they surround the arteries with their branches; they come from a particular plexus, which is formed of the posterior branches of the eighth pair, and the great intercostal nerve.

Lymphatic vessels are sometimes seen on the surface of the human spleen.

The use of the spleen has not hitherto been determined. We merely know, says Professor Müller, that its importance in the economy is not great: the experiments of numerous observers have shown that it may be extirpated without any remarkable ill consequence. Dupuytren observed increased voracity in dogs after the operation; Mayer states that the lymphatic glands become enlarged, but this is certainly not a constant effect. It has by others been said that the secretion of urine becomes more abundant, but Tiedemann and Gmelin deny that such is always the case. Mead and Mayer had noticed signs of imperfect digestion after the removal of the spleen; and some writers have stated that the bile becomes very bitter and dark-coloured, both of which the Heidelberg professors likewise deny to be con-

stant phenomena. The refutation of the hypotheses proposed to explain the use of the spleen will not occupy us long; for they either rest on wholly incorrect premises, or they are such as can neither be proved nor disproved.

All the theories which regard the spleen as essentially connected in its function with the liver, can be shown to be fallacious. Doellinger supposes the spleen to be formed merely for the sake of symmetry, to be the fellow of the liver, — the rudimentary liver, as it were, of the left side. But the liver is originally symmetrical; and the spleen is, as we have already described, developed in the middle line. No greater value can be accorded to the circumstance that splenic veins join the vena portæ, and to the hypothesis, thence deduced, that the spleen prepares the blood for the secretion of the bile; for in this respect it does not differ from all the chylopoetic viscera, nor even from the inferior extremities in the lower vertebrata, and the generative organs and air-bladder of fishes.

Some physiologists imagine, without any reason, that the spleen may exert a de-oxidising effect on the blood; others, again, believe that it favours the secretion of the gastric juice, because it receives less blood (?) at the time that the stomach is full; while others, as Lieutaud and Moreschi, regard it as a reservoir of blood for the stomach, supposing that the stomach when distended with food may attract more blood to itself, or may press on the splenic artery so as to diminish the quantity of blood sent at that time to the spleen. Dobson's hypothesis is very similar: he stated that he has found the spleen to have its maximum volume at the time when the process of chymification is at an end, — namely, five hours after food is taken; and to be small and contain little blood seven hours later, no food having been taken in the interval: he hence inferred that the spleen is the receptacle for the increased quantity of blood which the system acquires from the food, and which cannot, without danger, be admitted into the blood vessels generally; and that it regains its previous dimensions after the volume of the circulating fluid has been reduced by secretion. The premises of this theory do not appear to me to be sufficiently proved. Dobson repeated Magendie's experiment of injecting fluids into the veins of an animal, and, he says, with the same result with regard to the spleen, namely, the increase of its size.

The assertion of Defermon, that, when certain substances are taken into the system, the spleen undergoes changes in volume, — that it becomes smaller under the influence of strychnine, camphor, and muriate of morphia, — appears to me likewise to require confirmation. Sir E. Home, resting on the statement that the spleen increases in size after fluids are taken into the stomach, imagined that the fluids found their way by some unknown canals from the stomach to the spleen, and thence to the kidneys; but he afterwards renounced this idea. The function of the spleen probably consists in the production of some change, of which the nature is unknown, in the blood which circulates through its tissue, and in thus contributing to the process of sanguification; or in the secretion of a lymph of peculiar nature, which, being mixed with the contents of the lymphatic and lacteal system coming from other parts, tends to perfect the formation of the chyle. There are no other ways than the lymphatics and veins, by which any animal matter, modified by the action of the spleen, can be conveyed away from it. Tiedemann believes that the lymphatics perform this office; but whether he is correct or not is quite uncertain, and the nature of the change which the animal matter is supposed to undergo is still less known.

The blood of the splenic vein, according to Tiedemann and Gmelin, does not differ from other venous blood; they saw it coagulate like the blood of other organs. The older physiologists, and more recently Autenrieth, maintain, however, that the blood has peculiar characters. Schultz, too, found the blood of the vena portæ of a darker blacker tint than other venous blood; and the dark colour was most evident in animals which were fasting. Neither neutral salts nor the action of the air had the effect of rendering it of a brighter red colour; its coagulum was less firm than that of other blood, and it contained less fibrine and albumen, but more fatty matter.

Mr. Hewson supposed that it was the office of the spleen, as well as of the lymphatic glands and thymus body, to secrete from arterial blood a fluid which, mixed with lymph, should give rise to red blood particles. This, however, cannot be true, for the red particles are formed equally well after the extirpation of the spleen. The reddish colour of the lymph of the spleen, observed by Hewson, Tiedemann, and Fohmann, is not constant.

Mayer has asserted that the spleen is reproduced after extirpation. He says, that after the lapse of some years, he has found in ruminating animals, in the place of the spleen, a body of the size of a lymphatic gland: this would be an interesting fact if it could be satisfactorily proved; but that is scarcely possible, for animals often have small accessory spleens (splenculi), and in the operation of extirpation a small portion of the organ might be left behind in the body. The presence or absence of the bunches of white corpuscules, above described, might aid in determining whether any substance be spleen or not. — *Müller's Physiology, Baly's translation.*

Spleenwort. See *Asplenium.*

SPLENA'LGIA. (*a*, *æ.* f.; from σπλην, the spleen, and αλγος, pain.) A pain in the spleen or its region.

SPLE'NETIC. (*Splenetĭcus*; from σπλην, the spleen.) Belonging to the spleen.

SPLENI'TIS. (*is*, *idis.* f.; from σπλην, the spleen.) Inflammation of the spleen. Characterised by fever, tension, heat, tumour, and pain in the left hypochondrium, increased by pressure. This disease, according to Juncker, comes on with a remarkable shivering, succeeded by a most intense heat, and very great thirst; a pain and tumour are perceived in the left hypochondrium, and the paroxysms for the most part assume a quartan form; when the patients

expose themselves for a little to the free air, their extremities immediately grow very cold. If an hæmorrhage happen, the blood flows out of the left nostril. The other symptoms are the same with those of the hepatitis. Like the liver, the spleen is also subject to a chronic inflammation, which often happens after agues, and is called the ague cake, though that name is also frequently given to a scirrhous tumour of the liver succeeding intermittents. The causes of this disease are, in general, the same with those of other inflammatory disorders; but those which determine the inflammation to that particular part more than another are very much unknown. It attacks persons of a very plethoric and sanguine habit of body rather than others.

During the acute stage of splenitis, we must follow the antiphlogistic plan, by general and topical bleedings, by purging frequently, and by the application of blisters near the part affected. If it should terminate in suppuration, we must endeavour to discharge the pus externally, by fomentations or poultices. When the organ is in an enlarged scirrhous state, mercury may be successful in preventing its farther progress, or even producing a diminution of the part; but proper caution is required in the use of it, lest the remedy do more harm than the disease.

Sple'nium. Spleen-wort. See *Asplenium.*

SPLE'NIUS. (*us, ii.* m.; from σπλην, the spleen: so named from its resemblance in shape to the spleen; or, according to some, it derives its name from *splenium*, a *ferula*, or splint, which surgeons apply to the sides of a fractured bone.) *Splenius capitis*, and *Splenius colli*, of Albinus. The splenius is a flat, broad, and oblong muscle, in part covered by the upper part of the trapezius, and obliquely situated between the back of the ear and the lower and posterior part of the neck.

It arises, tendinous, from the four or five superior spinous processes of the dorsal vertebræ; tendinous and fleshy from the last of the neck; and tendinous from the ligamentum colli; or, rather, the tendons of the two splenii unite here inseparably; but about the second or third vertebra of the neck they recede from each other, so that part of the complexus may be seen.

It is inserted, by two distinct tendons, into the transverse processes of the two first vertebræ of the neck, sending off some few fibres to the complexus and levator scapulæ; tendinous and fleshy into the upper and posterior part of the mastoid process, and into a ridge on the occipital bone, where it joins with the root of that process.

This muscle may be easily separated into two parts. Eustachius and Fallopius were aware of this; Winslow has distinguished them into the *superior* and *inferior* portions; and Albinus has described them as two distinct muscles, calling that part which is inserted into the mastoid process and os occipitis, *splenius capitis*, and that which is inserted into the vertebræ of the neck, *splenius colli*. We have here followed Douglas, and the generality of writers, in describing these two portions as one muscle, especially as they are intimately united near their origin.

When this muscle acts singly, it draws the head and upper vertebræ of the neck obliquely backwards; when both act, they pull the head directly backwards.

Splenius capitis. See *Splenius.*

Splenius colli. See *Splenius.*

Splenoce'le. (From σπλην, the spleen, and κηλη, a tumour.) A hernia of the spleen.

SPLINT. A long piece of wood, tin, or strong pasteboard, employed for preventing the ends of broken bones from moving, so as to interrupt the process by which fractures unite.

Splint bone. The fibula is so called.

SPLIT-CLOTH. *Scissum linteum.* A bandage which consists of a central portion and six or eight tails. It is used principally for the head.

SPO'DIUM. (*um, ii.* n. Σποδιον.) The *spodium* of Dioscorides and of Galen are now not known in the shops. It is said to have been produced by burning cadmia alone in the furnace; for, having thrown it in small pieces into the fire, near the nozzle of the bellows, they blow the most fine and subtle parts against the roof of the furnace; and what was reflected from thence was called *spodium.* It differed from the pompholyx in not being so pure, and in being more heavy. Pliny distinguishes several kinds of it, as that of copper, silver, gold, and lead.

Spodium abaisir. Burnt ashes. Metallic calces, and a composition of white lead and oil.

Spodium arabum. Burnt ivory, or ivory black.

Spodium græcorum. The white dung of dogs; called also, *Album græcum.*

Spolia'rium. A private room at the baths.

SPONDY'LIUM. (*um, ii,* n.; from σπονδυλος, a vertebra: so named from the shape of its root, or probably because it was used against the bite of a serpent called σπονδυλις.) See *Heracleum spondylium.*

SPO'NDYLUS. (*us, i.* m. Σπονδυλος, a vertebra.) The spine or back-bone.

Sponge-tent. See *Spongia præparata.*

SPO'NGIA. (*a, æ.* f. Σπογγος; σπογγια.) Sponge. A genus of marine productions, the nature of which is considered doubtful. It is a soft, light, very porous and compressible substance, readily imbibing water, and distending thereby. It is found adhering to rocks, particularly in the Mediterranean Sea, about the islands of the Archipelago. It was formerly supposed to be a vegetable production, but is now classed among the zoophytes. It contains *iodine.* Burnt sponge was some years since in great reputation for the cure of bronchocele, and scrofulous complaints. Any efficacy which it may possess must be owing to the iodine it contains. Sponge-tents are employed by surgeons to dilate fistulous ulcers, &c. *Spongia officinalis* is the species in ordinary use.

Spongia præparata. Prepared sponge. Sponge-tent. This is formed by dipping pieces of sponge in hot melted emplastrum ceræ compositum, and pressing them between two iron plates. As soon as cold, the substance thus formed may be cut into pieces of any shape. It was formerly used for dilating small open-

ings, for which it was well adapted, as, when the wax melted, the elasticity of the sponge made it expand and distend the opening in which it had been put.

Spongia usta. Burnt sponge. Cut the sponge into pieces, and beat it, that any extraneous matters may be separated; then burn it in a close iron vessel until it becomes black and friable; lastly, rub it to a very fine powder. This preparation is exhibited with bark in the cure of scrofulous complaints, and forms the basis of a lozenge, which has been known to cure the bronchocele in many instances. It contains a portion of *iodine*. The dose is from a scruple to a drachm.

Spongiosa ossa. *Ossa turbinata inferiora. Ossa convoluta.* These bones are situated in the under part of the side of the nose: they are of a triangular form and spongy appearance, resembling the os spongiosum superius: externally they are convex; internally they are concave; the convexity is placed towards the septum nasi, and the concavity outwards. The under edge of each bone is placed horizontally near the outer part of the nose, and ending in a sharp point behind. At the upper part of the bone are two processes, the anterior of which ascends and forms part of the lachrymal groove, and the posterior descends and forms a hook to make part of the maxillary sinus. The connection of this bone is to the os maxillare, os palati, and os unguis, by a distinct suture in the young subject; but in the adult, by a concretion of substance.

The ossa spongiosa afford a large surface for extending the organ of smell, by allowing the membrane of the nose to be expanded, upon which the olfactory nerves are dispersed.

In the fœtus these bones are almost complete.

Spongio'sum os. 1. The ethmoid bone.

2. See *Spongiosa ossa.*

SPONGY. *Spongiosus.* Applied very generally to express a texture resembling that of a sponge.

Spongoi'des. (Σπογγοειδης; from σπογγος, a sponge, and ειδος, *forma*, shape: so called because it is porous, like a sponge or sieve.) See *Ethmoid bone.*

SPORADIC. (*Sporadicus;* from σπειρω, to sow.) Diseases which are not epidemic, but occur here and there from causes affecting only the individual, are called sporadic diseases.

Spotted lungwort. See *Pulmonaria.*

Sprain. See *Subluxatio.*

Sprat. See *Clupea sprattus.*

Spreading. See *Diffusus.*

Sphrongidium. See *Columnula.*

SPRUCE. 1. A particular species of fir. See *Pinus abies.*

2. A fermented liquor, called spruce-beer, prepared from the spruce fir. From the quantity of carbonic acid it contains, it is found a useful antiscorbutic.

Spur. See *Calcar.*

Spurge-flax. See *Daphne gnidium.*

Spurge-laurel. See *Daphne laureola.*

Spurge-olive. See *Daphne mezereum.*

Spurious. See *Nothus.*

Spurred. See *Calcaratus.*

Sputamen. See *Sputum.*

SPU'TUM. (*um, i.* n.; from *spuo*, to spit.) *Sputamen.* Saliva. That which is cast out of the mouth merely by spitting or hawking, as the spittle, is properly the sputum: but it applies also to expectorated matter, or that which comes from within the chest and is spit out. For the varieties of sputa, see the *Supplement.*

SQUA'MA. (*a, æ.* f.) A scale. An opake and thickened lamina of the cuticle. See *Scale.*

Squamæ. An order of cutaneous diseases in Dr. Willan's arrangement. Scaly diseases are commonly produced by some degree of inflammation of the true skin, over which they are formed; but occasionally, as in the slighter forms of pityriasis, the cuticle alone, or with the rete mucosum, appears to be in a morbid condition. If the definition be carefully attended to, scales will not be confounded with the scabs succeeding confluent pustules and vesicles, or superficial ulcerations. The four genera of scaly diseases are, *Lepra, Psoriasis, Pityriasis,* and *Ichthyosis.*

SQUAMA'RIA. (From *squama*, a scale: so called from its scaly roots.) The great tooth-wort, or *Plumbago europæa.*

SQUAMA'TUS. Scaly: applied to the nectary of the *Ranunculus* genus, &c. See *Nectarium.*

SQUA'MOUS. (*Squamosus;* from *squama*, a scale: because the bones lie over each other like scales.) Scaly.

Squamous suture. The suture which unites the squamose portion of the temporal bone with the parietal.

SQUARRO'SUS. (From *squarra*, rough.) Squarrose: rough, scabby, scurfy, scaly. Applied to plants, &c.; as *Juncus squarrosus.*

Squill. See *Scilla.*

Squilla. See *Scilla.*

Squills, vinegar of. See *Acetum scillæ.*

Squina'nthus. (From *squinanthia*, the quinsy: so named from its uses in the quinsy.) See *Andropogon schœnanthus.*

Squinting. See *Strabismus.*

Squire's elixir.

STA'CHYS. (*ys, yos.* m. Σταχυς, a spike: so named from its spicated stalk and seed.) 1. The name of a genus of plants in the Linnæan system. Class, *Didynamia;* Order, *Gymnospermia.*

2. Some species of wild sage, and horehound, nettle, &c. were formerly so called.

Stachys fœtida. See *Ballote nigra.*

Stachys palustris. Clown's woundwort or all-heal. Fallen into disuse.

STA'CTE. (*e, es.* and *a, æ.* f. Σταχτη; from σταζω, to distil.) 1. That kind of myrrh which distils or falls in drops from the trees.

2. A more liquid kind of amber than what is commonly met with in the shops; whence in Scribonius Largus, Paulus Ægineta, and some others, we meet with a collyrium, and several other forms, wherein this was the chief ingredient, distinguished by the name of *Stactica.*

Sta'cticon. Instillation; also an eye-water.

Staff. A grooved steel instrument introduced through the urethra into the bladder, to guide the knife in the operation of lithotomy.

Sta'gma. (From σταζω, to distil.) 1. Any distilled liquor.

2. The vitriolic acid.

STAHLIANS. The followers of George Ernest Stahl, an eminent chemist and physiologist of the seventeenth century. The Stahlians are called also *Animists*, and their school is called the *Dynamic school*. See *Animists*, *Dynamic school*, and *Life*.

STALAGMI'TIS. (*is*, *is*. f.; from σταλαγμος, a dropping, or distillation, because the gum which it yields escapes in that manner.) The name of a genus of plants. Class, *Polygamia*; Order, *Monœcia*.

Stalagmitis cambogioi'des. This and several other species of stalagmitis yield a kind of gamboge: the true gamboge, however, is the produce of the *Garcinia cambogia*. See *Cambogia* in the Supplement.

STALA'GMUS. (*us*, *i*. m.; from σταλαζω, to distil.) Distillation.

Stalk. See *Scapus*.

Sta'lticus. (From στελλω, to contract.) Healing: applied to medicines which were supposed to have that power.

STAMEN. (*en*, *inis*. n.) The male genital organ of plants, found generally within the corolla, near the pistil. Stamens were formerly called *chives*. They are various in number in different flowers, from one to some hundreds. This organ is essential to a plant, no one having yet been discovered, after the most careful research, that is destitute of it, either in the same flower with the pistils, or a separate one of the same species.

A stamen consists of three parts: —

1. The *filament*, the part which supports the anther.

2. The *anther*, placed on the filament, and the most essential part of all.

3. The *pollen*, or powder adhering to the anther.

II. Stamina. In *Physiology* and *Pathology*, applied to the degree of strength and vigour in the constitution.

Sta'minal. *Staminalis*. Relating to the stamen.

STAMINI'FEROUS. *Staminiferus*. Stamen-bearing: applied to such flowers and florets as contain one or more stamens and no pistils. They are necessarily barren flowers.

Stammering. See *Blæsitas*.

Standard. See *Vexillum*.

Stanni pulvis. Tin, finely divided, is exhibited internally as a vermifuge: it acts mechanically, and the fine filings are more effectual than the powder.

Stannic acid. *Acidum stannicum*. (*Stannicus*; from *stannum*, tin.) A name which has been given to the peroxide of tin, because it is soluble in alkalis.

Sta'nnum. (*um*, *i*. n.) See *Tin*.

Stapedis musculus. See *Stapedius*.

STAPE'DIUS. (From *stapes*, one of the bones of the ear.) *Musculus stapes*, of Cowper; and *pyramidal-stapedien*, of Dumas. A muscle of the internal ear. See *Auris*.

STA'PES. (*es*, *edis*. m.; *in quo pes stat*, a stirrup.) A bone of the internal ear, so called from its resemblance to a stirrup. See *Auris*.

Sta'phis. (*is*, *idis*. f. Σταφις.) A grape, or a bunch of grapes; whence, from their likeness thereunto, it is applied to many other things, especially the glands of the body, whether in a natural or diseased state.

Staphisa'gria. (*a*, *æ*. f. Σταφις αγρια, wild vine: from the resemblance of its leaves to those of the vine.) See *Delphinium staphisagria*.

STA'PHYLE. (Σταφυλη, a grape or raisin: so called from a supposed resemblance.) The uvula.

Staphyli'nos. Σταφυλῖνος. A Greek name of the wild carrot.

STAPHYLI'NUS. (From σταφυλη, the uvula.) Applied, in *Anatomy*, to parts connected with the uvula.

Staphylinus externus. See *Circumflexus*.

STAPHYLO'MA. (*a*, *atis*. n.; from σταφυλη, a grape: so named from its being thought to resemble a grape.) A disease of the eyeball, in which the cornea loses its natural transparency, rises above the level of the eye, and successively even projects beyond the eyelids, in the form of an elongated, whitish, or pearl-coloured tumour, which is sometimes smooth, sometimes uneven, and is attended with a total loss of sight. The proximate cause is an effusion of thick humour between the lamellæ of the cornea, so that the internal and external superficies of the cornea very much protuberates. The remote causes are, an habitual ophthalmia, contusions, and frequently a deposition of the variolous humour in the small-pox.

This disease sometimes occupies the whole transparent cornea; the opake cornea projects, and, if in the form of a cone, increasing in magnitude, it has been known to push out and invert the lower eyelid; and sometimes the morbid cornea is so elongated as to lie on the cheek: in these instances, there are generally collections of pus or some analogous fluid.

Staphyloma requires the aid of surgery to remove all the adventitious growths, or collections of fluids, and the use of detergent lotions and such caustic application as can be with safety used.

Staphylosis. See *Staphyloma*.

Star grass. See *Aletris farinosa*.

Star-like. See *Stellatus*.

Star-shoot. See *Tremella nostoc*.

Star-thistle. See *Carlina acaulis*.

Starch. See *Amylum*.

Starkey's pills. The same as *Matthews's pills*.

Starkey's soap. See *Sapo terebinthinæ*.

STA'TICE. (*e*, *es*. f.; from στατιζω, to stop: so named from its supposed property of restraining fluxes.) The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Pentagynia*. The herb sea-thrift.

Statice caroliniana. Marsh rosemary. A plant used in the United States as an astringent in dysentery, and as a gargle in ulcerated sore throats.

Statice limonium. The systematic name of the sea-thrift. Sea-lavender, or red behen.

Behen rubrum. Limonium. Limonium majus. Behen. The roots possess astringent and strengthening qualities, but not in a very remarkable degree.

STATIONA'RIA FEBRIS. A stationary fever. So Sydenham called those fevers which happen when there are certain general constitutions of the years, which owe their origin neither to heat, cold, dryness, nor moisture, but rather depend on a certain secret and inexplicable alteration in the bowels of the earth, whence the air becomes impregnated with such kinds of effluvia as subject the body to particular distempers, so long as that kind of constitution prevails, which, after a certain course of years, declines and gives way to another.

Stavesacre. See *Delphinium.*

STE'ARINE. (From στεαρ, fat.) See *Adeps.*

STEAROPTENE. *Stearoptenum.* A name given by Herberger to the concrete portion, or camphor of volatile oils. The term is altogether ill-formed, for the genitive of στεαρ is στεατος; and πτηνος does not mean volatile in the sense here intended, but *flying like a bird.*

STEATOCE'LE. (*e, es.* f.; from στεαρ, fat, and κηλη, a tumour.) A fatty tumour of the scrotum.

STEATO'MA. (*a, atis.* n.; from στεαρ, fat.) An encysted tumour, the contents of which are of a fatty consistence.

STEEL. *Chalybs.* The best, hardest, finest, and closest grained iron, combined with carbon by a particular process.

Steer's opodeldoc. See *Opodeldoc, Steer's.*

STE'LLA. (*a, æ.* f.; from στελλω, to appear a star.) A bandage with many crossings like a star.

STELLA'RIA. (*a, æ.* f.; from *stella*, a star: so named from the star-like appearance of its flowers.) The name of a genus of plants. Class, *Decandria;* Order, *Trigynia.* Stichwort.

STELLA'TÆ. The name of an order of plants in Linnæus's Fragments of a Natural Method, consisting of such as have stellate leaves, and quadrifid corollæ: mostly tetrandrous; as *Galium, Asperula, Rubia tinctorum,* &c.

STELLA'TUS. (From *stella*, a star.) Stellate: star-like. Applied to plants and parts of plants; as the nectary of the *Stapelia,* &c.

Stelochites. See *Osteocolla.*

Stem. See *Caulis,* and *Stipes.*

Stem-leaves. See *Caulinus.*

STE'MA. (From στημι, to stand.) The penis.

Stemless. See *Acaulis.*

Stemless milk-vetch. See *Astragalus excapus.*

Stenonis Ductus. See *Ductus stenonis.*

STENOTHO'RAX. (*ax, acis.* m.; from στενος, narrow, and θωραξ, the chest.) One who has a narrow chest.

STERCU'LIA. A genus of plants of the Class *Monodelphia;* and Order *Polyandria.*

STERCULIA URENS. This plant affords the Bassora gum. See *Bassora gum.*

STERILITY. (*Sterilitas, atis.* f.; from στειζος.) 1. In *Physiology* and *Pathology,* sterility is the want of power to get or bear a child: hence it applies to both the male and female.

1. *Female sterility* is an inability to conceive offspring, — an imperfection or abolition of the conceptive power. In many instances this is a direct imbecility or want of tone, rather than a want of desire; and the common causes are, a life of intemperance of any kind, and especially of inordinate indulgence in sexual pleasures, a long continuance of the whites, or a paralytic affection of the generative organs. It has also been occasioned by injuries done to the loins or hypogastric region, and by over exertion in walking. The plan of treatment to be had recourse to, is similar to that recommended against sterility in males caused by debility.

Barrenness in females is often caused by organic derangement or structural defect, both natural and accidental. This may be of various kinds; for the vagina may be imperforate, and prohibit not only all intromission of semen, but an entrance of the penis itself. The ovaria may be defective, or even altogether wanting, or not duly developed, or destitute of ovula; or the fimbriæ may be defective, and incapable of grasping the ovum; or the Fallopian tube may be obstructed, or impervious, or wanting; in all which cases barrenness must necessarily ensue. These, however, are rare instances.

Barrenness is more frequently caused by a manifest retention, irregularity, or profusion of the menstrual secretion, producing the symptoms of chlorosis and amenorrhœa, or menorrhagia, which requires that the diseased state of the organs that form its seat should be removed. But there must also be a healthy degree of tone and energy in the conceptive organs, as well as of ease and quiet, in order that they should prove fruitful; and hence, whenever the menstrual flux is more frequently repeated than its natural course, or is thrown forth, even at its proper time, in great profusion, and, as is generally the case, intermixed with genuine blood, there is as little chance of conception as in difficult menstruation. The organs are too debilitated for the new process; and not unfrequently there is as little desire as there is elasticity. The cure of barrenness, under such circumstances, must depend on the cure of the particular kind of morbid affection that operates at the time, and lays the foundation for the disease.

Personal aversion, or want of appetency, also prohibit conception, though it is not altogether impossible that impregnation should take place from violence, rude or brutal force. Wherever there is a personal aversion, a coldness or reserve, instead of an appetency and pleasure — an irrespondence in the feelings of the female to those of the male, there is as little reason to hope for a parturient issue. There must be an orgastic shock or percussion sufficient to shoot off an ovulum from its bed, and to urge the fine and irritable fimbriæ of the Fallopian tube to lay hold of it in the ovarium, and grasp it tight, by which alone a communication can be opened between this last organ and the ovarium, or the seed cannot reach home to its proper soil, and produce a harvest.

2. *Male sterility* is an inability to beget offspring. It is caused either by impotency, or by seminal misemission, or by copulative incongruity.

Impotency has often been called *anaphrodisia*, which, however, is variously used by medical writers, sometimes as importing a want of desire, sometimes inability, sometimes both, and sometimes a particular kind of inability resulting from weakness alone. Impotency is often the result of great weakness only, produced by excess of indulgence, long-continued gleet, or a paralytic affection of the generative organs; and it has resulted from injuries done to the loins and pelvis. Time, in these cases, often effects a cure, and tonics and stimulants are frequently useful, especially cold bathing; but when produced by a long life of debauchery, or by a paralytic condition of the nerves from accidents, the case is hopeless. Much has been written and said of aphrodisiacs, but there is no dependance to be placed on any one. Wine and vinous stimulants generally augment the state of which they were the original cause. Cantharides are frequently resorted to; but, like spirits and wine, they are now deservedly distrusted. Their effect, as a local stimulant, shows itself rather on the bladder and prostate gland than on the testes; and, as a general irritant, in increasing the heat and action of the whole system. Many of the verticillate plants, as mint and pennyroyal, have been tried in the concentrated state for the same purpose, but with different and even opposite effects in the hands of different practitioners. The best aphrodisiacs are warm and general tonics, as the stimulating bitters with chalybeates. Local stimulants, as blisters and electricity, have been found serviceable.

When impotency is caused by organic affection, the only chance of deriving benefit depends on the removal of the structural disease, or of any natural malformation.

Another cause of inability to beget offspring is what nosologists have termed *dyspermatismus*, or seminal misemission. Imperfection, or defective emission, is produced in several ways: from super-erection of the penis, or priapism, which, if caused by plethora or vascular fulness, is to be overcome by local bleedings, purgatives, and a slender diet; — by the incursion of an epileptic spasm, produced by sexual excitement during the intercourse; — by the discharge being ejected hastily, and without due adjustment, even before the vagina has been fairly entered, which, evincing great nervous irritability in a delicate habit, requires the use of tonics and chalybeates, a generous diet, and cold bathing; — by the discharge being unduly retarded, from hebitude of the genital organs, and hence not accomplished till the orgasm on the part of the female has subsided: this, which is called *bradyspermatismus*, requires tonics and local stimulants, especially electricity; — by the discharge being thrown back into the bladder before it reaches the extremity of the penis; which is called *dys-spermatismus refluus*. This is caused by some obstruction to the flow of the semen between the vesiculæ and glans, which is mostly a narrowing of the urethra, or stricture, and requires the removal of the cause of the obstruction.

II. In *Botany*. — See *Barren*.

STERNA'LGIA. (*a*, *æ*. f.; from στερνον, the sternum or chest, and αλγος, pain.) 1. Pain about the sternum, which is often very severe, and may arise from rheumatism, gout, dyspepsia, and other diseases.

2. A name of the pectoral angina. See *Angina pectoris*.

Sterno-cleido-hyoideus. See *Sterno-hyoideus*.

Sterno-cleido-mastoideus. *Sterno-mastoideus*, and *cleido-mastoideus*, of Albinus. *Mastoideus*, of Douglas and Cowper. A muscle, on the anterior and lateral part of the neck, which turns the head to one side, and bends it forward. It arises by two distinct origins: the anterior, tendinous and fleshy, from the top of the sternum near its junction with the clavicle; the posterior, fleshy, from the upper and anterior part of the clavicle. Both unite a little above the anterior articulation of the clavicle, to form one muscle, which runs obliquely upwards and outwards, to be inserted, by a thick strong tendon, into the mastoid process of the temporal bone, which it surrounds; and, gradually becoming thinner, is inserted as far back as the lambdoidal suture.

Sterno-costales. Vesalius considered these as forming a single muscle on each side, of a triangular shape; hence we find the name of *triangularis* adopted by Douglas and Albinus; but Verheyen, who first taught that they ought to be described as four or five distinct muscles, gave them the name of *sterno-costales*; and in this he is very properly followed by Winslow, Haller, and Lieutaud.

These muscles are situated at each side of the under surface of the sternum, upon the cartilages of the third, fourth, fifth, and sixth ribs. Their number varies in different subjects; very often there are only three, sometimes five, and even six, but most usually we find only four.

The lowermost of the sterno-costales, or what would be called the inferior portion of the triangularis, arises tendinous and fleshy from the edge and inner surface of the lower part of the cartilago ensiformis, where its fibres intermix with those of the diaphragm and transversalis abdominis. Its fibres run nearly in a transverse direction, and are inserted, by a broad thin tendon, into the inner surface of the cartilage of the sixth rib, and lower edge of that of the fifth.

The second and largest of the sterno-costales arises tendinous from the cartilago ensiformis and lower part of the sternum, laterally, and, running a little obliquely outwards, is inserted into the lower edge of the cartilage of the fifth, and sometimes of the fourth rib.

The third arises tendinous from the sides of the middle part of the sternum, near the cartilages of the fourth and fifth ribs, and, ascending obliquely outwards, is inserted into the cartilage of the third rib.

The fourth and uppermost, which is the most frequently wanting, arises tendinous from the beginning of the cartilage of the third rib and

the adjacent part of the sternum, and running almost perpendicularly upwards, is inserted by a thin tendon (which covers a part of the second internal intercostal) into the cartilage and beginning of the bony part of the second rib.

All these muscles are more or less intermixed with one another at their origin, and this probably occasioned them to be considered as one muscle. Fallopius informs us, that the plate Vesalius has given of them was taken from a dog, in which animal they are much larger than in man. Douglas has endeavoured to account for this difference, but his explanation is far from being satisfactory.

Ste'rno-hyoide'us. As this muscle arises from the clavicle, as well as from the sternum, Winslow calls it *sterno-cleido-hyoideus*. It is a long, flat, and thin muscle, situated obliquely between the sternum and os hyoides, behind the lower part of the mastoideus, and covering the *sterno-thyroideus* and the *hyo-thyroideus*. It arises, by very short tendinous fibres, from the cartilaginous part of the first rib, from the upper and inner part of the sternum, from the capsular ligament that connects that bone with the clavicle, and commonly from a small part of the clavicle itself; from thence, ascending along the anterior and lateral part of the neck, we see it united to its fellow, opposite to the inferior part of the larynx, by means of a thin membrane, which forms a kind of *linea alba*. After this the two muscles separate again, and each passing over the side of the thyroid cartilage, is inserted into the basis of the os hyoides, immediately behind the insertion of the last-described muscle.

Its use is to draw the os hyoides downwards.

Sterno-mastoideus. See *Sterno-cleido-mastoideus.*

Ste'rno-thyroide'us. This is flat and thin, like the sterno-hyoideus, but longer and broader. It is situated at the fore part of the neck, between the sternum and thyroid cartilage, and behind the sterno-hyoideus. It arises broad and fleshy from the upper and inner part of the sternum, between the cartilages of the first and second ribs, from each of which it receives some few fibres, as well as from the clavicle, where it joins with the sternum. From thence, growing somewhat narrower, it ascends, and, passing over the thyroid gland and the cricoid cartilage, is inserted tendinous into the lower and posterior edge of the rough line of the thyroid cartilage, immediately under the insertion of the sterno-hyoideus. Now and then a few of its fibres pass on to the os hyoides. Its use is to draw the thyroid cartilage, and consequently the larynx, downwards.

STE'RNUM. (*um, i.* n.) *Pectoris os.* The breast-bone. The sternum, os pectoris, or breast-bone, is the oblong, flat bone placed at the fore part of the thorax. The ossification of this bone in the fœtus beginning from many different points at the same time, we find it, in young subjects, composed of several bones, united by cartilages: but, as we advance in life, most of these cartilages ossify; and the sternum, in the adult state, is found to consist of three, and sometimes only of two pieces, the two lower portions being united into one; and very often, in old subjects, the whole is formed into one bone. But, even in the latter case, we may still observe the marks of its former divisions; so that, in describing the bone, we may very properly divide it into its upper, middle, and inferior portions.

The upper portion forms an irregular square, which, without much reason, has, by many writers, been compared to the figure of a heart as it is painted on cards. It is of considerable thickness, especially at its upper part. Its anterior surface is irregular, and slightly convex; posteriorly, it is somewhat concave. Its upper middle part is hollowed, to make way for the trachea. On each side, superiorly, we observe an oblong articulating surface, covered with cartilage in the recent subject, for receiving the ends of the clavicles. Immediately below this, on each side, the bone becomes thinner, and we observe a rough surface for receiving the cartilage of the first rib, and almost close to the inferior edge of this we find the half of such another surface, which, combined with a similar surface in the middle portion of the sternum, serves for the articulation of the cartilage of the second rib.

The middle portion is much longer, narrower, and thinner than the former; but is somewhat broader and thinner below than above, where it is connected with the upper portion. The whole of its anterior surface is slightly convex, and within it is slightly concave. Its edge, on each side, affords four articulating surfaces, for the third, fourth, fifth, and sixth ribs; and parts of articulating surfaces at its upper and lower parts, for the second and seventh ribs. About the middle of this portion of the sternum we sometimes find a considerable hole, large enough in some subjects to admit the end of the little finger. Sylvius seems to have been the first who described it. Riolanus and some others after him, have, without reason, supposed it to be more frequent in women than in men. In the recent subject it is closed by a cartilaginous substance; and, as it does not seem destined for the transmission of vessels, as some writers have asserted, we may, perhaps very properly, with Hunauld, consider it as an accidental circumstance, occasioned by an interruption of the ossification before the whole of this part of the bone is completely ossified.

The third and inferior portion of the sternum is separated from the former by a line, which is seldom altogether obliterated, even in the oldest subjects. It is smaller than the other parts of the bone, and descends between the ribs, so as to have been considered as an appendix to the rest of the sternum. From its shape, and its being constantly in a state of cartilage in young subjects, it has been commonly named *cartilago xiphoides, ensiformis,* or sword-like cartilage; though many of the ancients gave the name of xiphoides to the whole sternum, comparing the two first bones to the handle, and this appendix to the blade of the sword. The shape of this appendix varies in different subjects: in some it is longer and more pointed, in others shorter and more obtuse. Veslingius has seen it reaching as low as the navel, and incommoding the motion

of the trunk forwards. In general it terminates obtusely, or in a single point; sometimes, however, it is bifurcated; and Eustachius and Haller have seen it trifid. Very often we find it perforated, for the transmission of branches of the mammary artery. In the adult it is usually ossified and tipped with cartilage; but it very often continues cartilaginous through life, and Haller once found it in this state in a woman who died in her hundredth year.

The substance of the sternum, internally, is of a light, spongy texture, covered externally with a thin bony plate: hence it happens that this bone is easily fractured. From the description we have given of it, its uses may be easily understood. We have seen it serving for the articulation of seven true ribs on each side, and hence we shall find it of considerable use in respiration. We likewise observed, that it is articulated with each of the clavicles. It serves for the origin and insertion of several muscles; it supports the mediastinum; and, lastly, defends the heart and lungs; and it is observable, that we find a similar bone in almost all animals that have lungs, and even in such as have no ribs, of which latter we have an instance in the frog.

Sternutamento'ria. (So called because the powdered flowers and roots have the property of exciting sneezing.) See *Achillea ptarmica.*

Sternutame'ntum. (*um, i.* n.; from *sternuo*, to sneeze.) That which produces sneezing: snuff.

Sternutatio. See *Sneezing.*

STE'RTOR. (*or, oris.* m.) A snoring or snorting. A loud and deep sound produced in the larynx and fauces. In natural sleep snoring arises from the relaxation of the velum palati: in apoplexy it appears to arise chiefly from the accumulation of mucus in the air passages.

STE'THOSCOPE. (*Stethoscopus, i.* m.; from στῆθος, the chest, and σκοπεω, to explore.) An instrument invented by Läennec to aid auscultation. It is made of cedar wood, of a cylindrical form, about eleven inches long, and about an inch and a half in diameter. It has a cylindrical perforation throughout its whole length, and is divided into two parts, the only convenience of which is that of greater portability. The end of each part terminates in a funnel-shaped cavity, the one to receive the separate half of the instrument, and the other to receive the part acting as a stopper; which latter has a short pipe, made of brass, or silver, to enter the base of the cylinder. The instrument is used without the stopper, when employed to ascertain the state of respiration; and with it, either to examine the action of the heart, or the signs afforded by the voice, in certain states of disease affecting the lungs or pleural membrane. There are several modifications of the stethoscope, of which, perhaps the most convenient is one somewhat shorter than that above described, without any division in the middle, and furnished with rather a broad and very slightly concave ear-plate. In using this instrument, care is to be taken that it is kept perfectly flat upon the part to which it is applied, in order that the sound may not escape, nor air be admitted; for which purpose it is convenient to hold it at its lower part, while the other end (with the even surface) should be in close contact with the ear, so that the aperture of the instrument be in direct communication with the internal ear. Silk covering, as causing a cracking sort of noise, and thick dress, as obscuring the sound of respiration, should be avoided; but linen or flannel dress may remain on the person without disadvantage.

STHE'NIA. (*a, æ.* f.) A term employed by the followers of Dr. Brown, to denote that state of the body which disposes to inflammatory diseases, in opposition to those of debility, which arise from asthenia.

Sthenic. (From σθενος, strength.) A term applied by Brown to such diseases as he supposed to arise from accumulated excitability. See *Brunonian theory.*

STIBIA'LIS. (From *stibium*, antimony.) Antimonial: appertaining to antimony.

STI'BIC. (*Stibicus;* from *stibium* antimony.) Of or belonging to antimony.

Stibic acid. Berzelius's name for the yellow oxide of antimony.

Stibii essentia. Antimonial wine.

STI'BIOUS. *Stibiosus.* Antimonial.

Stibious acid. So Berzelius calls the white oxide of antimony.

STI'BIUM. (*um. ii.* n. *Stimmi*, στιμμι.) The ancient name of antimony. See *Antimony.*

STI'GMA. (*a, atis.* n. Στιγμα; from στιζω, to prick or to brand.) I. In *Pathology*, 1. A small red speck in the skin, occasioning no elevation of the cuticle. Stigmata are generally distinct, or apart from each other. They sometimes assume a livid colour, and are then termed *petechiæ* and *purpuræ.*

2. A natural mark or spot on the skin. See *Nævus maternus.*

II. In *Botany*, that part of the female organ of a plant which is placed at the summit of the style. It is an indispensable part of the fructification, and consists of a vast number of absorbing papillæ, rarely observable by the naked eye, but best seen in the *Mirabilis jalapa.* Botanists distinguish the following differences in the form of stigma: —

1. *Globose;* as in *Trachelium.*
2. *Capitate*, round, but flat below; as in *Sorbus* and *Vinca.*
3. *Acute*, ending in a point; as in *Piscidia.*
4. *Obtuse;* as in *Nigrina.*
5. *Clubbed;* as in *Genipi.*
6. *Emarginate*, cut; as in *Dentaria.*
7. *Peltate;* as in *Garcinia.*
8. *Uncinate*, acute and reflected; as in *Lantana.*
9. *Triangular;* as in *Linium candidum.*
10. *Trilobed;* as in *Tulipa Gesneriana.*
11. *Petaliform;* as in *Iris Germanica.*
12. *Convolute;* as in *Crocus.*
13. *Revolute;* as in *Leontodon.*
14. *Pennicilliform*, resembling a pencil-brush; as in *Milium paspalium.*
15. *Perforate;* as in *Sloanea.*
16. *Concave;* as in *Viola.*
17. *Bifid;* as in *Menyanthes.*
18. *Trifid;* as in *Amaryllis.*
19. *Multifid;* as in *Castus.*

20. *Striate;* as in *Papaver.*

21. *Plumose,* on each side like a hairy pen; as in grasses.

22. *Four-sided;* as in *Amyris.*

23. *Pubescent,* covered with hair; as in *Vicia.*

24. *Simple,* not differing from the style at its summit; as in *Galanthus* and *Hippuris.*

25. *Sessile,* on the germen: there being no style.

The stigma is always more or less moist with a peculiar viscid fluid, which in some plants is so conspicuous as to form a large drop, though never big enough to fall to the ground. This moisture is designed for the reception of the pollen, which explodes on meeting with it; and hence the seeds are rendered capable of ripening, which, though in many plants fully formed, they would not otherwise be.

STILBO'MA. (From στιλβω, to polish.) A cosmetic.

STILLICI'DIUM. (*um, ii.* n.; from *stillo,* to drop, and *cado,* to fall.) A strangury, or discharge of the urine, drop by drop. Also the pumping upon a part.

STI'MMI. Στιμμι. Antimony.

STIMULANT. (*Stimulans;* from *stimulo,* to stir up.) Possessed of the power of exciting the animal energy. Stimulants are divided into *general,* and *topical,* according as they affect the whole system or a particular part. Thus mercury taken internally is a general stimulant, mustard applied to the skin is a topical stimulant. Those general stimulants, the effect of which is very fugacious, are termed *diffusible* stimulants, as ether.

STI'MULUS. (*us, i.* m.; from στιγμος, *stigmulus,* per sync. *stimulus,* a sting or spur.) 1. In *Pathology* and *Physiology,* that which rouses the action or energy of a part.

2. In *Botany,* a sting, or a sharp-pointed substance, which conveys a poison into the part it penetrates; as that of the nettle.

Stinking lettuce. See *Lactuca virosa.*

STI'PES. (*es, itis.* m.; from the Greek, στυπος.) A stipe or stem of a fungus, fern, or palm.

STIPITA'TUS. Standing on a pillar or pedicle.

STI'PULA. (*a, æ.* f.) A leafy appendage to the proper leaves, or to their footstalks. In some instances they are so like unto leaves, that they are believed to be so, and can only be distinguished from leaves by their situation on the footstalk. Stipulæ are, —

1. *Solitary;* as in *Astragalus onobrychis.*

2. *In pairs;* as in *Lathyrus annuus.*

3. *Lateral,* on the side of the footstalk; as in *Lotus tetraphyllus.*

4. *Oppositifoliar,* in the side of the opposite leaves; as in *Trifolium pratense.*

5. *Extrafoliaceous,* external with respect to the leaf or footstalk; as in *Astragalus onobrychis.*

6. *Intrafoliaceous,* internal; as in *Morus nigra* and *alba.*

7. *Caducous,* falling off before the leaves are expanded; as in *Prunus avium.*

8. *Persistent,* remaining after the fall of the leaf; as in *Trifolium pratense.*

9. *Deciduous,* falling with the leaves; as in many stipulated plants.

10. *Spinescent,* thorny; as in *Robinia pseudacacia.*

11. *Sessile;* as in *Pisum sativum.*

12. *Adnate;* as in *Rosa canina.*

13. *Decurrent;* as in *Crotalaria sagittalis.*

14. *Sheathed;* as in *Hedysarum vaginale.*

15. *Lanceolate;* as in *Cistus helianthemum.*

16. *Subulate;* as in *Cassia glandulosa.*

17. *Sagittate;* as in *Pisum maritimum.*

18. *Lunate;* as in *Lathyrus tingitanus.*

19. *Ovate;* in *Ononis repens.*

20. *Cordate;* in *Ocymum sanctum.*

21. *Filiform;* in *Ononis mauritanica.*

22. *Foliaceous;* in *Sambucus ebulus.*

23. *Entire;* in *Vicia cracca.*

24. *Serrate;* in *Pisum sativum.*

25. *Ciliate;* in *Passiflora fœtida.*

26. *Toothed;* in *Orobus lathyroides.*

27. *Pinnatifid;* in *Viola tricolor.*

STIPULA'RIS. Stipular: belonging to the stipula of plants; as the *spina stipularis* of the *Mimosa nilotica* and *horrida.*

STITCH. A sharp spasmodic pain in the intercostal muscles, is vulgarly so called.

STŒ'CHAS. (*as, adis.* f.; from στοιχαδες, the islands on which it grew.) See *Lavendula.*

Stœchas arabica. See *Lavendula.*

Stœchas citrina. See *Gnaphalium.*

STO'LO. (*o, onis.* m.; a shoot, branch, or twig.) A sucker or scion. A runner which proceeds from the roots of some plants, and takes root in the earth. It is distinguished into a *supraterraneous,* which runs on the surface above ground, as in *Fragaria vesca* and *Potentilla reptans;* and *subterraneous,* which runs under the surface, as in *Triticum repens,* the stolos of which are erroneously taken for the roots.

STOLONI'FEROUS. *Stoloniferus.* Putting forth suckers.

STOMACA'CE. (*e, es.* f.; from στομα, the mouth, and κακος, evil.) *Cancrum oris. Gangrena oris.* Canker of the mouth. A fetor in the mouth, with a bloody discharge from the gums, which are ulcerated along their edges. The remedies for this disease are, acid gargles with myrrh, and the internal exhibition of mineral acids with bark or cascarilla; good food, especially a proper quantity of vegetables and occasional purgatives; the cold bath, and walking exercise.

STO'MACH. (*Stomachus, i.* m.; στομαχος, from στομα, the mouth, and χεω, to pour.) *Ventriculus:* called also, *Anocœlia, Gaster,* and *Nedys.* A membraneous receptacle, situated in the epigastric region, which receives the food from the œsophagus. Its figure is somewhat oblong and round: it is largest on the left side, and gradually diminishes towards its lower orifice where it is the least. Its superior orifice, where the œsophagus terminates, is called the *cardia;* the inferior orifice, where the intestine begins, the *pylorus.* The anterior surface is turned towards the abdominal muscles, and the posterior opposite the lumbar vertebræ. It has two curvatures: the first is called the great curvature of the stomach, and extends down

wards from one orifice to the other, having the omentum adhering to it; the second is the small curvature, which is also between both orifices, but superiorly and posteriorly. The stomach, like the intestinal canal, is composed of three coats or membranes: — 1. The *outermost*, which is very firm, and from the peritoneum. 2. The *muscular*, which is very thick, and composed of various muscular fibres; and, 3. The *innermost*, or *villous coat*, which is covered with exhaling and inhaling vessels, and mucus. These coats are connected together by cellular membrane. The glands of the stomach which separate the mucus are situated between the villous and muscular coat, in the cellular structure. The arteries of the stomach come chiefly from the cœliac artery, and are distinguished into the coronary, gastro-epiploic, and short arteries; they are accompanied by veins which have similar names, and which terminate in the vena portæ. The nerves of the stomach are very numerous, and come from the eighth pair and sympathetic nerve. The lymphatic vessels are distributed throughout the whole substance, and proceed immediately to the thoracic duct. The use of the stomach is to excite hunger and partly thirst, to receive the food from the œsophagus, and to retain it, till, by the motion of the stomach, the admixture of various fluids, and many other changes, it is rendered fit to pass the right orifice of the stomach, and be converted into chyle in the intestines.

Stomach, inflammation of. See *Inflammation of the stomach and intestines.*

STOMA'CHIC. (*Stomachicus*; from στομαχος, the stomach.) That which excites and strengthens the action of the stomach.

STOMA'CHICA PA'SSIO. A disorder in which there is an aversion to food; even the thought of it begets a nausea, anxiety, cardialgia, an effusion of saliva, and often a vomiting. Fasting is more tolerable than eating: if the patient be obliged to eat, a pain follows that is worse than hunger itself.

Stomachus. See *Stomach.*

Stone. See *Calculus.*

Stone-crop. See *Sedum acre.*

STONE-POCK. An acrid and hard pimple, which suppurates. The *acne indurata* of Bateman.

Storax. See *Styrax.*

Storax, liquid. See *Liquidambra.*

Storax liquida. See *Liquidambra.*

STORAX RUBRA OFFICINALIS. Cascarilla bark was formerly so called.

STORAX WHITE. The Peruvian balsam has been so called.

STOREY'S WORM CAKES. These consist of calomel and jalap made up into cakes, and coloured with vermilion.

Strabalismus. See *Strabismus.*

STRABI'SMUS. (*us, i.* m.; from στραβιζω, to squint.) Squinting. An affection of the eye, by which a person sees objects in an oblique manner, from the axis of vision being distorted. Dr. Cullen distinguishes three species: —

1. *Strabismus habitualis*, when from a custom of using only one eye.

2. *Strabismus commodus*, when one eye, in comparison with the other, from greater weakness, or mobility, cannot accommodate itself to the other.

3. *Strabismus necessarius*, when some change takes place in the situation or figure of the eye, or a part of it. The most likely way to overcome squinting, especially in children, is to blindfold the sound eye for a considerable part of the day, and thus force the affected eye into use, and a subserviency to the will.

Strabositas. See *Strabismus.*

STRA'MEN CAMELORUM. Camel's hay. See *Andropogon schænanthus.*

Strammonium. See *Stramonium.*

STRAMO'NIUM. (*um, ii.* n.; from *stramen*, straw: so called from its fibrous roots.) See *Datura stramonium.*

Stramonium officinale. See *Datura.*

Stramonium spinosum. See *Datura.*

STRA'NGALIS. (Στραγγαλις; from στραγγαλιζω, to strangle.) A hard, painful tumour in the breast, from obstruction of the flow of milk.

STRA'NGURY. (*Stranguria, æ.* f.; from στραγξ, a drop, and ουρον, urine.) A difficulty and pain in passing the urine, which is excreted by drops.

Strap-shaped. See *Ligulatus*, and *Linearis.*

STRATIOTES. (From στρατος, an army: so named from its supposed virtues in healing fresh wounds.) See *Achillea millefolium.*

Stratioticum. See *Achillea millefolium.*

Straw. See *Culmus.*

Strawberry. See *Fragaria.*

STREATHAM. A village in Surrey, where is a weak purging water, drunk to the amount of one, two, or more pints in a morning.

STRE'MMA. (*a, atis.* n. Στρεμμα; from στρεφω, to turn.) A strain or sprain of the parts about a joint.

STREPITOSUS MORBUS. A disease not uncommon among the Austrian Alps, in which emphysematous tumours arise on the neck, face, and arms, which, when not quite full of air, crepitate like a dry bladder. It is described by Paul de Sorbait. We do not hear of any such disease in the present day.

STRIA'TUS. Striate: scored. Applied to stems, seeds, &c.; as the stem of the *Œnanthe fistula*, and the seeds of the *Conium maculatum.*

STRI'CTURE. (*Strictura, æ.* f.) A diminution or contracted state of some tube or duct of the body; as the œsophagus, intestines, urethra, vagina, &c. It is either *organic*, that is, accompanied with actual thickening of the walls of the canal, or *spasmodic.*

STRI'CTUS. In botanical language, it means stiff and straight; as *Caulis strictus.*

STRIDOR DENTIUM. Grinding of the teeth. A common symptom during sleep in children affected with worms or other intestinal irritation. It occurs also in fevers, as a symptom of irritation of the brain.

STRI'GA. (*a, æ.* f.) A species of pubescence of plants, white, bristle-like, with broad bases, mostly decumbent; as in *Borago officinalis.*

STRI'GIL. *Strigilis.* An instrument to scrape

off the sweat during the gymnastic exercises of the ancients, and in their baths: *strigils* were made of metal, horn, or ivory, and were curved. Some were made of linen.

STRIGME'NTUM. The strigment, filth, or sordes scraped from the skin in baths and places of exercises.

STRIGO'SUS. Furnished with strigæ.

STROBILIFORM. *Strobiliformis.* In the form of a cone: applied to a spike.

STRO'BILUS. (*us, i.* m.) A cone. A species of pericarpium, or seed-vessel. A catkin hardened and enlarged into a seed-vessel: an example of which is in the *Pinus*, or fir. It is either *conic, cylindric, ovate, globose, squamose*, or *spurious*, consisting of membranaceous and not woody scales; as in *Origanum marjorana.*

STRO'NGYLUS. (*us, i.* m.) A genus of intestinal worms in Rudolphi's classification.

STRONGYLUS GIGAS. This species of worm is said to have been found in the human kidney.

STRO'NTIA. (*a, æ.* f.; so called because it was first found in a lead mine at Strontian, in Scotland.) A greyish white-coloured earth, found in combination with carbonic acid in the mineral called strontianite. It was discovered by Dr. Hope.

Pure strontia is of a greyish-white colour; a pungent, acrid taste; and, when powdered in a mortar, the dust that rises irritates the lungs and nostrils. Its specific gravity approaches that of barytes. It requires rather more than 160 parts of water at 60° to dissolve it; but of boiling water much less. On cooling, it crystallises in thin, transparent, quadrangular plates, generally parallelograms, seldom exceeding a quarter of an inch in length, and frequently adhering together. The edges are most frequently bevelled from each side. Sometimes they assume a cubic form. These crystals contain about ·68 of water; are soluble in 51·4 times their weight of water at 60°, and in little more than twice their weight of boiling water. They give a blood red colour to the flame of burning alkohol. The solution of strontia changes vegetable blues to a green. Strontia combines with sulphur either in the wet or dry way, and its sulphuret is soluble in water.

In its properties, strontia has a considerable affinity to baryta. It differs from it chiefly in being infusible, much less soluble, of a different form, weaker in its affinities, and not poisonous. Its saline compounds afford differences more marked.

The basis of strontia is *strontium*, a metal first procured by Sir H. Davy in 1808, precisely in the same manner as barium, to which it is very analogous, but has less lustre. It appeared fixed, difficultly fusible, and not volatile. It became converted into strontia by exposure to air, and, when thrown into water, decomposed it with great violence, producing hydrogen gas, and making the water a solution of strontia. By igniting the mineral strontianate intensely with charcoal powder, strontia is cheaply procured.

STRO'NTIUM. (*um, ii.* n.) The metallic base of strontia. See *Strontia.*

STROPHI'OLUM. (*um, i.* n.) A little curved gland-like part near the scar or base of some seeds, as that of *Asarum*; but especially in several papilionaceous genera, as *Ulex, Spartium*, &c.

STRO'PHOS. (From στρεφω, to twist.) Tormina, or griping pains of the bowels.

STRO'PHULUS. (*us, i.* m.) A papular eruption peculiar to infants, and exhibiting a variety of forms, which are described by Dr. Willan under the titles of *intertinctus, albidus, confertus, volaticus*, and *candidus.*

1. *Strophulus intertinctus*, usually called the *red gum*, and, by the French, *efflorescence benigne.* The papulæ characterising this affection rise sensibly above the level of the cuticle, are of a vivid red colour, and commonly distinct from each other. Their number and extent varies much in different cases. They appear most constantly on the cheeks, fore-arm, and back of the hand, but are sometimes diffused over the whole body. The papulæ are, in many places, intermixed with stigmata, and often with red patches of a larger size, which do not, however, occasion any elevation of the cuticle. A child's skin, thus variegated, somewhat resembles a piece of red printed linen; and hence this eruption was formerly called the *red gown*, a term which is still retained in several counties of England, and may be found in old dictionaries. Medical writers have changed the original word for one of a similar sound, but not more significant. The strophulus intertinctus has not, in general, any tendency to become pustular; a few small pustules, containing a straw-coloured, watery fluid, occasionally appear on the back of the hand, but scarcely merit attention, as the fluid is always reabsorbed in a short time, without breaking the cuticle. The eruption usually terminates in scurf, or exfoliation of the cuticle: its duration, however, is very uncertain: the papulæ and spots sometimes remain for a length of time, without an obvious alteration; sometimes disappear and come out again daily; but, for the most part, one eruption of them succeeds another, at longer intervals, and with more regularity. This complaint occurs chiefly within the two first months of lactation. It is not always accompanied with, or preceded by, any disorders of the constitution, but appears occasionally in the strongest and most healthy children. Some authors connect it with aphthous ulcerations common in children, supposing the latter to be a part of the same disease diffused along the internal surfaces of the mouth and intestines. The fact, however, seems to be, that the two affections alternate with each other: for those infants who have the papulous eruption on the skin are less liable to aphthæ; and, when the aphthæ take place to a considerable degree, the skin is generally pale and free from eruption. The strophulus intertinctus is by most writers, said to originate from an acidity, or acrimonious quality of the milk taken into a child's stomach, communicated afterwards to the blood, and stimulating the cutaneous excretories. This opinion might, without difficulty, be proved to have little foundation. The predisposition to the complaint may be

deduced from the delicate and tender state of the skin, and from the strong determination of blood to the surface, which evidently takes place in infants. The papulous eruption is, in many cases, connected with a weak, irritable state of the alimentary canal, and consequent indigestion. For if it be by any means suddenly repelled from the surface, diarrhœa, vomiting, spasmodic affections of the bowels, and often general disturbance of the constitution, succeed; but as soon as it re-appears, those internal complaints are wholly suspended. Dr. Armstrong and others have particularly noted this reciprocation, which makes the red gum, at times, a disease of some importance, though in its usual form it is not thought to be in any respect dangerous. On their remarks a necessary caution is founded, not to expose infants to a stream of very cold air, nor to plunge them unseasonably in a cold bath. The most violent, and even fatal, symptoms have often been the consequence of such imprudent conduct.

2. The *Strophulus albidus*, by some termed the *white gum*, is merely a variety of strophulus intertinctus, but deserves some notice on account of the different appearance of its papulæ. In place of those described as characterising the red gum, there is a number of minute whitish specks, a little elevated, and sometimes, though not constantly, surrounded by a slight redness. These papulæ, when their tops are removed, do not discharge any fluid; it is, however, probable that they are originally formed by the deposition of a fluid, which afterwards concretes under the cuticle. They appear chiefly on the face, neck, and breast, and are more permanent than the papulæ of the red gum. In other respects, they have the same nature and tendency, and require a similar plan of treatment. Although a distinctive name has been applied to this eruption, when occurring alone, yet it is proper to observe, that, in a great number of cases, there are red papulæ and spots intermixed with it, which prove its connection with the strophulus intertinctus.

3. The *Strophulus confertus*. An eruption of numerous papillæ, varying in their size, appears on different parts of the body in infants, during dentition, and has thence been denominated the *tooth-rash*. It is sometimes also termed the *rank red gum*. About the fourth or fifth month after birth, an eruption of this kind usually takes place on the cheeks and sides of the nose, extending sometimes to the forehead and arms, but rarely to the trunk or body. The papulæ on the face are smaller, and set more closely together than in the red gum; their colour is not so vivid, but they are generally more permanent. They terminate at length with slight exfoliations of the cuticle, and often appear again in the same places, a short time afterwards. The papulæ which, in this complaint, occasionally appear on the back or loins, are much larger, and somewhat more distant from each other, than those on the face. They are often surrounded by an extensive circle of inflammation, and a few of them contain a semi-pellucid watery fluid, which is reabsorbed when the inflammation subsides. In the seventh or eighth month, the strophulus confertus assumes a somewhat different form; one or two large irregular patches appear on the arms, shoulder, or neck; in which the papulæ are hard, of a considerable size, and set so close together that the whole surface is of a high red colour. Most commonly the fore-arm is the seat of this eruption, the papulæ rising first on the back of the hand, and gradually extending upwards along the arm. Sometimes, however, the eruption commences at the elbow, and proceeds a little upwards and downwards on the outside of the arm. It arrives at its height in about a fortnight: the papulæ then begin to fade, and become flat at the top; afterwards the cuticle exfoliates from the part affected, which remains discoloured, rough, and irregular, for a week or two longer.

An obstinate and very painful modification of this disease takes place, though not often, on the lower extremities. The papulæ spread from the calves of the legs to the thighs, nates, loins, and round the body, as high as the navel: being very numerous and close together, they produce a continuous redness over all these parts.

The cuticle presently becomes shrivelled, cracks in various places, and finally separates from the skin in large pieces. During this process a new cuticle is formed, notwithstanding which the complaint recurs in a short time, and goes through the same course as before. In this manner successive eruptions take place, during the course of three or four months, and perhaps do not cease till the child is one year old, or somewhat more. Children necessarily suffer great uneasiness from the heat and irritation occasioned by so extensive an eruption; yet, while they are affected with it, they often remain free from any internal or febrile complaint. This appearance should be distinguished from the intertrigo of infants, which exhibits an uniform, red, smooth, shining surface, without papulæ; and which affects only the lower part of the nates and inside of the thighs, being produced by the stimulus of the urine, &c. with which the child's clothes are almost constantly wetted. The strophulus confertus, where the child is otherwise healthy, is generally ascribed to a state of indigestion, or some feverish complaint of the mother or nurse. Dr. Willan, however, asserts that he has more frequently seen the eruption when no such cause was evident. It may, with more probability, be considered as one of the numerous symptoms of irritation, arising from the inflamed and painful state of the gums in dentition: since it always occurs during that process, and disappears soon after the first teeth have cut the gums.

4. The *Strophulus volaticus* is characterised by an appearance of small circular patches, or clusters of papulæ, arising successively on different parts of the body. The number of papulæ in each cluster is from six to twelve. Both the papulæ and their interstices are of a high red colour. These patches continue red, with a little heat or itching, for about four days, when they turn brown, and begin to exfoliate.

As one patch declines, another appears at a small distance from it; and in this manner the complaint often spreads gradually over the face, body, and limbs, not terminating in less than three or four weeks. During that time the child has sometimes a quick pulse, a white tongue, and seems uneasy and fretful. In many cases, however, the eruption takes place without any symptoms of internal disorder. The above complaint has been by some writers denominated *ignis volaticus infantum*. Under this title Astruc and Lorry have described one of the forms of crusta lactea, in which a successive eruption of pustules takes place on the same spot, generally about the mouth or eyes, in children of different ages, and sometimes in adults. The *maculæ volaticæ infantum* mentioned by Wittichius, Sennertus, and Sebizeus, agree in some respects with the strophulus volaticus; but they are described by other German authors as a species of erysipelas, or as irregular efflorescences affecting the genitals of infants, and often proving fatal. The strophulus volaticus is a complaint by no means frequent. In most cases which have come under Dr. Willan's observation, it appeared between the third and sixth month; in one instance, however, it occurred about ten days after birth, and continued three weeks, being gradually diffused from the cheeks and forehead to the scalp, afterwards to the trunk of the body and to the extremities: when the patches exfoliated, a red surface was left, with a slight border of detached cuticle.

5. *Strophulus candidus.* In this form of strophulus, the papulæ are larger than in any of the foregoing species. They have no inflammation round their base; their surface is very smooth and shining, whence they appear to be of a lighter colour than the adjoining cuticle. They are diffused, at a considerable distance from each other, over the loins, shoulders, and upper parts of the arms: in any other situation they are seldom found.

This eruption affects infants about a year old, and most commonly succeeds some of the acute diseases to which they are liable. Dr. Willan has observed it on their recovery from a catarrhal fever, and after inflammation of the bowels or lungs. The papulæ continue hard and elevated for about a week, then gradually subside and disappear.

STROUGHTON'S ELIXIR. An aromatic tincture made with gentian, serpentaria, orange-peel, cardamoms, &c.

STRU'MA. (*a*, *æ*. f. Dr. Good thinks this word is most probably derived from *στρωμα*, congestion or coacervation, or from *struo*, to heap up, or *à struendo*, because they grow insensibly.) 1. Generally applied to scrofula. See *Scrofula*.

2. Bronchocele, or an induration of the thyroid gland.

STRU'MOUS. (*Strumosus*; from *struma*, scrofula.) Of the nature of scrofula.

STRUMUS. An obsolete name of the berry bearing chickweed, which was supposed to be efficacious in the cure of scrofula. See *Cucubalus baccifèrus*.

STRU'THIUM. (*um*, *i*. n.; from *στρουθος*, a sparrow: so named from the resemblance of its flowers to an unfledged sparrow.) The masterwort. See *Imperatoria ostruthium*.

STRY'CHNIA. (*a*, *æ*. f.; so called, because it is obtained from the *Strychnos*.) Strychnine. An alkaline substance obtained from the bean of the *Strychnos nux vomica* by the following process: — The bean is rasped down as small as possible. It is then exposed to the action of nitric ether in a Papin's digester. The residue, thus deprived of a quantity of fatty matter, is digested in alkohol as long as that re-agent is capable of dissolving any thing. The alkoholic solutions are evaporated to dryness, and the residue redissolved in water. Caustic potash being dropped into the solution, a white crystalline precipitate falls, which is strychnia. It is purified by washing it in cold water, dissolving it in alkohol, and crystallising it. Strychnia is obtained likewise by boiling the infusion of the bean with magnesia, in the same manner as Robiquet had obtained morphia from the infusion of opium.

Strychnia exists in the St. Ignatius' bean nearly free from brucia: this bean, therefore, is the preferable source from which to obtain strychnia; but it is very rare in commerce.

The properties of strychnia, when in a state of purity, are as follows: —

It is crystallised in very small four-sided prisms, terminated by four-sided low pyramids. It has a white colour; its taste is intolerably bitter, leaving a metallic impression in the mouth. It is destitute of smell. It is not altered by exposure to the air. It is neither fusible nor volatile, except at temperatures at which it undergoes decomposition. It is very little soluble in cold water, 100,000 parts of that liquor dissolving only 15 parts of strychnia; but it dissolves in 2,500 times its weight of boiling water. A cold solution of strychnia in water may be diluted with 100 times its volume of that liquid without losing its bitter taste.

The action of strychnia on the animal economy is precisely analogous to that of the alkoholic extract of nux vomica, only much more powerful. Half a grain blown into the throat of a rabbit, has produced trismus in two minutes, and death in five: and the eighth of a grain taken into the stomach has proved fatal to a strong dog.

In exceedingly minute doses strychnia has been found a very useful medicine, especially in paralytic cases, and it appears preferable to the extract of nux vomica, as being of more uniform strength. Dr. Ryan, who has used it very extensively, speaks in high terms of its efficacy in a variety of nervous diseases. The dose is $\frac{1}{12}$ of a grain morning and evening, repeated more frequently as the patient gets accustomed to it. Dr. Ryan has met with few patients who would bear more than $\frac{5}{12}$ of a grain in the course of a day.

Strychnine. See *Strychnia*.

STRYCHNOMA'NIA. (*a*, *æ*. f.; from *στρυχνος*, nightshade, and *μανια*, madness.) So the ancients called the disorder produced by eating the deadly nightshade.

STRY'CHNOS. (*os, i.* m.; an ancient name which occurs in Pliny and Dioscorides, derived from *στρωννυμι*, to overthrow, and applied most probably from the overpowering narcotic quality of the plant to which it was assigned, *στρυχνος* of the Greeks being a kind of nightshade. Linnæus adopted this name for the present genus on account of the analogy of its narcotic properties with the plant of the ancients. Some derive it from *στρυχω*, to torment: from its properties of producing insanity.) The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Monogynia*.

This species affords the lignum colubrinum, or snake wood. It is poisonous. Its taste is very bitter. It has been esteemed as an anthelmintic, febrifuge, and astringent, but is not used in the practice of the present day.

STRYCHNOS NUX VOMICA. The systematic name of the tree the seed of which is called the poison-nut. *Nux vomica. Nux metella.* The *nux vomica*, *lignum colubrinum*, and *faba sancti Ignatii*, have long been known in the Materia Medica as narcotic poisons, brought from the East Indies, while the vegetables which produced them were unknown, or at least not botanically ascertained.

By the judicious discrimination of Linnæus, the nux vomica was found to be the fruit of the tree described and figured in the *Hortus malabaricus*, under the name of *Caniram cucurbitifera malabariensis*, of Plukenet, now called *Strychnos nux vomica.*

To this genus, also, but upon evidence less conclusive, he likewise justly referred the colubrinum. But the faba sancti Ignatii he merely conjectured might belong to this family, as appears by the query, *An Strychni species?* which subsequent discoveries have decided in the negative; for in the Supp. Plant. it constitutes the new genus *Ignatia*, which Loureiro has lately confirmed, changing the specific name *amara* to that of *philippinica.* The strychnos and ignatia are, however, nearly allied, and both rank under the order *Solanaceæ.* See *Ignatia amara.*

Dr. Woodville has inquired thus far into the botanical origin of these productions, from finding that, by medical writers, they are generally treated of under the same head, and in a very confused and indiscriminate manner. The seed of the fruit, or berry of this tree, *Strychnos nux vomica*, is the officinal nux vomica: it is flat, round, about an inch broad, and near a quarter of an inch thick; with a prominence in the middle on both sides, of a grey colour, covered with a kind of woolly matter; and internally hard and tough like horn. To the taste it is extremely bitter, but has no remarkable smell. It consists chiefly of a gummy matter, which is moderately bitter; the resinous part is very inconsiderable in quantity, but intensely bitter; hence rectified spirit has been considered as its best menstruum.

Nux vomica is one of the most powerful of the vegetable poisons, and is of the narcotico-acrid kind. It proves fatal to dogs in a very short time, as appears by various authorities. Hillefeld and others found that it also poisoned hares, foxes, wolves, cats, rabbits, and even some birds, as crows and ducks; and Loureiro relates, that a horse died in four hours after taking a drachm of the seed in a half roasted state.

The effects of this drug upon different animals, and even upon those of the same species, appear to be rather uncertain, and not always in proportion to the quantity of the poison given. With some animals it produces its effects almost instantaneously; with others, not till after several hours, when laborious respiration, followed by torpor, tremblings, coma, and convulsions, usually precede the fatal spasms, or tetanus, with which this drug commonly extinguishes life.

From four cases related of its mortal effects upon human subjects, we find the symptoms corresponded nearly with those which we have here mentioned of brutes. As no visible effect is produced on the stomach or intestines, except when the dose is very large, it appears that the nux vomica acts immediately upon the nervous system, and destroys life by the virulence of its narcotic influence.

The quantity of the seed necessary to produce this effect upon a strong dog, as appears by experiments, need not to be more than a scruple; a rabbit was killed by five, and a cat by four grains: and of the four persons to whom we have alluded, and who unfortunately perished by this deleterious drug, one was a girl ten years of age, to whom fifteen grains were exhibited at twice for the cure of an ague. Loss, however, tells us, that he took one or two grains of it in substance, without discovering any bad effect; and that a friend of his swallowed a whole seed without injury.

From the time of Gesner the nux vomica has been recommended by a succession of authors, as an antidote to the plague, as a febrifuge, as a vermifuge, and as a remedy in mania, hypochondriasis, hysteria, rheumatism, gout, and canine madness. In Sweden, it was successfully used in dysentery; but Bergius, who tried its effects in this disease, says, that it suppressed the flux for twelve hours, which afterwards returned again. A woman, who took a scruple of this drug night and morning, two successive days, is said to have been seized with convulsions and vertigo, notwithstanding which the dysenteric symptoms returned, and the disorder was cured by other medicines; but a pain in the stomach, the effect of the nux vomica, continued afterwards for a long time.

Bergius, therefore, thinks it should only be administered in the character of a tonic and anodyne, in small doses (from five to ten grains), and not till after proper laxatives have been employed. Loureiro recommends it as a valuable internal medicine in fluor albus; for which purpose he roasts it till it becomes perfectly black and friable, which renders its medicinal use safe, without impairing its efficacy. It is said to have been used successfully in the cure of agues, and has also been reckoned a specific in pyrosis, or water-brash. It is in different cases from the above, however, that the nux vomica maintains its reputation in the present day; namely, those of disordered innervation, and especially paralysis. The alcoholic extract is

the form in which it is most frequently given. The dose of this is from half a grain to a grain, given, at first, twice a day, and afterwards more frequently. The dose of the powdered nut is five grains, gradually increased to a scruple, or half a drachm. The nux vomica is now generally superseded by its active principle, the strychnia, which possesses all its virtues in a highly concentrated form. See *Strychnia.*

Strychnos sancti ignatii. The plant which produces the faba sancti Ignatii, now referred to the genus *Ignatia.* See *Ignatia amara.*

Strychnos tieute. This species produces the *upas tieuté*, one of the strong Java poisons. See *Upas.*

Strychnos volubilis. This tree was supposed to afford the Jesuit's bean. See *Ignatia amara.*

Stupe. See *Stupha.*

STUPEFA'CIENT. (*Stupefaciens;* from *Stupefacio*, to stupify.) Of a stupifying quality.

STU'PHA. (*a, æ.* f.; στυππη; στυππειον.) *Stupa. Stuppa.* A stupe. A piece of cloth, or flax, soaked in a warm liquid and applied as a fomentation.

STU'POR. (*or, oris.* m.; from *stupeo*, to be senseless.) Insensibility.

Stuppa. See *Stupha.*

Sturgeon. See *Acipensor sturio.*

STUTTERING. A high degree of stammering, which is a nervousness, influencing the muscles of speech.

STY. (This vernacular term, or, as it is sometimes written, *stian*, is to be met with in the earlier writers, who derive it from the Saxons, in which *stihan* signifies a "rising, springing up, or ascent.") See *Hordeolum.*

Sty'gia. (From *Styx*, a name given by the poets to one of the rivers in hell.) A water made from sublimate, and directed in old dispensatories, was so called on account of its poisonous qualities. A name of the *aqua regia*, also, from its corrosive qualities.

STY'LIFORM. (*Styliformis;* from *stylus*, a bodkin, and *forma*, a likeness.) Shaped like a bodkin, or style. Applied to processes of bones, and parts of plants.

Styli'scus. (From στυλος, a bodkin.) A tent made in the form of a bodkin.

STY'LO. Names compounded of this word belong to muscles which are attached to the styloid process of the temporal bone.

Stylo-cerato-hyoideus. See *Stylo-hyoideus.*

Stylo-chondro-hyoideus. See *Stylo-hyoideus.*

Stylo-glossus. A muscle situated between the lower jaw and os hyoides laterally, which draws the tongue aside and backwards. It arises, tendinous and fleshy, from the styloid process, and from the ligament which connects that process to the angle of the lower jaw, and is inserted into the root of the tongue, runs along its sides, and is insensibly lost near its tip.

Stylo-hyoideus. A muscle situated between the lower jaw and os hyoides laterally, which pulls the os hyoides to one side, and a little upwards. It is a small, thin, fleshy muscle, situated between the styloid process, and os hyoides, under the posterior belly and middle tendon of the digastricus, near the upper edge of that muscle. It arises, by a long thin tendon, from the basis and posterior edge of the styloid process, and, descending in an oblique direction, is inserted into the lateral and anterior part of the os hyoides, near its horn. The fleshy belly of this muscle is usually perforated on one or both sides, for the passage of the middle tendon of the digastricus. Sometimes, though not always, we find another smaller muscle placed before the stylo-hyoideus, which, from its having nearly the same origin and insertion, and the same use, is called *stylo-hyoideus alter.* It seems to have been first known to Eustachius: so that Douglas was not aware of this circumstance when he placed it amongst the muscles discovered by himself. It arises from the apex of the styloid process, and sometimes by a broad and thin aponeurosis, from the inner and posterior part of the angle of the lower jaw, and is inserted into the appendix, or little horn of the os hyoides. The use of these muscles is to pull the os hyoides to one side, and a little upwards.

Stylo-hyoideus alter. See *Stylo-hyoideus.*

Stylo-mastoid foramen. *Foramen stylo-mastoideum.* A hole between the styloid and mastoid process of the temporal bone, through which the portio dura of the auditory nerve passes to the temples.

Stylo-pharyngeus. A muscle situated between the lower jaw and os hyoides laterally, which dilates and raises the pharynx and thyroid cartilage upwards. It arises, fleshy, from the root of the styloid process, and is inserted into the side of the pharynx and back part of the thyroid cartilage.

STY'LUS. (*us, i.* m.) I. A surgical instrument called a probe.

II. The style or shaft of a flower, which proceeds from the germen, and bears the stigma. It is, —

1. *Filiform*, in *Jasminum*, and *Zea mays.*

2. *Linear*, in *Orobus.*

3. *Subulate*, thicker below than towards the apex; as in *Geranium.*

4. *Clavate*, thicker at its summit than toward its base; as in *Leucojum vernum.*

5. *Triangular*, in *Pisum.*

6. *Bifid*, in *Polygonum persicaria.*

7. *Trifid*, in *Bryonia* and *Momordica.*

8. *Dichotomous*, divided into two, which again bifurcate; as in *Cordia.*

9. *Long*, much more so than the stamina; as in *Campanula* and *Dianthus.*

10. *Persistent*, not going off after the fecundation of the germen; as *Sinapis.*

STYMATO'SIS. (*is, is.* f.; from στυω, to have a priapism.) A violent erection of the penis, with a bloody discharge.

Styptе'ria. (From στυφω, to bind: so called from its astringent properties.) Alum.

STY'PTIC. (*Stypticus;* from στυφω, to constringe.) A term applied to those substances which possess the power of stopping hæmorrhages, such as turpentine, alum, &c.

Styptic um Helvetii. *Helvetius's styptic.* A preparation, an account of which was published by John Frederick Helvetius, the chemist. It consisted of iron filings and tartar made up to a proper consistence with French

brandy. It long enjoyed reputation on the Continent, and was afterwards revived in England under the name of *Eaton's styptic*, which, however, is now generally made with the sulphate of iron. See *Eaton's styptic.*

STYRACI'FLUA. (From *styrax*, storax, and *fluo*, to flow.) See *Liquidambra.*

STY'RAX. (*ax, acis.* m. and f.; from στυραξ, a reed, in which it was used to be preserved.) 1. The name of a genus of plants in the Linnæan system. Class, *Decandria;* Order, *Monogynia.*

2. The pharmacopœial name of the *Styrax calamita.*

Styrax alba. See *Myroxylon peruiferum.*

STYRAX BENZOIN. The systematic name of the tree which affords the gum benzoin. This substance has received the following names: — *Benzoë. Benjoinum. Assa dulcis. Assa odorata. Liquor Cyreniacus. Balzoinum. Benzoin. Benjui. Benjuin.* It is classed, by modern chemists, among the balsams. There are two kinds of benzoin: *benzoe amygdaloides*, which is formed of white tears, resembling almonds, united together by a brown matter; and *common benzoin*, which is brown and without tears. The tree which affords this balsam, formerly called *Laurus benzoin, Benzoifera*, and *Arbor benenici*, is the *Styrax benzoin — foliis oblongis acuminatis, subtus tomentosis, racemis compositis longitudine foliorum*, of Dryander, from which it is obtained by incisions. The benzoin of the shops is usually in very large brittle masses. When chewed it imparts very little taste, except that it impresses on the palate a slight sweetness; its smell, especially when rubbed or heated, is extremely fragrant and agreeable. Gum benjamin was analysed by Brande. The products obtained by distillation were, from 100 grains, benzoic acid, 9 grains; acidulated water, 5·5: butyraceous and empyreumatic oil, 60; brittle coal, 22; and a mixture of carburetted hydrogen and carbonic acid gas, computed at 3·5. On treating the empyreumatic oil with water, however, 5 grains more of acid were extracted, making 14 in the whole.

From 1500 grains of benzoin, Bucholz obtained 1250 of resin; 187 benzoic acid; 25 of a substance similar to balsam of Peru; 8 of an aromatic substance soluble in water and alkohol; and 30 of woody fibres and impurities.

Ether, and sulphuric and acetic acids, dissolve benzoin; so do solutions of potash and soda. Nitric acid acts violently on it, and a portion of artificial tannin is formed. Ammonia dissolves it sparingly. Its preparations are much esteemed against inveterate coughs and pthisical complaints unattended with much fever; it has also been used as a cosmetic, and in the way of fumigation, for the resolution of indolent tumours. The acid of benzoin is employed in the *tinctura camphoræ composita*, and a tincture is directed to be made of the balsam. See *Benzoic acid.*

STYRAX CALAMI'TA. Storax in the cane: because it was formerly brought to us in reeds or canes. See *Styrax officinalis.*

STYRAX COLATA. Strained storax.

Styrax liquida. See *Liquidambra.*

STYRAX OFFICINALIS. The systematic name of the tree which affords the solid storax. Officinal storax. *Styrax officinalis — foliis ovatis, subtus villosis, racemis simplicibus, folio brevioribus*, of Linnæus. There are two kinds of storax to be found in the shops: the one is usually in irregular compact masses, free from impurities, of a reddish-brown appearance, and interspersed with whitish tears, somewhat like gum ammoniac, or benzoin; it is extremely fragrant, and, upon the application of heat, readily melts. This has been called *storax in lump; red storax;* and, when in separate tears, *storax in tears.* The other kind, which is called the *common storax*, is in large masses, very light, and bears no external resemblance whatever to the former storax, as it seems almost wholly composed of dirty saw-dust, caked together by resinous matter. Storax was formerly used in catarrhal complaints, coughs, asthmas, obstructions, &c. In the present practice it is almost totally disregarded, notwithstanding it is an efficacious remedy in nervous diseases.

STYRAX RUBRA. Red storax, or storax in the tear.

Subacetas cupri. See *Ærugo æris.*

Subacetate of copper. See *Ærugo æris.*

SUBALA'RIS VENA. The vein of the axilla.

Subcarbonas potassæ. See *Potassæ carbonas.*

Subcarbonas ferri. See *Ferri Sesquioxydum.*

Subcarbonas plumbi. See *Plumbum.*

SUBCA'RBONATE. *Subcarbonas.* A carbonate in which the base predominates.

SUBCARTILAGINOUS (*Subcartilaginosus;* from *sub*, under, and *cartilago*, a cartilage.) Of a structure approaching to that of cartilage.

SUBCLA'VIAN. (*Subclaviculus;* from *sub*, beneath, and *clavicula*, the clavicle.) That which is, or passes, under the clavicle.

SUBCLAVIAN ARTERY. The right subclavian arises from the arteria innominata, and proceeds under the clavicle to the axilla. The left subclavian arises from the arch of the aorta, and ascends under the left clavicle to the axilla. The subclavians in their course give off the internal mammary, the inferior thyroid, the vertebral, the cervicalis superficialis, the superior intercostal, and the suprascapular.

SUBCLAVIAN VEIN. This receives the blood from the veins of the arm, and runs into the vena cava superior.

SUBCLA'VIUS. (From *sub*, under, and *clavicula*, the collar-bone; as being situated under the clavicle or collar-bone.) *Subclavianus.* A muscle situated on the anterior part of the thorax, which pulls the clavicle downwards and forwards. It arises, tendinous, from the cartilage that joins the first rib to the sternum, is inserted, after becoming fleshy, into the inferior part of the clavicle, which it occupies from within an inch of the sternum as far outwards as to its connection, by a ligament, with the caracoid process of the scapula.

SUBCRURÆ'US. A name of two little muscular slips, sometimes found under the cruræus: they are inserted into the capsular ligament, which they pull up.

SUBCUTA'NEOUS. (*Subcutaneus;* from

sub, under, and *cutis*, the skin.) Under the skin; a name given to the platysma myoides muscle, and to some nerves, vessels, glands, &c. which are very superficial.

Subcutaneous glands. *Glandulæ subcutaneæ.* These are sebaceous glands lying under the skin, which they perforate by their excretory ducts.

Suber. Cork. See *Quercus suber*.

SUBE'RIC. (*Subericus*, from *suber*, cork.) Appertaining to cork.

Suberic acid. *Acidum subericum.* A white pulverulent acid, obtained from cork, by nitric acid. It is not used as a medicine.

Subintrans febris. Frank gives this name to what is usually called an anticipating quotidian. See *Anticipans*.

Sublimame'ntum. (From *sublimo*, to lift up.) The pendulous substance which floats in the middle of the urine.

SU'BLIMATE. 1. Any thing which is sublimed. See *Sublimation*.

2. The corrosive sublimate is sometimes simply called *sublimate*.

Sublimate, corrosive. See *Hydrargyri bichloridum*.

SUBLIMA'TION. (*Sublimatio, onis.* f.; from *sublimo*, to raise or sublime.) A process by which volatile substances are raised by heat, and again condensed in a solid form. This chemical process differs from evaporation only in being confined to solid substances. It is usually performed either for the purpose of purifying certain substances, and disengaging them from extraneous matters; or else to reduce into vapour, and combine, under that form, principles which would have united with greater difficulty if they had not been brought to that state of extreme division.

As all fluids are volatile by heat, and consequently capable of being separated, in most cases, from fixed matters, so various solid bodies are subjected to a similar treatment. Fluids are said to distil, and solids to sublime, though sometimes both are obtained in one and the same operation. If the subliming matter concretes into a solid hard mass, it is commonly called a sublimate; if into a powdery form, flowers.

The principal subjects of this operation are, volatile alkaline salts; neutral salts, composed of volatile alkali and acids, as sal ammoniac; the salt of amber, and flowers of benzoin, mercurial preparations, and sulphur. Bodies of themselves not volatile are frequently made to sublime by the mixture of volatile ones; thus iron is carried over by sal ammoniac in the preparation of the flores martiales, or ferrum ammoniatum.

The fumes of solid bodies in close vessels rise but a little way, and adhere to that part of the vessel where they concrete.

Sublimis. See *Flexor brevis digitorum pedis*, and *Flexor sublimis perforatus*.

SUBLINGUA'LIS. (From *sub*, under, and *lingua*, the tongue.) Sublingual. A name given to parts immediately under the tongue.

Sublingual glands. *Glandulæ sublinguales. G. Bartholinianæ. G. Rivinianæ.* The glands which are situated under the tongue, and secrete saliva. Their excretory ducts are called *Rivinian* from their discoverer *Rivinus*.

SUBLUXA'TIO. (*o, onis.* f.; from *sub*, diminutive, and *luxatio*, a dislocation.) A sprain. A sprain is an injury of a joint in which it has been twisted or strained, in any direction further than its natural range of motion allows, but without actual dislocation of the bones. In every sprain, the ligaments of the joint are preternaturally stretched, and in severe ones they are often partially torn. Hence follows inflammation of the ligaments and the soft parts surrounding the joint, and in bad cases of the capsular ligament itself. Sprains are a very troublesome class of injuries, and will often keep a patient confined much longer than fractures or even dislocations.

In the treatment of sprains, the first indication is to allay inflammation; and where this is considerable the copious and repeated application of leeches is often required, with purgatives, and an antiphlogistic regimen, and sometimes general bloodletting. The local applications may consist of cold lotions or hot fomentations, according to circumstances. When all danger of inflammation is past, the joint is to be strengthened by friction with stimulating liniments, the application of bandages, &c. While acute inflammation prevails, perfect rest of the joint must be insisted on; when weakness merely is present, gentle exercise is serviceable.

SUBMERSION. (*Submersio;* from *submergo*, to sink under water.) Drowning. See *Asphyxia*.

SUBME'RSUS. Under water: applied to leaves which are naturally under water, while others of the plants are above; as in *Ranunculus aquatilis*. See *Natans*.

SUBMU'RIAS. A submuriate, or muriate in which the base predominates.

Submurias hydrargyri. See *Hydrargyri chloridum*.

Suborrita'rius ne'rvus. The suborbitary nerve, a branch of the fifth pair, more usually called *infra-orbitary*.

SUBRAMO'SUS. A little branched.

SUBROTU'NDUS. Roundish; nearly globular: applied to several parts of plants. The leaf of the *Pyrola* is subrotund.

SUBSALT. A salt having an excess of base beyond what is requisite for saturating the acid, as *supersalt* is one with an excess of the acid. The *sulphate* of potash is the neutral compound of sulphuric acid and potash; *subsulphate* of potash, a compound of the same ingredients, in which there is an excess of base; *supersulphate* of potash, a compound of the same acid and the same base, in which there is an excess of acid.

SUBSCAPULA'RIS. (From *sub*, under, and *scapula*, the shoulder-blade.) *Infra-scapularis.* The name of this muscle sufficiently indicates its situation. It is composed of many fasciculi of tendinous and fleshy fibres, the marks of which we see imprinted on the under surface of the scapula. These fasciculi, which arise from all the basis of that bone internally, and likewise from its superior as well as from one half of its inferior costa, unite to form a considerable flat tendon which adheres to the capsular

ligament, and is inserted into the upper part of the lesser tuberosity at the head of the os humeri.

The principal use of this muscle is to roll the arm inwards. It likewise serves to bring it close to the ribs; and, from its adhesion to the capsular ligament, it prevents that membrane from being pinched.

Subsulphas hydrargyri flavus. Yellow subsulphate of mercury. This preparation is directed to be made by the Edinburgh College in the following manner. Take of purified mercury two parts, sulphuric acid three parts. Put them into glass cucurbit, placed in a sand-bath and boil them to dryness. Reduce to powder the white mass which is left at the bottom of the vessel, and throw it into boiling water. It is immediately converted into a yellow powder which is to be repeatedly washed with warm water. This preparation is named *sulphuric oxide of mercury*, by the Dublin College, and is the substance long known under the name of turbeth mineral. When the sulphate of mercury, formed by the aid of heat, is thrown into water, that fluid by its strong affinity for sulphuric acid decomposes the salt, and precipitates the greater part of the oxide mercury. The acid which remains in the water, however, retains some of the oxide as a soluble super-sulphate, while the precipitated oxide takes with it a little of the acid, and remains in the form of an insoluble sulphate. The turbeth mineral acts as a powerful emetic in the dose of five grains. It has also the alterative properties of the other preparations of mercury. It is never used internally in the present day. It is a very useful errhine in cases of head-ache, amaurosis, &c. Ten grains of the subsulphate may be mixed with a drachm of sugar or powdered starch: a pinch, of this powder will produce a copious discharge of mucous from the nose.

SUBSU'LTUS TE'NDINUM. Weak convulsive motions or twitchings of the tendons. These twitchings or starts of the tendons are most common in the extreme stages of debility, produced by low nervous and typhus fevers, and are generally the harbingers of a fatal termination. They are, in these cases, weak convulsions, interruptedly undulating from one limb to another, too feeble to raise the limb itself, though sufficiently powerful to be felt in the belly of the muscle, and along its tendon: they affect the wrist and ankles the most. Twitchings of a limb or a set of muscles is often an habitual affection.

Subte'pidus. Lukewarm.

SUBU'BERES. (From *sub*, under, and *ubera*, the breasts.) This term has been used by some writers for those infants who yet suck, in distinction to those who are weaned, and then are called *exuberes*.

SUBULA'TUS. Subulate: awl-shaped. Applied, in *Botany*, to leaves, receptacles, &c. which are tapering from a thick base to a point like an awl; as the leaf of the *Salsola kali*, and receptacle of the *Scabiosa atropurpurea*.

Succa'co. The rob of any fruit.

SUCCEDA'NEUM. (*um*, *i.* n.) A medicine substituted for another.

Succenturia'ti mu'sculi. The pyramidal muscles of the belly.

Succenturiati renes. Two glands lying above the kidneys. See *Renal gland*.

Su'cci scorbutici. The juice of English scurvy grass, &c.

SUCCINATE. (*Succinas, atis*, f.) A salt formed by the combination of the acid of amber, or succinic acid, with a salifiable base; as, *succinate of potash*, *succinate of copper*, &c.

Succi'ngens membrana. The diaphragm.

SUCCI'NIC. (*succinicus*; from *succinum*, amber.) Of or belonging to amber.

Succinic acid. *Acidum succinicum. Sal succini.* It has long been known that amber, when exposed to distillation, affords a crystallised substance, which sublimes into the upper part of the vessel. Before its nature was understood, it was called *salt of amber*; but it is now known to be a peculiar acid, as Boyle first discovered. The crystals are at first contaminated with a little oil, which gives them a brownish colour; but they may be purified by solution and crystallisation, repeated as often as necessary, when they will become transparent and shining. Pott recommends to put on the filter, through which the solution is passed, a little cotton previously wetted with oil of amber. Their figure is that of a triangular prism. Their taste is acid; and they redden the blue colour of litmus, but not that of violets. They are soluble in less than two parts of boiling alkohol, in two parts of boiling water, and in twenty-five of cold water.

Planché of Paris observes, that a considerable quantity might be collected in making amber varnish, as it sublimes while the amber is melting for this purpose, and is wasted.

Several processes have been proposed for purifying this acid: that of Richter appears to be the best. The acid being dissolved in hot water, and filtered, is to be saturated with potash or soda, and boiled with charcoal, which absorbs the oily matter. The solution being filtered, nitrate of lead is added; whence results an insoluble succinate of lead, from which, by digestion in the equivalent quantity of sulphuric acid, pure succinic acid is separated. Nitrate or muriate of barytes will show whether any sulphuric acid remains mixed with the succinic solution; and if so, it may be withdrawn by digesting the liquid with a little more succinate of lead. Pure succinic acid may be obtained by evaporation, in white transparent prismatic crystals. Their taste is somewhat sharp, and they redden powerfully tincture of turnsole. Heat melts and partially decomposes succinic acid. Air has no effect upon it. It is soluble in both water and alkohol, and much more so when they are heated.

SU'CCINUM. (*um*, *i.* n.; from *succus*, juice: because it was thought to exude from a tree.) Amber. A beautiful bituminous substance, which takes a good polish, and, after a slight rubbing, becomes so electric as to attract straws and small bodies. It was called ηλεκτρον, *electrum*, by the ancients; and hence the word electricity. "Amber is a hard, brittle, tasteless substance, sometimes perfectly transparent,

but mostly semitransparent or opake, and of a glossy surface: it is found of all colours, but chiefly yellow or orange, and often contains leaves or insects: its specific gravity is from 1·065 to 1·100; its fracture is even, smooth, and glossy; it is capable of a fine polish, and becomes electric by friction; when rubbed or heated, it gives a peculiar agreeable smell, particularly when it melts, that is, at 550° of Fahrenheit, but it then loses its transparency; projected on burning coals, it burns with a whitish flame, and a whitish-yellow smoke, but gives very little soot, and leaves brownish ashes; it is insoluble in water and alkohol, though the latter, when highly rectified, extracts a reddish colour from it; but it is soluble in the sulphuric acid, which then acquires a reddish-purple colour, and is precipitable from it by water. No other acid dissolves it, nor is it soluble in essential or expressed oils without some decomposition and long digestion; but pure alkali dissolves it. By distillation it affords a small quantity of water, with a little acetous acid, an oil, and a peculiar acid. The oil rises at first colourless; but, as the heat increases, becomes brown, thick, and empyreumatic. The oil may be rectified by successive distillations, or it may be obtained very light and limpid at once, if it be put into a glass alembic with water, as the elder Rouelle directs, and distilled at a heat not greater than 212° Fahr. It requires to be kept in stone bottles, however, to retain this state; for in glass vessels it becomes brown by the action of light.

Amber is met with plentifully in regular mines in some parts of Prussia. The upper surface is composed of sand, under which is a stratum of loam, and under this a bed of wood, partly entire, but chiefly mouldered or changed into a bituminous substance. Under the wood is a stratum of sulphureous or rather aluminous mineral, in which the amber is found. Strong sulphureous exhalations are often perceived in the pits.

Detached pieces are also found occasionally on the sea-coast in various countries. It has been found in gravel beds near London. In the Royal Cabinet at Berlin there is a mass of 18lbs. weight, supposed to be the largest ever found. Jussieu asserts, that the delicate insects in amber, which prove the tranquillity of its formation, are not European. Haüy has pointed out the following distinctions between mellite and copal, the bodies which most closely resemble amber: — Mellite is infusible by heat. A bit of copal heated at the end of a knife takes fire, melting into drops, which flatten as they fall: whereas amber burns with spitting and frothing; and when its liquefied particles drop, they rebound from the plane which receives them.

The origin of amber is at present involved in perfect obscurity, though the rapid progress of vegetable chemistry promises soon to throw light on it.

Various frauds are practised with this substance. Neumann states as the common practices of workmen the two following: — The one consists in surrounding the amber with sand in an iron pot, and cementing it with a gradual fire for forty hours, some small pieces placed near the sides of the vessel being occasionally taken out for judging of the effect of the operation. The second method, which he says is that most generally practised, is by digesting and boiling the amber about twenty hours with rapeseed oil, by which it is rendered both clear and hard.

Werner has divided it into two subspecies, the white and the yellow; but there is little advantage in the distinction. Its ultimate constituents are the same with those of vegetable bodies in general; viz. carbon, hydrogen, and oxygen.

In the second volume of the Edinburgh Philosophical Journal, Dr. Brewster has given an account of some optical properties of amber, from which he considers it established beyond a doubt that amber is an *indurated vegetable juice*; and that the traces of a regular structure, indicated by its action upon polarised light, are not the effect of the ordinary laws of crystallisation by which *mellite* has been formed, but are produced by the same causes which influence the mechanical condition of gum arabic, and other gums which are known to be formed by the successive deposition and induration of vegetable fluids. See *Oleum succini*, and *Succinic acid*.

Succinum cinereum. See *Ambergris.*

Succinum griseum. See *Ambergris.*

Succinum oleum. See *Oleum succini.*

Succinum præparatum. See *Amber.*

SUCCI'SA. (*a, æ.* f.; from *succido*, to cut: so named from its being indented, and, as it were, cut in pieces.) Applied to a species of the genus *Scabiosa.*

Succory. See *Cichorium.*

SU'CCULENS. Succulent; juicy, rich. Applied to fruits, pods, soils, &c.

SUCCULE'NTÆ. The name of an order of Linnæus's Fragments of a Natural Method, containing those which have fleshy and succulent leaves, as *Cactus, Sedum, Sempervivum*, &c.

SUCCULE'NTUS. Juicy; full of juice. Applied to plants, pods, leaves, &c.

SU'CCUS. (*us, i.* m.) Juice.

SUCCUS COCHLEARIÆ COMPOSITUS. A warm aperient and diuretic, mostly exhibited in the cure of diseases of the skin arising from scurvy.

SUCCUS CYRENIACUS. Juice of laserwort.

Succus gastricus. See *Gastric juice.*

Succus heliotropii. See *Croton tinctorium.*

Succus indicus purgans. See *Gamboge.*

Succus liquoritiæ. See *Glycyrrhiza glabra.*

SUCCU'SSION. A mode of exploring the chest which consists in shaking the patient's body and listening to the sounds thereby produced.

Sucker. See *Stolo.*

SUDA'MEN. (*en, inis.* n.; from *sudo* sweat.) *Sudamina* are vesicles resembling millet-seeds in form and magnitude, which appear suddenly, without fever, especially in the summer time, after much labour and sweating.

SUDA'TIO. (*o, onis.* f.; from *sudor*, sweat. A sweating. See *Ephidrosis.*

SUDATORIA FEBRIS. The sweating sickness. See *Sudor anglicus.*

SUDATO'RIUS. Relating to perspiration.

SUDATO'RIUM. (From *sudo*, to sweat.) A sweating room. See *Balneum*.

SU'DOR. Sweat or perspiration.

SUDOR ANGLICUS. The sweating sickness. A very extraordinary epidemy, which made its first appearance in England in the year 1485, although it is, doubtless, an error to suppose that it originated in England. The celebrated Caius drew up an account of this disease from his own observation. Dr. Aiken, in his "Biographical Memoirs of Medicine in Great Britain," gives an abstract of Caius's work on the subject, with critical remarks, and to this we are indebted for what follows.

Caius being a witness, during his residence at Shrewsbury, in 1551, to the dreadful ravages made by this disease, hastily drew up an English treatise concerning it, designed for the use of the people at large. It was dedicated to William, Earl of Pembroke, and entitled, *A Boke or Conseill against the Disease commonly called the Sweat, or Sweating Sickness; made by John Caius, Doctor in Physic*, 1552, 12mo. This he sometime afterwards revised, enlarged, and put into a more scientific form, and the Latin language; and published it in the year 1556, under the title *De Ephemera Britannica*. The dedication, to Anthony Perrenot, bishop of Arras, is dated January 1555. It was correctly reprinted at London in 1721.

In this work we find the following account of the rise and appearance of this extraordinary disease.

It began in the army of the Earl of Richmond, afterwards King Henry VII., upon his landing at Milford-haven in 1485, and spread to London, where it raged from the beginning of August to the end of October. Dr. Friend, in his *History of Physick*, apparently transcribing his account of this disorder from Caius, says that it appeared first in 1483, yet adds the circumstance of its beginning in Henry's army at Milford. This he mentions as distinct from the visitation in 1485. That this learned writer has here fallen into a mistake, may be proved from our historians, who relate, that the Earl of Richmond did indeed approach the coast of Cornwall with a fleet in 1483; but, on advice that the insurrection of his friends had proved unsuccessful, sailed back without attempting to land. It appeared in England four times afterwards at unequal intervals; in the summer of 1506; in 1517, from July to the middle of December; in 1528, during the whole summer; and, lastly, in 1551, from April to the end of September. Its attack was extremely sudden. It generally began with the affection of some particular part, occasioning in some a sense of a hot vapour running through the limb. To this succeeded extreme internal heat, unquenchable thirst, and most profuse sweating. Anxiety, restlessness, sickness, violent pain of the head, delirium, and excessive drowsiness attended its progress; and frequently in one, two, three, four, or more hours from the eruption of the sweat, the patient was carried off. The violence of the attack was over in fifteen hours; yet the sick person was not in a state of security till the expiration of twenty-four hours; whence the disease is properly denominated by our author, an *Ephemera*. The persons most liable to the contagion were those in high health, of middle age, and of better rank and condition; children, poor and old people, were less subject to its influence. The numbers carried off by it were incredible. In the town of Salop 960 died in a few days (*pauculis diebus*); and our physician labours the description of this calamity with all the strong colouring of a Thucydides.

In his reasonings concerning it, he first accounts for its being an ephemera from the supposition that it attacked the more subtle spirits; whereas he conceives the plague and other fevers to attack the humours. He then proceeds to give his opinion concerning its origin and cause. He discusses the various sources of contagion; considering separately the effects of untimely seasons, of noxious effluvia peculiar to certain places, and other contaminations of the air, and of planetary conjunctions. The immediate origin of the sickness in his time he attributes to certain thick and stinking fogs rising from the low grounds near Shrewsbury, which, being wafted by the wind, were perceived to carry the contagion with them. This general cause was, he says, augmented in particular situations by other sources of corrupt air; such as close narrow streets, dunghills, privies, uncleansed drains, and the like. He strongly insists on the common notion of this distemper being in a manner peculiar to the English; asserting that it spared foreigners, even the Scotch, in England, and seized the English in foreign countries. This he imputes to the greater luxury in diet by which our countrymen were, it seems, even then distinguished from all other nations; and he confirms his conjecture by observing that the freest livers, and those of the most athletic habits, were attacked with the greatest violence.

The method of prevention he proposes is well suited to his ideas of the causes of the infection. It consists in more abstemious living, the use of acidulous fruits and sauces, great attention to cleanliness, and free exposure to the open air. He recommends the kindling of fires both round the house and within doors; looking upon fire as a great corrector of contagion, and adducing an observation to this purpose, that smiths and cooks were preserved by their fires from the distemper. He directs aromatics and sweet-scented herbs of all kinds to be burned in these fires, and also to be frequently applied to the nose. He speaks with some reserve concerning evacuations, recommending gentle purgatives and bleeding only to the plethoric, and in them not later than the spring; since he thinks they should meet the danger in summer with a body undisturbed and undebilitated by medicine.

The method of cure turns upon the sole idea that the sweat, from whence the disease is denominated, is critical, and therefore to be promoted in the greatest profuseness, till the danger is over. With this view, he directs the person seized to lie down immediately, in the clothes he happens to have on, and have the body completely covered (all but the face) with bedclothes; in which situation he is to remain per-

fectly still, not stirring a limb, if possible, nor putting a hand out of bed. He is to abstain from food the whole twenty-four hours; and even from drink the first five hours. Then a little ale or beer, or wine and water, is to be given in small portions, and sucked through a spout, the patient still lying in the same posture. At the expiration of about fourteen hours, the bed-clothes are gradually to be removed, and the sweating restrained; and after it is quite over, proper food is to be given to recruit the exhausted strength. This is the process when the sweat flows spontaneously. When this is not the case, attempts must be made to excite it; and the means here directed are dry and warm friction, draughts of generous wine with *theriaca*, or *mithridate*, or aromatics, vinegar whey, China root, and other sudorific medicines. By this method of practice, attentively pursued, and properly adapted to the circumstances, we are told that the disease, though so fatal when neglected or mismanaged, was got over with a tolerable certainty of success; so that, according to Lord Bacon's observation, it might be looked upon "rather as a surprise of nature, than obstinate to remedies."

Valuable as this treatise of our author is, not only as giving the fullest account of so singular a distemper, but as containing many judicious practical remarks, we must, however, acknowledge that it is far from a perfect piece of medical writing. It is not long, yet many digressions, foreign to the subject, are admitted; and trivial matters are dwelt upon more at length than those of capital importance. Under the head of diet, the author takes occasion to launch out into an enumeration of all the articles the tables of the luxurious at that time afforded. He employs several pages to describe the methods of making beer and ale, and the process of malting; and he concludes with a copious panegyric upon temperance, extracted from the ancients. What we have most to regret, is the little light he affords us with respect to the first rise of the disease; and there is little doubt that he is guided merely by vulgar prejudice in supposing it so peculiar to this country. Its first appearance seems to have been neither amongst Englishmen, nor in England; but among the foreign levies of the Earl of Richmond, who had either brought it with them, or, more probably, generated it in the crowded transport vessels on board of which they were embarked. This body of troops is described by a cotemporary historian (Philip de Comines) as the most wretched he had ever beheld; collected, we may suppose, from gaols and hospitals, and buried in filth. A highly malignant and contagious disease might readily be produced in such circumstances; but why it should appear under so new and singular a form, why this should be renewed so many times at irregular intervals, and should at length entirely cease, are questions perhaps impossible to be solved. That the climate of England was not essential to the existence of that disease, is rendered manifest by its raging with great violence in Germany and the Low Countries in 1529 and 1530; and that the persons of foreigners were not secure in England, appears from the death of Ammonius, a learned Italian, and a particular friend of Erasmus, in 1520 (in which year the sickness also prevailed in Calais); and from the death of another of that nation, related by Caius himself. On the supposition of its being a fever of the putrid and malignant kind, we shall scarcely be able to account for its prevailing most among the rich and well-fed, contrary to what we now observe of that class of disorders; and, indeed, the vast numbers related to be swept away by it, evidently prove its frequency among the lowest ranks of people.

If 960 persons were carried off by it at Shrewsbury in a few days, the greater part of whom were neither children nor old people, of what rank in life must the majority have been?

SUDORI'FIC. (*Sudorificus*; from *sudor*, sweat, and *facio*, to make.) A synonym of diaphoretic. See *Diaphoretic*.

SUFFIME'NTUM. (From *suffimen*, a perfume.) A perfume.

SUFFI'TUS. A fumigation.

SUFFOCA'TIO. (*o, onis.* f.) Suffocation.

Suffocatio hysterica. The *globus hystericus*; called also *suffocatio uterina*, from the supposed connection of hysteria with an affection of the uterus.

Suffocatio stridula. See *Croup*.

Suffru'tices plantæ. Under-shrubby plants. Vegetables which have stems that are somewhat ligneous, or of a nature intermediate between the shrubby and the herbaceous; as thyme, sage, hyssop, &c.

SUFFRUTICO'SUS. Somewhat woody; nearly shrubby; as *Lavendula*, *Salvia*, &c.

SUFFUMIGATION. (*Suffumigatio, onis.* f.; from *sub*, under, and *fumigo*, to smoke. The burning of odorous substances to remove an evil smell, or destroy miasma.

Suffusio auriginosa. The jaundice.

SUFFUSION. (*Suffusio, onis.* f.; from *suffundo*, to pour down: so called because the ancients supposed the opacity proceeded from something running under the crystalline humour.) 1. A cataract.

2. An extravasation of some humour, as the blood: thus we say, a suffusion of blood in the eye, when it is what is vulgarly called bloodshot.

Sugar. See *Saccharum*.

Sugar, maple. See *Acer*.

Sugar of lead. See *Plumbi acetas*.

Sugar of milk. See *Milk*.

SUGILLA'TION. (*Sugillatio*; from *sugillo*, to bruise.) A bruise. A spot or mark made by a leech or cupping-glass.

SULCA'TUS. Sulcate: furrowed; marked with deep lines running lengthways. Applied to stems, leaves, seeds, &c. of plants; and well seen in the seeds of the *Scandix odorata*.

SU'LCUS. A groove or furrow; generally applied to the bones.

SU'LPHAS. (*as, atis.* f.; from *sulphur*, brimstone.) A sulphate or salt formed by the union of the sulphuric acid with a salifiable base. Those principally used in medicine are,—

1. Sulphate of alumina and potash. See *Alum*.

2. ——— copper. See *Cupri sulphas*.

3. ———— iron. See *Ferri sulphas.*
4. ———— magnesia. See *Magnesia sulphas.*
5. ———— potash. See *Potassæ sulphas.*
6. ———— soda. See *Sodæ sulphas.*
7. ———— zinc. See *Zinci sulphas.*
8. ———— quinine. See *Quinæ disulphas.*
9. ———— mercury. See *Subsulphas hydrargyri flavus.*

Sulphas aluminosus. See *Alumen.*

Sulphas ammoniæ. *Alkali volatile vitriolatum*, of Bergman. *Sal ammoniacum secretum*, of Glauber. *Vitriolum ammoniacale.* This salt has been found native in the neighbourhood of some volcanoes. It is esteemed diuretic and deobstruent, and exhibited in the same diseases as the muriate of ammonia.

Sulphas antimonii. Sulphate of antimony. *Vitriolum antimonii.* This is formed by boiling powdered antimony in sulphuric acid. A white saline mass results, which, when thrown into water, is resolved into a soluble *supersulphate* and an insoluble *subsulphate.*

Sulphas cupri. See *Cupri sulphas.*

Sulphas ferri. See *Ferri sulphas.*

Sulphas hydrargyri. See *Hydrargyrum vitriolatum.*

Sulphas magnesiæ. See *Magnesiæ sulphas.*

Sulphas potassæ. See *Potassæ sulphas.*

Sulphas quinæ. See *Quinæ disulphas.*

Sulphas sodæ. See *Sodæ sulphas.*

Sulphas zinci. See *Zinci sulphas.*

Sulphate of antimony. See *Sulphas antimonii.*

Sulphate of lime. This salt is commonly called *selenite*, *gypsum*, *plaster of Paris*, and sometimes *alabaster.* It forms extensive strata in various mountains. The *specular gypsum*, or *glacies Mariæ*, is a species of this salt, and affirmed by some French travellers to be employed in Russia, where it abounds, as a substitute for glass in windows. See *Gypsum.*

SU'LPHIS. A sulphite. A salt formed by the combination of a definite quantity of the sulphurous acid with a salifiable base; as *sulphite of potash*, *sulphite of ammonia*, &c.

Sulphite. See *Sulphis.*

Su'lpho-cya'nic acid. *Sulphuro-prussic acid. Sulphuretted chyazic acid.* Dissolve in water one part of sulphuret of potash, and boil it for a considerable time with three or four parts of powdered prussian blue, added at intervals. Sulphuret of iron is formed, and a colourless liquid containing the new acid combined with potash, mixed with hyposulphate and sulphate of potash. Render this liquid sensibly sour, by the addition of sulphuric acid. Continue the boiling for a little, and, when it cools, add a little peroxide of manganese in fine powder, which will give the liquid a fine crimson colour. To the filtered liquid add a solution containing persulphate of copper, and protosulphate of iron, in the proportion of two of the former salt to three of the latter, until the crimson colour disappears. Sulphuroprussiate of copper falls. Boil this with a solution of potash, which will separate the copper. Distil the liquid mixed with sulphuric acid in a glass retort, and the peculiar acid will come over. By saturation with carbonate of barytes, and then throwing down this by the equivalent quantity of sulphuric acid, the sulphuroprussic acid is obtained pure.

It is a transparent and colourless liquid, possessing a strong odour, somewhat resembling acetic acid. Its specific gravity is only 1·022. It dissolves a little sulphur at a boiling heat. It then blackens nitrate of silver; but the pure acid throws down the silver white. By repeated distillations sulphur is separated and the acid is decomposed. According to Berzelius it consists of

Carbon	20·30
Nitrogen	23·85
Hydrogen	1·68
Sulphur	54·17
	100·00

Su'lpho-naphtha'lic acid. Mr. Faraday communicated a paper to the Royal Society in 1826, to show that, during the mutual action of sulphuric acid and naphthaline, a compound of that acid with hydrocarbon is formed, differing from all known substances; and which, possessing acid properties, and combining with salifiable bases to produce a peculiar class of salts, is named sulpho-naphthalic acid.

Sulpho-salts. These are merely double sulphurets, in which Berzelius traces a close analogy to salts.

Sulphovi'nic acid. *Acidum sulphovinicum.* Œnothionic acid. A peculiar acid, generated during the process for obtaining sulphuric ether. See *Ether sulphuricus.*

SU'LPHUR. (*ur*, *uris.* n.) Sulphur. Brimstone. Its old names are, *Abric*, *Alcubrith*, *Anpater*, *Appebrioc*, *Aquala*, *Aquila*, *Chibur*, *Chybur*, and *Cibur.* It is the only simple combustible substance which nature offers pure and in abundance. It was the first known of them all. It is found in the earth, and exists externally in depositions, in sublimed incrustations, and on the surface of certain waters, principally near burning volcanoes. It is found combined with many metals.

Sulphur, in the mineral kingdom, is either in a loose powder or compact; and then either detached or in veins. It is found in the greatest plenty in the neighbourhood of volcanoes or pseudo-volcanoes, whether modern or extinct, as at Solfatara, &c. and is deposited as a crust on stones contiguous to them, either crystallised or amorphous. It is frequently met with in mineral waters, and in caverns adjacent to volcanoes; sometimes also in coal-mines. It is found in combination with most of the metals. When united to iron it forms the mineral called *martial pyrites*, or *iron pyrites.* All the ores known by the name of *pyrites*, of which there are a vast variety, are combinations of sulphur with different metals; and hence the names of copper, tin, arsenical, &c. pyrites. It exists likewise in combination with alumina and lime: it then constitutes different kinds of alum ore.

A prodigious quantity of pure sulphur is obtained from Solfatara in Italy.

From pyrites sulphur is extracted in the large way. In order to form it into rolls, it is melted and poured into cylindrical wooden moulds; in these it takes the form in which we usually see it in commerce, as roll sulphur.

Flowers of sulphur, as they are called, are formed by subliming purified sulphur with a gentle heat in close rooms, where the sublimed sulphur is collected, though the article met with in general under that name is nothing but sulphur finely powdered.

Properties. — Sulphur is a combustible, dry, and exceedingly brittle body, of a pale lemon-yellow colour. Its specific gravity is 1·990. It is destitute of odour, except when rubbed or heated. It is of a peculiar faint taste. It frequently crystallises in entire or truncated octahedra, or in needles. If a piece of sulphur, of a considerable size, be very gently heated, as, for example, by holding it in the hand and squeezing it firmly, it breaks to pieces with a crackling noise. It is a non-conductor of electricity, and hence it becomes electric by friction. When heated, it first softens before it melts, and its fusion commences at 218° Fahr.: it is capable of subliming at a lower temperature; and takes fire at 560°. In the beginning of fusion it is very fluid; but by continuing the heat it grows tough, and its colour changes to a reddish-brown. If in this condition it be poured into water, it remains as soft as wax, and yields to any impression. In time, however, it hardens again, and recovers its former consistence.

When a roll of sulphur is suddenly seized in a warm hand, it crackles, and sometimes falls in pieces. This is owing to the unequal action of heat on a body which conducts that power slowly, and which has little cohesion. If a mass of sulphur be melted in a crucible, and, after the surface begins to concrete, if the liquid matter below be allowed to run out, fine acicular crystals of sulphur will be obtained.

Sulphur is insoluble in water; but in small quantity in alkohol and ether, and more largely in oil.

Combinations of Sulphur. Sulphur combines with *oxygen* in four definite proportions, constituting an interesting series of acids. See *Sulphuric acid*, and *Sulphurous acid*.

Sulphur combines readily with *chlorine*.

Iodide of sulphur is easily formed by mixing the two ingredients in a glass tube, and exposing them to such a heat as melts the sulphur.

Sulphur and *hydrogen* combine, and form *sulphuretted hydrogen*. Their union may be effected, by causing sulphur to sublime in dry hydrogen in a retort.

The usual way of preparing sulphuretted hydrogen, is to pour a dilute sulphuric or muriatic acid on the black sulphuret of iron or antimony in a retort. For accurate experiments it should be collected over mercury. It takes fire when a lighted taper is brought in contact with it, and burns with a pale blue flame, depositing sulphur. Its smell is extremely fetid, resembling that of rotten eggs. Its taste is sour. It reddens vegetable blues. It is absorbable by water, which takes up more than an equal volume of the gas. Its sp. gr., according to Gay Lussac and Thénard, is to that of air as 1·1912 to 1·0.

Of all the gases, sulphuretted hydrogen is perhaps the most deleterious to animal life. A greenfinch, plunged into air which contains only $\frac{1}{1500}$ of its volume, perishes instantly. A dog of middle size is destroyed in air that contains $\frac{1}{800}$; and a horse would fall a victim to an atmosphere containing $\frac{1}{250}$.

Dr. Chaussier proves that to kill an animal, it is sufficient to make the sulphuretted hydrogen gas act on the surface of its body, when it is absorbed by the inhalants. He took a bladder having a stop-cock at one end, and at the other an opening, into which he introduced the body of a rabbit, leaving its head outside, and securing the bladder air-tight round the neck by adhesive plaster. He then sucked the air out of the bladder, and replaced it by sulphuretted hydrogen gas. A young animal in these circumstances usually perishes in 15 or 20 minutes. Old rabbits resist the poison much longer.

When potassium or sodium is heated merely to fusion, in contact with sulphuretted hydrogen, it becomes luminous, and burns with extrication of hydrogen, while a metallic sulphuret remains, combined with sulphuretted hydrogen, or a sulphuretted hydro-sulphuret.

Sulphuretted hydrogen combines with an equal volume of ammonia, and unites to alkalis and oxides, so that it has all the characters of an acid. These compounds are called *hydrosulphurets*.

All the *hydrosulphurets*, soluble in water, have an acrid and bitter taste, and, when in the liquid state, the odour of rotten eggs. All those which are insoluble are, on the contrary, insipid, and without smell. Those which have been examined, are the hydrosulphurets of potash, soda, ammonia, barytes, strontites, lime and magnesia.

When we expose sulphur to the action of a solution of a hydrosulphuret, saturated with sulphuretted hydrogen, as much more sulphuretted hydrogen is evolved as the temperature is more elevated. But when the solution of hydrosulphuret, instead of being saturated, has a sufficient excess of alkali, it evolves no perceptible quantity of sulphuretted hydrogen even at a boiling heat; although it dissolves as much sulphur as in its state of saturation. Hence follows, 1st, That sulphuretted hydrogen, sulphur, and the alkalis have the property of forming very variable triple combinations; 2d, That all these combinations contain less sulphuretted hydrogen than the hydrosulphurets; and, 3d, That the quantity of sulphuretted hydrogen is inversely as the sulphur they contain, and reciprocally. These compounds have been called, in general, sulphuretted hydrosulphurets and hydrogenated sulphurets.

Sulphur combines with *carbon*, forming an interesting compound, to which the name *sulphuret of carbon* is sometimes given.

Sulphur has been long an esteemed article in the Materia Medica. It stimulates the system

loosens the belly, and promotes the insensible perspiration. It pervades the whole habit, and manifestly transpires through the pores of the skin, as appears from the sulphureous smell of persons who have taken it, and from silver being stained in their pockets of a blackish colour. In the stomach it is probably combined with hydrogen. It is a celebrated remedy against cutaneous diseases, particularly psora, both given internally and applied externally. It has likewise been recommended in rheumatic pains, flying gout, rickets, atrophy, coughs, asthmas, and other disorders of the chest and lungs, and particularly in catarrhs of the chronic kind, also in colica pictonum, worm cases, and to lessen salivation.

In hæmorrhoidal affections it is almost specific; but in most of these cases it is advantageously combined with some cooling purgative, especially supertartrate of potash.

The preparations of sulphur in general use are the *Sulphur lotum*, *Sulphur præcipitatum*, and *Sulphur sublimatum*.

Sulphur antimonii præcipitatum. See *Antimonii sulphuretum præcipitatum.*

Sulphur auratum antimonii. See *Antimonii sulphuretum præcipitatum.*

Sulphur lotum. Washed sulphur. *Flores sulphuris loti.* Take of sublimed sulphur, a pound. Pour on boiling water, so that the acid, if there be any, may be entirely washed away: then dry it. The dose is from half a drachm to two drachms.

Sulphur, milk of. See *Sulphur præcipitatum.*

Sulphur præcipitatum. *Lac sulphuris.* Milk of sulphur. Take of sublimed sulphur, a pound; fresh lime, two pounds; water, four gallons: boil the sulphur and lime together in the water; then strain the solution through paper, and drop in as much muriatic acid as may be necessary to precipitate the sulphur; lastly, wash this by repeated affusions of water until it is tasteless. This preparation is mostly preferred to the flowers of sulphur, in consequence of its being freed from its impurities. The dose is from half a drachm to three drachms.

Sulphur, precipitated. See *Sulphur præcipitatum.*

Sulphur sublimatum. See *Sulphur.*

Sulphur vivum. Native sulphur.

Sulphur, washed. See *Sulphur lotum.*

Sulphur-wort. See *Peucedanum.*

SULPHU'REOUS. *Sulphureus.* 1. Of or belonging to sulphur.

2. Applied, in *Natural History*, to designate a bright pale yellow, without any orange tinge. See *Colour.*

Su'lphurous acid. *Acidum sulphurosum.* Sulphur, burned at a low temperature, absorbs less oxygen than it does when exposed to greater heat, and is consequently acidified in a slighter degree, so as to form sulphureous acid. This, in the ordinary state of the atmosphere, is a gas; but on reducing its temperature very low by artificial cold, and exposing it to strong compression, it becomes a liquid. To obtain it in the liquid state, however, for practical purposes, it is received into water, by which it is absorbed.

Water thus saturated is intensely acid to the taste, and has the smell of sulphur burning slowly. It destroys most vegetable colours, but the blues are reddened by it previously to their being discharged. A pleasing instance of its effect on colours may be exhibited by holding a red rose over the blue flame of a common match, by which the colour will be discharged wherever the sulphureous acid comes in contact with it, so as to render it beautifully variegated, or entirely white. If it be then dipped into water, the redness, after a time, will be restored.

Sulphurous acid is used in bleaching, particularly for silks. It likewise discharges vegetable stains and iron-moulds from linen.

In combination with the salifiable bases it forms sulphites, which differ from the sulphates in their properties.

Sulphuret of antimony. See *Antimonii sulphuretum.*

Sulphuret of carbon. This substance was discovered accidentally in the year 1796 by Professor Lampadius, who regarded it as a compound of sulphur and hydrogen, and termed it *alkohol of sulphur.* Clément and Desormes first declared it to be a sulphuret of carbon, and their statement was fully confirmed by the joint researches of Berzelius and the late Dr. Marcet. (Philos. Trans. for 1813.)

Sulphuret of carbon may be obtained by heating in close vessels native bisulphuret of iron (iron pyrites) with one fifth of its weight of well dried charcoal; or by transmitting the vapour of sulphur over fragments of charcoal heated to redness in a tube of porcelain. The compound, as it is formed, should be conducted by means of a glass tube into cold water, at the bottom of which it is collected. To free it from moisture and adhering sulphur, it should be distilled at a low temperature in contact with chloride of calcium.

Bisulphuret of carbon is a transparent colourless liquid, which is remarkable for its high refractive power. Its specific gravity is 1·272. It has an acid, pungent, and somewhat aromatic taste, and a very fœtid odour. It is exceedingly volatile;—its vapour at 63·5° F. supports a column of mercury 7·36 inches long; and at 110° F. it enters into brisk ebullition. From its great volatility it may be employed for producing intense cold.

Bisulphuret of carbon is very inflammable, and kindles in the open air at a temperature scarcely exceeding that at which mercury boils. It burns with a pale blue flame. Admitted into a vessel of oxygen gas, so much vapour rises as to form an explosive mixture; and when mixed in like manner with binoxide of nitrogen, it forms a combustible mixture, which is kindled on the approach of a lighted taper, and burns rapidly, with a large greenish white flame of dazzling brilliancy. It dissolves readily in alkohol and ether, and is precipitated from the solution by water. It dissolves sulphur, phosphorus, and iodine, and the solution of the latter has a beautiful pink colour. Chlorine decomposes it, with formation of chloride of sulphur. The pure acids have little action upon it. With the alkalies it unites slowly, forming compounds which Berzelius calls *carbo-*

sulphurets. It is converted by strong nitro-muriatic acid into a white crystalline substance like camphor, which Berzelius considers to be a compound of muriatic, carbonic, and sulphurous acid gases.

Xanthogen and hydro-xanthic acid. — M. Zeise, Professor of Chemistry at Copenhagen, has discovered some novel and interesting facts, relative to bisulphuret of carbon. When this fluid is agitated with a solution of pure potash in strong alkohol, the alkaline properties of the potash disappear entirely ; and on exposing the solution to a temperature of 32° F., numerous acicular crystals are deposited. M. Zeise attributes these phenomena to the formation of a new acid, the elements of which are derived, in his opinion, partly from the alkohol and partly from the bisulphuret of carbon. See *Hydro-xanthic acid. — Turner.*

Sulphuretted chyazic acid. See *Sulphocyanic acid.*

Sulphuretted hydrogen. See *Sulphur.*

Sulphuretted hydrogen gas. See *Sulphur.*

SULPHURE'TUM. (*um, i.* n.) Sulphuret. A combination of sulphur with an alkali, earth, or metal.

SULPHURETUM AMMONIÆ. *Hepar sulphuris volatile.* Boyle's or Beguine's fuming spirit. Sulphuret of ammonia is obtained in the form of a yellow fuming liquor, by the ammonia and sulphur uniting while in a state of gas during distillation. It excites the action of the absorbent system, and diminishes arterial action, and has been given internally in diseases arising from the use of mercury, phthisis, diseases of the skin, and phlegmasiæ: externally it is prescribed in the form of bath in paralysis, contractura, psora, and other cutaneous diseases.

Sulphuretum antimonii præcipitatum. See *Antimonii sulphuretum præcipitatum.*

SULPHURETUM CALCIS. Sulphuret of lime. Principally used to form a medicated bath for various diseases of the skin.

Sulphuretum hydrargyri nigrum. See *Hydrargyri sulphuretum nigrum.*

Sulphuretum hydrargyri rubrum. See *Hydrargyri sulphuretum rubrum.*

Sulphuretum potassæ. See *Potassii sulphuretum.*

Sulphuretum sodæ. See *Sulphuretum sodii.*

SULPHURETUM SODII. A combination of sodium and sulphur. It is improperly called sulphuret of soda. It is analogous to the sulphuret of potassium.

SULPHURETUM STIBII NATIVUM. *Sulphuretum stibii nigrum. Antimonium crudum.* Native sulphuret of antimony. It is from this ore that all our preparations of antimony are made. See *Antimony.*

SULPHURIC. *Sulphuricus.* Belonging to sulphur.

SULPHURIC ACID. *Acidum sulphuricum.* Oil of vitriol. Vitriolic acid. When sulphur is heated to 180° or 190° in an open vessel it melts, and soon afterwards emits a bluish flame, visible in the dark, but which, in open day-light, has the appearance of a white fume. This flame has a suffocating smell, and has so little heat that it will not set fire to flax, or even gunpowder, so that in this way the sulphur may be entirely consumed out of it. If the heat be still augmented, the sulphur boils, and suddenly bursts into a much more luminous flame, the same suffocating vapour still continuing to be emitted.

The suffocating vapour of sulphur is imbibed by water, with which it forms the fluid formerly called *volatile vitriolic*, now sulphureous acid. If this fluid be exposed for a time to the air, it loses the sulphureous smell it had at first, and the acid becomes more fixed. It is then the fluid which was formerly called *spirit of vitriol.* Much of the water may be driven off by heat, and the dense acid which remains is the sulphuric acid, commonly called *oil of vitriol;* a name which was probably given to it from the little noise it makes when poured out, and the unctuous feel it has when rubbed between the fingers, produced by its corroding and destroying the skin, with which it forms a soapy compound.

Sulphuric acid was formerly obtained in this country by distillation from sulphate of iron, as it still is in many parts abroad: the common green vitriol is made use of for this purpose, as it is to be met with at a low price, and the acid is most easily to be extracted from it.

That which is now made in Great Britain is produced by the combustion of sulphur. There are three conditions requisite in this operation: — oxygen must be present to maintain the combustion; the vessel must be so close as to prevent the escape of the volatile matter which rises; and water must be present to imbibe it. For these purposes, a mixture of eight parts of sulphur, with one of nitre, is placed in a proper vessel, enclosed within a chamber of considerable size, lined on all sides with lead, and covered at bottom with a shallow stratum of water. The mixture being set on fire, will burn for a considerable time by virtue of the supply of oxygen which nitre gives out when heated, and the water imbibing the sulphureous vapours, becomes gradually more and more acid, after repeated combustions, and the acid is afterwards concentrated by distillation.

Such was the account usually given of this operation, till Clement and Desormes showed its total inadequacy to account for the result. 100 parts of nitre, judiciously managed, will produce, with the requisite quantity of sulphur, 2000 parts of concentrated sulphuric acid.

The sulphuric acid strongly attracts water which it takes from the atmosphere very rapidly and in larger quantities if suffered to remain in an open vessel, imbibing one third of its weight in twenty-four hours, and more than six times its weight in a twelvemonth. If four parts by weight be mixed with one of water, at 50°, they produce an instantaneous heat of 300° F.; and four parts raise one of ice to 212°; on the contrary, four parts of ice, mixed with one of acid, sink the thermometer to 4° below 0. When pure it is colourless, and emits no fumes. It requires a great degree of cold to freeze it; and if diluted with half a pint or more of water, unless the dilution be carried very far, it be-

comes more and more difficult to congeal; yet at the specific gravity of 1·78, or a few hundredths above or below this, it may be frozen by surrounding it with melting snow. Its congelation forms regular prismatic crystals with six sides. Its boiling point, according to Bergman, is 540°; according to Dalton, 590°.

Pure sulphuric acid is without smell and colour, and of an oily consistence. Its action on litmus is so strong, that a single drop of acid will give to an immense quantity of water the power of reddening. It is a most violent caustic; and has sometimes been administered with the most criminal purposes. The person who unfortunately swallows it speedily dies in dreadful agonies and convulsions. Chalk, or common carbonate of magnesia, is the best antidote for this, as well as for the strong nitric and muriatic acids.

When transmitted through an ignited porcelain tube of one fifth of an inch diameter, it is resolved into two parts of sulphureous acid gas, and one of oxygen gas, with water. Voltaic electricity causes an evolution of sulphur at the negative pole; whilst a sulphate of the metallic wire is formed at the positive. Sulphuric acid has no action on oxygen gas or air. It merely abstracts their aqueous vapour.

All the simple combustibles decompose sulphuric acid, with the assistance of heat. About 400° Fahr. sulphur converts sulphuric into sulphureous acid. Several metals, at an elevated temperature, decompose this acid, with evolution of sulphureous acid gas, oxidisement of the metal, and combination of the oxide with the undecomposed portion of the acid.

The sulphuric acid is of very extensive use in the art of chemistry, as well as in metallurgy, bleaching, and some of the processes for dyeing: in medicine it is given as a tonic and stimulant, properly diluted, in the dose of from one to three drops, with cinchona and other medicines, in the cure of fevers and debilities; and it is often applied externally, as a caustic with oil, and, when very much diluted, against psora and some chronic affections of the skin. The combinations of this acid with the various bases are called *sulphates*, and most of them have long been known.

Sulphuric acid, oxygenated. If the oxygenised muriatic acid of Thénard be put in contact with the sulphate of silver, there is immediately formed insoluble chloride of silver, and oxygenised sulphuric acid. To obtain sulphuric acid in the highest degree of oxygenation, it is merely necessary to pour barytes water into the above oxygenised acid, so as to precipitate only a part of it, leaving the rest in union with the whole of the oxygen. [This, like the other supposed oxygenated, are in reality compounds of the acid with deutoxide of hydrogen. See *Hydrogen.*]

Sulphuris flores. See *Sulphur sublimatum.*

Sulphuris lac. See *Sulphur præcipitatum.*

Sulphuroprussic acid. See *Sulpho-cyanic acid.*

Sultan-flower. See *Centaurea moschata.*

Su'mach. (*Sumak*; from *samak*, to be red, Arabic: so called from its red berry.) See *Rhus coriaria.*

Sumach, elm-leaved. See *Rhus coriaria.*

Su'men. (Arabic.) The lower or fat part of the belly.

Sun-dew. See *Drosera rotundifolia.*

Superarse'nias potassæ. Superarseniate of potash. A compound of potash with excess of arsenic acid. It was called *Macquer's arsenical salt*, from its discoverer; and has been sometimes given in medicine, possessing similar properties to those of the white oxide of arsenic.

Superbus. See *Rectus superior oculi.*

SUPERCI'LIUM. (*um, ii.* n.; so called because it is *supra cilium.*) The eyebrow.

Supercilium veneris. See *Achillea millefolium.*

SUPE'RFLUUS. Superfluous: abounding; in excess. See *Polygamia.*

SUPERFŒTA'TION. (*Superfœtatio, onis.* f.; from *super*, above or upon, and *fœtus*, a fœtus.) The impregnation of a woman already pregnant. How far this is a possible case has for ages been a matter of controversy among physiologists and medical jurisconsults, and it remains so to the present time. Those who oppose the doctrine of superfœtation, regard all the apparent instances of it as in reality cases of twins, in which either one fœtus has died prematurely, but remained in utero along with the living one to the full period of gestation, or one ovum has been retarded in its descent into the uterus, and is hence less developed than the other, though both were impregnated by the same coition.

Supergemina'lis. (From *super*, above, and *gemini*, the testicles.) The epididymis, or body above the testicles.

Supergenua'lis. (From *super*, above, and *genu*, the knee.) The patella, or knee-pan.

Superimpregna'tio. (From *super*, above, and *impregnatio*, a conception.) See *Superfœtation.*

SUPE'RIOR. A term in general use as regards the relative situation of parts.

Superior auris. See *Attollens aurem.*

SUPERLI'GULA. (From *super*, above, and *ligula*, a little tongue.) The epiglottis.

Superpurga'tio. (From *super*, beyond, and *purgo*, to purge.) An excessive evacuation by stool.

Supersalt. See *Subsalt.*

SUPERSCAPULA'RIS. (From *super*, upon, and *scapula*, the shoulder-blade.) Two muscles are so called; the *super scapularis superior*, more commonly called *supra-spinatus*, and the *superscapularis inferior*, more commonly called *infra-spinatus.*

SU'PERUS. Above: applied to the perianthium of flowers when placed above the germen; as in roses, and the genus *Pyrus.*

SUPINA'TION. (*Supinatio, onis.* f.; from *supino*, to lay with the face upwards.) The act of turning the palm of the hand upwards, by rotating the radius upon the ulna.

SUPINA'TOR. (From *supino*, to lay with the face upwards.) A name given to those muscles which turn the hand upwards.

Supinator brevis. See *Supinator radii brevis.*

Supinator longus. See *Supinator radii longus.*

SUPINATOR RADII BREVIS. A supinator muscle of the hand, situated on the fore-arm. *Supinator brevis sive minor*, of Winslow. This small muscle, which is tendinous externally, is situated at the upper part of the fore-arm under the supinator longus, the extensor carpi radialis brevis, the extensor carpi ulnaris, the extensor digitorum communis, and the extensor minimi digiti.

It arises tendinous from the lower and anterior part of the outer condyle of the os humeri, and tendinous and fleshy from the outer edge and posterior surface of the ulna, adhering firmly to the ligament that joins the radius to that bone. From these origins its fibres descend forwards and inwards, and are inserted into the upper, inner, and anterior part of the radius around the cartilaginous surface upon which slides the tendon of the biceps, and likewise into a ridge that runs downwards and outwards below this surface. It assists in the supination of the hand by rolling the radius outwards.

SUPINATOR RADII LONGUS. *Supinator longus*, of Albinus. *Supinator longus sive major*, of Winslow. A long flat muscle covered by a very thin tendinous fascia, and situated immediately under the integuments along the outer convex surface of the radius. It arises, by very short tendinous fibres, from the anterior surface and outer ridge of the os humeri, about two or three inches above its external condyle, between the brachialis internus and the triceps brachii; and likewise from the anterior surface of the external intermuscular membrane, or ligament, as it is called. About the middle of the radius, its fleshy fibres terminate in a flat tendon, which is inserted into the inner side of the inferior extremity of the radius, near the root of its styloid process.

This muscle not only assists in rolling the radius outwards, and turning the palm of the hand upwards, on which account Riolanus first gave it the name of *supinator*, but it likewise assists in pronation, and in bending the fore-arm.

SUPPOSITO'RIUM. (*um, i.* n.; from *sub*, under, and *pono*, to put.) A suppository, *i. e.* a substance to put into the rectum, there to remain and dissolve gradually.

Suppressed menses. See *Amenorrhœa.*

SUPPRESSION. (*Suppressio, onis.* f.; from *supprimo*, to withhold.) The total defect or non-secretion of an excrementitious fluid, as a suppression of urine, in which the kidneys secrete none. The rapidly fatal effects of a total suppression of urine have been particularly pointed out by Sir Henry Halford. If the secretion be not restored, the patient dies in a state of coma within three days.

SUPPURA'TION. (*Suppuratio, onis.* f.; from *suppuro*, to suppurate.) The formation of pus. See *Inflammation*, *Abscess*, and *Pus.*

SU'PRA. Above. This word, affixed to the name of an object, denotes something situated above that object, as *supra-renal gland*, &c.

Supra-costales. See *Intercostal muscles.*

SUPRA-DECOMPO'SITUS. More than doubly compound: a botanical term, applied to leaves.

SUPRA-FOLIACEOUS. Situated above the leaf.

SUPRA-SPINA'TUS. *Supra-spinatus seu supra-scapularis*, of Cowper. A muscle of the arm, first so named by Riolanus, from its situation. It is of considerable thickness, wider behind than before, and fills the whole of the cavity or fossa that is above the spine of the scapula. It arises fleshy from the whole of the base of the scapula that is above its spine, and likewise from the spine itself, and from the superior costa. Opposite to the basis of the coracoid process, it is found beginning to degenerate into a tendon, which is at first covered by fleshy fibres, and then passing under the acromion, adheres to the capsular ligament of the os humeri, and is inserted into the upper part of the large tuberosity at the head of the os humeri. This muscle is covered by a thin fascia which adheres to the upper edge and superior part of the basis, as well as to the upper edge of the spine of the scapula. The principal use of the supra-spinatus seems to be to assist in raising the arm upwards; at the same time, by drawing the capsular ligament upwards, it prevents it from being pinched between the head of the os humeri and that of the scapula. It may likewise serve to move the scapula upon the humerus.

SU'RA. (An Arabic word.) 1. The calf of the leg.

2. The fibula.

SU'RCULUS. (*us, i.* m.) A term applied by botanists to the stem of mosses, or the shoot which bears the leaves. It is *simple*, in *Polytrichum*; *branched*, in *Minium androgynum*; with *branches turned downward*, in *Sphagnum palustre*; *decumbent, creeping*, or *erect* in other mosses.

SU'RDITAS. Deafness. See *Aphonia*, and *Paracusis.*

SURFEIT. The consequence of excess in eating or drinking, or of something unwholesome or improper in the food. It consists in a heavy load or oppression of the stomach, with nausea, sickness, impeded perspiration, and, at times, eruptions on the skin.

Surgery. See *Chirurgia.*

Surmullet. See *Mullus.*

SUS. (*Sus, suis.* m. and f.) The name of a genus of animals. Class, *Mammalia*; Order *Pachyderma.* The hog.

SUS SCROFA. The systematic name of the hog, the fat of which is called lard. The flesh called pork, especially when young, is much used in most countries. It is generally easy of digestion, though it disagrees with some stomachs. Salted, it affords a harder food, still very nutritious to hard-working people, whose digestion is good.

Suspended animation. See *Asphyxia.*

SUSPENSION. *Suspensio.* Hanging. See *Asphyxia.*

SUSPENSO'RIUM. (*um, ii.* n.; from *suspendeo*, to hang.) A suspensory: a bag, or bandage to suspend any part.

SUSPENSORIUM HE'PATIS. The broad ligament of the liver.

Suspensorius testis. The cremaster muscle of the testicle.

SUSU'RRUS. (*us, i.* m.; from *susurro*, to murmur.) 1. A buzzing noise, like that of bees.

2. A whisper, or low tone of voice. See *Whisper.*

SUTU'RA. (*a, æ.* f.; from *suo*, to join together.) A suture. 1. In *Surgery*, this term signifies the uniting the lips of a wound by sewing. *Clavata commissura.* A number of a different kinds of sutures have been recommended by writers on surgery, but all of them are now reduced to two; namely, the *twisted*, and the *interrupted*, called also the *knotted suture.* The twisted suture is made in the following manner: — Having brought the divided parts nearly into contact, a pin is to be introduced from the outside inwards, and carried out through the opposite side to the same distance from the edge that it entered at on the former side; a firm wax ligature is then to be passed around it, making the figure of 8, by which the wounded parts are drawn gently into contact. The number of pins is to be determined by the extent of the wound: half an inch, or at most three quarters, is the proper distance between two pins. The interrupted suture is practised where a number of stitches is required, and the interruption is only the distance between the stitches.

2. In *Anatomy*, the word suture is applied to the union of bones by means of dentiform margins, as in the bones of the cranium. See *Temporal, sphenoidal, zygomatic, transverse, coronal, lamboidal,* and *sagittal sutures.*

3. In *Botany*, it is applied to that part of a capsule which is a kind of furrow on the external surface, in which the valves are united. See *Capsula.*

Swallow-wort. See *Hirundinaria.*

Swan. See *Cygnus.*

Swan, tame. See *Cygnus mutus*, and *Anas cygnus.*

Sweat. See *Perspiration.*

Sweet flag. See *Acorus calamus.*

Sweet marjoram. See *Origanum marjorana.*

Sweet navew. See *Brassica rapa.*

Sweet rush. See *Andropogon schœnanthus.*

Sweet sultan. The *Centaurea moschata.*

Sweet willow. See *Myrica gale.*

SWIETE'NIA. (*a, æ.* f.; named after Van Swieten.) The name of a genus of plants. Class, *Decandria;* Order, *Monogynia.*

Swietenia febri'fuga. The red wood tree. The bark of this tree was proposed as a substitute for cinchona, and appears to have some febrifuge power, though not at all equal to that of the cinchona. Dr. Ainslie found, that when given to the extent of four or five drachms in the twenty-four hours, it occasioned vertigo and stupor. It is now never used in Europe. The timber of this tree is very hard and durable, and affords a red dye.

Swietenia maha'goni. The systematic name of the mahogany tree. The bark of the wood of this tree is of a red colour internally; has an astringent bitter taste; and yields its active matter to water. It has been proposed as a substitute for Peruvian bark, and has been used as such with advantage. Dose, half a drachm.

Swine-pox. See *Varicella.*

Swinging. See *Gestation.*

Sword-fish. See *Xiphias gladius.*

Sword-shaped. See *Lanceolatus*, and *Ensiformis.*

Sycamore. See *Sycomore.*

SYCO'MA. (From συκη, a fig.) *Sycosis.* A wart or excrescence resembling a fig, on the eyelid, about the anus, or any other part.

SYCOMORE. (*Sycomorus;* from συκον, a fig, and μωρον, a mulberry, because it belongs to the genus *ficus*, and has leaves like the mulberry tree.) It is a native of Egypt. The white sap has been esteemed laxative and vulnerary.

SYCO'SIS. (*is, is.* f.; from συκωσις, from συκον, a fig: and so called from the granulated and prominent surface of the ulceration which takes place in the disease.) A cutaneous disease which consists of an eruption of inflamed, but not very hard tubercles, occurring on the bearded portion of the face and on the scalp in adults, and usually clustering together in irregular patches. Celsus has correctly stated that some difference takes place in the appearance and the progress of the eruption, when it is seated in the chin and in the scalp; whence he divides it into two species.

1. In the *Sycosis menti*, the tubercles arise first on the under lip, or on the prominent part of the chin, in an irregularly circular cluster; but this is speedily followed by other clusters, and by distinct tubercles, which appear in succession, along the lower part of the cheeks up to the ears, and under the jaw towards the neck, as far as the beard grows. The tubercles are red and smooth, and of a conoidal form, and nearly equal to a pea in magnitude. Many of them continue in this condition for three or four weeks, or even longer, having attained their full size in seven or eight days; but others suppurate very slowly and partially, discharging a small quantity of thick matter, by which the hairs of the beard are matted together, so that shaving becomes impracticable, from the tender and irregular surface of the skin. This condition of the face, rendered rugged by tubercles from both ears round to the point of the chin, together with the partial ulceration and scabbing, and the matting together of the unshaven beard, occasions a considerable degree of deformity; and it is accompanied also with a very troublesome itching.

This form of the sycosis occurs, of course, chiefly in men; but women are not altogether exempt from it, though it is commonly slight when it appears in them. Its duration is very uncertain: it is commonly removed in about a fortnight: but sometimes the slow suppuration goes on for many weeks; and sometimes the suppurating turbercles heal, and again begin to discharge. Occasionally the disease disappears for a season, and breaks out again.

2. The *Sycosis capillitii*, is seated chiefly about the margin of the hairy scalp, in the occiput, or round the forehead and temples, and near the external ear, which is also liable to be included in the eruption. The tubercles rise in clusters, which affect the circular form: they are softer

and more acuminated than those on the chin; and they all pass into suppuration in the course of eight or ten days, becoming confluent, and producing an elevated, unequal, ulcerated surface, which often appears granulated, so as to afford some resemblance to the internal pulp of a fig. The ulceration, as Celsus states, is generally humid; for there is a considerable discharge of a thin ichorous fluid, which emits an unpleasant rancid odour.

The sycosis, under its first-mentioned form, may be distinguished from acne, by its seat being exclusively on the bearded part of the face, — by the softer, more numerous, and clustered turbercles, — and by the ulceration which they tend to produce. And, under its second form, in which it is somewhat assimilated to the eruption of favous pustules, or porrigo favosa, affecting the face and the borders of the hairy scalp, it may be discriminated by the turberculated and elevated base of the suppurating tumours; not to mention the adult age of the patient, and the absence of contagion.

The cure of sycosis is generally much more easily accomplished than that of porrigo favosa; but the method of treatment required for it is not very different. When the tubercles are numerous, inflamed, and confluent, and especially when the suppuration is either beginning or considerably advanced, the most speedy benefit is derived from the application of poultices, at night, of linseed meal, bread and milk, or other simple ingredients. In the less severe forms warm ablutions or fomentations may be substituted, when the inflammatory symptoms are reduced; and in cases where they are from the first moderate, the healing process is much promoted, and the discharge moderated and restrained, by the unguentum hydrargyri nitrati, or the unguentum hydrargyri præcipitati albi, reduced with common cerate. Ointments of zinc and acetate of lead are in some cases useful. At the same time attention must be paid to the constitution, which mostly requires tonics.

Sylphium. See *Silphium.*

Sylvius, digestive salt of. See *Sal digestivum sylvii.*

SYMBLE'PHARUM. (*um*, *i.* n.; from συν, with, and βλεφαρον, the eyelid.) A concretion of the eyelid to the globe of the eye. This chiefly happens in the superior, but very rarely in the inferior, palpebra. The causes of this concretion are a bad conformation of the parts, or from ulcers of the cornea, the membrana conjunctiva, or internal superficies of the palpebræ, or imprudent scarifications, or burns, especially if the eye remains long closed. There are two species, — the partial and total: in the former, the adhesion is partial; in the latter, the membrana conjunctiva and cornea are concreted to the eyelid.

SYMBOLO'GICA. (From συμβυλον, a sign, and λογος, a discourse.) This term has been used by some writers synonymously with *symptomatology.*

SYMMETRY. (*Symmetria*, *æ.* f.; from συν, with, and μετρον, a measure.) The correspondence of parts in size and shape.

SYMMETRICAL. Endowed with symmetry. In *Anatomy*, organs are said to be symmetrical which are divided by the median line of the body into halves, which resemble each other more or less exactly. Thus the two hemispheres of the brain are symmetrical; the two sides of the pelvis are symmetrical. In the animal body the organs of relation only are symmetrical; those of organic life are not so; thus the parts of the liver are not symmetrical, nor those of the lungs. It is to be observed, however, that in the best formed body the symmetry of parts is not perfect: thus there are few individuals who have both sides of the face exactly of the same shape, or both hands exactly of the same size.

SYMPA'SMA. (*a*, *atis.* n.; from συν, and παασσω, to sprinkle.) A dry powder, which the ancients used to sprinkle over the body. See *Catapasma.*

SYMPATHETIC. *Sympatheticus.* Relating to sympathy.

SYMPATHETIC INK. Among the amusing experiments of the art of chemistry, the exhibition of sympathetic inks holds a distinguished place. With these the writing is invisible, until some re-agent gives it opacity. We shall here mention a few, out of a great number, that a slight acquaintance with chemistry may suggest to the student. 1. If a weak infusion of galls be used, the writing will be invisible till the paper be moistened with a weak solution of sulphate of iron. It then becomes black, because these ingredients form ink. 2. If paper be soaked in a weak infusion of galls, and dried, a pen dipped in the solution of sulphate of iron will write black on that paper, but colourless on any other paper. 3. The diluted solutions of gold and silver remain colourless upon the paper until exposed to the sun's light, which gives a dark colour to the oxides, and renders them visible. 4. Most of the acids, or saline solutions, being diluted, and used to write with, become visible by heating before the fire, which concentrates them, and assists their action on the paper. 5. Diluted prussiate of potash affords blue letters when wetted with the solution of sulphate of iron. 6. The solution of cobalt in aqua regia, when diluted, affords an ink which becomes green when held to the fire, but disappears again when suffered to cool. This has been used in fanciful drawings of trees, the green leaves of which appear when warm, and vanish again by cold. If the heat be continued too long after the letters appear, it renders them permanent. 7. If oxide of cobalt be dissolved in acetic acid, and a little nitre added, the solution will exhibit a pale rose colour when heated, which disappears on cooling. 8. A solution of equal parts of sulphate of copper and muriate of ammonia gives a yellow colour when heated, that disappears when cold.

Sympathetic inks have been proposed as the instruments of secret correspondence; but they are of little use in this respect, because their properties change by a few days remaining on the paper; most of them have more or less of a tinge when thoroughly dry; and none of them resist the test of heating the paper till it begins to be scorched. — *Ure.*

Sympathetic nerve. See *Intercostal nerve.*

SYMPATHY. (*Sympathi'a, æ.* f. Συμπαθεια; from συν, with, and παθος, affection.) That relation of the organs and parts of the living body to each other whereby an action excited in one part induces a corresponding action in another part.

Baglivi attributed the sympathies to membranous connexion; Bordeu to the cellular tissue; Willis and Vieussens to the agency of the nerves; and Whitt and Broussais chiefly to the brain. Rega divided the sympathies into those of *sensibility* and those of *contractility* — a division which has much to recommend it. Bichât offered some very excellent observations on the relations subsisting between them and the different parts of the nervous system; but, although these observations were calculated to lead to a more correct arrangement of the sympathies than had been formerly offered, it has not come to our knowledge that any has appeared founded on a better basis than that indicated in the observations of Bichât.

The sympathies may be arranged into the *reflex* and the *direct;* the former arising through the instrumentality of the sensorium, the latter taking place independently of it, through the means of the ganglial nerves, and chiefly of those which are distributed to the blood-vessels, and which form communicating chords between the viscera.

With a view to the illustration of the latter class of sympathies, viz. those which are direct, and chiefly consist of the sympathetic actions of organic life, we shall offer a few remarks.

When it is considered, that the ganglial nerves alone supply the blood-vessels and the secreting organs and surfaces; that they accompany these vessels to the utmost limits of their ramifications; that they communicate very freely with each other, and with their chief centre, the semilunar ganglion; that they give rise to numerous plexuses, which render the connexion between them still more intimate; and that they hold a close relation with the rest of the nervous system, through means of communicating nerves; — the mutual dependence of action between the chief organs of the body, in health and in disease, may be easily explained. If, moreover, it be granted that the most important vital phenomena, as digestion, assimilation, circulation, secretion, animal heat, generation, &c.; in short, that life itself, with all those manifestations of it now particularised, and which have been usually called organic, results from the influence exerted by this part of the nervous system, through the instrumentality of the vessels upon the fluid they contain, and in some measure reciprocally by this fluid upon these nerves ramified in the parietes of the vessels, and upon the ganglia themselves, through which it must of course circulate, — the agency of this system in the production of the class of sympathies under consideration must be evident. From this view of the subject, and from taking into account the modifying operation of similar textures, the related action of various organs, and, under certain circumstances, the combined influence and reaction of the sensorium, the numerous relations and connexions of healthy function and of disordered action may be more satisfactorily traced.

When one organ or system of parts is excited to increased action, or when its operations are diminished or obstructed, we perceive all the other parts of the system which communicate with it through the medium of the ganglial system, experiencing a modification of their functions, — the action of one or more organs having always an evident relation to the kind and degree of action going on in the other. In these cases the relation is sufficiently manifest; but the kind and degree of it may vary very greatly between different organs. And the relations may be of the following sorts, as the vital energies distributed throughout the system are effected in degree or in kind, or in both ways at the same time.

I. *Organic sympathies, in which the vital energy of the system evinces various modifications in degree and distribution, but in which it is not changed in kind.*

1. Related actions may be characterised by a due proportion or a healthy degree of the vital forces of the whole system; but, owing to the application of an exciting cause to one organ or part, or to two or three organs, these forces may be greatly increased in them; as, however, the healthy or medium quantity of the vital forces of the body is not supposed to be exceeded, there consequently must be a diminution of these forces throughout the other parts of the system, in proportion to the increase in the excited organs.

When the natural functions of one organ are simply excited, without being diseased, the functions of other organs with which it holds communication, by means of the ganglial nerves, undergo a relative degree of change, — for the excitement of a viscus is merely an exaltation of its vitality; and, as we exalt the vital actions in one or more departments of the entire series, we diminish them throughout the rest in an equal proportion; the excitement being frequently greater or less in some parts, and the diminution more or less confined to others.

If, for the sake of illustration, we suppose the vital energies of the system to be equal to 50; and, through means of the organic or ganglial nerves to be distributed as follows, — to the stomach and intestines, 7; to the heart, vascular system, and lungs, 8; to the brain and voluntary nerves, 7; to the liver, spleen, and pancreas, 6; to the generative organs, 3; to the urinary apparatus, 4; to the surface of the body, 3; to the rest of the body, 11; we may consider that it is duly proportioned. But if, owing to the application of certain excitants to one or more organs, as to the stomach and intestines, we exalt the proportion bestowed on these to 13, we shall consequently find the brain and voluntary nerves possessing only 5; the heart, vessels, and lungs, 7; the urinary organs, 3; the surface of the body, 2; and the rest of the body experiencing the loss of the remaining one. If, again, we excite the vital

forces distributed to the heart and vascular system until they amount to 16, we shall have a febrile condition of the system in its simplest form, and all the other organs will suffer a diminution in proportion: the stomach will only equal 4, and so on in proportion. But the vital forces of the heart and blood-vessels may equal 16; and, owing to the arteries of the brain experiencing an undue proportion of this increase, this organ may at the same time equal 10; or, instead of this increase falling to the lot of the cerebral vessels, those of other viscera may be similarly augmented, whilst those of the remaining organs may be proportionally diminished: in such cases we have a less simple result; but, nevertheless, the increase of the circulating functions is followed by an equal diminution of the secreting. Viewing the sympathetic connexion of function in another direction, we shall suppose that the excited state of vital action takes place in secreting organs: in this case the nutritive and other animal operations are diminished in an equal degree. Or we shall suppose that the excitement commences in the capillaries of an organ, from the presence of an irritating cause; that, owing to these vessels being supplied with ramifications of the same order of nerves, which supply the heart and vascular system generally, the excitement extends more or less throughout this system; and that, in consequence of the continuity of this order of nerves, and their very frequent reticulations and inosculations, not only do the heart and arteries experience the excitement produced at a part of the extreme circumference, but the whole body suffers a relative degree of derangement, and hence evinces all the phenomena of sympathetic fever. Thus, the capillaries of a particular organ are excited; the excitement extends more or less generally throughout the vascular series, and the nutritive and secreting functions are diminished in proportion as the actions of the heart and arteries are increased. Many collateral views of this subject may be adduced, and many of its connexions traced, as well as various modifying influences, both in and out of the body, appreciated — all tending to establish the position, that it is chiefly to the ganglial nerves we ought to attribute the manifold phenomena of related action which we observe in the animal economy. At this place we have only considered one of the genera belonging to this class of sympathies, namely, that which comprehends the most simple of the related actions — those which supervene in the system without an increase or diminution of the whole amount of the vital energies with which the body is endowed. The other kinds of related function have been pointed out in the above arrangement of this class of sympathies, and we cannot farther allude to them here: indeed, it would be much beyond our limits to consider fully the different kinds of sympathy in their manifold relations; we have illustrated one more particularly, because of its importance, and of its having been very generally overlooked.

In this order of sympathies there are three relations to be observed, which actually more or less obtain and constitute the essence of the subject, or the actual condition of the animal functions under consideration: 1st, the relation may respect the increased actions subsisting in two or more organs; 2d, it may be viewed between the increased functions of one part and the diminished functions of another; and 3d, it may regard the diminished functions observed in those parts which do not participate in the excitement: the relation being most immediate in the first, and least so in the third of these forms.

2. The sympathetic or related actions may be attended with a diminution of the sum of the vital energies throughout the system. In this case the different relations pointed out above may nevertheless exist, or one or two of them only may be remarkable: the chief difference here being that the sympathies of this order are generally induced by agents, which while they diminish the entire sum of vital energy, act more decidedly upon particular organs or systems of parts.

3. The sympathetic operations may be characterised by a somewhat greater amount of the vital energies of the whole body. In this order of sympathies the three relations particularised above also subsist; for, although the entire sum of vital actions may be greater than what is usually bestowed on the system, it may be so much increased in some organs as to be greatly diminished in others. This condition of functional sympathy seldom continues long, until it subsides to the first, or, from exhaustion of the vital energies, to the second order just now particularised.

II. *Organic sympathies in which, in addition to various modifications in degree and distribution, the vital energy of the system suffers a change in its kind.*

1. Sympathetic actions in which the general amount of the vital forces is natural in degree, but vitiated or modified in kind, the relation being evident — 1st, mutually between those functions which are increased; 2d, between the actions which are augmented and those which are diminished; and, 3d, between those only which are diminished.

2. Sympathies in which the entire sum of vital energy is both reduced in degree and modified in kind: the relation between its distribution in the various organs being the same as just now pointed out.

3. Sympathies in which the amount of the whole vital energy is both heightened in degree and modified in kind. In this order, the distribution and the relations to which such distribution gives rise are the same as already adduced.

The application of this classification, and the views which it embraces, to medicine, must appear evident. — *Copland.*

Dr. Burns, of Glasgow, in his excellent treatise on inflammation, a work less generally known than it deserves, has taken some original views of the subject of sympathy, of which the following is an abstract. All the body is sympathetically connected together, and dependent the one part upon the rest, constituting

general sympathy. But sometimes we find particular parts more intimately dependent upon each other than upon the rest of the body, constituting a particular sympathy. Action cannot be greatly increased in any one organ without being diminished in some other; but certain parts are more apt to be affected by the derangement of particular organs than others; and it was the observance of this fact which gave foundation to the old and well-known doctrine of sympathy, which was said to proceed "*tum ob communionem et similitudinem generis, tum ob viciniam.*" It may be thought that this position of action, being diminished in one organ by its increase either in the rest or in some other part, is contradicted by the existence of general diseases or actions affecting the whole system. But in them we find, in the first place, that there is always some part more affected than the rest. This local affection is sometimes the first symptom, and affects the constitution in a secondary way, either by the irritation which it produces, or by an extension of the specific action. At other times the local affection is coeval with the general disease, and is called sympathetic. It is observed in the second place, that, as there is some part which is always more affected than the rest, so also is there some organ which has its action, in consequence of this, diminished lower than that of the rest of the system, and most commonly lower than its natural standard. From the extensive sympathy of the stomach with almost every part of the body, we find that this most frequently suffers, and has its action diminished in every disease, whether general or local, provided that the diseased action arises to any considerable degree. There are also other organs which may, in like manner, suffer from their association or connexion with others which become diseased. Thus, for instance, we see, in the general disease called puerperal fever, that the action of the breasts is diminished by the increased inflammatory action of the uterus.

In consequence of this balance of action, or general connexion of the system, a sudden pain, consequent to violent action of any particular part, will so weaken the rest as to produce fainting, and occasionally death. But this dependence appears more evidently in what may be called the smaller systems of the body, or those parts which seem to be more intimately connected with each other than they are with the general system. Of this kind is the connexion of the breasts with the uterus of the female; of the urethra with the testicles of the male; of the stomach with the liver; and of the intestines with the stomach, and of this again with the brain; of the one extremity of the bone with the other; and of the body of the muscle with its insertion; of the skin with the parts below it.

These smaller systems, or circles, shall be treated regularly: but first it may be proper to observe, that these are not only intimately connected with themselves, but also with the general system, an universal sympathy being thus established.

That there is a very intimate connexion between the breasts and uterus has been long known; but it has not been very satisfactorily explained. Fallopius, and all the older authors, declare plainly that the sympathy is produced by an anastomosis of vessels; Bartholine adding that the child being born, the blood no longer goes to the uterus, but is directed to the breasts and changed into milk. But none of all those who talk of this derivation assign any reasonable cause which may produce it.

In pregnancy, and at the menstrual periods, the uterus is active; but, when the child is delivered, the action of the uterus subsides, whilst the breasts in their turn become active, and secrete milk. If, at this time, the uterus is again put into action, that of the breasts is diminished, and the secretion of milk is destroyed, as is well illustrated by the case of inflammation of the uterus, which is incident to lying-in women. When the uterus, at the cessation of the menses, ceases to be active, or to secrete, we often find that the breasts have an action excited in them, becoming slowly inflamed, and assuming a cancerous disposition. The uterus and breasts seem to be a set of glands balancing each other in the system, one only being naturally active, or secreting properly, at a time; and accordingly we seldom, if ever, find that when the uterus yields the menstrual discharge, the milk is secreted in perfection during the continuance of this discharge, nor do we ever find them both inflamed at the same time.

The uterus has not only this connexion with the breasts, but it has also a very particular sympathy with the stomach, which again sympathises with the brain; and thus we see how a disorder of the uterus may induce an extensive series of affections, each dependent on the other.

The organs of generation in the male form likewise a little system, in which all the parts exhibit this sympathy with each other. They likewise give us a very good instance of the association of action, or sympathy in the common acceptation of that word.

Sympathy is divided into, first, the sympathy of equilibrium, in which one part is weakened by the increased action of another; and, secondly, the sympathy of association, in which two parts act together at the same time.

The sympathy of association is produced suddenly, and for a short time. The sympathy of equilibrium is produced more slowly, and continues to operate for a much longer time.

It is curious enough that most, or at least many, of those organs, which seem to be connected by the sympathy of equilibrium, exhibit, likewise, more or less of the sympathy of association, when under the circumstances in which this can take place.

The sympathy of equilibrium is seen in the effects of inflammation of the end of the urethra or the testicle, which often diminishes its action, and produces a very disagreeable sensation of dulness; or, if this inflammation be suddenly diminished, the action of the testicle is as suddenly increased, and swelling takes place. The same is seen in the connexion of the urethra

with the bladder and prostate gland, as is mentioned in all the dissertations on gonorrhœa. These parts likewise affect the stomach greatly, increased action in them weakening that organ much. This is seen in the effects of swelled testicle, or excessive venery, or inflamed bladder, and in a stone; all which weaken the stomach, and produce dyspepsia. The same remark applies to the kidney; vomiting and flatulence being produced by nephritis.

The sympathy of association, or an instance of sympathy in the common acceptation of the word, is likewise seen in the connexion betwixt the glans and testicles in coition; but, for this purpose, the action in the glans must be sudden and of short duration; for, if continued long, weakness of the testicles, or diminished action, is induced. In those parts which exhibit this natural association of action, if the action of one part be suddenly and for a short time increased, the action of the sympathising part will likewise be increased; as we see in the instance already given of coition, and likewise in paroxysms of the stone, in which the glans penis, after making water, becomes very painful.

But if the action be more slowly induced, and continued for a long time, then this association is set aside, by a stronger and more general principle of the equilibrium of action, and the sympathising part is weakened. Hence violent inflammation of the end of the urethra produces a weakness and irritability of the bladder, dulness of the testicle, &c.

There is also an evident sympathy of equilibrium betwixt the stomach and lower tract of intestines; which two portions may be said, in general, to balance each other in the abdomen. When the action of the intestines is increased in diarrhœa, the stomach is often weakened, and the patient tormented with nausea. This will be cured, not so easily by medicines taken into the stomach, as by anodyne clysters, which will abate the action of the intestines. When the intestines are inflamed, as in strangulated hernia, vomiting is a never-failing attendant.

When, again, the stomach is inflamed, the intestines are affected, and obstinate costiveness takes place; even in hysterical affections of the stomach, the intestines are often deranged. Injections of cold water frequently relieve these affections of the stomach, by their action on the intestines.

The liver and stomach are also connected with one another. When the liver is inflamed, or has its action increased, the stomach is weakened, and dyspeptic symptoms take place. When the stomach is weakened, as, for instance, by intoxication, then the action of the liver is increased, and a greater quantity than usual of bile is secreted. The same takes place in warm climates, where the stomach is much debilitated.

If the liver has its action thus frequently increased, it assumes a species of inflammation, or becomes, as it is called, scirrhous. This is exemplified in the habitual dram-drinkers, and in those who stay long in warm countries and make free with their stomachs. The liver likewise sympathises with the brain; for when this organ is injured, and its action much impaired, as in compression, inflammation and suppuration have been often known to take place in the liver.

Besides this connexion of the stomach with the liver, it is also very intimately dependent on the brain, being weakened when the action of the brain is increased; as we see in an inflammation of that organ. The brain again is affected with pain when the stomach is weakened by intoxication, or other causes; and this pain will be often relieved by slowly renewing the action of the stomach by such stimuli as are natural to it, such as small quantities of soup frequently repeated. A slight increase of action in the stomach, at least if not of a morbid kind, affects the brain so as to produce sleep, diminishing its action. This we see in the effects of a full meal, and even of a draught of warm water. The stomach, likewise, sympathises with the throat, squeamishness, and anorexia being often produced by inflammation of the tonsils. This inflammation is frequently abated by restoring or increasing the action of the stomach. Hence the throat, in slight inflammation, is frequently easier after dinner: hence, likewise, the effects of emetics in cynanche.

The extremities of bones and muscles also sympathise in the same manner. When one end of a bone is inflamed, the action of the other is lessened, and pain is produced; for a painful sensation may result both from increased and diminished action. When the tendon of a muscle is inflamed, the body of that muscle often is pained, and *vice versâ*.

Lastly, the external skin sympathises with the parts below it. If it be inflamed, as in erysipelas, the parts immediately beneath are weakened, or have their natural action diminished. If this inflammation affect the face or scalp, then the brain is injured; and headach, stupor or delirium supervene. If it attack the skin of the abdomen, then the abdominal viscera are affected, and we have vomiting and purging, or obstinate costiveness, according to circumstances. This is illustrated by the disease of children, which is called by the women the bowel-hive, in which the skin is inflamed, as they suppose, from some morbid matter within.

If the internal parts be inflamed, the action of the surface is diminished, and, by increasing this action, we can lessen or remove the disease below; as we see daily proved by the good effects of blisters. When the stomach, intestines, or kidney have been very irritable, a sinapism has been known to act like a charm; and, in the deep-seated inflammations of the breasts, bowels, or joints, no better remedy is known, after the use of the lancet, than blisters.

The utility of issues in diseases of the lungs, the liver, and the joints, is to be explained on the same principle. In these cases we find that issues do little good unless they be somewhat painful, or be in the state of healthy ulcers. An indolent flabby sore, however large the discharge (which is always thin, and accompanied with little action), does no good, but only adds to the misery of the patient. We may, how-

ever, err on the other hand, by making the issues too painful, or by keeping them active too long; for, after they have removed the inflammatory disease below, they will still operate on these parts, lessening their action, and preventing the healing process from going on properly. This is seen in cases of curvature of the spine, where, at first, the inflammation of the vertebra is diminished by the issues; but if they be kept long open after this be removed, they do harm. We often see the patient recover rapidly after his surgeon has healed the issue in despair, judging that it could do no farther service, but only increase the weakness of his patient.

It is a well-established fact that, when any particular action disappears suddenly from a part, it will often speedily affect that organ which sympathises most with the part that was originally diseased. This is best seen in the inflammatory action, which, as practical writers have well observed, occasionally disappears quickly from the part first affected, and then shows itself in some other.

From the united testimony of all these facts, Dr. Burns maintains the doctrine just delivered, and proposes to introduce it into pathological reasonings. In the whole of the animal economy we discover marks of the wisdom of the Creator, but perhaps in no part of it more than in this, of the existence of the sympathy of equilibrium; for, if a large part of the system were to have its action much increased, and all the other parts to continue acting in the same proportionate degree as formerly, the whole must be soon exhausted; for increased action would require for its support an increased quantity of energy.

But upon this principle, when action is much increased in one part, it is to a certain degree diminished in some other: the general sum or degree of action in the body is thus less than it otherwise would be, and consequently the system suffers less.

SY'MPHYSIS. (*is*, *is*. f.; from *συμφυω*, to grow together.) Mediate connexion. A genus of the connexion of bones, in which they are united by means of an intervening body. It comprehends four species; viz. synchondrosis, syssarcosis, synneurosis, and syndesmosis.

SY'MPHYTUM. (*um*, *i*. n.; from *συμφυω*, to unite: so called because it was supposed to unite the lips of wounds.) 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Monogynia*.

2. The pharmacopœial name of the comfrey. See *Symphytum officinale*.

Symphytum maculosum. See *Pulmonaria officinalis*.

Symphytum minus. See *Prunella vulgaris*.

SYMPHYTUM OFFICINALE. The comfrey. *Consolida major*. This plant, *Symphytum officinale —foliis ovatis lanceolatis decurrentibus*, is administered where the althæa cannot be obtained, its roots abounding with a viscid glutinous juice, whose virtues are similar to those of the althæa.

Symphytum petræum. See *Coris Monspeliensis*.

SYMPTOM. (*Symptoma*, *æ*. f.; from *συμπτωμα*, a coincidence, because the symptom is coincident with the disease. The sign of a disease, consisting in some deviation from the natural and healthy functions of the diseased part, or some other which sympathises with it.

The symptoms of diseases are very numerous, because most of the functions of the body undergo a change when disease takes place.

Symptoms, then, are the phenomena of diseases; and every symptom is a change of action, or an unhealthy action, or lesion of a visible quality of some part of the body.

Symptoms may be arranged under three divisions, or heads: —

I. *Impaired Functions.*

To this division belongs, —

a. *In the Animal Functions.*

1. Loss of speech.
2. Incoherent speech.
3. Deliriousness.
4. Impaired memory.
5. Delusion.
6. Unsound judgment.
7. Mental extravagance.
8. Fancied inspiration.
9. Fanaticism.
10. Sentimentalism.
11. Diminished sensibility of mind.
12. Absence of mind.
13. Wandering fancy.
14. Unnatural conscientiousness.
15. Inordinate energy of the passions of the mind.
16. Numbness, or diminished feeling of the skin.
17. Unnatural feeling.
18. Destruction of the feeling.
19. Want of taste.
20. Depraved taste.
21. Diminished smell.
22. Unnatural smell.
23. Diminished sight.
24. Lost sight.
25. Impaired sight.
26. Nearness of sight.
27. Diminished hearing.
28. Hearing destroyed.
29. False hearing.
30. Unnatural movement of the muscles.
31. Hoarseness.
32. Faulty articulation.
33. Want of sleep.
34. Unnatural sleep.

b. *In the Vital Functions.*

1. A frequent pulse.
2. A slow pulse.
3. A strong pulse.
4. A feeble pulse.
5. A hard pulse.
6. A soft pulse.
7. A contracted pulse.
8. An irregular pulse.
9. An intermitting pulse.
10. A rebounding pulse.
11. No pulse.
12. The action of the heart ceasing for a time.

13. A cough.
14. A difficulty of breathing.
15. Sighing.

c. *In the Natural Functions.*

1. Want of appetite.
2. A voracious appetite.
3. Sickness of stomach.
4. Depraved appetite.
5. Thirst.
6. Want of thirst.
7. A difficulty of swallowing.
8. Costiveness.
9. Relaxation of bowels.
10. Unnatural fæces.
11. Increased perspiration.
12. An expectoration.
13. An increased flow of saliva.
14. Unnatural urine.

d. *In the Sexual Functions.*

1. Unhealthy semen.
2. Unnatural emission of semen.
3. Obstructed emission of semen.
4. A want of erectile power in the penis.
5. Unnatural erection.
6. Impotence.
7. Discharge from the urethra.
8. Unnatural discharge from the vagina.
9. Suspension of menstrual discharge.
10. Painful menstruation.

II. *Change of Visible Qualities.*

To this division belongs, —

1. Pallor of the skin.
2. Preternatural redness.
3. Blueness.
4. Yellowness.
5. Tumefaction.
6. Crackling noise on pressure.
7. Fluctuation.
8. Grating of bone.
9. Grating of the teeth.
10. A sound when tapped.
11. Excess of cruor in the blood.
12. Excess of serum in the blood.
13. Too dark a colour of the blood.
14. Too florid a colour.
15. An albuminous surface of the cruor of the blood.
16. A yellow serum.
17. Dilatation of the pupil.
18. Contracted pupil.
19. A wasting of the body.
20. A wasting of a part.
21. An increased size of the body.
22. An increased size of a part.

III. *Uneasy Sensations.*

Under this division come, —

1. Pain, or uneasy feeling.
2. Anxiety.
3. Lassitude.
4. Coldness.
5. Horripilation.
6. Heat.
7. Giddiness.

According to the origin, the time of appearing, the situation, and the nature of symptoms, and other circumstances, writers have made the following distinctions: —

1. The true symptoms of the disease.
2. The symptoms of symptoms.
3. The epiginomic, or supervening symptoms.

The more trivial distinctions are divided into, —

1. Precedent.
2. Concomitant.
3. Consequent.
4. Proper.
5. Common.
6. Characteristic.
7. Primary.
8. Secondary.
9. Pathognomonic.

It is by arranging together diseases, t symptoms of which are similar, that nosologis form them into classes, orders, genera, speci and varieties.

Synanche. See *Cynanche.*

Syna'nchica. (From συναγχη, the quins so called from its uses in that disease.) Qui sey-wort, — the *Asperula cynanchica.* Not n used.

SYNARTHRO'SIS. (*is, is.* f.; from σ αρθροω, to articulate.) That mode of connexi of bones in which they do not admit of moti on each other. It has three species, viz. sutu harmony, and gomphosis.

Synastomosis. See *Anastomosis.*

SYNCHONDRO'SIS. (*is, is.* f.; fr συν, with, and χονδρος, a cartilage.) A spec of symphysis, in which one bone is united w another by means of an intervening cartila as the vertebræ and the bones of the pubes.

SYNCHONDROTO'MIA. (*a, æ.* f.; fr συνχονδρωσις, the symphysis of the pubes, τεμνω, to cut.) The operation of dividing symphysis of the pubes. See *Sigaultian ope tion,* in the *Supplement.*

Sy'nchysis. (Συγχυσις, from συγχυω, to c found.) 1. A confusion of the humours of eye from injury or other cause.

2. A dissolution of the vitreous humour. *Benedict.*

Synciput. See *Sinciput.*

SY'NCLONUS. (From συν, together, κλονος, agitation.) A genus in Good's n logy, including diseases characterised by tre lous, simultaneous, and clonic agitation of muscles, especially when excited by the will

Synclonus balli'smus. The name give the shaking palsy by Dr. Good, from whom following account of it is taken.

It is the *scelotyrbe festinans* of Professor Sauvages, and the *shaking palsy* of Mr. Par son. The genus Tantarismus of Baligvi se to hold an equal point between *ballismus chorea,* and the species usually arranged u it may be resolved into the one or the ot and are done so under the present arrangem

The term Ballismus (βαλλισμος) is not in a medical sense by the Greek writers, occurs in Athenæus and various other aut in the literal sense of tripudiatio, or " ping, capering, curvetting on the toes;" βαλλιζω, " tripudio, pedibus plaudo;" an hence well designed to express the cha teristic feature of the patient's being thr involuntarily, when he attempts to walk, the toes and fore-part of his feet," to em

the language of Mr. Parkinson, "and impelled, unwillingly, to adopt a running pace:" or as Dr. Cullen, who has indiscriminately blended this species with the preceding, expresses it, to "various fits of leaping and running."

Ballismus, however, though not found in the writings of the Greek physicians, has been long established as a technical term in the medical nomenclature of later times, in which it has been used, with little discrimination, to import almost all or any of the species that belong to the present genus.

Sauvages observes that while chorea, or scelotyrbe *Sancti Viti*, attacks the young, ballismus, or scelotyrbe *festinans*, attacks those in advanced life; and the remark is founded on a just distinction of the characters of the two diseases; though there are other features also peculiar to each, which entitle them to be considered as perfectly distinct maladies. Shaking palsy, as it is called by Mr. Parkinson, who has adopted the colloquial name, is by no means a correct designation; for though in the disease before us there is a weakness of muscular fibre, and a diminution of voluntary power in the parts affected, there is none of that diminution of sensation by which palsy is generally characterised. Mr. Parkinson's description of the disease, however, is the best we have hitherto had, and is as follows: —

So imperceptible is the approach of this malady that the precise period of its commencement is seldom recollected by the patient. A slight sense of weakness, with a proneness to trembling, sometimes in the head, but most commonly in the hands or arms, are the first symptoms noticed. These affections gradually increase, and at the period, perhaps, of twelve months from their first being observed, the patient, particularly while walking, bends himself forward. Soon after this his legs suffer similar agitations and loss of power with the hands and arms.

As the disease advances, the limbs become less and less capable of executing the dictates of the will, while the unhappy sufferer seldom experiences even a few minutes' suspension of tremulous agitation: and should it be stopped in one limb by a sudden change of posture, it soon makes its appearance in another. Walking, as it diverts his attention from unpleasant reflections, is a mode of exercise to which the patient is in general very partial. Of this temporary mitigation of suffering, however, he is now deprived. When he attempts to advance he is thrown on the toes and fore part of his feet, and impelled, unwillingly, to adopt a running pace, in danger of falling on his face at every step. In the more advanced stage of the disease the tremulous motions of the limbs occur during sleep, and augment in violence till they awaken the patient in much agitation and alarm. The power of conveying the food to the mouth is impeded, so that he must submit to be fed by others. The torpid bowels require stimulating medicines to excite them into action. Mechanical aid is often necessary to remove the fæces from the rectum. The trunk is permanently bowed; muscular power diminished; mastication and deglutition difficult; and the saliva constantly dribbles from the mouth. The agitation now becomes more vehement and constant; and when exhausted nature seizes a small portion of sleep, its violence is such as to shake the whole room. The chin is almost immoveably bent down upon the sternum; the power of articulation is lost; the urine and fæces are discharged involuntarily, and coma with slight delirium closes the scene.

The remote cause is involved in some obscurity. Long exposure to damp vapour, by lying from night to night on the bare earth, in a close unventilated prison, seems to have produced it; and possibly other causes of chronic rheumatism: and hence it has frequently supervened on chronic rheumatism itself. Long indulgence in spirituous potation has often given rise to it; and probably any thing that debilitates the nervous power.

And on this account miners, and others exposed to the daily exhalation of metallic vapours, and especially those of mercury, are frequent and severe sufferers; of which Hornung has adduced many interesting examples from the quarrymen in Carniola. It has also followed upon worms in the intestines; and in this case, has sometimes assumed a periodical type.

The part of the nervous organ more immediately affected has, also, afforded some ground for controversy. Bonet ascribes it to a diseased state of some portion of the cerebrum, and has given examples of its being found, on dissection, to contain, in various quarters, proofs of serum, sanies, and other morbid secretions. But the misfortune is here, as we have already observed in similar appearances after mania, that it is impossible for us to determine whether these diseased fluids give rise to the disease or the disease to them. And hence Mr. Parkinson seems to pay no attention to them, at least as a cause, and fixes the seat of the affection in the cervical part of the spinal marrow, from which he supposes it to shoot up by degrees to the medulla oblongata. We have already shown sufficiently in the physiological proem to the present class, that the nervous fibres which ramify over the extremities, whether sensific or motific, originate from the chain of the spinal marrow; and we have also shown, in discussing the diseases of trismus, tetanus, and lyssa, how acutely one extremity of a chain of any kind, and particularly of a continuous fibrous chain, sympathises with another: and there can be no difficulty, therefore, in conceiving that wherever the cutaneous ends of the nerves of motion are torpified, or otherwise affected by any of the causes just adverted to, the vertebral column must itself very seriously participate in the mischief, and consequently the upper or cervical part of this column: and that from this point the disease must ramify to the brain before the general functions of the system become affected, as in its latter stages.

The remedial process is not very plainly indicated. Vesicatories, and other stimulants, applied to the neck or even the dorsal vertebræ,

have appeared useful. A seton or caustic, and especially the actual cautery, as practised so generally in France, might possibly be of more avail, applied to different parts of the spine. Beyond this an active purgative system, as strongly recommended by Riedlin, has certainly been found efficacious; and the solution of arsenic bids as fair for a favourable result here as in the preceding species. Stark tried musk, and carried it to very large doses frequently repeated every day: but it does not seem to have produced any decisive success.

Friction of the affected extremities resolutely persevered in by a skilful rubber, with stimulant embrocations of camphor or ammonia, should also be tried in an early stage of the disease, and be alternated with the use of the voltaic trough. Here, too, we may expect to derive advantage from a free use of diaphoretic and alterant apozems, as the decoction of the woods, and especially where the disease is suspected to be of a rheumatic origin: to which may be added a regular course of bathing in the Bath springs.

SY'NCOPE. (*e, es.* f.; συγκοπη, from συγκοπτω, to strike or cut down.) Fainting or swooning. *Animi deliquium. Lipothymia. Defectio animi. Dissolutio. Exanimatio. Asphyxia. Virium lapsus. Apopsychia. Apsychia. Ecchysis.* A disease in which the respiration and action of the heart either cease, or become much weaker than usual, with paleness and coldness, arising from diminished energy of the brain, or from organic affections of the heart. Cullen's species are: —

1. *Syncope cardiaca*, the cardiac syncope, arising without a visible cause, and with violent palpitation of the heart during the intervals, and depending generally on some organic affection of the heart or neighbouring vessels.

2. *Syncope occasionalis*, the exciting cause being manifest. The disease is sometimes preceded by anxiety about the præcordia, a sense of fulness ascending from the stomach towards the head, vertigo, or confusion of ideas, dimness of sight, and coldness of the extremities. The attacks are frequently attended with or end in vomiting, and sometimes in epileptic or other convulsions. The causes are sudden and violent emotions of the mind, pungent or disagreeable odours, derangement of the primæ viæ, debility from preceding disorders, loss of blood, spontaneous or artificial, the operation of paracentesis, the kneeling position, &c. An ordinary fainting fit is a matter of little importance, and occurs frequently in persons who are in general perfectly healthy. The actions of the system will generally be spontaneously restored in a short time. This is accelerated by the horizontal position, which throws the blood on the brain, and thereby stimulates it to resume its wonted functions. Pungent volatile substances applied to the nostrils, cold water sprinkled on the face or chest, and the internal administration of gentle stimulants as soon as the patient can swallow, may also be resorted to. The more formidable kinds of syncope, which arise from diseases of the heart or great vessels, or from profuse hæmorrhage, need not be noticed here, as their consideratio belongs to the particular case in connexion wit which they occur.

Syncope angino'sa. Dr. Parry gives th name to the disease more commonly calle *angina pectoris*. See *Angina pectoris*.

SYNDESMOLO'GIA. (*a, æ.* f.; from συν δεσμος, a ligament, and λογος, a discourse.) Th doctrine of the ligaments.

Synde'smo-pharynge'us. See *Constrictor pha ryngis medius*.

SYNDESMO'SIS. (*is, is.* f.; from συνδε μος, a ligament.) That species of symphysi or mediate connexion of bones, in which the are united by ligament, as the radius with th ulna.

SYNDE'SMUS. (*us, i.* m. Συνδεσμος; fro συνδεω, to bind together.) A ligament.

SYNECHI'A. (*a, æ.* f. Συνεχεια, continuity. A concretion of the iris with the cornea, or wit the capsule of the crystalline lens. The remot causes are, a collapse of the cornea, a prolaps of the iris, a tumefied cataract, hypopium, c original malformation.

SYNGENE'SIA. (*a, æ.* f.; from συν, to gether, and γενεσις, generation.) The nam of a class of plants, in the sexual system c Linnæus, consisting of plants in which th anthers are united into a tube, the filaments o which they are supported being mostly separat and distinct. The flowers are compound. Th orders of the class *Syngenesia* have been erro neously placed in this dictionary, as those of th class *Polygamia*: — they are *Polygamia æquali Polygamia superflua, Polygamia frustranea, Poly gamia necessaria, Polygamia segregata*. For th orders of the class *Polygamia*, see *Polygamia* i the Supplement.

SYNIZE'SIS. (*is, is.* f.; from συνιζω *consido, cœo, coalesco*, to meet.) Closed pu pil. A perfect concretion and coarctation o the pupil. It is known by the absence of th pupil, and a total loss of vision. The specie are: —

1. *Native*, with which infants are sometime born.

2. *Simple*, the pupil being closed or obliterated from a gradual contraction, and, at length, coali tion, of the muscular fibres of the iris, unat tended by any other change or impairment o the eye.

3. *Accidental*, from an inflammation or exul ceration of the uvea or iris, or from a defect o the aqueous or vitreous humour.

4. *Complicate*, or that which is complicated with some other ocular disease. Medicines ar only serviceable in the simple species, in whic the tincture of belladonna often effects a cure and application, also, of stimulating solutions as sulphate of zinc, dilute alkohol, ether, &c When these are of no service, an artificial pupi may be made, either by excision, incision, o separation, according to the appearance of th closure.

SYNNEURO'SIS. (*is, is.* f.; from συν, with and νευρον, a nerve: the ancients included membranes, ligaments, and tendons under th head of nerves.) Synonymous with *Syndes mosis*.

SY'NOCHA. (*a, æ.* f.; from *συνεχω*, to continue.) See *Inflammatory fever.*

SY'NOCHUS. (*us, i.* m.; from *συνεχω*, to continue.) See *Mixed fever.*

SYNO'VIA. (*a, æ.* f.; a term of no radical meaning, coined by Paracelsus.) An unctuous fluid secreted from certain glands in the joint in which it is contained. Its use is to lubricate the cartilaginous surfaces of the articulatory bones, and to facilitate their motions.

According to Mr. Hatchett it consists of albumen and a small quantity of the phosphates of lime, soda, and ammonia. According to M. Margueron it consists of

Fibrous matter	11·86
Albumen	4·52
Muriate of soda	·71
Phosphate of lime	·70
Water	80·46
	100·00

SYNOVIAL. *Synovialis.* Of or belonging to the synovia, or fluid of the joints.

Synovial glands. *Glandulæ synoviales.* The fatty fimbriated structure found within the cavities of some joints.

Synovial membrane. The membrane which lines the cavities of the joints, and secretes the synovia. See *Texture.*

SYNTENO'SIS. (*is, is.* f.; from *συν*, with, and *τενων*, a tendon.) A species of articulation where the bones are connected together by tendons.

SYNTE'XIS. (From *συντηκω*, to dissolve.) A marasmus or wasting of the body.

SY'NTHESIS. (*is, is.* f.; from *συντιθημι*, to compose.) Combination. See *Analysis.*

Syntheti'smus. (From *συνθετιζω*, to place together.) The reduction of a fracture.

Synulo'ticus. (From *συνουλοω*, to cicatrise.) Conducive to the healing a wound. Having a healing property when applied to wounds.

SY'PHILIS. (The name of a shepherd, who fed the flocks of king Alcithous, who, proud of their number and beauty, insulted the sun; as a punishment for which, fable relates, that this disease was sent on earth; or from *σιφλος*, filthy.) Dr. Mason Good says that the term was probably invented by Fracastorio, from the Greek *συν* and *φιλεω*, importing "mutual love;" for such is the title by which he has designated his celebrated and very elegant poem on this very inelegant subject. The venereal disease, called *Lues venerea, Morbus Gallicus, Aphrodisius morbus, Morbus indicus, Morbus Neapolitanus*, and *Patursa.* By the "venereal disease" are usually signified certain morbid changes produced in various textures of the human body by the action of a specific morbid poison. Some writers, however, extend the meaning of the expression further; for they make it comprehend not only *syphilis*, or the *true venereal disease*, but also clap, or *gonorrhœa*, sores of different descriptions on the genitals, and numerous effects or accompaniments of the latter complaints. Such writers do not speak of the *venereal disease* in the singular but in the plural number, and offer a description not of one disorder, but of several, under the appellation of *venereal diseases*, the varieties of which are sometimes ascribed to the existence of different kinds of venereal poison, each capable of producing distinct and peculiar effects on the part and constitution.

Now, if it be inquired what we know about any venereal poison, and what proof we have of its existence, the answer is, that it has never been detected in a separate form, and nothing is known respecting its appearance, colour, consistence, or any of its general or chemical qualities. The only explanation that can perhaps be given of it is, perhaps, what Mr. Lawrence has suggested, namely, that it is that state of the secretion of a sore, which renders it capable of producing the disease in another person, or that state of the blood in the mother which renders it capable of communicating the disease to the *fœtus in utero;* but what that particular state is we are unable to describe; we are only able to observe its effects, and judge from them that a virus or poison is concerned.

It would not appear to be the nature of the venereal poison always and inevitably to excite inflammation, ulceration, or disease of the part to which it is applied in any shape; it cannot therefore be a very active and quickly penetrating agent; and though the proportion of cases in which the poison takes effect is considerable, experience proves, that many individuals, exposing themselves to the risk, come off with impunity. When the contrary happens, the poison, after the expiration of a variable space of time, which appears to be requisite for it to make an impression, produces changes not only in the part to which it is immediately applied, but, at a subsequent period, in a given number of examples, disease in other situations, in consequence of its absorption into the system.

Syphilis cannot be propagated from individual to individual through the medium of the breath, nor of the atmosphere, nor apparently through the medium of any of the ordinary natural secretions, and certainly never by one person merely touching the sound part of the skin of another individual labouring under the disorder. With the exception of what may happen between a syphilitic pregnant female and the child in her womb, only one way is positively known, in which the disease can be communicated, and that is through the medium of the specific poison, blended at the time of its application with pus, or some other morbid secretion. Such infectious matter begins its action by exciting inflammation, followed by a pimple, or pustule, which is gradually converted into an ulcer. Of course, such ulcer is almost always on the parts of generation; but, if a person accidentally prick himself with a lancet infectee with venereal matter, or, if such matter happen to come in contact with any abraded part of the skin, syphilis may then commence in other situations.

The symptoms or effects of the venereal disease are divided into the *primary* and *secondary.* The primary are those which arise from the direct application of the poison to the

part, namely, *ulceration* of that part, often followed by a *swelling of the absorbent glands*, to which the lymphatics of the ulcerated texture first direct their course; the sore receiving the name of *chancre*, and the glandular swelling that of *bubo*. The latter is deemed one of the primary effects, because excited not really by the poison after its entrance into the circulation (as all the secondary symptoms are believed to be), but by its directly irritating the gland or glands, as it is passing through this portion of the absorbent system into the blood.

It has been already stated, that the application of the poison does not invariably cause a chancre. It seems as if some individuals were less susceptible of the venereal disease than others, and, no doubt, those who are very attentive to ablution, after a suspicious connexion, much oftener avoid being infected than other parties who neglect this precaution. Nor does the poison, when it gives rise to a primary ulcer, or chancre, constantly lead to the formation of a bubo. In the majority of cases, the latter swelling is not produced, and this sometimes even when secondary symptoms follow, and the poison has found its way into the constitution.

The *secondary symptoms* are all those effects of the disease which take place from the introduction of the poison into the circulation, whether ulceration of the throat, cutaneous eruptions, ulcers, or excrescences on the surface of the body, inflammation of the iris, various affections of the nose, ears, testicles, or joints; and, in the osseous system, severe pains, nodes, caries, or necrosis. These secondary symptoms, which make the *constitutional form of the disease*, do not occur, however, with any regularity. In many cases, they never show themselves at all; while in others, they take place with great severity, though there may be no remarkable differences in the appearance of the primary ulcers, or the kind of treatment, to account for this diversity of consequences. In a given number of cases of primary symptoms, under any plan of treatment, secondary symptoms will occur only in a limited proportion of the patients.

With respect to the origin of venereal disease, it has been believed that it began in Europe towards the close of the fifteenth century, having been either brought to this quarter of the world from St. Domingo by the followers of Columbus, or having broken out from unknown causes in the French army then besieging Naples. Mr. S. Cooper says that the fullest consideration of the subject has led him to believe, that the venereal disease has existed from time immemorial; that it always has existed, and always will exist, in every populous country, where promiscuous sexual intercourse takes place. Those, who ascribe the origin of syphilis to the latter part of the fifteenth century, have been much influenced by one fact, which is, that down to that period no description of any disease, corresponding exactly to what we call syphilis, had been given by medical writers; and although ulcerations on the genitals, and buboes, had been commonly treated of, no mention was made of the secondary symptoms, no connexion was ever traced, or even suspected, between the primary effects, as they are called, and the sore throat, cutaneous affections, and the pain and swellings of the bones, which we denominate secondary ones. Perhaps, however, it is scarcely allowable to infer, that because no notice is taken of the secondary symptoms of the venereal disease in the old works on medicine and surgery, that such complaints were not in existence previously to the close of the fifteenth century. The relation of the primary and secondary symptoms to one another, might have been overlooked; it might never have been suspected when there had been a chancre on the penis, that the sore throat, cutaneous affection, or node, which came on subsequently, had any connexion with the sore. Certainly this will not seem incredible, when it is recollected that it was not until a very recent date, that some particular effects of the venereal disease were made out; and that, even at the present day, with all the advantages of a better system of pathology, our knowledge of many circumstances, relative to this extraordinary disease, is very obscure and uncertain. Thus, two or three hundred years hence, when it shall be recorded to posterity, that at as late a period as the year 1800, no account had been given of syphilitic iritis, and that the true character of gonorrhœal ophthalmia had not been described, it would not be correct to infer, that those affections had no existence until the time when they began to be discussed in works on surgery. Their not having prevailed, and their not having been described, are two different things.

Not only are diseases of the genitals acknowledged to have existed from time immemorial, but we have every ground for believing, that they were of a contagious nature. This seems proved by the precautions adopted by various governments, to prevent the extension of such disorders among the population. Thus, in the borough of Southwark, prior to the time sometimes fixed upon for the origin of syphilis, there were places called *stews*, where prostitutes were confined, and received the benefit of surgical assistance. They were taken up and put into these establishments, whether agreeable to them or not, by virtue of certain decrees, made expressly to protect the rest of the community from the risk of catching their complaints. At the same time, or even earlier, similar establishments were formed in Paris, Edinburgh, Avignon, and even in the holy city of Rome, under the Pope's nose, under the walls of the Vatican itself, with an abbess at the head of it.

The venereal disease is commonly believed to be communicable only through the medium of pus. The late Mr. Hey, of Leeds, was induced, however, to regard this doctrine as incorrect; and, from some cases which came under his observation, he suspected that the disease might sometimes be communicated, not only after all ulceration and suppuration had ceased, but even when the person, giving it to another, was to all appearance in perfect health; but whoever reads the cases on which Mr. Hey founded this extraordinary inference, will perceive how great was the possibility of his being

deceived by the patients, who gave him the histories of their cases. Some particulars involved the honour of the individuals themselves, and therefore they might have been ashamed of disclosing every secret relative to their cases. It is more rational, perhaps, to suppose that Mr. Hey had been deceived by the patients themselves, than that any such such mysterious sources of infection existed, as those implied by his view of their cases. The idea that syphilis can be communicated by a person so healthy, that he has no venereal matter formed upon any part of the surface of his body, or indeed any visible or palpable complaint whatsoever, is a problem, that every thing yet ascertained about the nature of syphilis tends to refute. As the venereal disease may be transmitted from the mother to the fœtus through the medium of her blood, many surgeons have been inclined to suspect, that it may be also communicable through the medium of the natural secretions, such as the saliva, the semen, the milk, &c. With respect to the fœtus, we may infer that it receives the infection by means of the circulating blood, in the same manner as the mother herself receives her secondary symptoms; but with regard to the saliva, semen, and milk, there is no evidence that these natural secretions will serve for the transmission of the disease. Mr. S. Cooper believes with Mr. Travers, that none of the common natural secretions of a contaminated individual can communicate the disease to other persons. The following statement in this gentleman's work is interesting; a man, who has syphilis in the secondary form, provided he be free from all affections of the genitals, will communicate no taint to his progeny, any more than to his wife; but a healthy wet nurse, getting a sore nipple in consequence of suckling a pocky child, and having secondary symptoms, will communicate the disease to the fœtus of which she may become pregnant. Now this is agreeable to the usually received opinions, that the blood will contaminate the embryo, though all genital sores may be absent, and though the party cohabiting with the woman is beyond the sphere of the influence of the disease in her. So far then as the present state of our knowledge reaches, we may conclude, that the disease is only communicable through the medium of purulent fluid, and not an ordinary natural secretion, with the exception of the mode of its transmission to the fœtus, which receives the infection through the circulation, and may be regarded as under the same circumstances, with respect to the secondary effects of the disorder, as the mother herself. There may also be an exception to the general principle in what happens between the pocky child and its nurse, provided the disease in the former is to be regarded as the constitutional modification of it, transmitted through the blood of the mother. Certain descriptions would tend to prove, however, that the ordinary secretions of the female organs are sometimes the medium or vehicle of infection.

The effects of the venereal disease are different in different individuals; two men may have connexion with the same woman; both may catch the disease, but one will have it severely, and the other only in a slight and mild form. One man has been known to give the disease to different women; some of whom have had it in a lenient shape, while the others have suffered most severely. Sometimes the same individual will have two or more sores of different kinds at the same time. In some examples, sores of the Hunterian character are seen on the glans penis, while sores of other descriptions are close by them. One of the most curious circumstances in the venereal disease is not unfrequently exemplified in the army: soldiers are sometimes gregarious in their amours: a party of six or eight will have connexion, one after another, with the same woman. In this manner, several men contract disease from the same source, and on one and the same occasion; yet they do not all suffer in the same manner. Some have sores of one kind; some of another; and some, various sorts of ulcers; while others will contract a discharge from the urethra. These facts are adverse to the opinion, that syphilis is owing to a plurality of poisons; for here are many different effects, apparently produced from the same source.

The venereal disease presents itself in a great variety of shapes, and is attended by apparently the most capricious irregularities, and this in relation both to the primary and the secondary symptoms: thus, we find that some persons will have only superficial ulcers without induration around and below them, but with elevated or raised margins; while others will have sores, characterised by a hard circumference, an indurated base, an indisposition to granulate, and, in a word, all the features belonging to, what is called, the Hunterian chancre. Again, others will have phagedenic sores, entirely different from either of the other kinds now described; and while one individual will have only one sore of one of the descriptions here pointed out, another will have not merely a sore, corresponding to one of those varieties, but also a bubo; and a third will have gonorrhœa, in addition to the chancre and bubo. With respect to the secondary symptoms, these also exhibit the most perplexing diversities: the primary symptoms are frequently followed by secondary ones, as varied as the former, and even more so; thus, with regard to the cutaneous eruption, the spots on the skin may either be a scaly eruption, a papular eruption, a pustular eruption, or a tubercular eruption. The sore throat also, which is a common secondary symptom, presents itself in a variety of forms. there may be a deep excavated ulcer on the tonsils, or only a superficial ulceration of them; or there may be an ulceration, extending to the upper part of the pharynx and soft palate, without affecting the tonsils. Then, in the affections of the osseous system, we notice the same indisposition in the disease to confine itself to any determinate shape: there may be only periostitis — a mere swelling or inflammation of the periosteum; or there may be true nodes, or a real enlargement of the osseous texture itself — an increased deposition of bony matter; or there may be merely pains in the bones, or swellings and

pains of the joints. Thus, we see in the outline of this singular disease, nothing but variety and irregularity, which it is difficult to solve by reference to any principles yet suggested by the many able men, who have exerted their talents in the investigation of this Protean disorder.

Mr. Carmichael attempted to explain some of the varieties of the venereal disease, by supposing a plurality of poisons; by the consideration that it is in truth not one, but several diseases, each depending on a specific poison of its own. His doctrine is, that, except in a few anomalous cases, every primary sore has its corresponding eruption; so that we may foretell by the appearance of the former what the latter will be, provided it come out at all; or if we see only the eruption, we may be able to pronounce from it what has been the character of the primary sore. When these views were first made known, they raised the most lively hopes, that a great step had been made in the knowledge of venereal complaints. But the disease in London is not found to have the same regularity and constancy in the relations between its primary and secondary symptoms, as Mr. Carmichael thought that he had noticed in Dublin. A primary sore of a determinate character will frequently communicate a sore of a different kind, and, what is still more inexplicable, frequently several sores, each of different kinds. Certain facts, recorded by Mr. Evans, prove, that a connexion with a common prostitute, in whom there are no ulcers at all, will sometimes give rise to venereal complaints, and then the disease seems indeed to have been communicated through the medium of the ordinary secretions of the genital organs, with which the poison was commixed. So far as the doctrine of Mr. Carmichael goes, which ascribes the origin of phagedenic ulcers to a particular venereal poison, the idea does not seem at all tenable. We have seen that the phagedenic character may occur as a complication of any kind of ulcers, whatever may have been their original nature, and that such unfavourable change often depends on constitutional causes, bad health, injudicious treatment, intemperance, disturbance of the part, and other very definite and manifest circumstances. It is true, that we see in hospital gangrene and phagedenic diseases from syphilis, which are believed to be analogous to, or identical with, hospital gangrene, disorders certainly capable of propagation by contagion; but this refers to the accidental application of the matter, by means of a sponge, &c., to the abraded surface, in another person. Without such abrasion there would have been no evil consequences. Then, how unlikely, how impossible we may say, it would be for a person afflicted with a phagedenic disease of the genitals, to have sexual intercourse, so as to give the complaint to another person. On the contrary, we have reason to believe, that some of the worst forms of phagedenic ulcers are communicated by women, who have but trivial complaints themselves. Every body has heard of the captivating Lisbon opera dancer, whose charms attracted so many of the officers of the British army into her embraces. If we are to credit the reports, many hundreds of our countrymen had connexion with her, no doubt civil also as well as military; and great numbers of them received, as a reward for their adoration of this irresistible goddess, the present of something more than a trifling clap. Many who had an acquaintance with this lady, contracted venereal complaints of a particularly obstinate and afflicting kind, such as are comprised under what is sometimes facetiously denominated the *black lion*, a phagedenic, rapidly spreading, almost incontrollable ulceration of the penis; yet this lady continued to dance every night for months and months together, as if she were right in every respect herself, whilst her unfortunate friends were suffering all the pains and penalties inflicted upon them through the power of so fascinating a goddess, whose poison, like that of the serpent, hurt not herself. Now it cannot be imagined, that she had phagedenic ulceration of the genitals, while she was discharging her duties so well, which consisted of dancing in the early part of the night, and of another sort of amusement in the latter part of it. It is impossible then to suppose, that these phagedenic sores could have arisen from a particular kind of poison, the product of any phagedenic sore. Mr. Carmichael's description of the venereal disease is excellent, so far as the symptoms are concerned; we daily recognise in practice the very forms and shapes of the disorder which he has described so well; yet we see various circumstances, which prevent us from coming to his conclusions respecting the diversities of venereal diseases. We cannot trace any uniform and mutual correspondence between the primary and the secondary symptoms; for the different effects, which he refers to different poisons, are found by us to be frequently too much blended together. One series of complaints is not so separate, so restricted to particular cases, as Mr. Carmichael's views would induce us to expect; for instance, we often meet with the scaly and pustular eruptions in the same patient. His account of the causes of phagedæna is totally incompatible with the facts revealed to us by experience. No doubt the Lisbon opera dancer had not any thing very serious the matter with her; probably her natural secretions were somewhat changed, or she might have had at most some gleety affection. Then we must recollect another fact, which agrees with this inference from the opera dancer's case; in the large towns in France, it is customary for the Cyprian corps to be inspected once a week by medical officers; although the frequency of disease does not appear to be diminished thereby. Mr. Evans, who was stationed in Valenciennes, attended several of these reviews, made under the direction of the police. The British garrison at Valenciennes, at that time, consisted of four or five thousand men, and many of them suffered severely from venereal complaints; there was at least the usual number of venereal cases among them: yet Mr. Evans informs us, that in the inspections referred to, where some hundreds of concubines were carefully examined, very little disease was found. Mr. Travers suggests one

peculiar mode by which the venereal disease may be communicated; he supposes that a woman may in some instances be the passive medium of infection, that is, when she has had connexion with an infected person, and immediately afterwards has connexion with another man who is sound, the last person may be contaminated, though she may escape the disease. This seems possible; but whether it frequently happens or not, it is difficult to say. At all events, it appears as if the natural secretions of the female organs were sometimes pregnant with infection, though no ulceration may exist on the surface of the genitals.

The symptoms of syphilis are divided into *primary* and *secondary:* the primary consists of various forms of ulceration on the genitals, or other parts to which the venereal matter may be applied, and specific inflammation of the glands called buboes; the secondary consist of a variety of constitutional diseases.

Primary symptoms. — Primary venereal sores are of several kinds. The most remarkable one is that which was so well described by Mr. Hunter, and is called accordingly the *Hunterian chancre*. It is characterised by a tendency to assume a circular form, its excavated surface, the tenacious and adherent quality of the matter produced on it, and by its hard cartilaginous base and margin. It generally begins as a pimple, or minute vesicle, which enlarges, and soon breaks and ulcerates. Generally speaking, venereal ulceration does not extend itself with great rapidity; neither is it the common character of the Hunterian chancre to make quick progress. Nevertheless, exceptions to this statement do occur, and these seem to depend on the state of the health; for when this is in an unfavourable condition, or certain forms of constitutional disturbance and irritability prevail, the ulceration will spread with greater quickness than usual. When the sore is situated on the prepuce, or the frænum, there is usually more inflammation present than when it is situated on the glans. When the ulcer is on the glans, it is less painful, but more disposed to give rise to hæmorrhage. What is termed *phymosis*, is an inflammation, a thickening, and a contraction of the extremity of the prepuce, rendering it impossible to draw it back so as to uncover the glans: this case is less frequently a consequence of the Hunterian chancre, than of some other primary sores on the penis. Mr. S. Cooper's experience does not incline him to adopt the opinion that the hard cartilaginous base of the Hunterian chancre is essential to a sore, that is capable of imparting to the system such effects, or secondary symptoms, as are exclusively regarded as syphilitic. All surgeons know, that the Hunterian chancre may, and often does, give rise to secondary symptoms; but there are other kinds of primary sores, which will produce similar complaints, so similar that they cannot be discriminated.

Another kind of primary sore is that which is generally called *the superficial ulcer with raised edges;* it is not accompanied by induration, but its margin is very high; it is often seen on the outside of the prepuce; and frequently is not a single sore, but is accompanied by others of the same nature, sometimes by two, three, four, or more. In many instances, we see them surrounding the orifice of the prepuce, producing a thickening of it and phymosis, which may continue long after the cure of the sores. Sometimes we notice some of these superficial ulcers on the corona glandis, and others under the prepuce, or around its orifice, or just on the outside of it. They are frequently very obstinate, and it may be long before any impression can be made upon them, whether mercury be given in full quantities, or merely in alterative doses. Sometimes, in five or six weeks, there will be very little change in them whatever is done, and what change does take place, may be for the worse. Mr. S. Cooper observes that, after five or six weeks, they generally yield to common treatment, to mild alterative plans, namely, to small doses of mercury, aperient medicines, and antimonials, and sometimes to tonics, bark, sarsaparilla, and the mineral acids. One common situation for such a sore is just at the side of the frænum, and then the frænum is generally destroyed. The black or yellow wash, and lotions of the sulphate of copper, or zinc, are the best applications.

Another description of primary sore is the *phagedenic*, as it is termed, — a corroding ulcer without granulations, corresponding to the description of phagedenic sores in general. It is destitute of any remarkable degree of surrounding induration, but its circumference is of a livid red colour. It is invariably rendered worse by mercury, a fact, which I deem to be as well established as anything yet made out, with regard to the treatment of venereal complaints. In this form of the disease, when the treatment is injudiciously conducted, the whole of the penis will frequently be destroyed in a very short time. Sometimes considerable hæmorrhage takes place, and a useful hint is afforded by it; for we commonly observe, that, after loss of blood, the extension of the ravages of the disease stops, or is suspended for a time; and hence we may infer that venesection will frequently be useful in the early stages of the disease, a truth fully confirmed by experience.

Another primary sore is called the *sloughing ulcer*. It appears first as a black spot, which increases, and is thrown off, leaving exposed to view a corroded or phagedenic surface. After the slough has separated, an ulcer remains of a painful character, with a dark blue, or livid crimson margin. In this manner the disease will go on alternately sloughing and ulcerating, sometimes till nearly all the external parts of generation are destroyed. With respect to the hypothesis, that phagedenic primary sores had their origin from a specific poison, various considerations oppose its adoption. The sore is not always phagedenic from the beginning, which we should naturally suppose would be the case, if it arose from a specific poison. The causes of phagedenic ulceration may frequently be traced very unequivocally to the condition of the individual's health; to his having neglected to restrict himself to proper regimen; to his having been guilty of excess, or to his having neglected some other kind of primary sore in its

commencement. It appears that any sore may assume the phagedenic or sloughing condition from the bad state of the constitution, or from neglect, or injudicious treatment.

With respect to primary venereal sores, we should be careful not to confound with them several common complaints which cannot even be suspected to be connected with, or to originate from, any kind of virus, as, for example, the disease called *herpes preputii*, which begins with heat and itching of the foreskin, and in one or two days is followed by red patches as large as a silver penny, on each of which may be remarked five or six small vesicles, which lose their transparency in a few days, and become filled with pus. They then burst, and the fluid oozing out of them, and drying, forms scabs. *Excoriations of the corona glandis* too, and of the prepuce, are common in individuals who are not cleanly, and who neglect to wash these parts occasionally. Under such circumstances, troublesome excoriations will be likely to be produced by the lodgment of the natural mucus, and its becoming acrid and irritating. These cases merely require cleanliness for their cure. Patients with such excoriations often ask our advice, and if we give them mercury, we give it unnecessarily; nothing is required but a weak solution of the sulphate of zinc, or a lotion of rose water and subcarbonate of potash. There are also cases in which there is a scaly appearance of the prepuce, a kind of *psoriasis*, which must not be mistaken for a venereal complaint.

The venereal poison, in its passage through the inguinal glands, frequently gives rise to inflammation and enlargement of them, which, in many instances, is followed by suppuration and ulceration. The swelling, abscess, or sore, thus produced, is termed a *bubo*, a name derived from a Greek word signifying *the groin*; though, if the patient happened to have a primary venereal sore on one of his fingers, he might have a bubo just above the elbow, near the inner edge of the biceps, or in the axilla; so that a bubo does not always imply a disease in the groin, as the etymology of the word would imply. But the poison of syphilis may make its way into the system, without exciting any inflammation in the absorbent glands of the groin, or other region of the body; no bubo at all may intervene between the occurrence of the primary sore and the commencement of secondary symptoms. In other terms, the latter are not invariably preceded by a bubo. On the whole, buboes form more frequently after a chancre on the prepuce, than after one on the glans; yet every inflammation of the glands of the groin must not be set down as venereal, for these parts are subject to various enlargements from other causes. Mr. Hunter observed, that when the venereal poison affected one of the absorbent glands, the gland that inflamed was one of the nearest to the primary ulcer. Such, indeed, is the fact; and we never find that the absorbent glands, situated in the course of the aorta or iliac vessels, are inflamed, and brought into the state of suppuration by the absorption of venereal matter. The glands of the groin, then, may inflame, suppurate, and ulcerate, but not those within the trunk. Mr. Hunter entertained a suspicion, that another criterion of a venereal bubo was the circumstance of its involving only one gland; but at the present day, this test is not relied on. Frequently, in venereal cases, several glands inflame; and sometimes in glandular swellings from irritation, only one gland is concerned. Also in a bubo arising from scrofula, there may be only one gland affected at first. Another character, assigned by Mr. Hunter to a venereal bubo, is the quickness with which it generally proceeds to suppuration, and the shortness of time which the matter requires to make its way to the surface. This test also appears not to be of much practical importance; for there is a great variety in venereal buboes in this respect; some are much more indolent than others. And it is far from being the invariable character of a venereal bubo to proceed rapidly to suppuration; for while some of them are very acute, corresponding more or less to Mr. Hunter's description, others are of a chronic character; and this frequently cannot be accounted for, either by the influence of scrofula or mercury, the two circumstances which Mr. Hunter believed would generally explain the greater slowness of certain varieties of bubo than of the generality of them.

The generality of buboes, not truly venereal, are preceded and accompanied by more or less disorder of the health; and under such circumstances, if there should be no chancre to account for the bubo, we should have reason for suspecting that the state of the health had brought on the glandular enlargement. It is one good rule when the patient will not admit that he has had a chancre, or we cannot discover any traces of one, always to inquire into the state of the nearest lower extremity, and to ascertain whether there is any inflammation, wound, boil, or sore, about the foot, leg, thigh, or nates; any bunnion on the great toe, or any inflamed bursa, or painful corn; for the inguinal glands are liable to inflammation and enlargement, in consequence of any of these causes.

Secondary symptoms. — Previously to the occurrence of *secondary symptoms*, the constitution may generally be observed to be somewhat disordered; there is more or less fever present, with accelerated pulse, headach, loss of appetite, pains in the limbs, and inability to sleep. Indeed, almost all patients are particularly restless for two or three days before the appearance of any secondary symptoms; that is, before they complain of a sore throat, or perceive any traces of cutaneous disease about them. According to the Hunterian doctrines, when secondary symptoms take place, they are more disposed to occur in some parts of the body than in others. On this account, Mr. Hunter divides the parts affected into two orders; the first order consisting of those in which the secondary symptoms usually first show themselves, namely, the throat and skin, with which parts the iris is also to be arranged; the second, including parts in which the disease produces its influence at a later period, as the periosteum and the bones, to which may be added the nose, in which ulcer-

ation of the mucous membrane, the ozœna syphilitica, with or without disease of the bones, is very common: in the second order of parts are likewise to be included the ear and the testicle, to which organs, however, the effects of syphilis less frequently extend than to the other parts here specified. Mr. Hunter's opinion, respecting the throat and skin, agrees pretty well with general experience, and modern surgeons are inclined to accede to his doctrine in relation to them; though pains in the bones and joints sometimes precede the sore throat and cutaneous eruption. Mr. S. Cooper has seen nodes follow a primary sore as the first secondary symptom, and this has also been noticed by others. Mr. Cooper once attended a medical gentleman, who had no sore throat, and no cutaneous eruption; yet he had nodes. It is generally considered, that the interval between the primary and the secondary symptoms is on an average from six to twelve weeks; but it may extend to several months, or, according to some reports, to one or two years. The earliest secondary symptoms generally commence within three months from the cure of the primary sore; but they may come on much more quickly, or even before the primary sore is healed. Almost every surgeon has had opportunities of seeing cases in which there were at the same time an uncured chancre, an unhealed bubo, a sore throat, an iritis, and so forth, all existing together.

The *cutaneous eruption* presents considerable varieties. A few years ago, it was considered that no eruption was venereal, unless it had a copper-coloured appearance, and was scaly. Mr. Hunter represents the skin as at first becoming mottled, and tells us that such appearance will come out, and fade away again repeatedly. Now, this observation must have been overlooked by former surgeons, who endeavoured to prove that, without mercury, syphilitic symptoms invariably proceed from bad to worse; for here we find it stated, by their own great authority, that the eruption spontaneously disappears and then returns; that the disease fluctuates; yet the doctrine, that Mr. Abernethy collected by his enquiries from all the most experienced surgeons in London was, that the symptoms of syphilis are continually progressive; and that when there is a true venereal sore, or eruption, it would always continue to get worse till mercury was given. One form of syphilitic eruption is characterised by being scaly, and of a copper or reddish-brown colour; small copper-coloured spots first appearing themselves, and the cuticle then peeling off. Some of these blotches conjoin, so as to form extensive patches; but others of the same colour, and decidedly syphilitic, are, on account of their diminutive size and particular figure, sometimes termed the *lenticular* syphilitic lepra. The venereal eruption, according to Mr. Hunter, consists of copper-coloured spots on the skin, accompanied by desquamation, which leaves the subjacent cuticle thicker and thicker as this process goes on, and of the same colour as the cuticle which peels off. If the disease advance further, scabs will form, suppuration will take place under them, and the result be a *secondary venereal ulcer*, which, when thus produced, affects principally such parts of the skin as are in contact with other portions of the cutis, like the fold of the nates, the angle between the scrotum and thigh, or in the armpit. In these situations, the eruption has a raised surface, from which a whitish matter frequently oozes. These copper-coloured scaly blotches generally first appear on the face, hands, and wrist, and afterwards on the breast and the extremities, where they are particularly numerous, and assume the form of *lepra* or *psoriasis*. There is another circumstance deserving of attention, namely, when the palm of the hand or the sole of the foot, where the cuticle is very thick, is affected, an appearance is produced, constituting what is often termed the *syphilitic lepra*, and *psoriasis of the hands and feet*. Mr. Carmichael, like Mr. Hunter, regarded the scaly copper-coloured eruption as characteristic of true syphilis; and though, says he, there are other eruptions which are venereal, or the consequence of venereal complaints, yet they are not truly syphilitic. He notices pustular, tubercular, and papular eruptions; but he does not consider these as consequences of a true Hunterian chancre, but refers them to primary sores of other descriptions. The syphilitic eruption, according to Mr. Carmichael, always consists of scaly blotches, in the form either of lepra or psoriasis, and unattended with fever; or it should rather be said, there is not so much fever present with these eruptions as with either of the others, namely, the papular, the tubercular, or pustular. As already noticed, Mr. Carmichael attaches so much importance to the form of the eruption, that he believes it possible to tell by the inspection of the cutaneous disease, what has been the character of the primary sore. In short, he divides the venereal disease into four species or varieties. The first of these is the *scaly venereal disease*, or that which is correspondent to the Hunterian description, the chancre having a hardened edge and base; and when the bones are affected, their shafts and harder parts chiefly suffering, the nodes being true ones, and the eruption scaly, in the form either of psoriasis or lepra. The second is the *papular*, so called from the character of its eruption, which consists of inflamed pimples, and may follow gonorrhœa, and what some surgeons call the *gonorrhœal ulcer* of the prepuce and corona glandis. The third is named the *tubercular*, as being attended with an eruption of this character: and the fourth is the *pustular* variety of the venereal disease, so called also from the appearance of the cutaneous affection. The projecting incrustations, which are conical, or in the form of limpet-shells, constitute the appearance known by the name of the *venereal rupia*, which may follow an eruption, originally either tubercular or pustular. One important fact to be remembered is, that papular and pustular eruptions, when they have reached a certain stage, may be attended with a scaly appearance, which is, therefore, not exclusively the feature of lepra and psoriasis. This circumstance may, perhaps, explain some cases in which the eruption seems to

consist of scaly spots, and pustules and pimples, more or less mixed together.

Secondary venereal ulceration of the skin is often preceded by an eruption, some part of which, after repeated desquamation and scabbing, is converted into sores; but, in other instances, chronic inflammation takes place, independently of any eruption, and ulceration follows; and occasionally inflammation, suppuration, and secondary venereal ulceration, will occur over nodes. Secondary venereal ulcers have not any regular and constant appearance; they are frequently of a round shape, more or less chronic, and with an irregular, foul, ash-coloured surface; while others evince the peculiarity of healing in the centre and extending at the circumference, the unhealed part being of a tawny colour, with sharp edges, and a foul bottom. No sooner does an experienced surgeon cast his eyes upon an ulcer of this kind, than he is led to suspect its venereal character; its tawny appearance, its shape, and its situation, will induce him to entertain a suspicion that it has been preceded by other venereal complaints. But we should never conclude, from the mere look of a sore, that it is certainly venereal; but always take into consideration the history of the case, before a positive opinion is delivered.

Besides these secondary symptoms presenting themselves as affections of the skin, we must not omit to specify the *ragged ulcerated fissures* and clefts seen on the nates, or about the anus (rhagades ani), and especially in the fold at the lower part of the nates, and between the perineum and the thigh, or sometimes even about the roots of the finger-nails. In the latter event, matter forms under the nail, which becomes detached, and the discharge is remarkable for its strong, fœtid, and peculiarly disagreeable smell. Such is the *venereal whitlow*, as it is sometimes named.

Some *excrescences* in venereal patients, taking place especially about the genitals, perineum, and anus, receive different names, according to their various shape and consistence; as *warts*, *condylomata*, *fici*, &c. They are frequently accompanied with ulceration, or purulent discharge from the urethra, or vagina; and they often grow from parts which have been ulcerated, though now healed. They are not essentially connected with syphilis; for we see precisely the same kind of growths in persons who appear never to have had the venereal disease. In women they are very common, and some of them do not appear to me to be materially different from particular kinds of hæmorrhoidal excrescences. Formerly it was the practice to salivate patients for the cure of these excrescences, and this sometimes more profusely than for a sore throat or a chancre; and it must be acknowledged, that when the system was thus brought and kept a long while under the influence of mercury, such growths generally dwindled away, and ultimately disappeared. The fact, however, that these excrescences could be as permanently and certainly cured by the knife, ligature, escharotics, and stimulating applications, as by mercury, was well known to some intelligent practitioners nearly half a century ago; and, what is still more to the point, it was known that the cure was radical. On what principle, then, could the severe measure of a long and profuse salivation be vindicated?

One of the most common secondary symptoms is *ulceration of the fauces, tonsils, and soft palate*, — in other words a *sore throat*. What has generally been considered as the most unequivocal specimen of syphilitic ulceration of the throat, is remarked to come on without much previous inflammation, to begin on the surface of the part affected, and to extend more and more deeply; so that, when situated on the tonsils, an appearance is produced, as if a portion of them had been scooped away. The sore has a sharp prominent margin, and its excavated surface is covered with yellow adhesive matter, that cannot readily be separated from it. It is not uncommonly believed, that a sore throat, corresponding to this description, is peculiar to true syphilis, or the scaly form of the venereal disease — that disease, all of whose symptoms are sometimes thought more particularly to require larger quantities of mercury for their cure, than other varieties of the venereal disease. On this point, however, it may be observed, that the doctrine to which allusion has here been made, is not so much insisted upon at the present day as it was some years ago. In fact, this kind of sore throat has frequently been cured by sarsaparilla; and it sometimes follows sores which have no kind of resemblance to the chancre with an indurated base and circumference. Mr. S. Cooper, however, is of opinion, that whenever this kind of sore throat is accompanied by a scaly eruption, or by pains in the shafts of the long bones, or by true nodes, it will be more benefited by mercury than by any other kind of medicine.

Besides this description of sore throat, there is another, consisting in superficial, but foul and wide-spreading ulcerations of the tonsils, velum pendulum palati, and upper portion of the pharynx, accompanied by considerable pain, restlessness, and fever. On account of its appearance, it is frequently called the *ulcerous excoriation of the throat*. Mr. Carmichael thought he had traced it to be an effect of what he terms the *papular venereal disease*, or that which he conceived to arise from the *simple primary sore*, patches of excoriation on the prepuce, or gonorrhœa virulenta.

In certain other cases, the *ulcers* of the throat have *a truly phagedenic character*, and are disposed, under improper treatment, to destroy the whole of the soft palate, and to extend their ravages to the pharynx, and even sometimes to the larynx, causing necrosis of its cartilages, and endangering life. With this form of sore throat, when the constitution is in an unfavourable state from the injudicious use of mercury, there is a tendency to the production of caries and necrosis in the bones of the palate, and even in the upper jaw-bone and the ossa spongiosa; but if the disease be properly treated, and the employment of too great a quantity of mercury be avoided, the patient will generally escape the serious mischief to which I have al-

luded. We must always be careful not to confound accidental inflammations of the throat from cold, and common abscesses, and chronic scrofulous enlargements of the tonsils, with venereal affections of them.

One species of *iritis*, or *inflammation of the iris*, is an affection ranking as a secondary symptom of syphilis. After the appearance of disease of the skin, or sore throat, the iris sometimes inflames; this affection, which may follow, or accompany, various kinds of syphilitic eruptions, and is usually attended with pains in the limbs and joints, is noticed in the article *Ophthalmitis*.

With regard to *venereal affections of the bones and joints*, if the swelling has come on suddenly, seems to be chiefly seated in the periosteum, and the pain is not remarkably aggravated at night, we may generally conclude that it is not a venereal affection. True syphilitic nodes are more indolent in their progress than the swellings just referred to; and the pain of them is always more severe at night than in the day. They are particularly disposed to occur on the central portions of the long cylindrical bones, and on such parts of the bones as are not covered by any great thickness of soft parts. Hence, the front surface of the tibia, the superficial part of the ulna, the sternum, the clavicle, and the cranium, are often the seat of nodes. The swellings, most likely to be mistaken for venereal nodes, are inflammations of the periosteum, and not of the bone itself, attended with pain in their very commencement, and even with redness of the skin; they arise suddenly, and frequently disappear in a short time without the use of mercury. They have, therefore, more of the inflammatory character about them, than usually belongs to venereal nodes. The best plan, in all doubtful cases, is to inquire particularly into their history; we should consider the other symptoms which may have previously existed; the order in which they have occurred; and the effect of any treatment that has been tried; and we must form our conclusion by connecting the present symptoms with all the other information which can be collected.

There is one curious circumstance in relation to nodes, namely, they are alleged to be rarely produced in syphilis, unless the patient has been using mercury; but in this as in other cases of venereal disease of the bones, it is probably the imprudent and excessive use of mercury that gives rise to them.

Treatment of syphilis. — Till of late years a very pernicious notion prevailed with respect to syphilis, namely, that it never underwent a spontaneous cure, but proceeded to destroy one texture after another till the patient fell a victim to its fury. This belief, in connexion with the absolute reliance on the specific and exclusive powers of mercury, frequently gave rise to a most destructive line of practice; the worse the disease became, the further the supposed remedy was pushed; and thus, between the disease and the doctor, thousands of patients were annually consigned to a premature grave. The error above alluded to, unfortunately derived strength from the weighty authority of John Hunter. In the year 1813, Mr. S. Cooper, in his *First Lines of the Practice of Surgery*, inferred, from statements of Mr. Pearson, the occasional curability of syphilis without mercury. The correctness of this view has since been amply established by subsequent experiments and observations. Those made in the hospital of the Coldstream Guards by the late Mr. Rose are the most important. The great question, as to the spontaneous curability of syphilis, was by him completely settled. It was proved, that the venereal disease might be cured, not only without mercury, but without any medicines whatever. As for the cure without mercury, that indeed may be said not to have been a new discovery: the spontaneous cure was the great point made out. Many practitioners of the sixteenth and seventeenth centuries treated the venereal disease with considerable success without mercury, that is to say, by means of guaiacum, sarsaparilla, and antimony, occasionally aided by venesection and purgatives. If it had been the character of the venereal disease always to grow progressively worse without mercury, no patient could ever have recovered prior to the epoch when that medicine began to be exhibited, which is contradicted by abundant evidence.

Mr. Rose had vast opportunities of bringing the question to a decision; for he could not only put his patients under particular treatment, but he had it in his power to enforce its strict adoption, and to watch his patients for the requisite period of time. Now, he cured without mercury all the ulcers on the parts of generation, sores of every kind, which he met with in the course of between two and three years in a regiment of soldiers, together with all the constitutional symptoms that followed them. It is not to be understood, that none of those who were cured of the primary sores without mercury had no secondary symptoms; a certain proportion of the men, so treated, had them; but, be it noticed, that Mr. Rose cured both the primary and the secondary symptoms too on the same plan. Some of these cases were probably not truly venereal; yet others must be admitted to have been venereal; for it cannot be imagined, that there were not many cases of true syphilis in a regiment of twelve or fifteen hundred men, who were continually having intercourse with the lowest prostitutes of the metropolis. In the treatment pursued by Mr. Rose, all ideas of specific remedies were renounced; his general practice was to confine the patient in bed; various local applications were used according to circumstances; aperient medicines, antimonials, bark, diluted sulphuric acid, and occasionally sarsaparilla, were administered; these were the chief means resorted to. From these, and other accounts corroborating them, there can be no doubt, that the venereal disease, both in its primary and secondary forms, may be cured without mercury; but this is not settling the question whether such practice is the right method or not. And the circumstance is only mentioned to prove that the old notions about the progressive nature of the venereal disease, till stopped by the imaginary specific

effects of mercury, were completely erroneous. The facts, established by Mr. Rose, are chiefly valuable on two accounts; first, as leading to more correct views of the diagnosis of the disease, inasmuch as they abolish the false doctrine, that all sores, healed without mercury, are necessarily not venereal, a maxim usually taught till within the last twenty years; and, secondly, Mr. Rose's facts are important, as encouraging us to withhold mercury when the patient's health is not in a safe or favourable state for its exhibition. Thirty or forty years ago, surgeons were actually frightened into the use of mercury, lest the disease should get progressively worse and worse, and the mischief advance till the patient had been destroyed.

It is now not only admitted by most enlightened practitioners, that syphilis may be cured without mercury, but that it is extremely doubtful whether that medicine possesses specific powers in any form of the disease. At the same time, all those who are not prejudiced in the antimercurial extreme, do not deny the great utility of mercury in the most common forms of the complaint; and the greater part actually employ it in the majority of cases. Several other substances besides mercury have enjoyed a transient reputation for their specific powers in syphilis, which is not to be wondered at when we know, what was not formerly known, that syphilis, like other diseases, has, in many instances, a tendency to a spontaneous cure. Of these substances, the principal are mezereon, guiac, sarsaparilla, nitric acid, and the preparations of gold. Some notice of the three former, in the capacity of antisyphilitics, will be found under the heads *Daphne mezeum — Guaiacum officinale* — and *Smilax sarsaparilla*, which see. Of the nitric acid, the effects are tonic and sedative; whence the appetite is increased, a greater rigidity or firmness is given to the living fibre, and a greater density to the coagulable lymph: the action of the bowels, and even of the bladder, being diminished. Besides these, it has a particular effect on the mouth, approaching to that of ptyalism; for the gums are rendered slightly sore, the mouth and tongue become moist, and in India and other warm climates, a real salivation is said to ensue. Under this change the syphilitic symptoms assume a better appearance, and especially those that belong to the primary set: but we have no decided case in which a perfect cure has been accomplished in our own country; though Dr. Scott affirms that in India this has been common. He was in the habit of employing the nitric and muriatic acids; and with the internal use of these he combined that of the acid bath. His object was to effect a cure without incurring any of the evils so frequent upon a mercurial course; and to this object the proposed plan has, in his opinion, given complete success. It would have been happy for the world if this success had been permanent and universal; but the plan has since fallen in its reputation, not much less in India than in Europe.

For the effects of gold in venereal diseases, see the article *Aurum*.

Taking for granted what is now established beyond doubt — that syphilis, although originating in a specific virus, is susceptible of cure by the natural efforts of the constitution, when vigorous, and exercised under favourable circumstances, and susceptible also of the influence of remedies quite independently of any specific effect, it becomes obvious that the disease should be treated, in a great measure, on general principles, the application of which must depend on the judgment of the practitioner in each individual case. The following general account of the mercurial treatment is taken from the excellent chapter on syphilis in Mr. S. Cooper's *First Lines of the Practice of Surgery*, the source from which the greater part of the present article is derived.

Whenever mercury is given, the wisest plan is to give it in moderation, and, above all things, to avoid the pernicious custom of putting the patient under a *course*, in which the mercury is given rapidly and profusely, and continued for an immoderate length of time. Experience has fully convinced me, that in no variety of chancre, nor in any other stage of the venereal disease, is it proper to give mercury so unmercifully, and for so long a period as was formerly done. At all events, violent and long salivations should be given up. This practice, as Mr. Cooper can state from his own observation in the foul wards of St. Bartholomew's Hospital, during a period of twelve years, instead of being more successful than the present methods, often led to the most dreadful of mutilations, and the number of those who lost their palates and noses, was infinitely greater than what is now observed. When these facts are considered, and joined with the treatment employed thirty or forty years ago, we cannot avoid concluding that a great deal of those ravages must have been produced not by the disease itself, but by the manner of treating it. At present, the practice of subjecting patients to long and immoderate courses of mercury is given up by all experienced and judicious surgeons. Common ulcerations are also more carefully discriminated from venereal ones; and when mercury is given, it is so administered as merely to produce a moderate affection of the gums and salivary glands, and not to occasion a total derangement of the whole economy.

Surgeons are also now no longer blinded by the pernicious fear, that unless mercury be given, the disease will continue to grow worse and worse till the patient is ultimately destroyed. In former days, directly a patient was brought to a hospital, however bad his health might be at the time, it was immediately considered necessary to cram him with mercury. But we are now aware, that the notion by which the old surgeons were terrified into such practice, was a mere ghost, nothing but a bugbear. When the patient's health is seriously impaired, as a general rule, mercury should be postponed till an amelioration in that respect has taken place. Even those practitioners who place the greatest reliance on mercury as a specific, and still maintain that it ought to be called so, qualify their assertions by admitting, that it

ought not to be given under every condition of the system; they candidly allow, that neither the condition of the parts, nor that of the constitution, is at all times such as will let mercury be given with impunity; they confess that its rash and unscientific employment will aggravate the symptoms; and they specify two cases in which its use is generally erroneous, namely, during excessive weakness of the system, and while the disease is complicated with excessive inflammation. Under these two conditions, the greatest advocates of mercury commonly admit, that its employment should be postponed. But these are not the only states in which it should usually be prohibited; it should not be given during any great derangement of the system from diarrhœa, or fever, or from what is termed *erythismus*, a peculiar state of constitution, in which the patient labours under excessive irritability, weakness, palpitation of the heart, and other evils from the mercury already given. There are some constitutions, in which this condition is liable also to be induced by a very slight quantity of mercury, and when it is present, the patient may die suddenly on making any trivial exertion.

Although mercury may not be absolutely essential to the cure of the venereal disease, yet so long as it shall continue to be a remedy of greater power for the prevention of secondary symptoms than any other known medicine, its reputation, as a means of curing this disorder, will always stand high. It is used either *topically*, that is, as a direct application to sores, nodes, and other local affections, or *constitutionally*, being introduced into the system either through the medium of the stomach or the skin.

Amongst *topical* mercurial preparations, the *black wash* is in very common use for venereal sores, both primary and secondary. It should vary in strength according to circumstances. Formerly the proportion of the ingredients in general use was a drachm of calomel to a pint of lime water; but now it is frequently made stronger, and sometimes as much as ten or fifteen grains of calomel are put into each ounce of lime water. With regard to the manner of using it: — if the sore or sores are on the outside of the prepuce, a piece of lint is dipped in the lotion and applied to them; but if the sores are under the prepuce, the introduction of lint into that situation would create too much irritation, and the lotion may therefore be occasionally injected under the prepuce with a small syringe. The *yellow wash*, used in the same manner, contains two grains of the oxymuriate of mercury in each ounce of lime water.

In general, *mercurial ointments* are not very good applications for venereal sores of any description; certainly they are not equal, in point of efficacy, to many other applications. Sometimes, however, the *unguentum hydrargyri nitratis*, blended with the unguentum cetaceum, or with zinc ointment, in various proportions, may be usefully employed.

Another manner of using mercury topically is that of *fumigation*. For this purpose we employ an apparatus that is furnished with an iron heater, and a copper tube, by which the fumes can be conveniently directed to the part affected; and in order to be able to do this better, we have both a straight tube and a curved one, the latter being particularly convenient for ulcers in the throat. The mercurial fumigating preparation in general use is *cinnabar*, or the *red sulphuret of mercury*, from which, when placed on the heater, a subtle grey powder is sublimed, which, lodging on the sore, is found in many instances to produce a very beneficial effect upon it. Mr. S. Cooper has seen sore throats, chancres, and other ulcerations, which had resisted for weeks and months every plan that could be devised, assume a healthy appearance, and heal up rapidly, after fumigation had been tried a few times. To know this truth is important; much more so than to be able to say exactly, how far the specific power of mercury is here concerned in the production of the good. The fumigation of a sore of moderate size is not likely to have much or any effect on the constitution; and it is probable that the method cannot generally operate on this principle. Perhaps, with the exception of fumigation, it may be said, as a general remark, that topical mercurial applications are not considered at all more useful than others which contain no mercury. The black, or calomel wash, is frequently made use of; but it is doubtful if it possesses more efficacy than several other astringent lotions which have not a particle of mercury in them.

With respect to the introduction of mercury into the system from the surface of the body, this can be accomplished either by rubbing mercurial ointment into the skin, or by mercurial fumigation of an extensive portion of the surface of the body. Friction with the ointment, the ordinary method, the most generally adopted, as requiring no machine for the purpose, is practised by the patient himself, who rubs some part of his body, which is frequently the inside of the thigh, for a quarter of an hour or twenty minutes before the fire, sometimes once a day and sometimes twice, with half a drachm or a drachm of the ointment. The quantity of ointment employed, however, varies in different cases, according to circumstances. Sometimes a scruple, sometimes half a drachm, and, in other instances, double this quantity, or even more, may be employed at a time. This is termed *rubbing in*, because a portion of the ointment seems as if it had been made to enter the pores of the skin by the friction; but, except where the patient is very easily affected, what remains on the surface of the skin should not be wiped away, the patient putting on a pair of flannel or other drawers over it. It should be mentioned, however, that sometimes friction and the rancidity of the ointment together (for we seldom meet with mercurial ointment perfectly free from rancidity), will bring out numerous pimples, and even erysipelatous inflammation, and then the patient should be directed to repeat the friction on another part, and not to leave any of the ointment on the skin. A few years ago, friction with mercurial ointment was commonly preferred in this country to all other plans of treating the venereal disease; first, because it was conceived to be the most efficient mode

of treatment, and the mercury in the ointment being combined with a very small proportion of oxygen, was usually given as one reason for the alleged fact; secondly, because it occasions less risk of disturbing the stomach and bowels than internal preparations; thirdly, because it is frequently considered to be the only certain way of getting a sufficient quantity of mercury into the system. Preparations of mercury, given by the mouth, are apt to disorder the stomach and bring on diarrhœa. Mr. Cooper suspected that the latter was the principal cause that rendered mercurial friction so favourite a practice; for, while the doctrine prevailed, that it was necessary for the cure of syphilis to fill the patient with mercury, to saturate him with it from head to foot, and to salivate him unmercifully, the stomach and bowels often revolted against the scheme, which absolutely could not be carried into execution in every instance by preparations designed for internal administration. It was then chiefly by means of mercurial friction that the old fiercely salivating practitioners were enabled to get into the system as much mercury as they wished; not that they did not also give internal preparations so far as they could. Mr. Cooper believes that the doctrine of the superior efficacy of mercurial friction is founded on prejudice, and that, unless the stomach and bowels be disordered, and the constitution cannot be affected with moderate doses of the blue pill, it is seldom indispensably necessary to have recourse to this uncleanly practice. In certain cases, we are indeed obliged to direct mercurial frictions, as when the stomach and bowels will not bear even a small quantity of mercury, which occasionally happens, or when it is necessary to resort to more plans than one, in order to bring the system under the influence of the mineral. Under these, and perhaps a few other circumstances, we may be called upon to prescribe frictions, as well as internal preparations.

Fumigating the surface of the body is not at present deemed so necessary and eligible a method of putting a patient under the influence of mercury, as some of its admirers once endeavoured to instil into the minds of the profession. It is attended with considerable trouble and inconvenience; it requires a particular machine, somewhat resembling a sedan-chair, in which the patient sits naked with his head out of an opening at the top of it. At the bottom of the machine is an iron heater, on which a preparation of mercury is thrown, which is sublimed and covers all the surface of the patient's body. The preparation of mercury employed for this purpose is the grey-oxide. Another mercurial powder, that was recommended and used by Mr. Abernethy, was calomel that had been put into liquor ammoniæ, and then dried. After having undergone the process, the patient puts on his shirt or flannel waistcoat, and goes to bed. The reasons formerly urged in favour of the practice were, that it is less fatiguing to a debilitated person than mercurial frictions, and that the system can be more quickly brought under the influence of mercury than by any other way whatsoever. This seems to have been Mr. Abernethy's opinion, who was once very zealous for fumigations; but afterwards relinquished them. With regard to the reasons given for the use of fumigations, that mercury may thus be employed, when the patient is in the weakest state, and that he may be mercurialised without the fatigue of friction, or the risk of disordering his stomach and bowels with internal preparations, the argument, though plausible, has not really much weight; because, when the health is seriously impaired, we are seldom justified in giving mercury at all; and, at all events, it should then never be introduced so rapidly into the system. But, if the plan deserves adoption in any particular instance, it may be useful to know, that it is not necessary for the patient to go into the machine at all; he may turn his flannel waistcoat and drawers inside out; and put them into the machine to be fumigated. They will become covered with the fine powder sublimed from the heater, and, on being worn afterwards, will salivate the patient as well as if he had gone into the machine himself.

Of the *internal preparations*, the *pilula hydrargyri*, or *common blue pill*, has the greatest reputation in this country; it is one of the mildest of all the internal preparations; the common dose of it is five grains; but frequently we are called upon to give a larger dose, and sometimes a smaller; from three to ten grains may be stated to be the ordinary average quantity proper to be given in the twenty-four hours. We may join it with other medicines, according to circumstances, as with the sulphate of quinine, the extract of conium, and various other medicines. We often combine the blue pill with a small quantity of opium, in order to lessen its tendency to affect the bowels.

The *hydrargyri submurias*, or *calomel*, is not very extensively employed in England for the cure of syphilitic complaints, though it is a favourite medicine for this purpose abroad, especially in Germany. Even in England, for one effect of the venereal disease, calomel is usually preferred, viz. syphilitic iritis. This preparation, like the blue pill, may be joined with other medicines, as with guaiacum and the sulphuret of antimony, as in the *compound calomel pill*, which is not unfrequently prescribed in venereal affections, but especially in those requiring merely slight alterative treatment.

The *oxymuriate of mercury*, or *corrosive sublimate*, is a very powerful medicine, and, if it be incautiously given, it may readily poison the individual. The dose is small, the average quantity, usually given, is one-eighth of a grain, twice or thrice a day. When mixed with distilled water, it dissolves more readily if a small proportion of the muriate of ammonia be added. There are instances, in which from half a grain to three quarters of a grain may be prescribed in divided doses to be taken in a day. The *liquor hydrargyri oxymuriatis* of the London Pharmacopœia, contains the eighth of a grain of the oxymuriate in two drachms. When it is wished to give it with bark, we may dissolve one grain of it in an ounce of the tinctura cinchonæ, of which a tea spoonful is the proper dose.

The *hydrargyrum cum creta* is the mildest preparation of mercury ever employed in this country, and, on this account, it is preferred in cases where we wish to exert a very slight mercurial influence on the constitution. It is deemed the best preparation of mercury for infants labouring under syphilis.

One caution is necessary in the employment of mercury; namely, to watch its effects very attentively; for it will act differently in different individuals. Some will be violently salivated by a few grains of blue pill, or a scruple of blue ointment; while others will use from one to three drachms of it daily for months together, with no manifest effect on the function of the salivary glands, bowels, or other organs. The doses of mercurial preparations must then be regulated by circumstances; indeed it is wholly impossible to give any precise rules on this head, on account of the different effects of the mineral on different individuals. The safest plan is always to begin with small quantities of mercury, watching the effects of the medicine, and being guided by them.

The action of mercury on the animal economy is very powerful; the nervous, the absorbent, and the sanguiferous systems are all considerably affected by it; an universal irritability is excited; there is a quickness of the pulse, and a feverish state of the whole constitution brought on by it; the secretions are all increased, especially those of the skin, kidneys, and salivary glands. *Salivation*, or an increased secretion of saliva, and a soreness and swelling of the gums and mouth, are the effects which surgeons have long been accustomed to observe with attention; for these are usually regarded as tests of the remedy having a sufficient influence on the system effectually to cure the complaint, for which it is given; not merely to cure the *primary symptoms*, but give the patient the best possible chance of escaping the *secondary ones*. In fact, this is the main object of giving mercury; we know that we can cure the primary symptoms without mercury; and were these alone abstractedly considered, perhaps, we should never be justified in salivating the patient at all. But the great and solid argument for the mercurial practice is, that, without it, the patients will be more likely to be attacked by secondary symptoms.

For the particulars of the local treatment of venereal sores, whether primary or secondary, we must refer to the treatises on surgery.

Syphilis Indica. See *Frambœsia.*

SY'PHILOID. (*Syphiloides*; from *syphilis*, and ειδος, resemblance.) Like unto syphilis. The name of a disease which resembles syphilis. There are many diseases which have a close resemblance to the venereal in its primary and constitutional forms: these have all been called syphiloid. The principal of this family of diseases is the pseudo-syphilis, or bastard pox, of Hunter and Abernethy.

It mostly commences with local symptoms, though not always: but the local symptoms have a less resemblance to those of genuine syphilis than the constitutional by which they are succeeded. A few foul and highly irritable sores are unexpectedly discovered on the genitals, commonly larger than chancres, and less thickened than indurated, about the size of a sixpence, and frequently sprouting with fungous granulations. Rarely, but very rarely, they have the guise of a true chancre. These are sometimes succeeded by buboes, and sometimes not. And, where buboes take the lead, they run their course more rapidly, and with more violent inflammation, than in the true disease, and spread to a greater number of circumjacent glands. These often heal by the ordinary means without mercury, or constitutional symptoms of any kind But not unfrequently, in a few weeks or months, they are followed by a soreness and ulceration of the tonsils, copper-coloured spots over the body, and nodes or swellings of the periosteum in various bones; and sometimes these symptoms change their order of succession, or appear single.

In a few instances, the constitutional symptoms take the lead, and the local follow. In all these cases, the virus seems to be more active and irritating than that of genuine syphilis; but which, while it pursues, though with much irregularity, the same general path, runs through its course much quicker, and is more effectually coped with by the natural strength, or remedial instinct of the constitution. And hence, all that we are here called upon to do in the way of treatment is, to support the general vigour, and second the instinctive effort. This is best to be accomplished by tonics and gentle stimulants, and, where necessary, by sedatives. The mineral acids are the best means of supplying the first intention; camphire, the decoction of the woods, and the compound calomel pill, where small doses of mercury do not irritate, the second; and opium the third; though to this last it will rarely be necessary to have recourse at all.

The distinction between syphyloid affections and genuine syphilis is frequently difficult, but of importance: since, as a full use of mercury seldom seems to do good, and often does serious mischief in the former, such a plan has a chance of overwhelming the constitution with a second disorder instead of freeing it from a first.

SYRIÆ OLEUM. A fragrant essential oil, obtained by distilling the canary balsam plant, or moldavica.

Syrian herb mastich. See *Teucrium.*

SYRI'GMUS. (Συριγμος; from συριζω, to make a sound by blowing through a pipe.) This term has been applied to ringing in the ears. See *Tinnitus aurium.*

SYRINGO'TOMUM. (From συριγξ, a fistula, and τεμνω, to cut.) An instrument to cut fistulas.

SY'RINX. (*a, gis. f.* Συριγξ, from the Hebrew.) A pipe. A syringe. A fistula.

SYRMAI'SMUS. (Συρμαισμος; from συρμαιζω, to purge gently.) A gentle evacuation by vomit or stool. — *Hippocrates.*

SYROP. The French for a syrup.

SYROP DE CAPILLAIRE. *Syrupus capillorum veneris.* Syrup of capillaire. A syrup much used in France as a pectoral. It is made with maidenhair, liquorice water, and sugar.

Syrup. See *Syrupus.*

SYRUPUS. (*us, i.* m. *Scrab*, a potion, Arabic.) The name syrup is given to sugar dissolved in water; and in the present Pharmacopœia this is termed simple syrup. See *Syrupus simplex.*

Syrups are generally made with the juice of vegetables or fruits, or by adding vegetable extracts or other substances. To keep syrups without fermenting, it is necessary that their temperature should be attended to, and kept as near 55° as possible. A good cellar will answer this purpose; for there are few summers in which the temperature of such a place rises to 60°.

Syrupus. The simple syrup is called merely *syrupus* in the London Pharmacopœia. See *Syrupus simplex.*

Syrupus aceti. Sugar and vinegar. A refrigerating syrup. See *Oxymel.*

Syrupus althææ. Syrup of marshmallow. *Syrupus ex althææ. Syrupus de althææ.* Take of the fresh root of marshmallow, bruised, eight ounces; refined sugar, two pounds and a half; water, four quarts. Boil down the water with the marshmallow root to half, and press out the liquor when cold. Set it by for twenty-four hours, that the feculencies may subside; then pour off the liquor, and, having added the sugar, boil it down to a proper consistence. An emollient and demulcent, mostly given to allay tickling coughs, hoarseness, &c. in conjunction with other remedies.

Syrupus aurantii. Syrup of orange. *Syrupus corticis aurantii. Syrupus è corticibus aurantiorum. Syrupus de cortice aurantiorum.* Take of fresh orange-peel, two ounces and a half; boiling water, a pint; refined sugar, three pounds. Macerate the orange-peel in the water for twelve hours in a covered vessel: then pour off the liquor, and add the sugar. A pleasant bitter and stomachic.

Syrupus caryophylli rubri. Syrup of clove pinks. A warm and stimulating syrup.

Syrupus colchici. An acrid and diuretic compound, given in dropsies.

Syrupus corticis aurantii. See *Syrupus aurantii.*

Syrupus croci. Syrup of saffron. Take of saffron, ten drachms; boiling water, a pint; refined sugar, three pounds. Macerate the saffron in the water for twelve hours, in a lightly covered vessel; then strain the liquor, and add the sugar. This imparts a beautiful colour to liquids, and is sometimes employed as a cordial. Among the vulgar, syrup of saffron is in high esteem in measles, small-pox, &c.

Syrupus limonum. Syrup of lemon. *Syrupus succi limonis. Syrupus è succo limonum. Syrupus e succo citrorum.* Take of lemon-juice, strained, a pint; refined sugar, two pounds and a half. Dissolve the sugar in the lemon-juice in the manner directed for simple syrup. A very pleasant, cooling, and acid syrup, which may be exhibited with advantage in febrile and bilious affections.

Syrupus mori. Syrup of mulberry. *Syrupus mororum.* Take of mulberry-juice, strained, a pint; refined sugar, two pounds and a half. Dissolve the sugar in the mulberry-juice in the manner directed for simple syrup. Syrup of mulberries is very grateful and aperient, and may be given with such intentions to children.

Syrupus papaveris. *Syrupus papaveris albi. Syrupus è meconio. Syrupus de meconio, sive diacodium.* Take of capsules of white poppy, three pounds; refined sugar, five pounds; boiling water, five gallons. Boil down the capsules in the water, to two gallons, and press out the liquor strongly. Boil down the liquor again, after being strained, to four pints, and strain it while hot. Set it by for twelve hours, that the feculencies may subside; then boil down the clear liquor to two pints, then add the sugar, and dissolve. It should be kept in stone bottles, and in a cellar. A useful anodyne preparation, which may be added with advantage to a vast variety of medicines against diseases of the bowels, coughs, &c.

Syrupus papaveris erratici. See *Syrupus rhœados.*

Syrupus rhamni. Syrup of buckthorn. Take of the fresh juice of buckthorn berries, four pints; ginger-root, sliced, allspice, powdered, of each six drachms; refined sugar, four pounds. Set by the juice for three days, that the feculencies may subside, and strain. To a pint of the clear juice add the ginger and allspice; then macerate in a gentle heat four hours, and strain; boil down what remains to one pint and a half; mix the liquors, add the sugar, and dissolve.

This preparation, in doses of three or four spoonfuls, operates as a brisk cathartic. The principal inconvenience attending it is, that it is very unpleasant, and occasions a thirst and dryness of the mouth and fauces, and sometimes violent gripes. These effects may be prevented by drinking liberally of water-gruel, or other warm liquids, during the operation.

Syrupus rhœados. *Syrupus papaveris erratici. Syrupus de papavere erratico.* Syrup of red poppy. Take of red poppy petals, fresh, a pound; boiling water, a pint and a half; refined sugar, two pounds and a half. Having heated the water in a water-bath, add gradually the red poppy petals, frequently stirring them; then having removed the vessel, macerate for twelve hours; next press out the liquor, and set it by to settle; lastly, add the sugar, and dissolve. This is used merely as a colouring matter.

Syrupus ribis nigri. Syrup of black currants. Aperient and diuretic qualities are attributed to this preparation.

Syrupus rosæ. Syrup of roses. *Syrupus rosarum solutivus. Syrupus è rosis siccis.* Take of damask-rose petals, dried, seven ounces; refined sugar, six pounds; boiling water, three pints. Macerate the rose petals in the water for twelve hours, and strain; then evaporate the strained liquor, by means of a water-bath, to two pints; then add the sugar, and dissolve. A useful laxative for children. Dose from ʒj. to ʒ ss.

Syrupus rubi idæi. Syrup of raspberry. A pleasant aperient syrup for children.

Syrupus sarzæ. Syrup of sarsaparilla. Take of the sliced root of sarsaparilla, fifteen ounces;

boiling water, a gallon; sugar, fifteen ounces. Macerate the root in the water for twenty-four hours; then boil down to four pints, and strain the liquor while hot; then add the sugar, and evaporate to a proper consistence. This preparation has been introduced into the present London Pharmacopœia; but it is not so active as the extract. It is used chiefly as an adjunct to the decoction.

SYRUPUS SCILLÆ. Syrup of squill. Used for the same purposes as the *Oxymel Scillæ*.

SYRUPUS SENNÆ. Syrup of senna. Take of senna-leaves, two ounces; fennel-seed bruised, an ounce; manna, three ounces; refined sugar, a pound; water, boiling, a pint. Macerate the senna-leaves and fennel-seeds in the water for an hour, with a gentle heat; strain the liquor, and mix with it the manna and sugar; then boil to the proper consistence. A useful purgative for children.

SYRUPUS SIMPLEX. *Syrupus.* Simple syrup. Take of refined sugar, ten pounds; water, three pints. Dissolve the sugar in the water with a gentle heat.

SYRUPUS TOLUTANI. Syrup of Tolu. Take of balsam of Tolu, ten drachms; water, boiling, a pint; refined sugar, two pounds and a half. Boil the balsam in the water half an hour in a lightly covered vessel, occasionally stirring it: strain the liquor when it is cold; then add the sugar, and dissolve. An useful balsamic syrup, calculated to allay tickling coughs and hoarsenesses.

SYRUPUS VIOLÆ. A pleasant laxative for young children.

SYRUPUS ZINGIBERIS. Syrup of ginger. Take of ginger-root, sliced, two ounces; water, boiling, a pint; refined sugar, two pounds and a half. Macerate the ginger-root in the water for four hours, and strain; then add the sugar, and dissolve. A carminative and stomachic syrup. Dose from one to three drachms.

SYSPA'SIA. (*a, æ.* f.; from συσπαω, *contraho, convello.*) A spasm.

SYSSARCO'SIS. (*is, is.* f.; from συν, and σαρξ, flesh.) A species of union of bones, in which one bone is united to another by means of an intervening muscle. In this manner the os hyoides is connected with the sternum and other parts.

SYSTA'TICUS. (From συνιστημι, *congredior, consocio.*) Applied by Dr. Good to designate nervous diseases which affect several, or all, the sensorial powers simultaneously.

System, absorbent. See *Absorbent*, and *Lymphatic.*

System, genital. See *Generation, organs of.*

System, nervous. See *Nerve.*

System of plants. See *Classification.*

SYSTEM, VASCULAR. The arteries and veins.

SY'STOLE. (*e, es.* f.; from συστελλω, to contract.) The contraction of the heart.

SYSTRE'MMA. (*a, atis,* n.; from συστρεφω, *contorqueo*, to wind about, or twist.) The cramp.

T.

T-BANDAGE. A bandage so named from its figure. It is principally used for supporting the dressings, after the operation for fistula in ano, in diseases of the perinæum, and those of the groin, anus, &c.

TABA'CUM. (*um, i.* n.; so called from *Tobago*, the island whence it was first brought.) Tobacco. See *Nicotiana.*

TABASHEER. The silica found in the hollow stem of the bamboo cane is so called. Its optical properties are peculiar.

TABE'LLA. (*a, æ.* f.; diminutive of *tabula*, a table.) A lozenge.

TA'BES. (*es, is.* f.; a Latin word, of doubtful origin. The lexicographers, says Dr. Good, derive it from the Greek τηκω, *macero*, varied in the Doric dialect to τακω, whence Scaliger makes a compound of τακωθιος, *macerans vitæ*, a consuming life, or life of consumption; and supposes that such a word existed formerly, and that *tabes* is a derivative from it. *Tab-eo, tab-es*, is most probably derived from the Hebrew תאב, *tab*, literally to *pine away*, or *consume*, which is the exact meaning of the Latin terms.) A wasting of the body; characterised by emaciation, weakness, and fever, but without any cough or spitting.

The distinction of modern nosologists between atrophy and tabes is, that the latter is accompanied by fever, which atrophy is not. The common causes of tabes are supposed to be an acrimony in the blood, either pus which is absorbed from an abscess, or some poisonous substance, as mercury or arsenic; or a scrofulous taint; or an excess of venereal indulgence: and from these causes Dr. Good institutes four species.

1. The *purulent tabes.*—An absorption of pus into the blood, acting upon a peculiarity of constitution, is here the exciting cause: but unless the latter be present, pus will rarely, if ever, be found to produce a tabid frame; for, if absorbed pus be capable, independently of idiosyncrasy, of inducing a decline in one instance, it ought to do so in every instance: yet this we know is not the case, since buboes, empyemas, and other abscesses of large size, have been removed by absorption, and yet no tabes has accompanied the process. It is said to occur more frequently where an abscess is open, in

consequence of pus becoming more acrimonious by the action of the air. But this supposition is altogether gratuitous; and, where hectic fever accompanies a sore or open abscess, it is more probably from increased irritation on the edges or internal surface of the cavity.

With respect to the treatment, every thing depends on the local disease; the proper remedies for which must be exhibited, and the strength maintained by a nutritious diet, pure air, and bark with mineral acids; and if stimulants be required, with a view of acting more directly on the morbid irritation, and changing its nature, they should be limited to the milder resins, as myrrh, or the mild terebinthinates.

2. The *tabes venenata* is that which is produced by a poisonous acrimony in the blood, which excites and maintains the hectic fever. This is a disease only met with amongst miners, mineralogists, and labourers in chemical laboratories, and the poison is probably taken in with the atmosphere, or by cutaneous absorption.

The first thing to be done in assisting the cure is to remove the patient from the deleterious scene into a salubrious atmosphere of fresh air, and then to purify the blood by a course of alkalies with sarsaparilla, mild bitters, and chalybeate mineral waters.

3. The *tabes scrofulosa*, corresponding with the *tabes mesenterica* of most writers. This Dr. Good considers as allied to scrofula; but it consists, beyond all doubt, in a real scrofulous affection of the mesenteric glands, which are the seat of a tubercular deposit similar to that which takes place in other scrofulous glands. Since, however, the disease is peculiarly connected with a morbid condition of one or more of the organs of nutrition, including those of digestion and assimilation, and is uniformly accompanied with emaciation, irritation, and some degree of hectic fever, it may, without impropriety, be considered in connexion with tabid diseases.

When the strumous taint is excited into action in infant life, it generally fixes upon the chylific or chyliferous glands, especially when they are in a weakly state: most commonly upon those of the mesentery. Scrofulous tabes begins with languor and want of appetite, pain in the back and loins, fulness, and, as the disease advances, pain and tenderness of the abdomen. The belly is enlarged, while the limbs are in a state of atrophy. These symptoms are accompanied or succeeded by a chalky appearance, and want of consistency in the alvine evacuations, as if the chyle were rejected by the absorbents, and left in the state of a milky fluid in the intestines, and the functions of the liver were at the same time impaired, the natural tinge of the bile being wanting. The evacuations are also sometimes mixed with mucus and blood; and are attended by pain, irritation, and tenesmus, somewhat resembling those which occur in a mild dysentery. Occasionally, also, there are symptoms of dropsy, and especially ascites; as if the absorption of the fluid, secreted into the cavity of the abdomen, were prevented by local obstacles: the absorbent glands, which are enlarged, being rendered impervious, and pressing also on the lacteals and lymphatics which enter them and pass by them. The appetite, in some cases, becomes ravenous, and worms are sometimes found in the faeces.

The treatment of this species of tabes is similar in every respect to that of the other forms of scrofula. Very small doses of the grey or black oxides of mercury, carefully guarding against relaxing the bowels and acting on the gums, may be beneficially employed, with mild tonic bitters, conium, and sarsaparilla; and, in most cases, benefit is derived from a steady perseverance in chalybeates.

4. The *tabes dorsalis*.—This, Dr. Good observes, is a disease of considerable antiquity; for we find traces of it in the oldest historical records that have reached our own day: and it is particularly described by Hippocrates under the name of *φθισις νωτιας*, literally "humid tabes," says the doctor, from the frequent and involuntary secretion of a gleety matter, or rather of a dilute and imperfect seminal fluid; but the term *νωτιας* evidently signifies "appertaining to the back," whence the translation of the name as *tabes dorsalis*. Hippocrates describes it as a disorder of the spinal marrow, incident to persons of a salacious disposition, or who are newly married, and have too largely indulged in conjugal pleasures. He represents the patient as complaining of a sense of formication, or a feeling like that of ants creeping from the upper part of his body, as his head, into the spine of his back; and tells us that when he discharges his urine or excrements there is at the same time a copious evacuation of semen, in consequence of which he is incapable of propagating his species, or answering the purpose of marriage. He is generally short breathed and weak, especially after exercise: he is sensible of a weight in his head, his memory is inconstant, and he is affected with a failure of sight and a ringing in his ears. Though without fever at first, he at length becomes severely feverish, and dies of that variety of remittent which the Greeks called leipyria, a sort of causus or ardent fever, attended with great coldness of the extremities, but with a burning fire and intolerable heat within, an insupportable anxiety and unconquerable dryness of the tongue. This description is fully confirmed by Professor Frank in his history of the miserable condition of two young men who had induced the same disease by a habit of self-pollution, one of whom, together with extreme emaciation, suffered excruciating pains in every limb from head to foot, was incapable of standing, and subject to epileptic fits; while the other, after a long career of acute suffering in various ways, was at length seized with a hemiplegia.

There is no reason to doubt the reality of the disease above described, but it is certainly not one of frequent occurrence, and has unquestionably been made a bugbear of by quacks to answer their own purposes.

The cure of this species is to be attempted, and often is effected, by attention to the mind; by avoiding the causes; by regular change of scene, and country air, with a nutritive and invigorating diet; cold bathing, especially in

the sea; and the moderate use of wine, with chalybeates, cinchona, and myrrh.

Tabes coxaria. A wasting of the thigh and leg from an abscess, or other cause, in the hip.

Tabes dorsalis. See *Tabes.*

Tabes pulmonalis. See *Phthisis.*

TACAMAHA'CA. (*a, æ.* f.; an Indian word.) A resinous substance of a yellowish-brown colour, slightly aromatic taste, and fragrant smell. Two kinds of it are generally found in commerce, namely, tacamahaca in the shell, which is the produce of the *Fagara octandra*, and *tacamahaca in the lump*, which is supposed to be the produce of the *Populus balsamifera.* Tacamahaca has had nervine, maturative, and other virtues attributed to it, but it is now hardly ever used.

Tact. See *Touch.*

Ta'ctus. (*us, ûs.* m.; from *tango*, to touch.) See *Touch.*

TÆ'DA. (*a, æ.* f. Δαιδα; from δαω, to burn.) A torch. A medicated torch for fumigations.

TÆ'NIA. (*a, æ.* f. Ταινια, a Greek word, signifying a fillet or tape.) 1. The tape-worm. A genus of intestinal worms, characterised by a long, flat, and jointed body. See *Entozoa.*

2. A name given by anatomists to two parts of the brain. See *Tænia hippocampi*, and *Tænia semicircularis.*

Tænia hippocampi. *Corpus fimbriatum.* The plaited edge of the posterior crus of the fornix. See *Encephalos.*

Tænia semicircularis. *Tænia semicircularis Halleri.* A flattened white line, running in the groove between the optic thalamus and corpus striatum. See *Encephalos.*

Tail. See *Cauda.*

TALIACOTIAN OPERATION. In the year 1598, Caspar Taliacotius published a work entitled "Cheirurgia Nova de Narium, Aurium, Labiorumque Defectu, per insitionem cutis ex humero, arte hactenus omnibus ignotâ sarciendo." In this work several extraordinary cases are recorded of the restoration of noses and other parts by partially detaching a portion from the arm, moulding it to a proper shape, causing adhesion, and finally detaching it altogether from the arm, so that it remained in its new situation. Operations of this kind are called Taliacotian operations, from their discoverer, and *Rhinoplastic, cheiloplastic*, &c., according to the part restored. Of late years several successful operations for new noses have been performed, and this is now always done by turning down a flap of integument from the forehead.

TA'LPA. (*a, æ.* f.; from τυφλος, blind. ?) *Talparia.* 1. The mole. A small plantigrade animal. The cinders of this animal burnt, mixed with honey and white of egg, were formerly esteemed against gangrene, lepra, and scrofula. The blood was a remedy for alopecia.

2. Applied formerly to a kind of atheromatous tumour under the scalp, which sometimes produced caries and sinuses, burrowing under the scalp; whence its name.

TA'LUS. (*us, i.* m.; from *taxillus*, a small die.) 1. The ankle.

2. A bone of the ankle. See *Astragalus.*

Tamalapatra. See *Laurus cassia.*

TAMARI'NDUS. (*us, i.* m.; from *tamar*, or *tamarindi*, which is, in the Arabian language, a synonym of the dactylus or date. 1. The name of a genus of plants. Class, *Monadelphia*; Order, *Triandria.* The tamarind-tree and fruit.

2. The pharmacopœial name of the tamarind. See *Tamarindus indica.*

Tamarindus indica. The systematic name of the tamarind-tree: called also, *Oxyphœnicon, Siliqua arabica, Balampulli, Tamaræa zecla, Oxyphœnicia*, and *Acacia Indica.* This tree grows in hot climates, and is abundant in the West India islands. The preserve called in the shops tamarinds consists of a pulp, with the seeds connected together by numerous tough strings or fibres. According to Long, tamarinds are prepared for exportation, at Jamaica, in the following manner: — "The fruit or pods are gathered in June, July, and August, when full ripe, which is known by their fragility or easy breaking on small pressure between the finger and thumb. The fruit taken out of the pod, and cleared from the shelly fragments, is placed in layers in a cask, and boiling syrup, just before it begins to granulate, is poured in, till the cask is filled: the syrup pervades every part, quite down to the bottom, and when cool the cask is headed for sale." The tamarind is employed as a laxative, and for abating thirst or heat in various inflammatory complaints, and for correcting putrid disorders, especially of a bilious kind, in which the cathartic, antiseptic, and refrigerant qualities of the fruit have been found equally useful; with which intention they are mixed with barley-water, or any proper diluting fluid, and given as a drink. When intended merely as a laxative, it may be of advantage (Dr. Woodville observes) to join it with manna or purgatives of a sweet kind, by which its use is rendered safer and more effectual. Three drachms of the pulp are usually sufficient to open the body, but to prove moderately cathartic one or two ounces are required. It is an ingredient in the *confectio cassiæ*, and *confectio sennæ.*

Tamari'scus. (*us, i.* m.) See *Tamarix.*

TA'MARIX. (*ix, icis.* f.; from *Tamarik*, abstersion, Heb.: named from its properties of cleansing and purifying the blood.) The name of a genus of plants. Class, *Pentandria*; Order, *Digynia.* The tamarisk-tree.

Tamarix gallica. The systematic name of the tamarisk-tree: also named *Tamariscus.* Tamarisk. The bark, wood, and leaves of this tree were formerly employed medicinally, though seldom used at present: the former for its aperient and corroborant virtues in obstructions of the liver; the latter in icterus, hæmoptysis, and some affections of the skin.

Tame-poison. See *Asclepias.*

TANACE'TUM. (*um, i.* n.; corrupted from *tanasia, athanasia*, the old name for tansy.) 1. The name of a genus of plants in the Linnæan system. Class, *Syngenesia*; Order, *Polygamia superflua.* Tansy.

2. The pharmacopœial name of the tansy. See *Tanacetum vulgare.*

Tanacetum balsami'ta. The systematic name of the officinal costmary, or alecost: named also, *Balsamita mas*, *Balsamita major*, *Tanacetum hortense*, and *Costus hortorum*. The plant which bears this name in the pharmacopœias is the *Tanacetum balsamita — foliis ovatis, integris, serratis*, of Linnæus. An herb with a fragrant smell, somewhat like that of mint, formerly esteemed as a corroborant, carminative, and emmenagogue.

Tanacetum hortense. See *Tanacetum balsamita*.

Tanacetum vulgare. The systematic name of the common tansy: called also, *Tanasia*, *Athanasia*, and *Parthenium mas*.

Tanacetum — foliis bipinnatis, incisis, serratis, of Linnæus. The leaves and flowers of tansy have a strong, not very disagreeable smell, and a bitter somewhat aromatic taste. The virtues of tansy are tonic, stomachic, anthelmintic, emmenagogue, and resolvent. It has been much used as a vermifuge; and testimonies of its efficacy are given by many respectable physicians. Not only the leaves, but the seeds have been employed with this intention, and substituted for those of santonicum. We are told by Dr. Clark, that in Scotland tansy was found to be of great service in various cases of gout; and Dr. Cullen, who afterwards was informed of the effect it produced upon those who had used the herb for this purpose, says, "I have known several who have taken it without any advantage, and some others who reported that they had been relieved from the frequency of their gout." Tansy is also recommended in the hysteria, especially when this disease is supposed to proceed from menstrual obstructions.

This plant may be given in powder to the quantity of a drachm or more for a dose; but it has been more commonly taken in infusion, or drank in tea.

Tanasia. See *Tanacetum*.

TANNIN. This, which is one of the immediate principles of vegetables, was first distinguished by Seguin from the gallic acid, with which it had been confounded under the name of the *astringent principle*. He gave it the name of tannin, from its use in the tanning of leather; which it affects by its characteristic property, that of forming with gelatine a tough insoluble matter.

It may be obtained from vegetables by macerating them in cold water; and precipitated from this solution, which contains likewise gallic acid and extractive matter, by hyperoxygenised muriate of tin. From this precipitate, immediately diffused in a large quantity of water, the oxide of tin may be separated by sulphuretted hydrogen gas, leaving the tannin in solution.

Professor Proust has since recommended another method, — the precipitation of a decoction of galls by powdered carbonate of potash, washing well the greenish-grey flakes that fall down with cold water, and drying them in a stove. The precipitate grows brown in the air, becomes brittle and shining like a resin, and yet remains soluble in hot water. The tannin in this state, he says, is very pure.

Sir H. Davy, after making several experiments on different methods of ascertaining the quantity of tannin in astringent infusions, prefers for this purpose the common process of precipitating the tannin by gelatine; but he remarks, that the tannin of different vegetables require different proportions of gelatine for its saturation; and that the quantity of precipitate obtained is influenced by the degree in which the solutions are concentrated.

Chenevix observed, that coffee-berries acquired by roasting the property of precipitating gelatine; and Hatchett has made a number of experiments, which show that an artificial tannin, or substance having its chief property, may be formed, by treating with nitric acid matters containing charcoal. It is remarkable that this tannin, when prepared from vegetable substances, as dry charcoal of wood, yields, on combustion, products analogous to those of animal matters. From his experiments it would seem that tannin is, in reality, carbonaceous matter combined with oxygen; and the difference in the proportion of oxygen may occasion the differences in the tannin procured from different substances, that from catechu appearing to contain most.

Bouillon Lagrange asserts that tannin, by absorbing oxygen, is converted into gallic acid.

It is not an unfrequent practice to administer medicines containing tannin in cases of debility, and at the same time to prescribe gelatinous food as nutritious. But this is evidently improper, as the tannin, from its chemical properties, must render the gelatine indigestible.

Tansy. See *Tanacetum*.

Tansy, maudlin. See *Achillea ageratum*.

Tansy, wild. See *Potentilla*.

Ta'ntalum. (*um*, *i.* n.) A metal at first supposed to be distinct, but now ascertained to be identical with columbium. See *Columbium*.

Taper. See *Acuminatus*, and *Attenuatus*.

Tape-worm. See *Entozoa*.

Tapioca. See *Jatropha manihot*.

Tapping. See *Paracentesis*.

Ta'psus. (*us*, and *os*, *i.* f.) See *Verbascum nigrum*.

Tapsus barbatus. See *Verbascum*.

Tar. See *Pinus sylvestris*.

Tar, Barbadoes. See *Petroleum*.

Tar-water. A once celebrated remedy, but now neglected more than it deserves. It is made by infusing tar in water, stirring it from time to time, and, lastly, pouring off the clear liquor, now impregnated with the colour and virtues of the tar. It is drunk in many chronic affections, particularly of the lungs.

TARANTI'SMUS. (*us*, *i.* m.) The disease produced by the bite of the tarentula. See *Tarentula*.

Tarantula. See *Tarentula*.

TARA'XACUM. (*um*, *i.* n.; from ταρασσω, to alter or change: so called because it is said to alter the state of the blood.) See *Leontodon*.

Tara'xis. (From ταρασσω, to disturb.) A slight inflammation of the eye. See *Ophthalmitis*.

Tarchon sylvestris. See *Achillea ptarmica*.

Tare. See *Ervum*.

TARE'NTULA. (*a*, *æ.* f.; from *Tarentum*,

now *Taranta*, in the kingdom of Naples, where the animal abounds. Such is the derivation generally given; but it appears more probable, that the word is from *terrantola*, a name given by the Italians to the *stellio* of the Romans, a reptile, to whose bite credulity ascribed the most extraordinary consequences, and which being afterwards confounded with the large spider in question, the same wonderful properties were transferred to the latter.) An animal of the class *Arachnida*, and order *Pulmonata*. The tarentula is a native of the south of Europe, and is one of the largest of European spiders. Wonderful stories have been told of the effects of its bite, which was said to produce a state of melancholy and stupor, attended with an extreme sensibility to music, and susceptible of relief only by dancing to the sound of the flute or other instrument, till the patient fell down quite exhausted. This affection was called *tarantism*, and once prevailed in Italy to such an extent as to constitute an epidemic mania, which, like St. Vitus dance, seems to have originated in morbid imagination, and to have been kept up by quackery. For a full and interesting account of tarantism, see Hecker, on the epidemics of the middle ages, lately translated by Dr. B. G. Babington. The real effects of the bite of the tarentula, as ascertained by modern experiment, are very similar to those of the common scorpion.

Target-shaped. See *Peltatus.*

Tarsi extensor minor. See *Plantaris.*

TA'RSUS. (*us*, *i.* m. Ταρσος.) 1. The instep, or that part of the foot which is between the leg and metatarsus: it is composed of seven bones, viz. the astragalus, os calcis, os naviculare, os cuboides, and three ossa cuneiformia.

2. The thin cartilage situated at the edges of the eyelids to preserve their firmness and shape.

TARTAR. (*Tartarum*, *i.* n.; from ταρταρος, infernal: because it is the sediment or dregs.) 1. The concretion which fixes to the inside of hogsheads containing wine. It is alloyed with much extractive and colouring matter, and in this impure or compounded state is called argal. It is either red or white, according to its colour. It is purified by decoction with argillaceous earths, by boiling its solution with $\frac{1}{20}$ of pipe-clay, and subsequent crystallisation. By this means it becomes perfectly white, and shoots out crystals, consisting of its peculiar acid called acid of tartar, imperfectly saturated with potash; it is therefore a super or bitartrate of that alkali which, when powdered, is the cream of tartar of the shops. See *Potassæ supertartras.*

2. A name heretofore given to many officinal preparations containing the acid of tartar, but, in consequence of recent changes in the chemical nomenclature, superseded by appellations more expressive of the respective compositions.

3. The human teeth are occasionally, after the age of puberty, and even before, and especially in advanced life, incrusted with an earthy-like substance, which is called tartar. It is deposited on them from the saliva, of which it is said to be a constituent. Berzelius says, that, when tartar first settles on the teeth, it is mere hardened mucus; and that, during the destruction of the mucus, phosphate of lime is traced on the enamel of the teeth, which in some cases increases to a great thickness, which, when analysed, is found to contain about one fifth of its weight of mucus. Rubbing the gums with earthy dentrifices is the best prophylactic against this unnatural condition; but rubbing alone is sufficient, if regularly resorted to.

TARTAR, CREAM OF. The popular name of the pulverised supertartrate of potash. See *Potassæ bitartras.*

Tartar, emetic. See *Antimonium tartarizatum.*

Tartar, oil of. See *Potassæ carbonatis liquor.*

Tartar, regenerated. See *Potassæ acetas.*

Tartar, salt of. See *Potassæ carbonas.*

Tartar, soluble. See *Potassæ tartras.*

TARTAR, SPIRIT OF. The *Pyrotartaric acid.*

Tartar, vitriolated. See *Potassæ sulphas.*

TARTA'RIC. (*Tartaricus*; from *tartar.*) Appertaining to tartar.

TARTARIC ACID. *Acidum tartaricum*; called also, *Sal essentiale tartari*, and *Acidum tartari essentiale*, and tartareous acid. The casks in which some kinds of wine are kept become incrusted with a hard substance, tinged with the colouring matter of the wine, and otherwise impure, which has long been known by the name of *argal*, or tartar, and distinguished into red and white according to its colour. See *Tartar.* This being purified by solution, filtration, and crystallisation, was termed *cream*, or *crystals of tartar.* It was afterwards discovered that it consisted of a peculiar acid combined with potash; and the supposition that it was formed during the fermentation of the wine, was disproved by Boerhaave, Newman, and others, who showed that it existed ready formed in the juice of the grape. It has likewise been found in other fruits, particularly before they are too ripe; and in the tamarind, sumach, balm, carduus benedictus, and the roots of rest-harrow, germander, and sage. The separation of tartaric acid from this acidulous salt, is the first discovery of Scheele that is known. He saturated the superfluous acid by adding chalk to a solution of the supertartrate in boiling water as long as any effervescence ensued, and expelled the acid from the precipitated tartrate of lime by means of the sulphuric. Or four parts of tartar may be boiled in twenty or twenty-four of water, and one part of sulphuric acid added gradually. By continuing the boiling the sulphate of potash will fall down. When the liquor is reduced to one half, it is to be filtered; and if any more sulphate be deposited by continuing the boiling, the filtering must be repeated. When no more is thrown down, the liquor is to be evaporated to the consistence of a syrup; and thus crystals of tartaric acid, equal to half the weight of the tartar employed, will be obtained. The following is given by Dr. Ure as the best formula for procuring tartaric acid:—Take of the supertartrate of potash, two pounds and a half; three gallons of boiling hot-water; one pound of prepared chalk; one pound of sulphuric acid. Boil the cream of tartar in two gallons of the water, and gradually throw in the chalk, until

all effervescence ceases: set the liquor aside that the tartrate of lime may subside; pour off the liquor, and wash the tartrate of lime repeatedly with distilled water until it is tasteless. Then pour on it the sulphuric acid, diluted with the remaining gallon of boiling water, and set the whole aside for twenty-four hours, stirring it well now and then. Strain the liquor, and evaporate in a water-bath until crystals form. The virtues of this acid are antiseptic, refrigerant, and diuretic. It is used in acute fevers, scurvy, and hæmorrhage.

The tartaric acid may be procured in needle-like or laminated crystals, by evaporating a solution of it. Its taste is very acid and agreeable, so that it may supply the place of lemon-juice. It is very soluble in water. Burnt in an open fire, it leaves a coaly residuum; in close vessels it gives out carbonic acid and carburetted hydrogen gas. By distilling nitric acid off the crystals, they may be converted into oxalic acid, and the nitric acid passes to the state of nitrous.

This acid combines with alkaline, earthy, and metallic bases, and form *tartrates*, all of which have been examined by chemists.

The tartrates of potash, soda, and ammonia, are not only susceptible of combining together, but also with the other tartrates, so as to form *double* or *triple salts*.

Tartrate of potash was formerly called *soluble tartar*, because much more so than the supertartrate. See *Potassæ tartras*.

The *supertartrate of potash* is much used in medicine, as well as in several chemical and pharmaceutical preparations. See *Potassæ supertartras*.

Mixed with an equal weight of nitre, and projected into a red-hot crucible, it detonates, and forms the *white flux*; treated in the same way with half its weight of nitre, it forms the *black flux*; and simply mixed with nitre in various proportions, it is called *raw flux*. It is likewise used in dyeing, in hat-making, in gilding, and in other arts.

By saturating the superfluous acid in the supertartrate with soda, a triple salt is formed which crystallises in larger regular prisms of eight nearly equal sides. See *Soda tartarizata*.

The *tartrate of soda* is much less soluble than this triple salt, and crystallises in slender needles or thin plates.

The *tartrate of ammonia* is a very soluble, bitter salt, and crystallises easily.

TA'RTARINE. The name given by Kirwan to the vegetable alkali.

Tartarum. See *Tartar*.

Tartarum emeticum. See *Antimonium tartarizatum*.

Tartarum regeneratum. See *Potassæ acetas*.

Tartarum solubile. See *Potassæ tartras*.

Tartarus ammoniæ. See *Tartras ammoniæ*.

Tartarus chalybeatus. See *Ferri potassio-tartras*.

TA'RTRAS. (*as, atis*. f.) A tartrate, or salt formed by the combination of tartaric acid with a salifiable base; as tartrate of soda, potash, &c.

Those used in medicine are,

1. The tartrate of ammonia.
2. ——————— potash.
3. ——————— potash and antimony.
4. ——————— potash and soda.
5. ——————— iron.
6. ——————— soda.
7. The supertartrate of potash.

TARTRAS AMMONIÆ. Tartrate of ammonia; called also *Alkali volatile tartarizatum*, by Bergman; and *Sal ammoniacum tartareum*, and *Tartarus ammoniæ*. A salt composed of tartaric acid and ammonia. Its virtues are diaphoretic, diuretic, and deobstruent. It is prescribed in fevers, atonic exanthemata, catarrh, arthritic and rheumatic pains, hysteric spasms, &c.

Tartras potassæ. See *Potassæ tartras*.

TARTRAS POTASSÆ ACIDULUS. Acidulated tartrate of potash. See *Potassæ bitartras*.

TARTRAS POTASSÆ ACIDULUS FERRATUS. An old name of the *Ferri potassio-tartras* of the present London Pharmacopœia; formerly called also *Tartarus chalybeatus*, *Mars solubilis*, and *Ferrum potabile*. Its virtues are astringent. It used to be employed externally, in the form of fomentations or bath, in contusions, distortions, and luxations. See *Ferri potassio-tartras*.

Tartras potassæ acidulus stibiatus. See *Antimonium tartarizatum*.

Tartras sodæ. See *Sodæ potassio-tartras*.

TASTE. *Gustus*. Savours are only the impression of certain bodies upon the organ of taste. Bodies which produce it are called *sapid*.

It has been supposed that the degree of sapidity of a body could be determined by that of its solubility; but certain bodies, which are insoluble, have a very strong taste, whilst other bodies very soluble have scarcely any. The sapidity appears to bear relation to the chemical nature of bodies, and to the peculiar effects which they produce upon the animal economy.

Tastes are very numerous, and very variable. There have been numerous endeavours made to class them, though without complete success: they are better understood, however, than the odours, no doubt owing to the impressions received by the sense of taste being less fugitive than those received by the smell. Thus we are sufficiently understood when we speak of a body having a taste that is *bitter*, *acid*, *sour*, *sweet*, &c.

There is a distinction of taste which is sufficiently established, it being founded on the organisation: that of agreeable and disagreeable. Animals establish it instinctively. This is the most important distinction; for those things which have an agreeable taste are generally useful for nutrition, while those whose savour is disagreeable are, for the most part, hurtful.

Apparatus of Taste. — The tongue is the principal organ of taste: however, the lips, the internal surface of the cheeks, the palate, the teeth, the *velum pendulum palati*, the *pharynx*, *œsophagus*, and even the stomach, are susceptible of receiving impressions by the contact of sapid bodies.

The salivary glands, of which the *excretory ducts* open into the mouth; the follicles, which

pour into it the *mucus* which they secrete, have a powerful effect in forming the taste. Independently of the mucous follicles, that the superior surface of the tongue presents, and which form upon it *fungous papillæ*, there are also little inequalities seen, one sort of which, very numerous, are called *villous papillæ*; the others, less numerous, and disposed in two rows on the sides of the tongue, are called *conical papillæ*.

All the nerves with which those parts are provided that are intended to receive the impressions of sapid bodies may be considered as belonging to the apparatus of taste. Thus the inferior maxillary nerves, many branches of the superior, amongst which it is necessary to notice the threads which proceed from the *spheno-palatine* ganglion, particularly the *naso-palatine* nerve of Scarpa, the nerve of the ninth pair, *glosso-pharyngeus*, appear to be employed in the exercise of taste.

The lingual nerve of the fifth pair is that which anatomists consider the principal nerve of taste, and, as a reason, they say that its threads are continued into the *villous* and *conical papillæ* of the tongue.

Mechanism of Taste. — For the full exercise of taste, the mucous membrane which covers the organs of it must be perfectly uninjured; it must be covered with *mucous fluid*, and the saliva must flow freely in the mouth. When the mouth becomes dry, the powers of taste cannot be excited.

It is also necessary that these liquids undergo no change: for if the mucus become thick, yellow, and the saliva acid, bitter, &c., the taste will be exerted but very imperfectly.

Some authors have assured us that the *papillæ* of the tongue become really erect during the time that the taste is exerted. This assertion I believe to be entirely without foundation.

It is quite enough that a body be in contact with the organs of taste, for us to appreciate its savour immediately; but if it is solid, in most cases it is necessary to dissolve in the saliva to be tasted: this condition is not necessary for liquids and gases.

There appears to be a certain chemical action of sapid bodies upon the epidermis of the mucous membrane of the mouth: it is seen evidently, at least in some, as vinegar, the mineral acids, a great number of salts, &c. In these different cases, the colour of the epidermis is changed, and becomes white, yellow, &c. By the same causes, like effects are produced upon dead bodies. Perhaps to this sort of combination may be attributed the different kinds of impressions made by sapid bodies, as well as the variable duration of those impressions.

Hitherto no one has accounted for the faculty possessed by the teeth, of being strongly influenced by certain sapid bodies. According to the researches of Miel, a distinguished dentist of Paris, this effect ought to be attributed to imbibition. The researches of Miel prove that the teeth imbibe very quickly liquids with which they are placed in contact. Different parts of the mouth appear to possess different degrees of sensibility for sapid bodies: for they act sometimes on the tongue, on the gums, and on the teeth; at other times they have an exclusive action on the palate, on the pharynx, &c. Some bodies leave their taste a long time in the mouth: these are particularly the aromatic bodies. This *after-taste* is sometimes felt in the whole mouth, sometimes only in one part of it. Bitter bodies, for example, leave an impression in the pharynx; acids upon the lips and teeth: peppermint leaves an impression which exists both in the mouth and pharynx.

Tastes, to be completely known, ought to remain some time in the mouth: when they traverse it rapidly, they leave scarcely any impression. For this reason, we swallow quickly those bodies which are disagreeable to us; on the contrary, we allow those that have an agreeable savour to remain a long time in the mouth.

When we taste a body which has a very strong and pertinacious taste, such as a vegetable acid, we become insensible to others which are feeble. This observation has been found valuable in medicine, in administering disagreeable drugs to the sick. We are capable of distinguishing a number of tastes at the same time, as also their different degrees of intensity: this is used by chemists, tasters of wine, &c. By this means we arrive, sometimes, at a tolerably exact knowledge of the chemical nature of bodies; but such delicacy of taste is not acquired until after long practice.

Is the lingual nerve that which is essential to taste? Nothing is known which can make us attribute this property entirely to it.

The choice of food depends entirely on the taste: joined to smell, it enables us to distinguish between substances that are hurtful, and those that are useful. It is this sense which gives us the most correct knowledge of the composition of chemical bodies. — *Magendie.*

TA'XIS. (From τασσω, to put in order.) An operation, by which those parts which have quitted their natural situation are replaced by the hand without the assistance of instruments; as in reducing hernia, &c.

Tea. See *Thea.*

TEAR. *Lachryma.* The limpid fluid secreted by the lachrymal glands, and flowing on the surface of the eyes. See *Lachrymal apparatus.*

The tears have mixed with them an arterious roscid vapour, which exhales from the internal surface of the eyelids, and external of the tunica conjunctiva, into the eye. Perhaps the aqueous humour also transudes through the pores of the cornea on the surface of the eye. A certain part of this aqueous fluid is dissipated in the air; but the greatest part, after having performed its office, is propelled by the orbicular muscle, which so closely constringes the eyelid to the ball of the eye, as to leave no space between, unless in the internal angle, where the tears are collected. From this collection the tears are absorbed by the orifices of the puncta lachrymalia; from thence they are propelled, through the lachrymal canals, into the lachrymal sac, and flow through the ductus nasalis

into the cavity of the nostrils, under the inferior concha nasalis. The *lachrymal sac* appears to be formed of longitudinal and transverse muscular fibres; and its three orifices furnished with small sphincters, as the spasmodic constriction of the puncta lachrymalia proves, if examined with a probe.

The tears have no smell, but a saltish taste, as people who cry perceive. They are of a transparent colour and aqueous consistence.

The *quantity*, in its natural state, is just sufficient to moisten the surface of the eye and eyelids; but from sorrow, or any kind of stimulus applied to the surface of the eye, so great is the quantity of tears secreted, that the puncta lachrymalia are unable to absorb them. Thus the greatest part runs down from the internal angle of the eyelids, in the form of great and copious drops, upon the cheeks. A great quantity also descends, through the lachrymal passages, into the nostrils: hence those who cry have an increased discharge from the nose.

Use of the Tears. — 1. They continually moisten the surface of the eye and eyelids, to prevent the pellucid cornea from drying and becoming opake, or the eye from concreting, with the eyelids. 2. They prevent that pain which would otherwise arise from the friction of the eyelids against the bulb of the eye from continually winking. 3. They wash and clean away the dust of the atmosphere, or any thing acrid that has fallen into the eye. 4. Crying unloads the head of congestions.

TE'CTUS. Covered: applied as opposed to *nudus*, or naked; as to the seeds of the angiospermous plants.

TEETH. (*Dens*, a tooth; *quasi edens*, from *edo*, to eat.) Small bones fixed in the alveoli of the upper and under jaw. In early infancy, Nature designs us for the softest aliment, so that the gums alone are then sufficient for the purpose of manducation; but, as we advance in life, and require a different food, she wisely provides us with teeth. These are the hardest and whitest of our bones, and at full maturity, we usually find thirty-two in both jaws; viz. sixteen above, and as many below. Their number varies indeed in different subjects; but it is seldom seen to exceed thirty-two, and it will very rarely be found to be less than twenty-eight.

Each tooth may be divided into two parts; viz. its body, or that part which appears above the gums; and its fangs or root, which is fixed into the socket. The boundary between these two, close to the edge of the gum, where there is usually a small circular depression, is called the neck of the tooth. The teeth of each jaw are commonly divided into three classes; but, before each of these is treated of in particular, it will be right to say something of their general structure.

Every tooth is composed of its *cortex* or *enamel*, and its internal bony substances. The enamel, or, as it is sometimes called, the vitreous part of the tooth, is a very hard and compact substance, of a white colour, and peculiar to the teeth. It is found only upon the body of the tooth, covering the outside of the bony or internal substance. When broken it appears fibrous or striated; and all the striæ are directed from the circumference to the centre of the tooth. This enamel is thickest on the grinding surface, and on the cutting edges or points of the teeth, becoming gradually thinner as it approaches the neck, where it terminates insensibly. Some writers have described it as being vascular, but it is certain that no injection will ever reach this substance; that it receives no tinge from madder; and that it affords no appearance of a circulation of fluids. The bony part of a tooth resembles other bones in its structure, but is much harder than the most compact part of bones in general. It composes the inner part of the body and neck, and the whole of the root of the tooth. This part of a tooth when completely formed, does not, like the other bones, receive a tinge from madder, nor do the minutest injections penetrate into its substance, although many writers have asserted the contrary. Mr. Hunter has been therefore induced to deny its being vascular, although he is aware that the teeth, like other bones, are liable, to swellings, and that they are found anchylosed with their sockets. He supposes, however, that both these may be original formations; and, as the most convincing proof of their not being vascular, he reasons from the analogy between them and other bones. He observes, for instance, that, in a young animal that has been fed with madder, the parts of the teeth which were formed before it was put on madder diet will appear of their natural colour, but that such parts as were formed while the animal was taking the madder will be of a red colour: whereas, in other bones, the hardest parts are susceptible of the dye, though more slowly than the parts which are growing. Again he tells us, that if you leave off feeding the animal with madder a considerable time before you kill it, you will find the above appearances still subsisting, with this addition, that all the parts of the teeth which were formed after leaving off the madder will be white. This experiment proves, that a tooth once tinged does not lose its colour; whereas other bones do (though very slowly) return again to their natural appearance: and, as the dye in this case must be taken into the habit by absorbents, he is led to suspect that the teeth are without absorbents as well as other vessels. These arguments are very ingenious, but they are far from being satisfactory. The facts adduced by Mr. Hunter are capable of a different explanation from that which he has given them; and, when other facts are added relative to the same subject, it will appear that this bony part of a tooth has a circulation through its substance, and even lymphatics, although, from the hardness of its structure, we are unable to demonstrate its vessels. The facts which may be adduced are, 1st, We find that a tooth recently drawn and transplanted into another socket, becomes as firmly fixed, after a certain time, and preserves the same colour as the rest of the set; whereas a tooth that has been long drawn before it is transplanted, will never become fixed. Mr. Hunter, indeed, is aware of this

objection, and refers the success of the transplantation, in the first instance, to the living principle possessed by the tooth, and which, he thinks, may exist independent of a circulation. But however applicable such a doctrine may be to zoophytes, it is suspected that it will not hold good in man, and others of the more perfect animals: and there does not appear to be any doubt but that, in the case of a transplanted tooth, there is a real union by vessels. 2dly, The swellings of the fangs of a tooth, which, in many instances, are known to be the effects of disease, and which are analogous to the swelling of other bones, are a clear proof of a similarity of structure, especially as we find them invested with a periosteum. 3dly, It is a curious fact, though as yet perhaps not generally known, that, in cases of phthisis pulmonalis, the teeth become of a milky whiteness, and in some degree transparent. Does not this prove them to have absorbents?

Each tooth has an inner cavity, which, beginning by a small opening at the point of the fang, becomes larger, and terminates in the body of the tooth. This cavity is supplied with blood-vessels and nerves, which pass through the small hole in the root. In old people this hole sometimes closes, and the tooth becomes then insensible.

The teeth are invested with periosteum from their fangs to a little beyond their bony sockets, where it is attached to the gums. This membrane seems to be common to the tooth which it encloses, and to the sockets which it lines. The teeth are likewise secured in their sockets by a red substance called the *gums*, which every where covers the alveolar processes, and has as many perforations as there are teeth. The gums are exceedingly vascular, and have something like cartilaginous hardness and elasticity, but do not seem to have much sensibility. The gums of infants, which perform the offices of teeth, have a hard ridge extending through their whole length; but in old people, who have lost their teeth, this ridge is wanting. The three classes into which the teeth are commonly divided are, *incisores*, *canini*, and *molares*, or *grinders*.

The *incisores* are the four teeth in the forepart of each jaw: they derive their name from their use in dividing and cutting the food in the manner of a wedge, and have each of them two surfaces which meet in a sharp edge. Of these surfaces, the anterior one is convex, and the posterior one somewhat concave. In the upper jaw they are usually broader and thicker, especially the two middle ones, than those of the under jaw, over which they generally fall by being placed a little obliquely.

The *canini*, or *cuspidati*, are the longest of all the teeth, deriving their name from their resemblance to a dog's tusk. There is one of these teeth on each side of the incisores, so that there are two in each jaw. Their fangs differ from those of the incisores only in being much larger, and their shape may be easily described to be that of an incisor with its edge worn off, so as to end in a narrow point instead of a thin edge. The canini not being calculated for dividing like the incisores, or for grinding, seem to be intended for laying hold of substances. Mr. Hunter remarks of these teeth, that we may trace in them a similarity in shape, situation, and use, from the most imperfect carnivorous animal, which we believe to be the human species, to the lion, which is the most perfectly carnivorous.

The *molares*, or grinders, of which there are ten in each jaw, are so called, because from their size and figure they are calculated for grinding the food. The canini and incisores have only one fang, but the three last grinders in the under jaw have constantly two fangs, and the same teeth in the upper jaw three fangs. Sometimes these fangs are divided into two points near their base, and each of these points has, perhaps, been sometimes considered as a distinct fang. The grinders likewise differ from each other in their appearance. The two first on each side, which Mr. Hunter appears to have distinguished very properly by the name of *bicuspides*, seem to be a middle nature between the incisores and grinders; they have in general only one root, and the body of the tooth terminates in two points, of which the anterior one is the highest, so that the tooth has in some measure the appearance of one of the canini. The two grinders beyond these, on each side, are much larger. Their body forms almost a square with rounded angles; and their grinding surface has commonly five points or protuberances, two of which are on the inner, and three on the outer part of the tooth. The last grinder is shorter and smaller than the rest, and from its coming through the gums later than the rest, and sometimes not appearing till late in life, is called *dens sapientiæ*. The variation in the number of teeth usually depends on these dentes sapientiæ.

Having thus described the appearance of the teeth in the adult, the manner of their formation and growth in the fœtus is next to be considered. We shall find that the alveolar process, which begins to be formed at a very early period, appears, about the fourth month, only as a shallow longitudinal groove, divided by slight ridges into a number of intermediate depressions, which are to be the future alveoli or sockets. These depressions are, at first, filled with small pulpy substances, included in a vascular membrane; and these pulpy substances are the rudiments of the teeth. As these advance in their growth, the alveolar processes become gradually more completely formed. The surface of the pulp first begins to harden; the ossification, proceeding from one or more points, according to the kind of tooth that is to be formed. Thus, in the incisores and canini, it begins from one point; in the bicuspides, from two points, corresponding with the future shape of those teeth; and in the molares from four or five points. As the ossification advances, the whole of the pulp is gradually covered with bone, excepting its under surface, and then the fang begins to be formed. Soon after the formation of this bony part, the tooth begins to be encrusted with its enamel; but in what manner this is deposited we are, as yet, unable to ex-

plain. Perhaps the vascular membrane which encloses the pulp may serve to secrete it. It gradually crystallises upon the surface of the bony part, and continues to increase in thickness, especially at the points and basis of the tooth, till some time before the tooth begins to pass through the gum; and when this happens, the enamel seems to be as hard as it is afterwards, so that the air does not appear to have the least effect in hardening it, as has been sometimes supposed. While the enamel is thus forming, the lower part of the pulp is gradually lengthened out and ossified, so as to form the fang. In those teeth which are to have more than one fang, the ossification begins from different parts of the pulp at one and the same time. In this manner are formed the incisores, the canini, and two molares on each side, making in the whole twenty teeth, in both jaws, which are sufficient for the purposes of manducation early in life. As the fangs of the teeth are formed, their upper part is gradually pushed upwards, till at length, about the seventh, eighth, or ninth month after birth, the incisores, which are the first formed, begin to pass through the gum. The first that appears is generally in the lower jaw. The canini and molares not being formed so soon as the incisores, do not appear till about the twentieth or twenty-fourth month. Sometimes one of the canini, but more frequently one of the molares, appears first.

The danger to which children are exposed, during the time of dentition, arises from the pressure of the teeth in the gum, so as to irritate it, and excite pain and inflammation. The effect of this irritation is, that the gum wastes, and becomes gradually thinner at this part, till at length the tooth protrudes. In such cases, therefore, we may, with great propriety, assist nature by cutting the gum. These twenty teeth are called *temporary* or *milk* teeth, because they are all shed between the age of seven and fourteen, and are supplied by others of a firmer texture with large fangs, which remain till they become affected by disease, or fall out in old age, and are, therefore, called the *permanent* or *adult* teeth. The rudiments of these adult teeth begin to be formed at different periods. The pulp of the first adult incisor, and of the first adult grinder, may be perceived in a fœtus of seven or eight months, and the ossification begins in them about six months after birth. Soon after birth the second incisor, and canine tooth on each side, begin to be formed. About the fifth or sixth year the first bicuspis, and about the seventh the second bicuspis begins to ossify. These bicuspides are destined to replace the temporary grinders. All these permanent teeth are formed in a distinct set of alveoli; so that it is not by the growing of one tooth under another in the same socket, that the uppermost tooth is gradually pushed out, as is commonly imagined; but the temporary teeth, and those which are to succeed them, being placed in separate alveoli, the upper sockets gradually disappear, as the under ones increase in size, till at length the teeth they contain, having no longer any support, consequently fall out. But, besides these twenty teeth, which succeed the temporary ones, there are twelve others to be added, to make up the number thirty-two. These twelve are three grinders on each side in both jaws; and in order to make room for this addition, we find the jaws grow as the teeth grow, so that they appear as completely filled with twenty teeth as they are afterwards with thirty-two. Hence, in children, the face is flatter and rounder than in adults. The first adult grinder usually passes through the gum about the twelfth year; the second, which begins to be formed in the sixth or seventh year, cuts the gum about the seventeenth or eighteenth; and the third, or dens sapientiæ, which begins to be formed about the twelfth year, passes through the gum between the age of twenty and thirty. The dentes sapientiæ have, in some instances, been cut at the age of forty, fifty, sixty, and even eighty years; and it sometimes happens that they do not appear at all. Sometimes, likewise, it happens that a third set of teeth appear about the age of sixty or seventy. Diemerbroek tells us that he himself, at the age of fifty-six, had a fresh canine tooth, in the place of one he had lost several years before. M. Du Fay saw two incisores and two canini cut the gum in a man aged eighty-four. Mr. Hunter has seen two fore-teeth shoot up in the lower jaw of a very old person; and an account was lately published of a man who had a complete set of teeth at the age of sixty. Other instances of the same kind are to be met with in authors. The circumstance is curious; and, from the time of life at which it takes place, and the return of the catamenia, which sometimes happens to women at the same age, it has been very ingeniously supposed, that there is some effort in nature to renew the body at that period.

The teeth are subject to a variety of *accidents*. Sometimes the gums become so affected as to occasion them to fall out, and the teeth themselves are frequently rendered carious by causes which have not hitherto been satisfactorily explained. The disease usually begins on that side of the tooth which is not exposed to pressure, and gradually advances till an opening is made into the cavity: as soon as the cavity is exposed, the tooth becomes liable to considerable pain, from the air coming into contact with the nerve. Besides these accidental means by which the teeth are occasionally affected, old age seldom fails to bring with it sure and natural causes for their removal. The alveoli fill up, and the teeth consequently fall out. The gums then no longer meet in the fore-part of the mouth, the chin projects forwards, and the face being rendered much shorter, the whole physiognomy appears considerably altered. Having thus described the formation, structure, growth, and decay of the teeth, it remains to speak of their uses, the chief of which we know to be in mastication. And here we cannot help observing the great variety in the structure of the human teeth, which fits us for such a variety of food, and which, when compared with the teeth given to other animals, may, in some measure, enable us to explain the nature of the aliment for which man is intended by Nature. Thus, in ruminating animals, we find incisores only in the

lower jaw, for cutting the grass, and molares for grinding it; in graminivorous animals, we see molares alone; and in carnivorous animals, canine teeth for catching at their prey, and incisores and molares for cutting and dividing it. But, as man is not designed to catch and kill his prey with his teeth, we observe that our canini are shaped differently from the fangs of beasts of prey, in whom we find them either longer than the rest of the teeth, or curved. The incisores likewise are sharper in those animals than in man. Nor are the molares in the human subject similar to the molares of carnivorous animals; they are flatter in man than in these animals; and, in the latter, we likewise find them sharper at the edges, more calculated to cut and tear the food, and, by their greater strength, capable of breaking the bones of animals. From these circumstances, therefore, we may consider man as partaking of the nature of these different classes; as approaching more to the carnivorous than to the herbivorous tribe of animals; but, upon the whole, formed for a mixed aliment, and fitted equally to live upon flesh and upon vegetables. Those philosophers, therefore, who would confine a man wholly to vegetable food, do not seem to have studied nature. As the molares are the last teeth that are formed, so they are usually the first that fall out: this would seem to prove that we require the same kind of aliment in old age as in infancy. Besides the use of the teeth in mastication, they likewise serve a secondary purpose, by assisting in the articulation of the voice.

Teeth, tartar of. See *Tartar.*

Teething. See *Dentition.*

Teething, difficult. See *Dentition, difficult.*

Tegula hibernica. See *Lapis hibernicus.*

TE'GUMENTS. Under the term common teguments, or integuments, anatomists comprehend the cuticle, rete mucosum, skin, and adipose membrane, as being the covering of every part of the body except the nails. See *Cutis.*

TE'LA. (*a, æ.* f.; from *texo*, to weave.) A web of cloth. The cellular membrane is so called from its likeness to a fine web. See *Membrana.*

Tela cellulosa. See *Membrana.*

TELE'PHIUM. (*um, ii.* n.: because it heals old ulcers; such as that with which Telephus was afflicted from the wound inflicted by Achilles. See *Sedum telephium.*

TE'LLURETTED HY'DROGEN. A combination of tellurium and hydrogen. To make this compound, hydrate of potash and oxide of tellurium are ignited with charcoal, and the mixture acted on by dilute sulphuric acid, in a retort connected with a mercurial pneumatic apparatus. An elastic fluid is generated, consisting of hydrogen holding tellurium in solution. It is possessed of very singular properties. It is soluble in water, and forms a claret-coloured solution. It combines with the alkalies. It burns with a bluish flame, depositing oxide of tellurium. Its smell is very strong and peculiar, not unlike that of sulphuretted hydrogen. This elastic fluid was discovered by Sir. H. Davy, in 1809.

TELLU'RIC ACID. *Acidum telluricum.* The peroxide of tellurium, which combines with many of the metallic oxides, acting the part of an acid, and producing a class of compounds which have been called *tellurates.*

TELLU'RIUM. (*um, ii.* n.; from *tellus*, the earth.) The name given by Klaproth to a metal extracted from several Transylvanian ores. It is of a tin-white colour, verging to lead-grey, with a high metallic lustre, of a foliated fracture, and very brittle, so as to be easily pulverised. Tellurium is oxidised and dissolved by the principal acids. It has two oxides which have acid properties. See *Telluric acid*, and *Tellurous acid.* Fused with an equal weight of sulphur, in a gentle heat, it forms a lead-coloured, striated sulphuret. It does not easily amalgamate with quicksilver.

TELLUROUS ACID. The protoxide of tellurium, which, if precipitated from its solutions by the alkalis, carries down with it a portion of the precipitant.

TEMPERAME'NTUM. (*um, i.* n.; from *tempero*, to mix together.) In the ancient physiology, the different mixture of the four cardinal humours, and the predominance of one or the other, gave rise to four distinct *temperaments*, namely, the *sanguine*, the *choleric*, the *phlegmatic*, and the *melancholic.* The constitution of every individual was supposed to be conformed to some one of these temperaments, or to a mixture of several of them. See *Temperament*, in the *Supplement.*

TEMPERATURE. *Temperatura.* A definite degree of sensible heat, as measured by the thermometer. Thus, we say a high temperature and a low temperature, to denote a manifest intensity of heat or cold; the temperature of boiling water, or 212° Fahrenheit; and a range of temperature, to designate the intermediate points of heat between two distant terms of thermometric indication.

Temperature, morbid. See *Morbid temperature*, in the *Supplement.*

TEMPLE. (*Tempus, oris.* n.) The lateral and flat parts of the forehead: so called because the ravages of time are often first perceptible by the hair on the temples turning grey.

TE'MPORAL. (*Temporalis*; from *tempus.*) Belonging to the temple.

TEMPORAL ARTERY. *Arteria temporalis.* A branch of the external carotid, which runs on the temple, and gives off the frontal artery.

TEMPORAL BONE. *Os temporis.* Two bones situated one on each side of the head, of a very irregular figure. They are usually divided into two parts, one of which, from the manner of its connexion with the neighbouring bones, is called *os squamosum*, and the other, *os petrosum*, from its irregularity and hardness.

In both these parts there are processes and cavities to be described. Externally there are three processes: one anterior, called *zygomatic* process, which is stretched forwards to join with the os malæ, and thus forms the bony jugum, under which the temporal muscle passes; one posterior, called the *mastoid* or *mammillary* process, from its resemblance to a nipple; and one inferior, called the *styloid* process, from its shape, which is said to resemble that of the ancient *stylus scriptorius.* In young subjects,

this process is united with the bone by an intermediate cartilage, which sometimes, even in adults, is not completely ossified. Three muscles have their origin from this process, and borrow half of their names from it, viz. stylo-glossus, stylo-hyoideus, and stylo-pharyngeus. Round the root of this process there is a particular rising of the os petrosum, which some writers describe as a process, and, from its appearance with the styloid, have named it *vaginalis*. Others describe the semicircular ridge of the meatus auditorius externus as a fifth process, to which they give the name of *auditory*. The depressions and cavities are, 1. A large fossa, which serves for the articulation of the lower jaw: it is situated between the zygomatic auditory and vaginal processes, and is separated in its middle by a fissure, into which the ligament that secures the articulation of the lower jaw with this bone is fixed. The fore part of this cavity, which receives the condyle of the jaw, is covered with cartilage; the back part only with the periosteum. 2. A long fossa behind the mastoid process, where the digastric muscle has its origin. 3. The *meatus auditorius externus*, the name given to a large funnel-like canal that leads to the organ of hearing. 4. The *stylo-mastoid hole*, so called from its situation between the styloid and mastoid processes. It is likewise called the aqueduct of Fallopius, and affords a passage to the portio dura of the auditory, or seventh pair of nerves. 5. Below, and on the fore-part of the last foramen, we observe part of the jugular fossa, a thimble-like cavity, in which the beginning of the internal jugular vein is lodged. 6. Before, and a little above this fossa, is the orifice of a foramen, through which pass the internal carotid artery and two filaments of the intercostal nerve. This conduit runs first upward and then forward, forming a kind of elbow, and terminates at the end of the os petrosum. 7. At this part of the ossa temporum we observe the orifice of a canal which runs outwards and backwards in a horizontal direction, till it terminates in the cavity of the ear called tympanum. This canal, which in the recent subject is continued from the ear to the mouth, is called the *Eustachian tube*. 8. A small hole behind the mastoid process, which serves for the transmission of a vein to the lateral sinus. But this, like other foramina in the skull that serve only for the transmission of vessels, is neither uniform in its situation, nor to be met with in every subject. The internal surface of these bones may easily be divided into three parts. The first, uppermost, and largest, is the squamous part, which is slightly concave from the impression of the brain. Its semicircular edge is sloping, so that the external lamella of the bone advances farther than the internal, and thus rests more securely on the parietal bones. The second and middlemost, which is the petrous part of the bone, forms a hard, craggy, protuberance, nearly of a triangular shape. On its posterior side we observe a large foramen, which is the meatus auditorius internus; it receives the double nerve of the seventh pair, viz. the portio dura and portio mollis of that pair. About the middle of its anterior surface is a small foramen, which opens into the aqueduct of Fallopius, and receives a twig of the portio dura of the seventh pair of nerves. This foramen having been first described by Fallopius, and by him named *hiatus*, is sometimes called *hiatus Fallopii*. Besides these, we observe other smaller holes for the transmission of blood-vessels and nerves. Below this craggy protuberance is the third part, which, from its shape and connexion with the os occipitis by means of the lambdoidal suture, may be called the lambdoidal angle of the temporal bone. It is concave from the impression of the brain; it helps to form the posterior and inferior fossæ of the skull, and has a considerable furrow, in which is lodged part of the lateral sinus. The temporal bones differ a little in their structure from the other bones of the cranium. At their upper parts they are very thin, and almost without diploë, but below they have great strength and thickness. In the fœtus, the thin upper part and the lower craggy part are separated by a cartilaginous substance; there is no appearance either of the mastoid or styloid processes, and, instead of a long, funnel-like meatus auditorius externus, there is only a smooth bony ring, within which the membrana tympani is fastened. Within the petrous part of these bones there are several cavities, processes, and bones, which belong altogether to the ear, do not enter into the formation of the cranium, and are described under the article *Auris*. The ossa temporum are connected by suture with the ossa parietalia, the os occipitis, the ossa malarum, and the os sphenoides, and are articulated with the lower jaw.

TEMPORA'LIS. (From *tempus*, the temple.) Belonging to the temple.

Temporalis musculus. A muscle of the lower jaw, situated in the temple. *Crotaphites*, of Winslow. It arises fleshy from the lower, lateral, and anterior part of the parietal bone; from all the squamous portion of the temporal bone; from the lower and lateral part of the os frontis; from the posterior surface of the os malæ; from all the temporal process of the sphenoid bone; and sometimes from a ridge at the lower part of this process. This latter portion, however, is often common to this muscle and the pterygoideus externus. It is of a semicircular shape, and its radiated fibres converge, so as to form a strong middle tendon, which passes under the jugum, and is inserted into the coronoid process of the lower jaw, to which it adheres on every side, but more particularly at its fore-part, where the insertion is continued down to the body of the bone. This muscle is covered by a pretty strong fascia, which some writers have erroneously described as a part of the aponeurosis of the occipito-frontalis. This fascia adheres to the bones, round the whole circumference of the origin of the muscle, and, descending over it, is fixed below to the ridge where the zygomatic process begins, just above the meatus auditorius, to the upper edge of the zygomatic process itself, and anteriorly to the os malæ. This fascia serves as a defence to the muscle, and likewise gives origin to some of its fleshy fibres. The prin-

cipal use of the temporal muscle is to draw the lower jaw upwards, as in the action of biting; and as it passes a little forwards to its insertion, it may at the same time pull the condyle a little backwards, though not so much as it would have done if its fibres had passed in a direct line from their origin to their insertion, because the posterior and lower part of the muscle passes over the root of the zygomatic process, as over a pulley.

TENCH. This well known fish is the *Cyprinus tinca* of the Linnæan system. It inhabits streams of fresh water, is easy of digestion, and much esteemed by some.

TE'NDO. (*o, inis, vel onis.* m.; from *tendo*, to stretch out or extend.) The white and glistening extremity of a muscle. See *Muscle.*

Tendo Achillis. See *Achillis tendo.*

Tendon. See *Tendo.*

Tendril. See *Cirrus.*

TENE'SMUS. (*us, i.* m.; from τεινω, to constringe: so called from the perception of a continual constriction or bound state of the part.) A continual inclination to go to stool, without a discharge, accompanied by a straining.

The cause of this is an irritation of the muscles of the sphincter ani, produced generally by acrimonious substances, as bile, indurated fæces, gall-stones, extraneous bodies, aloetic medicines, &c. The disease is sometimes very violent, and the straining so great as to cause a protrusion of the bowel. Every time any attempt is made to pass the fæces, the irritation returns, and it is sometimes accompanied by painful micturition in men; and a burning painful feeling continues after the stool has passed, with more or less of an urgency to expel. It is often a symptomatic affection of diseases of the urinary bladder, uterus, prostate gland, piles, worms, and organic diseases of the rectum. The best remedies are opium, preparations of lead, and fomentations. A starch glyster, with laudanum, is perhaps the most effectual in allaying the irritation.

TE'NSOR. (*or, oris.* m.; from *tendo*, to stretch.) A muscle, the office of which is to extend the part to which it is fixed.

Tensor pala'ti. See *Circumflexus palati.*

Tensor ty'mpani. *Internus auris*, of Douglas and Cowper. *Internus malleus*, of Winslow. A muscle of the internal ear. See *Auris.*

Tensor vaginæ femoris. *Fascialis membranosus*, of Douglas. *Membraneus, vel fasciæ latæ*, of Cowper. *Musculus aponeurosis, vel fasciæ latæ*, of Winslow. A muscle situated on the outside of the thigh, which stretches the membraneous fascia of the thigh, assists in the abduction of the thigh, and somewhat in its rotation inwards. It arises by a narrow, tendinous, and fleshy beginning, from the external part of the anterior, superior, spinous process of the ilium, and is inserted a little below the great trochanter into the membraneous fascia.

TENT. A roll of lint, or piece of sponge, for dilating openings, sinuses, &c.

Tent-sponge. See *Spongia.*

Tent-wort. See *Asplenium murale.*

TENTA'CULUM. (*um, i.* n.; from *tento*, to feel.) A feeler. Tentacula are mobile appendages, destitute of joints, of various conformations, possessed by various invertebral animals, and which serve as organs of touch, or the means of attachment to foreign bodies.

TENTO'RIUM. (*um. ii.* n.; *à tendendo.*) A process of the dura mater, separating the cerebrum from the cerebellum. It extends from the internal horizontal spine of the occipital bone, directly forwards to the cella turcica of the sphenoid bone. See *Encephalos.*

Terebe'lla. (Diminutive of *terebra*, a piercer or gimblet.) A trepan or instrument for sawing out circular portions of the skull. A trephine.

TEREBI'NTHINA. (*a, æ.* f.; from τερεβινθος, the turpentine-tree.) Turpentine, the produce of pine-trees. See *Turpentine.*

Terebinthina argentoratensis. Strasburg turpentine. This species is generally more transparent and less tenacious than either the Venice or Chio turpentines. It is of a yellowish brown colour, and of a more agreeable smell than any of the turpentines, except the Chio. It is extracted in several parts of Germany, from the red and silver fir, by cutting out successively narrow strips of the bark. In some places a resinous juice, called *Lachryma abiegna*, and *Oleum abietinum*, is collected from under the bark.

Terebinthina canadensis. Canada turpentine. See *Pinus balsamea.*

Terebinthina Chia. See *Pistacia.*

Terebinthina communis. See *Pinus.*

Terebinthina Cypria. See *Pistacia.*

Terebinthina Veneta. See *Pinus.*

Terebinthina vulgaris. See *Pinus*, and *Turpentine.*

Terebinthinæ oleum. Oil of turpentine. The oil distilled from the liquid resin of the *Pinus sylvestris.*

TE'RES. Round, cylindrical: applied to,

1. Some muscles and ligaments; as *teres major, ligamentum teres*, &c.

2. The *ascaris lumbricoides*, or round worm, which infests the intestines. See *Entozoa.*

3. Roots, stems, leaves, leafstalks, seeds, &c.

Teres ligamentum. The ligament at the bottom of the socket of the hip-joint.

Teres major. Riolanus, who was the first that distinguished this and the other muscles of the scapula by particular appellations, gave the name of *teres* to this and the following muscle, on account of their long and round shape. This muscle, which is longer and thicker than the teres minor, is situated along the inferior costa of the scapula, and is in part covered by the deltoides. It arises fleshy from the outer surface of the inferior angle of the scapula (where it covers some part of the infra-spinatus and teres minor, with both which its fibres intermix), and likewise from the lower and posterior half of the inferior costa of the scapula. Ascending obliquely towards the os humeri, it passes under the long head of the triceps brachii, and then becomes thinner and flatter, to form a thin tendon of about an inch in

breadth, and somewhat more in length, which runs immediately behind that of the latissimus dorsi, and is inserted along with it into the ridge at the inner side of the groove that lodges the long head of the biceps. These two tendons are included in a common capsula, besides which the tendon of this muscle adheres to the os humeri by two other capsulæ which we find placed one above the other.

This muscle assists in the rotatory motion of the arm, and likewise in drawing it downwards and backwards; so that we may consider it as the congener of the latissimus dorsi.

TERES MINOR. This muscle seems to have been first described by Fallopius. The teres minor is a thin fleshy muscle, situated along the inferior edge of the infra-spinatus, and is in part covered by the posterior part of the deltoides.

It arises fleshy from all the convex edge of the inferior costa of the scapula; from thence it ascends obliquely upwards and forwards, and terminates in a flat tendon, which adheres to the lower and posterior part of the capsular ligament of the joint, and is inserted into the lower part of the great tuberosity of the os humeri, a little below the termination of the infra-spinatus.

The tendinous membrane, which is continued from the infra-spinatus, and spread over the teres minor, likewise forms a thin septum between the two muscles. In some subjects, however, they are so closely united as to be with difficulty separated from each other. Some of the fibres of the teres minor are intermixed with those of the teres major and subscapularis.

The uses of this muscle are similar to those of the infra-spinatus.

TERETIU'SCULUS. Roundish. Applied in *Botany* to stems, &c.

TE'RETRUM. (*um*, *i.* n.; from τερεω, to pierce.) The trepan.

TERGE'MINUS. Doubly twin-forked: applied to a leaf-stalk, when it has two leaflets at the end of each, and two more at the division of the fork.

TERMINA'LIS. Terminal. In the language of *Botany*, opposed to lateral: applied to a flower-stalk when it terminates a stem or branch; as in *Centaurea scabiosa*.

TERMI'NTHUS. (*us*, *i.* m.; from τερμινθος, the turpentine-tree: so called from its resemblance to the fruit of the turpentine-tree.) A black ardent pustule, chiefly attacking the legs. It is not very clear what the disease was which the Greek writers describe under this name.

TE'RNARY. *Ternarius.* Relating to the number three. In the present day it is used only to express a particular mode of chemical combination. See *Combination, chemical.*

TERNA'TUS. Ternate: applied to a leaf which consists of three leaflets; as that of the trefoil.

TE'RNUS. Ternate: by threes. Applied to leaves, when there are three together; as in many of the plants of Chili and Peru, which seem particularly disposed to this arrangement, and in *Verbena triphylla*.

TE'RRA. (*a*, æ. f.) Earth. See *Earth.*

TERRA ABSORBENS. An absorbent earth, distinguishable from other earthy and stony substances by its solubility in acids; as chalk, crabs'-claws, oyster-shells, egg-shells, pearl, coral, &c.

Terra catechu. See *Acacia catechu.*

Terra damnata. See *Caput mortuum.*

Terra foliata tartari. See *Potassæ acetas.*

Terra japonica. See *Acacia catechu.*

Terra Lemnia. See *Bole.*

Terra Livonica. See *Bole.*

Terra marita. See *Curcuma longa.*

Terra mortua. See *Caput mortuum.*

Terra ponderosa. See *Baryta.*

TERRA PONDEROSA SALITA. The muriate of baryta.

Terra sigillata. See *Bole.*

Terræ oleum. See *Petroleum.*

TERRE'NUS. Terrene: belonging to the earth. Applied to plants which grow in the earth only, in opposition to those which live in water, and not in the earth.

Tertian ague. See *Ague.*

Tertiana. See *Ague.*

TERTIANA DUPLEX. A tertian fever that returns every day; but the paroxysms are unequal, every other fit being alike.

TERTIANA DUPLICATA. A tertian fever returning every other day; but there are two paroxysms in one day.

TERTIANA TRIPLEX. A tertian fever returning every day; every other day there are two paroxysms, and but one in the intermediate day.

TERTIANA'RIA. (*a*, æ. f.; from *tertiana*, a species of intermittent fever, which was said to be cured by this plant.) See *Scutellaria galericulata.*

TERTIUM SAL. (From *tertius*, third.) A neutral salt, as being the product of an acid and an alkali, making a third body different from either.

TESSELLA'TUS. (From *tessera*, a square.) Tesselated; chequered.

TE'SSERA. (From τεσσαρα, four.) The four-sided or cuboid bone.

TEST. Any reagent which, added to a substance, teaches us to discover its chemical nature or composition. See *Reagent.*

TE'STA. (*a*, æ. f.; *quasi tosta*; from *torreo*, to burn.) 1. The shell of a molluscous animal. See *Shell.*

2. In *Botany*, the term signifies the skin which contains all the parts of a seed, as the embryo, the lobes, the vitellus, and albumen, and which gives shape to the seed; for the skin is perfectly formed while they are but a homogeneous liquid. The testa differs in thickness and texture in different plants. It is sometimes single, but more frequently lined with a finer and very delicate film, called by Gærtner *membrana*, as may be seen in a walnut, and the kernel of a peach, almond, or plum. —*Smith.*

TESTA PROBA'TRIX. A cupel or test. A pot for separating baser metals from gold and silver.

TESTA'CEOUS. (*Testaceus*; from *testa*, a shell.) Having a shell, or of the nature of shell: thus, a testaceous animal is an animal

with a shell; a testaceous powder is a powder made of shells.

Testæ preparatæ. Prepared oyster-shells. Wash the shells, previously cleared of dirt with boiling water, then prepare them by repeated washings. This is merely carbonate of lime.

Testes cerebri. See *Tubercula quadrigemina.*

Testicle. See *Testis.*

Testicle, swelled. See *Orchitis.*

TESTI'CULUS. (*us, i.* m.; diminutive of *testis.*) 1. The testicle.

2. The *orchis* plant: so named from the resemblance of its roots to a testicle.

Testiculus caninus. See *Orchis mascula.*

TE'STIS. (*is, is.* m.; a witness: the *testes* being the witnesses of virility.) *Orchis.* The testicle. They are also called *didymi*, and by some *perin.* Two little oval bodies situated within the scrotum, and covered by a strong, white, and dense coat, called tunica albuginea. Each testicle is composed of small vessels, bent in a serpentine direction, arising from the spermatic artery, and convoluted into little heaps, separated from one another by cellular partitions. In each partition there is a duct receiving semen from the small vessels; and all the ducts constitute a net which is attached to the tunica albuginea. From this network twenty or more vessels arise, all of which are variously contorted, and being reflected, ascend to the posterior margin of the testis, where they unite into one common duct, bent into serpentine windings, and forming a hard body called the *epididymis.* The spermatic arteries are branches of the aorta. The spermatic veins empty themselves into the vena cava and emulgent vein. The nerves of the testicle are branches of the lumbar and great intercostal nerve. The use of the testicle is to secrete the semen.

TESTU'DO. (*o, inis.* f. A tortoise; from *testa*, a shell: because it is covered with a shell.) 1. The name of a genus of animals including the terrestrial species of the order *Chelonia.* The tortoise. See *Chelonia.*

2. A melicerous tumour of the scalp, of a flattened shape, has been so called from a fancied resemblance to a tortoise.

TETA'NIC. *Tetanicus.* Appertaining to tetanus — as *tetanic spasm.*

Tetano'ma. (From τετανοω, to smooth.) *Tetanothra.* A medicine which smoothes the skin, and removes wrinkles.

TE'TANUS. (*us, i.* m.; τετανος, from τεινω, to stretch.) Spasm with rigidity. *Convulsio Indica. Holotonicos. Rigor nervosus.* A disease characterised by a general spastic rigidity of the muscles. The varieties of tetanus are, 1. *Trismus*, the locked jaw. 2. *Opisthotonos*, where the body is thrown back by spasmodic contractions of the muscles. 3. *Emprosthotonos*, the body being bent forwards. 4. *Pleurothotonos*, where the body is bent to one side.

These affections arise more frequently in warm climates than in cold ones, and are very apt to occur when much rain or moisture quickly succeeds to extremely dry and sultry weather. They attack persons of all ages, sexes, temperaments, and complexions, but the male sex more frequently than the female, and those of a robust and vigorous constitution than those of a weak habit. An idea is entertained by many, Dr. Thomas observes, that negroes are more predisposed to attacks of tetanus than white people; they certainly are more frequently affected with it, but this circumstance does not arise from any constitutional predisposition, but from their being more exposed to punctures and wounds in the feet, by nails, splinters of wood, pieces of broken glass, &c., from usually going barefooted.

Tetanic affections are occasioned either by exposure to cold, or by some irritation of the nerves, in consequence of local injury by puncture, incision, or laceration: hence the distinction of tetanus into *idiopathic*, and *traumatic.* Lacerated wounds of tendinous parts prove, in warm climates, a never-failing source of these complaints. In cold climates, as well as in warm, the locked jaw frequently arises in consequence of the amputation of a limb.

Tetanus is also distinguished into *acute* and *chronic.*

When the disease has arisen in consequence of a puncture, or any other external injury, the symptoms show themselves generally about the eighth day; but when it proceeds from exposure to cold, they generally make their appearance much sooner.

In some instances it comes on suddenly, and with great violence; but it more usually makes its attack in a gradual manner; in which case, a slight stiffness is at first perceived in the back part of the neck, which, after a short time, becomes considerably increased, and at length renders the motion of the head both difficult and painful.

With the rigidity of the head there is likewise an uneasy sensation at the root of the tongue, together with some difficulty in swallowing, and a great tightness is perceived about the chest, with a pain at the extremity of the sternum, shooting into the back. A stiffness also takes place in the jaws, which soon increases to such a height that the teeth become so closely set together as not to admit of the smallest opening. This is what is termed the locked jaw, or *trismus.*

In some cases the spasmodic affection extends no further. In others, the spasms at this stage of the disease, returning with great frequency, become likewise more general, and now affect not only the muscles of the neck and jaws, but likewise those of the whole spine, so as to bend the trunk of the body very forcibly in some one direction. The *opisthotonos*, or bending backwards of the body, is the most common; the *emprosthotonos*, or bending forward, is very rare, and the *pleurothotonos*, or lateral distortion, still more so.

During the whole course of the disorder, the abdominal muscles are violently affected with spasm, so that the belly is strongly retracted, and feels very hard, most obstinate costiveness prevails, and both the flexor and extensor muscles of the lower extremities are commonly affected at the same time, so as to keep the limbs rigidly extended.

The flexors of the head and trunk become at length so strongly affected as to balance the

action of the extensors, and to keep the head and trunk so rigidly extended and straight, as to render it incapable of being moved in any direction. The arms, which were little affected before, are now likewise rigidly extended; the tongue also becomes affected with spasm, and, being convulsively darted out, is often much injured by the teeth at that moment snapping together. It is to this state of the disease that the term tetanus has been strictly applied.

The disorder continuing to advance, every organ of voluntary motion becomes affected: the eyes are rigid and immoveable; the countenance is hideously distorted, and expresses great distress; the strength is entirely exhausted; the pulse becomes irregular; and one universal spasm puts a period to a most miserable state of existence.

Attacks of tetanus are seldom attended with any fever, but always with violent pain, and the spasms do not continue for a constancy, but the muscles admit of some remission in their contraction, which is frequently renewed, especially if the patient makes the least attempt to speak, drink, or alter his position. The mind generally remains undisturbed to the last.

When tetanic affections arise in consequence of a wound or local injury, they are almost sure to prove fatal; but when the disease is idiopathic it may, in many cases, be removed by a timely use of proper remedies, although a considerable space will probably elapse before the patient will be able to recover his former strength. The chronic form of tetanus is much less fatal than the acute. The acute form usually destroys the patient within four days, though sometimes the fatal event is protracted to a much longer period; generally speaking, however, if the patient survives the fourth day, the symptoms begin to remit in their violence, and there is a fair chance of recovery. If the patient be alive, and the powers of the constitution keep up at the expiration of a week, there is great hope of a favourable issue: in this case the symptoms may gradually assume a chronic form, and wear themselves out in a period varying from some weeks to many months.

Morbid anatomy has hitherto thrown no light on the pathology of tetanus. In some cases there have been appearances of inflammation within the spinal canal, but in the greater part these have been absent. Inflammation and constriction of the pharynx, with a viscid reddish coloured secretion on the mucous membrane, and inflammation of different portions of the alimentary canal, have also been observed; but these, as well as some other morbid phenomena, seem to have been merely effects or incidental accompaniments of the disease. In many cases of traumatic tetanus, the nerve in the neighbourhood of the wound has been found inflamed and thickened, while in others nothing of the kind could be detected. Worms have often been found in the intestines, but so they have in many other cases besides tetanus. On the whole, it appears to be a purely nervous affection.

The diagnosis of tetanus is, generally speaking, very easy. The disease to which it has most affinity is hydrophobia; but the history of the case, the different period of accession of the two diseases, and the clonic character of the spasms which accompany hydrophobia, will amply suffice to discriminate them. Hysteria mimics almost all diseases, and tetanus among the rest; but its own characteristics are so marked, that a careful practitioner can hardly fail to recognise them. It is not to be forgotten that some or all of the phenomena of tetanus may ensue on inflammation of the spinal cord; but here the local pain, the inflammatory fever, the symptoms of paralysis and disordered sensation, and the different mode of accession, afford sufficient data for an accurate diagnosis.

The general indications of cure are, — 1. To remove any local irritation which may appear to have excited the disease. 2. To lessen the general irritability, and spasmodic tendency. 3. To restore the tone of the system. — If a thorn, or other extraneous substance, be lodged in any part, it must be extracted; any spicula of bone which may have brought on the disease after amputation should be removed; a punctured wound ought to be dilated, &c. Some have proposed dividing the nerve going to the part, or even amputating this, to cut off the irritation; others paralysing the nerves by powerful sedatives, or destroying them by caustics; others, again, exciting a new action in the part by active stimulants; but the efficacy, and even propriety, of such measures is doubtful. To fulfil the second indication, various means have been proposed. The abstraction of blood, recommended by Dr. Rush, might perhaps appear advisable in a vigorous plethoric habit in the beginning of the disease, but it has generally proved of little utility, or even hurtful, and is rather contra-indicated by the state of the blood. Purgatives are clearly indicated by the obstinate costiveness and vitiated state of the abdominal secretions, which are characteristic of the disease. They require to be given in very large, and often enormous doses, to produce any effect. It has been found, also, that a salivation, induced by mercury, has sometimes greatly relieved the disorder; but in other instances it has failed altogether. The remedy which has been oftenest employed, and with the most decided advantage, is opium, and sometimes prodigious quantities of it have been exhibited: indeed, small doses are useless, and even large ones have only a temporary effect, so that they must be repeated as the violence of the symptoms is renewed; and, where the patient cannot swallow, it may be tried in glyster, or freely rubbed into the skin. Large quantities of wine and ardent spirits have sometimes been administered with success, in conjunction with opium; and such is the singular state of the nervous system in this disease, that a quantity of ardent spirits, which would produce fatal intoxication in a healthy individual, will often produce no sensible effect whatever on one labouring under tetanus. Other sedative and antispasmodic remedies, besides, have been occasionally resorted to, as hemlock, tobacco, musk, camphire, &c., but for the most part with less satisfactory results. The warm bath has sometimes proved an useful auxiliary in

cold climates; and the cold bath has been much extolled, especially in the West Indies: the latter measure, however, has often proved worse than useless; and in one case, related by Mr. Morgan, it caused immediate death.

TETARTÆ'US. (Τεταρταιος, fourth.) Applied to a quartan fever. See *Ague*.

TETRADYNA'MIA. (*a*, *æ*. f.; from τεσσαρες, four, and δυναμις, power.) The name of a class of plants in the sexual system of Linnæus, containing hermaphrodite flowers, with six stamens, four of which are long, and two short.

TETRA'GONUS. Four-cornered; quadrangular; square. Applied to several parts of plants; as *caulis tetragonus*, *folium tetragonum*, &c.

TETRAGY'NIA. (*a*, *æ*. f.; from τεσσαρες, four, and γυνη, a wife.) The name of an order of plants in several of the classes of the sexual system of Linnæus, consisting of plants which, to the classic character, whatever it is, add the circumstance of having four pistils.

TETRAO. The name of a genus of birds, of the order *Gallinæ*.

TETRAO TETRIX. The black cock, or black grouse. A rare bird, much esteemed by game eaters. The flesh is nutritious, and easy of digestion.

TETRAMYRUM. (From τετρας, a quaternary, and μυρον, an ointment.) An ointment of four ingredients. See *Tetrapharmacum*.

TETRA'NDRIA. (*a*, *æ*. f.; from τετρας, a quaternary, and ανηρ, a husband.) The name of a class of plants in the sexual system of Linnæus. To it belong those which have hermaphrodite flowers, with four stamina of equal length.

TETRANGU'RIA. (From τετρας, a quaternary, and αγγος, a cup: so called because its fruit resembles a cup divided into four parts.) A species of citrul. Not now in use.

TETRAPE'TALOUS. *Tetrapetalus*. Four-petalled: applied to a flower that consists of four single petals or leaves placed around the pistil.

TETRAPHA'RMACUM. (*um*, *i*. n.; from τετρας, a quarternary, and φαρμακον, a drug.) A Greek ointment, composed of four ingredients, namely, wax, resin, pitch, and lard.

TETRAPHY'LLOUS. (*Tetraphyllus*; from τετρας, four, and φυλλον, a leaf.) Four-leaved.

TETRASPE'RMOUS. (*Tetraspermus*; from τετρας, a quarternary, and σπερμα, a seed.) Four-seeded.

Tetter. See *Psoriasis*.

Tetter, dry. See *Psoriasis*.

Tetter, humid. See *Impetigo*.

TEU'CRIUM. (*um*, *ii*. n.; from *Teucer*, who discovered it.) The name of a genus of plants in the Linnæan system. Class, *Didynamia*; Order, *Gymnospermia*. The herb speedwell.

TEUCRIUM CAPITATUM. The systematic name of the poley mountain of Montpelier. *Polium montanum*. This plant bears the winter of our climate, and is generally substituted for the Candy species.

TEUCRIUM CHAMÆDRYS. The systematic name of the common germander. *Chamædrys*. *Chamædrys minor repens vulgaris*. *Quercula calamandrina*. *Trissago*. *Chamædrops*, of Paulus Ægineta, and Oribasius. This plant, called also creeping germander, small germander, and English treacle, *Teucrium — foliis cuneiformi-ovatis, incisis, crenatis, petiolatis; floribus ternis; caulibus procumbentibus, subpilosis*, of Linnæus, has a moderately bitter and somewhat aromatic taste. It was in high repute amongst the ancients in intermittent fevers, rheumatism, and gout; and where an aromatic bitter is wanting, germander may be administered with success. The best time for gathering this herb is when the seeds are formed, and the tops are then preferable to the leaves. When dry, the dose is from ʒss. to ʒj. Either water or spirit will extract their virtue; but the watery infusion is more bitter. This plant is an ingredient in the once celebrated powder named after the Duke of Portland.

TEUCRIUM CHAMÆPITYS. The systematic name of the common ground pine. *Chamæpitys*. *Arthetica*. *Arthrctica*. *Ajuga*. *Abiga*. *Iva arthritica*. *Holocyron*. *Ionia*. *Sideritis*. This low hairy plant, *Teucrium — foliis trifidis, linearibus, integerrimis; floribus sessilibus, lateralibus, solitariis; caule diffuso*, of Linnæus, has a moderately bitter taste, and a resinous, not disagreeable smell, somewhat like that of the pine. The tops or leaves are recommended as aperients, and correborants of the nervous system, and are said to be particularly serviceable in uterine obstructions and paralytic disorders.

TEUCRIUM CRETICUM. The systematic name of the poley mountain of Candy. *Polium creticum*. The tops and whole herb enter the antiquated compounds *mithridate* and *theriaca*. The plant is obtained from the island of Candy; has a moderately aromatic smell, and a nauseous bitter taste. It is placed amongst the aperients and corroborants.

TEUCRIUM IVA. French ground-pine. *Chamæpitys moschata*. *Iva moschata Monspeliensium*. *Chamæpitys anthyllus*. It is weaker, but of similar virtues to chamæpitys.

TEUCRIUM MARUM. The systematic name of the Marum germander, or Syrian herb mastich. *Marum Syriacum*. *Marum Creticum*. *Majorana Syriaca*. *Marum verum*. *Marum cortusi*. *Chamædrys incana maritima*. This shrub is the *Teucrium — foliis integerrimis ovatis acutis petiolatis, subtus tomentosis; floribus racemosis secundis*, of Linnæus. It grows plentifully in Greece, Egypt, Crete, and Syria. The leaves and younger branches, when recent, on being rubbed betwixt the fingers, emit a volatile aromatic smell, which readily excites sneezing; to the taste they are bitterish, accompanied with a sensation of heat and acrimony. Judging from these sensible qualities of the plant, it may be supposed to possess very active powers. It is recommended as a stimulant, aromatic, and deobstruent; and Linnæus, Rosenstein, and Bergius speak highly of its utility. Dose, ten grains to half a drachm of the powdered leaves, given in wine. At present, however, marum is chiefly used as an errhine.

Teucrium montanum. The systematic name of the common poley mountain.

Teucrium polium. The systematic name of the golden poley mountain. Neither this nor the former are now used.

Teucrium scordium. The systematic name of the water germander. *Scordium. Trissago palustris. Chamædrys palustris. Allium redolens.* The leaves of this plant have a smell somewhat of the garlic kind, from which circumstance it is supposed to take its name: to the taste they are bitterish and slightly pungent. The plant was formerly in high estimation, but is now justly fallen into disuse, although recommended by some in antiseptic cataplasms and fomentations.

Teuthrum. See *Teucrium polium.*

TEXTURE. (*Textura*, from *texo*, to weave.) It is observed in the living body that there are certain common organised materials of which the different distinct parts are formed, and which are the same in appearance and properties in whatever part they are found. Such are cellular membrane, bone, muscular fibre, &c. These parts are called the *textures* of the body. They are also named, but improperly, *tissues.* A *texture* means any thing which is woven, and is therefore aptly enough applied metaphorically to various solids of the living body; a *tissue* means a piece of cloth interwoven with gold or silver, or embroidered.

However important the investigation of the common properties of the textures may now be considered, it was long before the attention of anatomists was directed to it.

The doctrine of the textures was first distinctly stated by Andrew Bonn, in a thesis *De Continuationibus Membranarum*, published in 1763. From this there is little doubt that Bichat originally derived the ideas which he afterwards gave to the world in his *Traité sur les Membranes*, in 1800.

The following is an enumeration of the textures according to Bichat.

1. Cellular
2. Nervous *animal*
3. Nervous *organic*
4. Arterial
5. Venous
6. Exhalant
7. Absorbent, with their glands
8. Osseous
9. Medullary
10. Cartilaginous
11. Fibrous
12. Fibro-cartilaginous
13. Muscular *animal*
14. Muscular *organic*
15. Mucous
16. Serous
17. Synovial
18. Glandular
19. Dermoid
20. Epidermoid
21. Pilous

} Systems.

The following table appended by the late Dr. Milligan to his translation of Magendie, gives a general view of the properties of the textures, many of which are more particularly described in this Dictionary under their respective heads.

Name, Division, Situation.	Characters.	Chemical Composition.	
		Animal.	Saline.
I. Cellular. Serous ..... Adipose ..... Situation. *Serous* every where, except brain: *Adipose* every where, except viscera, eyelids, nose, penis, scrotum.	Whitish semi-pellucid filaments, variously interwoven with interstices, communicating in *Serous*, not in *Adipose*; soft, extensible, contractile; insensible, rapidly inflaming; pours out serum, coagulable lymph, or suppurates.	Gelatine 100	Com. salts .....0·08 Water ..... ?
II. Nervous, of animal life. S. Brain, spinal marrow, their nerves.	Composed of white, slender, parallel filaments, united into bundles of a large size, arising in pairs from the brain and spinal cord; pain terribly when irritated.	Albumen .....7·0 White fat .....4·5 Red fat.....0·7 Osmazome .....1·1 Phosphorus.....1·5 14·8	Water .....80·0 Ph. lime Ph. soda Sulphur Ph. Am. ... 5·2 Vauq. 85·2
III. Nervous, of organic life. S. Sympathetic nerve, its ganglions.	System of nerves and ganglions, not connected with the cerebral mass, nor symmetrical; not connected with the brain; scarcely give pain on being irritated; scarcely influence their muscles.	Same as II.	
IV. Arterial.	Coats stronger, whiter — section patent; fibres of mid-	No fibrin? Berzelius.	

Name, Division, Situation.	Characters.	Chemical Composition. Animal.	Saline.
S. Every where, except epidermis, &c. ?	dle coat transverse; internal without valves, readily ruptured, or ossified; not readily inflamed.	Fibrin? Magendie, p. 275. of first edition.	
V. Venous.	Coats thin, flesh-coloured; collapsing when cut; fibres of the middle coat longitudinal; cellular, dense, unalterable; internal tearing across — frequent valves — readily inflamed — not readily ossified.	.....	.....
S. Every where, except epidermis, &c.?			
VI. Exhalants.	Arise from arteries; carry no red blood; open on surfaces; exhale different fluids from different surfaces.		
S. Every where, on surfaces.			
VII. Absorbents and their glands.	Transparent, valvular, contractile; ramify and pass through glands; continue to act after death; easily inflamed; glands obovate, soft.	.....	.....
S. Every where, except the brain, eye, cartilages, serous membranes, placenta, bone, &c. ?			
VIII. Osseous.	White, partly soluble in acids, inflexible; hollow, insensible; pouring out callus when broken; fibrous; resists putrefaction.	Cartilage.....33·0 Oil? ..... Gelatine? ..... 33·0	Water ..... ? Phos. lime.....54·0 Carb. lime? ...10·0 Phos. magn.... 1·0 Fluate lime ... 2·0 Soda ..... 1·3 *Sulph. lime?* 1·0 Berzel. 70·0
S. Centre of limbs; walls of cavities; cavities.			
IX. Medullary.	In spongy bones, a vascular network, or *reticulum*, containing a peculiar oil; cells communicate; very subject to inflammation.	Pure med. oil 96·0 Albumen ... Gelatine..... Extractive.. Pecu. mat. 3·0 Water, membrane, and vessels..... 1·0 100	Phosp. lime..... ? Carb. lime..... ? Soda ..... ? Water..... 0 Berzel. ·0
Of spongy bones...			
Of long bones.....			
S. Internal cavities of bones.	In long bones, a membrane, contractile, sensible; rapidly suppurates, and destroys the bone.		
X. Cartilaginous.	Broader than thick, hard, elastic, whitish; apparently inorganic, but really constituted of fibres, which break when strongly bent. Cellular membrane and colourless vessels interposed. Insensible, almost imputrescible; no sympathies; tinges readily in jaundice; desquamates readily from inflammation. Ossifies in old age.	Coagulated albumen..... 98	Common salts 2·0 Water..... ?
S. Ends of bones; synchondroses; walls of cavities.			
XI. Fibrous.	Composed of a peculiarly hard, elastic, insensible, parallel or interlaced fibre, very strong; which ossifies slightly in old age. Without proper action, but is extensible.	Gelatine? 100	Water..... ? Com. salts? ...0·08
Membranous			
Fascicular.....			
S. Periosteum, dura mater, sclerotica, albuginea, membrane proper to kidney, spleen: capsular ligaments, tendinous sheaths, aponeuroses.			
Tendons, ligaments.			

Name, Division, Situation.	Characters.	Chemical Composition. Animal.	Saline.
XII. Fibro-Cartilaginous. Membranous ..... Articular ..... Tendinous sheaths S. Nose, trachea, palpebra, knee joint, lower jaw, articulation, periosteum, within tendinous sheaths.	Something between cartilage and ligament, having a base of parallel, or interlaced fibres, with cartilage interposed between them. Except the membranes, have no perichondrium; are rarely inflamed; elastic, pliable, insensible; reunite slowly; no sympathies; ossify slowly in old age.	Coag. albu. ? 98·0	Com. salts .....2·0 Water..... ?
XIII. Muscular, of animal life. Long ..... Large ..... Short ..... S. Trunk and limbs, between skin and walls of cavities; or bones.	Red, massy, parallel, or diverging fibres; obedient to the will; contractile to a stimulus applied to themselves, to their *animal* nerves, or the brain; limited by antagonists; generally cross a joint; subject to fatigue; sympathise with one another; die with the lungs.	Fibrin ..... 17·7 Albumen ..... 2·2 Gelatine ?..... Osmazome.... 0·15 19·24	Phosp. soda... 0·90 Phos. amm. ? Phos. lime.... 0·08 Carb. lime ? Mur. and lact. soda ..... 0·18 Water.....77·77 Fourcr. 78·33
XIV. Muscular, of organic life. S. Within walls of cavities.	Occupy the cavities; fibres pale, curved, or irregularly interlaced; never attached to bone, nor to fibrous organs. Form, thin, flat membranes; rarely superimposed; not uniform; short; not obedient to the will; not symmetrical; not affected by stimulation of the nerves; receive their nerves chiefly from the sympathetic.	Same as XIII.	
XV. Mucous. Excreting ..... Non-excreting ? or, *Gastro-pulmonary.* *Genito-urinary.* S. Lining imperfect cavities; eye, nose, throat, pulmonary, alimentary, genital, urinary passages. Facial sinuses, antrum, mammæ.	Soft, spongy, villous, equable membrane, furnished with follicles, glands, exhalants. Continuous with the skin, and lining all the cavities which open externally. Very sensible and irritable, though not contractile. Secretes mucus; pus, when inflamed; but very rarely coagulable lymph. Scarcely ever forms adhesions or ossifications.	Gelatine ?.....100 Mucus?	Water ..... ? Com. salts .....0·08
XVI. Serous. Locomotive ..... Fixed ?..... S. Lining imperfect cavities; thorax, abdomen, scrotum, head, labyrinth, eye, ovarium vesicle, blood and lymphatic vessels.	Dense, shining, semi-pellucid membrane, always forming a shut sac, and lining some shut cavity. Insensible, not contractile; exhaling an albuminous fluid, named serum. Never continuous with other tissues; easily inflamed, when it pours out coagulable lymph, and adheres to part of its own sac; frequently ossifies, or forms hydropic collections.	Gelatine? 100	Water ..... ? Com. salts .....0·08
XVII. Synovial. Articular ..... Tendinous ..... S. Lining joints.	Shut sac; structural characters resembling *serous tissue*, but exhales synovia, a widely different secretion. Not affected in general drop-	Gelatine? 100	Water..... ? Com. salts .....0·08

Name, Division, Situation.	Characters.	Chemical Composition. Animal.	Saline.
Tendinous sheaths, or bursæ mucosæ.	sies, nor serous membranes in synovial dropsy; rarely and slowly adheres; of limited locomotion.		
XVIII. Glandular. Secreting ..... Aporous ..... S. Cavities, or the vicinity of cavities.	Insulated bodies, of indefinite form; rarely in pairs; of variable figure; easily torn; hardness increased; elasticity lost by boiling. — *Have excretory ducts*, a parenchyma of variously organised cellular membrane; insensible?	.....	.....
XIX. Dermoid. S. The surface of the body only.	Envelopes whole body; originates the mucous system. The *corium*, or true skin, consists of fibres variously interlaced in layers, superimposed to each other, so as to form areas, which transmit the exhalation of sweat, the sebaceous secretion, and the pilous system. Embrowned by light; contracts by cold; convex towards the epidermis by boiling, and passes into gelatine. Elastic; enjoys the sense of touch; unites when dead with tannin.	Gelatine? .....100 Albumen? ..... Mucus?	Water..... ? Com. salts.....0·08
XX. Epidermoid. Of skin ..... Of mucous membrane Of hairs? ..... S. Surface of the body, mucous cavities, hairs?	Transparent, furrowed externally; separates from the skin by heat, vesicatories, putrefaction. Tinged yellow by nitric acid; brown by chlorine. Without fibres, inelastic, insensible; impregnated by water, it becomes opake; not crispable by heat, but forms an oil during combustion; abraded, it reproduces itself.	Coag. album. 93·5 Mucus? ..... Gelatine?	Com. salts.....0·08 Water..... ?
XXI. Pilous. *Vibrissæ* ..... *Cirrhi* ..... *Lanugo*..... S. Head particularly, armpits, genitals, nose, caruncula, lacrymalis, ears, diseased ovaria.	*Conical* prolongations from bulbs under the true skin. Semi-transparent; resoluble into cuticle, corpus mucosum, and parallel but unequal fibres. (Flem. Zool.) Slightly crisped by heat, insensible? hollow? made lighter by maceration; black, by lunar caustic; yellow, by nitric acid; brown, by chlorine; depolarises light.	Coagu. album. 94 Mucus? ..... Gelatine? ..... White con. oil? Grey-green oil, sometimes red, or black } ? Vauq.	Sul. of lime. Lactic acid Lac. of pot. Pho. of pot. } 1·5 Mur. of pot. Magnesia ... Iron ..... Silica? ..... Sulphur..... Ph. & carb. lime ? Phos. of mag. ....? Water..... .. ?

THA'LAMUS. (*us*, *i.* m. Θαλαμος, a bed.) 1. In *Anatomy*, a part of the brain from which the optic nerve derives one of its origins. See *Encephalos*, and *Nerve*.

2. In *Botany*, the receptacle of the parts of fructification of plants. See *Receptaculum*.

Thalamus nervi optici. See *Encephalos*.

Thalasso'meli. (From Θαλασσα, the sea, and μελι, honey.) A Greek cathartic medicine, made by exposing in a vessel lined with pitch, a mixture of equal parts of honey, sea water, and rain water.

THALI'CTRUM. (*um*, *i.* n.; from θαλλω, to flourish.) 1. The name of a genus of plants in the Linnæan system. Class, *Polyandria*; Order, *Polygynia*.

2. The pharmacopœial name of the poor man's rhubarb. See *Thalictrum flavum*.

Thalictrum flavum. The systematic name of the poor man's rhubarb. The root of this plant is said to be aperient and stomachic, and to come very near in its virtues to rhubarb. It is a common plant in this country, but seldom used medicinally.

THA'LLUS. (*us, i.* m.; from θαλλος, an olive bud, or green bough; from θαλλω, to be verdant, to shoot forth, or spread abroad.) A term applied by Acharius to the frond or foliage of a lichen, whether that part be of a leafy, fibrous, scaly, or crustaceous nature.

THA'PSIA. (*a, æ.* f.; from *Thapsus*, the island where it was found.) The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Digynia*.

Thapsia asclepias. The deadly carrot. The root operates violently both upwards and downwards, and is not used in the practice of the present day.

Tha'psus. Θαψος. The great white mullein, or cows' lungwort. See *Verbascum thapsus*.

THE'A. (*a, æ.* f.) Tea. The dried leaves of the tea-tree, of which there are two species, viz.—1. The *Thea nigra*, bohea, or black tea; and, 2. The *viridis*, or green tea; both of which are natives of China or Japan, where they attain the height of five or six feet.

Great pains are taken in collecting the leaves *singly*, at three different times, viz. about the middle of February, in the beginning of March, and in April. Although some writers assert that they are first exposed to the steam of boiling water, and then dried on copper plates, yet it is now understood that such leaves are simply dried on *iron* plates, suspended over a fire, till they become dry and shrivelled: when cool, they are packed in tin boxes to exclude the air, and in that state exported to Europe.

Teas are divided in Britain into three kinds of *green*, and five of *bohea*. The former class includes,—

1. *Imperial* or *bloom tea*, having a large leaf, a faint smell, and being of a light green colour.

2. *Hyson*, which has small curled leaves, of a green shade inclining to blue.

3. *Singlo* tea, thus termed from the place where it is cultivated.

The boheas comprehend,—

1. *Souchong*, which, on infusion, imparts a yellowish-green colour.

2. *Camho*, a fine tea, emitting a fragrant violet smell, and yielding a pale shade; it receives its name from the province where it is reared.

3. *Pekoe tea*, which is known by the small white flowers that are mixed with it.

4. *Congo*, which has a larger leaf than the preceding variety, and yields a deeper tint to water; and,

5. *Common bohea*, the leaves of which are of an uniform green colour. There are besides other kinds of tea, sold under the names of *gunpowder tea*, &c., which differ from the preceding only in the minuteness of their leaves, and being dried with additional care.

The following interesting results of experiments on tea by Brande have been published by him in his Journal:—

One hundred parts of Tea.	Soluble in Water.	Soluble in Alkohol	Precipit. with Jelly.	Inert Residue.
Per lb.				
Green Hyson ... 14*s.*	41	44	31	56
Ditto..... 12*s.*	34	43	29	57
Ditto..... 10*s.*	36	43	26	57
Ditto..... 8*s.*	36	42	25	58
Ditto..... 7*s.*	31	41	24	59
Black Souchong 12*s.*	35	36	28	64
Ditto..... 10*s.*	34	37	28	65
Ditto..... 8*s.*	37	35	28	63
Ditto..... 7*s.*	36	35	24	64
Ditto..... 6*s.*	35	31	23	65

Much has been said and written on the medicinal properties of tea. In its natural state it is a *narcotic* plant, on which account the Chinese refrain from its use till it has been divested of this property by keeping it at least for twelve months. If, however, good tea be drunk in moderate quantities, with sufficient milk and sugar, it invigorates the system and produces a temporary exhilaration; but when taken too copiously, it is apt to occasion weakness, tremor, palsies, and various other symptoms arising from narcotic plants, while it contributes to aggravate hysterical and hypochondriacal complaints. Tea has also been supposed to possess considerable diuretic and sudorific virtues, which, however, depend more on the *quantity* of warm water employed as a vehicle, than the quality of the tea itself. Lastly, as infusions of these leaves are the safest refreshment after undergoing great bodily fatigue or mental exertion, they afford an agreeable beverage to those who are exposed to cold weather; at the same time tending to support and promote perspiration, which is otherwise liable to be impeded.

Thea germanica. The male speedwell. See *Veronica officinalis*.

THEBA'ICUS. (*A Thebaide regione*; from the country about the ancient city of Thebes in Egypt, where it flourished.) Theban: applied as a trivial name to articles which come from Thebes; as *Papaver Thebaicum*, the Egyptian poppy; *Confectio Thebaica*, the opiate confection, because it is prepared from that poppy, &c.

Thebe'sii fora'mina. The orifices of veins in the cavities of the heart. See *Heart*.

THE'CA. (*a, æ.* f.; from τιθημι, to place.) A case, sheath, or box. 1. The canal of the vertebral column. See *Spine*.

2. The capsule or dry fructification adhering to the apex of a frondose stem.

Theca vertebralis. The vertebral canal. See *Vertebra*.

THE'NAR. (*ar, aris.* n.) Θεναρ. The palm of the hand or sole of the foot.

THEOBRO'MA. (*a, æ.* f.; from θεος, a god, and βρωμα, food: so called from the deliciousness of its fruit.) 1. The name of a genus of plants. Class, *Polyadelphia*; Order, *Decandria*.

2. The name of a compound used as a food.

Theobroma caca'o. The systematic name of the tree which affords cocoa and chocolate. Cocoa is the name given to the fruit, which is of the size of a kidney bean, and is enclosed in a thin shell. The shells are often ground and boiled for an article of diet; and the seed, ground down, is formed into cakes called chocolate. Both are highly nourishing when boiled

with milk; to which eggs are sometimes added. When the stomach can bear this food, it is admirably calculated for the sick, and especially the tabid. To those in health it is a luxury.

THEODO'RICUM. (From θεοι, the gods, and δωρον, a gift.) A pompous and obsolete name of some antidotes.

THERAPEI'A. (*a, æ.* f.; from θεραπευω, to heal.) *Therapia.* See *Therapeutics.*

THERAPEUTICS. (*Therapeuticus;* from θεραπευω, to cure.) *Therapia. Methodus medendi.* Therapia, or therapeutice, is that division of pathology, or science, which considers the application of the remedies and means employed with a view to prevent and to cure diseases.

The cure of a disease depends on the removal of its proximate cause. This is effected either by the powers of nature alone, or conjointly with the assistance of art: so that the cure of a disease may said to be either natural or artificial.

The powers of nature, denominated the *vires medicatrices naturæ*, are inherent in the solids and fluids, and it is by their exertion that a stop is occasionally put to the progress of a disease, or that it is cured without the administration of medicine; and it is also by their co-operation that the medical art is so beneficial.

We are in ignorance, most probably, of the greater part of the healing powers of nature. Many diseases are cured by attention merely to the air we breathe, the food we eat, the state of the mind, the rest and exercise of the body; and many are naturally removed as life advances, and by alteration of habits, change of temperature, clothing, and climate, without the aid of medicines.

The assistance with which the medical art is enabled to attempt, and to effect, the cure of diseases is arranged under three heads; —

1. The *hygienal;* which embraces the diet and regimen.

2. The *medicinal;* which regards the administration of medicines, both external and internal.

3. The *surgical;* or the assistance of manual, fascial, and instrumental operations.

As some diseases admit of being prevented, some of being partially, and others of being wholly removed or cured, there is a natural distinction into, —

1. The *prophylactic.*

2. The *palliative.*

3. The *radical* cure.

The *methodus medendi*, or method of cure, is the plan which regulates all the circumstances, rules, regulations, &c. for the welfare of the diseased. It therefore not only embraces the knowledge of the remedy to be exhibited, but also the consideration of the state of the body, the knowledge of the nature of the disease, and the operation of the remedies; for when disease is going on the functions are not performed in a healthy manner, and one or more of the moving powers take on a particular change of action, in which change the disease consists. The removal, therefore, of the disease requires the return from morbid to healty action. This must, of course, be effected by bringing about certain alterations in the moving fibres. This being admitted, it follows that the application of the remedy must be so managed as to produce such alterations as are known by experience to diminish or destroy the diseased action; so that, to attempt the cure of a disease, we must first be acquainted with the alterations we wish to produce, and we must also know what means are capable of effecting the change we desire. Pathologists have arranged the consideration of these several circumstances under four heads: namely, the indicant, the indication, the thing indicated, and the contra-indication; and unless these are duly considered before we attempt either to palliate or cure a disease, the attempt will most probably be unsuccessful; at any rate it will be empirical.

1. The *indicant;* or diseased action from which the symptoms arise, and every thing that should not exist, is an indicant.

2. The *indication;* or that which is calculated to remove the indicant.

3. The *thing indicated;* or the remedy.

4. The *contra-indication;* or that about the patient or the disease which prevents the use or application of the usual remedies.

These several divisions are well illustrated in hysteria: the hysterical action of the nerves and muscles are the indicant or disease, the symptoms of which are the unnatural and peculiar movements of the muscles affected; the indication is to allay those unnatural and inordinate contractions; the thing indicated is opium, or æther, or camphire, or all in combination. It may happen that the smallest quantity of opium or æther would produce much after-inquietude; that peculiarity is a contra-indication to its use, and some other must be preferred.

THERI'ACA. (*a, æ.* f.; from θηρ, a venomous or ferocious animal.) 1. A name given to several confections, especially of an alexipharmic kind.

2. Treacle, or molasses. See *Saccharum officinale.*

Theriaca andromachi. See *Mithridatium.*

THERIACA CŒLESTIS. The tinctura opii.

Theriaca Damocratis. See *Mithridatium.*

Theriaca Edinensis. See *Confectio opii.*

THERIACA GERMANORUM. A rob of juniper berries.

THERIACA LONDINENSIS. A cataplasm of cummin seed, bay-berries, germander, snake-root, cloves, and honey.

Theriaca rusticorum. See *Allium.*

Theriaca Veneta. See *Mithridatium.*

THERIO'MA. (From θηριοω, to rage like a wild beast.) A malignant ulcer.

THE'RMA. (*a, æ.* f.; from θερμη, heat.) A warm bath or spring. See *Mineral waters*, and *Bath.*

THERMO'METER. (*Thermometrum, i.* n.; from θερμη, heat, and μετρον, a measure.) An instrument for measuring the degrees of heat. A thermometer is a hollow tube of glass, hermetically sealed, and blown at one end in the shape of a hollow globe. The bulb and part of the tube are filled with mercury, which is the only fluid which expands equally. When

we immerse the bulb of the thermometer in a hot body, the mercury expands, and of course *rises* in the tube; but when we plunge it into a cold body, the mercury contracts, and of course *falls* in the tube.

The rising of the mercury indicates, therefore, an increase of heat; its falling, a diminution of it; and the quantity which it rises or falls, denotes the proportion of increase or diminution. To facilitate observation, the tube is divided into a number of equal parts, called degrees.

Further, if we plunge a thermometer ever so often into melting snow or ice, it will always stand at the same point. Hence we learn that *snow* or *ice* always begins to melt at the same temperature.

If we plunge a thermometer repeatedly into water kept boiling, we find that the mercury rises up to a certain point. This is, therefore, the point at which water always boils, provided the pressure of the atmosphere be the same.

There are four different thermometers used at present in Europe, differing from each other in the number of degrees into which the space between the freezing and boiling points is divided. These are Fahrenheit's, Réaumur's, Celsius's, and Delisle's.

The thermometer uniformly used in Britain is Fahrenheit's: in this the freezing point is fixed at 32° — the boiling point, at 212° above 0° — or the part at which both the ascending and descending series of numbers commence.

In the thermometer which was first constructed by Réaumur, the scale is divided into a smaller number of degrees upon the same length, and contains not more than 80° between the freezing and the boiling points. The freezing point is fixed in this thermometer precisely at 0°, the term between the ascending and the descending series of numbers. Again, 100 is the number of the degrees between the freezing and the boiling points in the scale of Celsius, which has been introduced into France, under the name of the Centigrade thermometer; and the freezing point is in this, as in the thermometer of Réamur, fixed at 0°. One degree on the scale of Fahrenheit appears, from this account, to be equal to 4-9ths of a degree on that of Réamur, and to 5-9ths of a degree on that of Celsius.

The space in Delisle's thermometer between the freezing and boiling points is divided into 150°, but the graduation begins at the boiling point, and increases towards the freezing point. The boiling point is marked 0, the freezing point 150. Hence 180 F. = 150 D., or 6 F. = 5 D. To reduce the degrees of Delisle's thermometer *under* the boiling point to those of Fahrenheit, we have F. = 212 − 6-5 D.; to reduce those *above* the boiling point, F. = 212 + 6-5 D. Upon the knowledge of this proportion it is easy for the student to reduce the degrees of any of these thermometers into the degrees of any other of them.

Thieves'-vinegar. (So called after the four thieves, who by its use were said to have been preserved from the plague of Marseilles.) See *Acetum prophylacticum*.

Thigh. See *Femur*.

Thigh-bone. See *Femoris os*.

THIRST. *Sitis.* I. In *Physiology*, the sensation by which we experience a desire to drink. It is variable according to individuals, and it is rarely uniform in the same person. Generally speaking, it consists of a feeling of dryness, of heat and constriction, which reigns in the back part of the mouth, the pharynx, œsophagus, and sometimes the stomach. Though thirst continue but for a short time, these parts swell and become red, the mucous secretion ceases almost entirely; that of the follicles changes, becomes thick and tenacious; the flowing of the saliva diminishes, and its viscosity is sensibly augmented. These phenomena are accompanied by a vague inquietude, by a general heat; the eyes become red, the mind is troubled, the motion of the blood is accelerated, the respiration becomes laborious, the mouth is frequently opened wide, in order to bring the external air into contact with the irritated parts, and thus to produce a momentary ease. For the most part the inclination to drink is developed, when by some cause, for example, heat and dryness of the atmosphere, the body has lost a great deal of fluid; but it appears under a great many different circumstances, such as having spoken long, having eaten certain sorts of food, or swallowed a substance which remains in the œsophagus, &c. The vicious habit of frequently drinking, and the desire of tasting some liquids, such as brandy, wine, &c., cause the development of a feeling which has the greatest analogy with thirst.

There are people who have never felt thirst, who drink from a sort of sympathy, but who could live a long time without thinking of it, or without suffering from the want of it; there are other persons in whom thirst is often renewed, and becomes so strong as to make them drink from forty to sixty pints of liquid in twenty-four hours: in this respect great individual differences are remarked. Thirst, then, is an internal sensation, an instinctive feeling: it belongs essentially to the organisation, and admits of no explanation.

II. In *Pathology*, this is frequently morbid, and in this state it is either in excess or deficient.

1. *Immoderate thirst* is accompanied by a sense of dryness in the mouth and throat, and a constant desire to drink. This, though a common symptom in most febrile diseases, occasionally exists as an idiopathic disease. Four hundred pints of wine and water are said to have been drank daily; and the most intolerable torture is often felt from thirst when the person is reluctantly compelled to a confession of guilt. Excessive thirst, when a disease, is best removed by mercurial purges.

2. *Thirstlessness.* — This is an unusual state. Sauvages, in his Nosology, mentions two instances of it; and the writer of this article knows at this time a gentleman who would never drink from a desire so to do. Absence of thirst is sometimes symptomatic of inflammation of the brain.

Thistle. See *Carduus*.

Thistle, carline. See *Carlina acaulis*.

Thistle, creeping. See *Serratula*.

Thistle, holy. See *Centaurea benedicta.*
Thistle, ladies'. See *Carduus marianus.*
Thistle, milk. See *Carduus.*
Thistle, pine. See *Carlina gummifera.*
Thistle, way. See *Serratula.*

THLA'SPI. (*pi.* n. indeclinable; from θλαω, to break: because its seed appears as if it were broken or bruised.) 1. The name of a genus of plants in the Linnæan system. Class, *Tetradynamia;* Order, *Siliculosa.*

2. The pharmacopœial name of the herb penny-cress. Two species of thlaspi are directed in some Pharmacopœias for medicinal uses, — the *Thlaspi arvense,* of Linnæus, or treacle mustard, and *Thlaspi campestre,* of Linnæus, or mithridate mustard. The seeds of both have an acrid biting taste, approaching to that of common mustard, with which they agree nearly in their pharmaceutic qualities. They have also an unpleasant flavour, somewhat of the garlic or onion kind.

THLASPI ARVENSE. The treacle mustard. See *Thlaspi.*

THLASPI CAMPESTRE. The mithridate mustard. See *Thlaspi.*

THORA'CIC. (*Thoracicus;* from *thorax,* the chest.) Belonging to the thorax or chest.

Thoracic aorta. See *Aorta, thoracic.*

THORACIC DUCT. *Ductus thoracicus. Ductus Pecquettii.* The trunk of the absorbents. It is of a serpentine form, and about the diameter of a crow-quill, and lies upon the dorsal vertebræ, between the aorta and vena azygos, extending from the posterior opening of the diaphragm to the angle formed by the union of the left subclavian and jugular veins, into which it opens and evacuates its contents. In this course the thoracic duct receives the absorbent vessels from almost every part of the body. See *Absorbent.*

THORACICI. An order of fishes in the Linnæan system, which have the ventral fins under the pectoral.

THO'RAX. (*ax, acis.* f.; from θορεω, to leap: because in it the heart leaps.) The chest, or that part of the body situated between the neck and the abdomen. The external parts of the thorax are, the common integuments, the breasts, various muscles, and the bones of the thorax. (See *Respiration.*) The parts within the cavity of the thorax are, the pleura and its productions, the lungs, heart, thymus gland, œsophagus, thoracic duct, arch of the aorta, part of the vena cava, the vena azygos, the eighth pair of nerves, and part of the great intercostal nerve. The chest, like the abdomen, is divided by imaginary lines into certain regions. These are, a right and left *humeral,* a right and left *subclavian,* a right and left *mammary,* a right and left *axillary,* a right and left *subaxillary,* a right and left *scapulary,* a right and left *intrascapulary,* and a right and left *subscapulary.*

THORI'NA. (*a, æ.* f.) An earth discovered in 1816 by Berzelius. He found it in small quantities in the gadolonite of Korarvet, and two new minerals, which he calls the deutofluate of cerium, and the double fluate of cerium and yttria. It resembles zirconia.

To obtain it from those minerals that contain protoxide of cerium and yttria, we must first separate the oxide of iron by succinate of ammonia. The new earth, indeed, may, when alone, be precipitated uy the succinates; but in the analytical experiments in which he has obtained it, it precipitated in so small a quantity along with iron, that he could not separate it from that oxide. The deutoxide of cerium is then precipitated by the sulphate of potash; after which the yttria and the new earth are precipitated together by caustic ammonia. Dissolve them in muriatic acid. Evaporate the solution to dryness, and pour boiling water on the residue, which will dissolve the greatest part of the yttria; but the undissolved residue still contains a portion of it. Dissolve it in muriatic or nitric acid, and evaporate it till it becomes as exactly neutral as possible. Then pour water upon it, and boil it for an instant. The new earth is precipitated, and the liquid contains disengaged acid. By saturating this liquid, and boiling it a second time, we obtain a new precipitate of the new earth.

This earth, when separated by the filter, has the appearance of a gelatinous, semi-transparent mass. When washed and dried, it becomes white, absorbs carbonic acid, and dissolves with effervescence in acids. Though calcined, it retains its white colour; and when the heat to which it has been exposed is only moderate, it dissolves readily in muriatic acid; but if the heat has been violent, it will not dissolve till it be digested in strong muriatic acid. This solution has a yellowish colour; but it becomes colourless when diluted with water, as is the case with glucina, yttria, and alumina. If it be mixed with yttria, it dissolves more readily after having been exposed to heat. The neutral solutions of this earth have a purely astringent taste, which is neither sweet, nor saline, nor bitter, nor metallic. In this property it differs from all other species of earths, except zirconia.

When dissolved in sulphuric acid with a slight excess of acid, and subjected to evaporation, it yields transparent crystals, which are not altered by exposure to the air, and which have a strong styptic taste.

This earth dissolves very easily in nitric acid; but after being heated to redness, it does not dissolve in it except by long boiling. The solution does not crystallise, but forms a mucilaginous mass, which becomes more liquid by exposure to the air, and which, when evaporated by a moderate heat, leaves a white opake mass, similar to enamel, in a great measure insoluble in water.

It dissolves in muriatic acid, in the same manner as in nitric acid. The solution does not crystallise. When evaporated by a moderate heat, it is converted into a syrupy mass, which does not deliquesce in the air, but dries, becomes white like enamel, and afterwards dissolves only in very small quantity in water, leaving a subsalt undissolved; so that by spontaneous evaporation it lets the portion of muriatic acid escape to which it owed its solubility.

This earth combines with avidity with carbonic acid. The precipitates produced by caus-

tic ammonia, or by boiling the neutral solutions of the earth in acids, absorb carbonic acid from the air in drying. The alkaline carbonates precipitate the earth combined with the whole of their carbonic acid.

The ferruginous prussiate of potash, poured into a solution of this earth, throws down a white precipitate, which is completely redissolved by muriatic acid.

Caustic potash and ammonia have no action on this earth newly precipitated, not even at a boiling temperature.

The solution of carbonate of potash, or carbonate of ammonia, dissolves a small quantity of it, which precipitates again when the liquid is supersaturated with an acid, and then neutralised by caustic ammonia; but this earth is much less soluble in the alkaline carbonates than any of the earths formerly known that dissolve in them.

Thorina differs from the other earths by the following properties: — From alumina, by its insolubility in hydrate of potash; from glucina, by the same property; from yttria, by its purely astringent taste, without any sweetness, and by the property which its solutions possess of being precipitated by boiling when they do not contain too great an excess of acid. It differs from zirconia by the following properties: — 1. After being heated to redness, it is still capable of being dissolved in acids. 2. Sulphate of potash does not precipitate it from its solutions, while it precipitates zirconia from solutions containing even a considerable excess of acid. 3. It is precipitated by oxalate of ammonia, which is not the case with zirconia. 4. Sulphate of thorina crystallises readily, while sulphate of zirconia, supposing it free from alkali, forms, when dried, a gelatinous transparent mass, without any trace of crystallisation.

THORI'NUM. The supposed metallic base of thorina.

Thorn. See *Spina.*

Thorn, Egyptian. See *Acacia vera.*

Thorn-apple. See *Datura.*

Thornback. See *Raia clavata.*

Thread. See *Filamentum.*

Thread-shaped. See *Filiformis.*

Three-edged. See *Trigonus.*

Three-fibred. See *Trinervus.*

Three-lobed. See *Trilobatus.*

THROMBO'SIS. (*is, is.* f.; from θρομβος.) The same as thrombus.

THRO'MBUS. (*us, i.* m.; from θρομβοω, to clot.) A small tumour which sometimes arises after bleeding, owing to the blood escaping from the vein into the cellular structure surrounding it.

Thrush. See *Aphthæ.*

THRY'PTICUS. (From θρυπτω, to break.) Synonymous with *lithontriptic.*

THU'RIS CO'RTEX. A name of the cascarilla bark. See *Croton.*

THUS. (*us, uris.* n.; from θυω, to sacrifice: so called from its great use in sacrifices.) Frankincense. See *Juniperus lycia.*

Thus judæorum. See *Thymiama.*

Thus masculum. See *Juniperus lycia.*

THUY'A. (*a, æ.* f.; from θυον, an aroma: so named from its fragrant smell.) *Thuja.* The name of a genus of plants. Class, *Monœcia;* Order, *Monadelphia.*

THUYA OCCIDENTALIS. The systematic name of the tree of life. *Arbor vitæ. Thuya — strobilis lævibus; squamis obtusis,* of Linnæus. The leaves and wood were formerly in high estimation as resolvents, sudorifics, and expectorants, and were given in phthisical affections, intermittent fevers, and dropsies.

THYLA'CION. (Θυλακιον. Θυλακος, a bag.) A word used by ancient writers to express the bag formed by the membranes of the fœtus at the orifice of the pudenda, before the birth.

THY'MBRA. (*a, æ.* f.; a name borrowed from Dioscorides, whose real θυμβρα, however, is a species of *Satureia.*) 1. The name of a genus of plants. Class, *Didynamia;* Order, *Gymnospermia.*

2. See *Satureia hortensis.*

THYMBRA HISPANICA. The name given by Tournefort to the common herb mastich. See *Thymus mastichina.*

Thyme. See *Thymus.*

Thyme, lemon. See *Thymus serpyllum.*

Thyme, mother of. See *Thymus serpyllum.*

THYMELŒ'A. (From θυμος, thyme, and ελαια, an olive; the first alluding to the leaf, and the latter to the shape and oiliness of the fruit.) See *Daphne gnidium.*

THYMIA'MA. (*a, atis.* n.; from θυμα, an odour: so called from its odoriferous smell.) Musk-wood. *Thus Judæorum.* A bark in small brownish-grey pieces, intermixed with bits of leaves, seeming as if the bark and leaves had been bruised and pressed together, brought from Syria, Cilicia, &c. and supposed to be the produce of the liquid storax tree. This bark has an agreeable balsamic smell, approaching to that of liquid storax, and a subacrid bitterish taste, accompanied with some slight astringency.

THYMIO'SIS. (From θυμος, an excrescence about the pudenda.) The name given by Swediaur to the yaws.

THYMI'TES. Wine impregnated with thyme.

THY'MIUM. (From θυμος, thyme; because it is of the colour of thyme.) A small wart upon the skin.

THYMOXA'LME. (From θυμος, thyme, οξυς, acid, and ἁλς, salt.) A medicine composed chiefly of thyme, vinegar, and salt.

THY'MUS. (*us, i.* m. Απο του θυμου, because it was used in faintings; or from θυμα, an odour, because of its fragrant smell.) 1. The name of a genus of plants in the Linnæan system. Class, *Didynamia;* Order, *Gymnospermia.* Thyme.

2. The pharmacopœial name of the common thyme. See *Thymus vulgaris.*

3. A small indolent fleshy tubercle like a wart, arising about the anus, or the pudenda, resembling the flowers of thyme, from which it takes its name.

THYMUS CITRA'TUS. Lemon thyme. See *Thymus serpyllum.*

Thymus creticus. See *Satureia capitata.*

THYMUS GLAND. Θυμος. A gland of considerable size in the fœtus, situated in the anterior duplicature or space of the mediastinum, under

the superior part of the sternum. An excretory duct has not yet been detected, but lymphatic vessels have been seen going from it to the thoracic duct. Its use is unknown.

Thymus mastichina. The systematic name of the common herb mastich. *Marum vulgare. Sampsuchus. Clinopodium mastichina Gallorum. Thymbra hispanica. Jaca indica.* A low shrubby plant, a native of Spain, which is employed as an errhine. It has a strong agreeable smell, like mastich. Its virtues are similar to those of the *Marum syriacum*, but less powerful.

Thymus serpyllum. The systematic name of the *Serpyllum. Serpillum. Gilarum. Serpyllum vulgare minus.* Wild thyme or mother of thyme. *Thymus—floribus capitatis, caulibus repentibus, foliis planis obtusis basi ciliatis*, of Linnæus. This plant has the same sensible qualities as those of the garden thyme, but has a milder and rather more grateful flavour. Lemon thyme, the *Serpyllum citratum*, is merely a variety of this plant. It is very pungent, and has a particularly grateful odour, approaching to that of lemons.

Thymus vulgaris. The systematic name of the common thyme. This herb, the *Thymus—erectus foliis revolutis ovatis, floribus verticillato spicatis*, of Linnæus, has an agreeable aromatic smell, and a warm pungent taste. Its virtues are said to be resolvent, emmenagogue, tonic, and stomachic; yet there is no disease mentioned in which its use is particularly recommended by any writer on the materia medica.

Thy'ro-arytænoide'us. A muscle situated about the glottis, which pulls the arytenoid cartilage forwards nearer to the middle of the thyroid, and consequently shortens and relaxes the ligament of the larynx.

Thy'ro-hyoide'us. A muscle situated between the os hyoides and trunk, which pulls the os hyoides downwards, and the thyroid cartilage upwards.

Thyro-pharyngeus. See *Constrictor pharyngis inferior.*

Thyro-pharyngo-staphilinus. See *Palato-pharyngeus.*

Thy'ro-phra'xia. (From θυρεος, a shield, and φραξις, obstruction.) An ill-devised name of goitre. See *Bronchocele.*

Thyro-staphili'nus. See *Palato-pharyngeus.*

THY'ROID. (*Thyroides;* from θυρεος, a shield, and ειδος, resemblance: from its supposed resemblance to a shield.) Resembling a shield.

Thyroid cartilage. *Cartilago thyroides. Cartilago scutiformis.* Scutiform cartilage. The cartilage which is placed perpendicular to the cricoid cartilages of the larynx, constituting the anterior, superior, and largest part of the larynx. It is harder and more prominent in men than in women, and forms what is called the *pomum Adami* in man.

Thyroid gland. *Glandula thyroides.* A large glandiform body, situated upon the cricoid cartilage, trachea, and horns of the thyroid cartilage. The labours of anatomists have hitherto failed to discover any thing satisfactory, with regard to it. No excretory duct has been detected, and the use of the organ not yet known.

THYR'SUS. (*us, i.* m.; a young sprout.) In *Botany*, a dense and close panicle, bunch, or cluster, more or less of an ovate form. It is *oblong* in *Tussilago hybrida*, and *ovate* in *Tussilago petasites.*

TI'BIA. (*a, æ.* f.; the hautboy: qu. *tubia*, from *tuba*, a tube: so called from its pipe-like shape.) *Focile majus. Arundo major. Fosilus. Canna major. Canna-domestica cruris.* The largest bone of the leg. It is of a long, thick, and triangular shape, and is situated on the internal part of the leg. Its upper extremity is large, and flattened at its summit, where we observe two articulating surfaces, a little concave, and separated from each other by an intermediate irregular protuberance. Of these two cavities, the internal one is deepest, and of an oblong shape, while the external one is rounded, and more superficial. Each of these, in the recent subject, is covered by a cartilage, which extends to the intermediate protuberance, where it terminates. These two little cavities receive the condyles of the os femoris, and the eminence between them is admitted into the cavity which is seen between the two condyles of that bone; so that this articulation affords a specimen of the complete ginglymus. Behind the intermediate protuberance, or tubercle, is a pretty deep depression, which serves for the attachment of a ligament, and likewise to separate the two cavities from each other. Under the edge of the external cavity is a circular flat surface, covered with cartilage, which serves for the articulation of the fibula; and at the fore-part of the bone is a considerable tuberosity, of an inch and a half in length, to which the strong ligament of the rotula is fixed.

The body of the tibia is smaller than its extremities, and, being of a triangular shape, affords three surfaces. Of these, the external one is broad, and slightly hollowed by muscles above and below; the internal surface is broad and flat; and the posterior surface is narrower than the other two, and nearly cylindrical. This last has a slight ridge running obliquely across it, from the outer side of the upper end of the bone to about one third of its length downwards. A little below this we observe a passage for the medullary vessels, which is pretty considerable, and slants obliquely downwards. Of the three angles which separate these surfaces, the anterior one, from its sharpness, is called the *spine* or *shin.* This ridge is not straight, but describes a figure like an italic *f*, turning first inwards, then outwards, and lastly, inwards again. The external angle is more rounded, and serves for the attachment of the interosseous ligament; and the internal one is more rounded still by the pressure of muscles.

The tibia enlarges again a little at its lower extremity, and terminates in a pretty deep cavity, by which it is articulated with the uppermost bone of the foot. This cavity, in the recent subject, is lined with cartilage. Its internal side is formed into a considerable process, called *malleolus internus*, which, in its situation, resembles the styloid process of the radius. This

process is broad, and of considerable thickness. At its back part we find a groove, lined with a thin layer of cartilage, in which slide the tendons of the flexor digitorum longus, and of the tibialus posticus; and a little behind this is a smaller groove, for the tendon of the flexor longus pollicis. On the side opposite to the malleolus internus, the cavity is interrupted, and immediately above it is a rough triangular depression, which is furnished with cartilage, and receives the lower end of the fibula.

The whole of this lower extremity of the bone seems to be turned somewhat outwards, so that the malleolus internus is situated more forwards than the inner border of the upper extremity of the bone.

In the fœtus, both ends of the tibia are cartilaginous, and become afterwards epiphyses.

TI'BIAL. (*Tibialis;* from *tibia*, the bone of the leg so called.) Belonging to the tibia.

Tibial arteries. *Arteriæ tibiales.* The two principal branches of the popliteal artery: the one proceeds forwards, and is called the *anterior tibial;* the other backwards, and is called the *posterior tibial*, of which the external tibial, the fibular, the external and internal plantar, and the plantar arch, are branches.

Tibialis. See *Tibial.*

Tibia'lis anti'cus. A flexor muscle of the foot, situated on the leg, which bends the foot by drawing it upwards, and at the same time turns the toes inwards.

Tibialis gracilis. See *Plantaris.*

Tibia'lis posti'cus. A flexor muscle of the foot, situated on the leg, which extends the foot, and turns the toes inwards.

TIC DOULOUREUX. A French term signifying a painful spasm. It is applied to facial neuralgia. See *Neuralgia.*

Tick. See *Acarus.*

Tick, domestic. See *Acarus domesticus.*

Tick, harvest. See *Acarus.*

Tick, itch. See *Acarus scabiei.*

Tifacoum. Quicksilver. — *Ruland.*

Tiglia grana. See *Croton tiglium.*

TILBURY. A small town in Essex, celebrated for its fort. A mineral water is found at West Tilbury. It is aperient and chalybeate, but is now seldom used.

TI'LIA. (*a*, *æ.* f. Πτελεα, *ulmus*, the elm-tree.) 1. A genus of plants in the Linnæan system. Class, *Polyandria;* Order, *Monogynia.*

2. The pharmacopœial name of the lime, or linden-tree. See *Tilia europæa.*

Tilia europæa. The systematic name of the lime-tree. The flowers of this tree are supposed to possess anodyne and antispasmodic virtues. They have a moderately strong smell, in which their virtue seems to consist, and abound with a strong mucilage. They are in high esteem in France. See *Tilia.*

Tilli grana. See *Croton tiglium.*

TI'LMUS. (From τιλλω, to pluck.) Floccilation, or picking of bed-clothes. See *Carphologia.*

Timac. The name of a root imported from the East Indies, which is said to possess diuretic virtues, and therefore exhibited in dropsies. The plant is thought to be the *Cissampelos caapeba.* See *Cissampelos caapeba.*

TIN. *Stannum. Jupiter* of the alchemists. It has been much doubted whether this metal is found native. The *native oxide of tin*, or *tin stone*, occurs both massive and crystallised. The *wood tin ore* is a variety of the native oxide, termed so from its fibrous texture. This variety has hitherto been found only in Cornwall. Tin is also found mineralised by sulphur, associated always with a portion of copper, and often of iron. This ore is called *tin pyrites.* Its colour is yellowish grey. It has a metallic lustre, and a fibrous or lamellated texture: sometimes it exhibits prismatic colours. Tin is comparatively a rare metal, as it is not found in great quantity any where but in Cornwall or Devonshire; though it is likewise met with in the mines of Bohemia, Saxony, the island of Banca, the peninsula of Malacca, and in the East Indies.

Tin is a metal of a yellowish white colour, considerably harder than lead, scarcely at all sonorous, very malleable, though not very tenacious. Under the hammer it is extended into leaves, called tinfoil, which are about one thousandth of an inch thick, and might easily be beaten to less than half that thickness, if the purposes of trade required it. Its specific gravity is 7·29. It melts at about the 442° of Fahrenheit's thermometer; and by a continuance of the heat it is slowly converted into a white powder by oxidation. Like lead, it is brittle when heated almost to fusion, and exhibits a grained or fibrous texture, if broken by the blow of a hammer. It may also be granulated by agitation at the time of its transition from the fluid to the solid state. The oxide of tin resists fusion more strongly than that of any other metal; from which property it is useful to form an opake white enamel when mixed with pure glass in fusion. The brightness of its surface, when scraped, soon goes off by exposure to the air; but it is not subject to rust or corrosion by exposure to the weather.

To obtain pure tin, the metal should be boiled in nitric acid, and the oxide which falls down reduced by heat, in contact with charcoal, in a covered crucible.

There are three definite combinations of tin and oxygen: —

1. The *protoxide*, which is grey.

2. The *sesquioxide*, distinguishable from the protoxide by its solubility in ammonia, and from the peroxide by its giving a purple precipitate with perchloride of gold.

3. The *peroxide*, which is white.

There are two *chlorides* and three *sulphurets* of tin.

The sulphuric, nitric, muriatic acids, and aqua regia, consisting of two parts nitric and one muriatic acid, all act on this metal; the acetic scarcely at all. The operation of other acids upon this metal has been little inquired into.

If small pieces of phosphorus be thrown on tin in fusion, it will take up from fifteen to twenty per cent., and form a silvery white phosphuret.

Tin unites with bismuth by fusion, and becomes harder and more brittle in proportion to the quantity of that metal added. With nickel

it forms a white brilliant mass. It cannot easily be united in the direct way with arsenic, on account of the volatility of this metal. Cobalt unites with tin by fusion, and forms a grained mixture of a colour slightly inclining to violet. Zinc unites very well with tin, increasing its hardness, and diminishing its ductility, in proportion as the quantity of zinc is greater. This is one of the principal additions used in making pewter, which consists for the most part of tin.

Antimony forms a very brittle hard mixture with tin. Tungsten, fused with twice its weight of tin, affords a brown spongy mass, which is somewhat ductile.

The uses of tin are very numerous. It is seldom used in the cure of diseases: the filings, however, have been used as a vermifuge.

TI'NCA. (*a, æ.* f.; *quasi tincta:* so called because it appears as if it were dyed.) The tench. See *Tench.*

Tincæ os. (So called from its resemblance to a tench's mouth.) The mouth of the uterus.

TINCAL. Crude borax, as it is imported from the East Indies in yellow greasy crystals. See *Sodæ biboras.*

Tinckling, metallic. See *Metallic tinckling,* in the *Supplement.*

TINCTO'RIUS. (From *tingo,* to dye.) Appertaining to the art of the dyer. Applied as a trivial name to plants, as *genista tinctoria.*

TINCTU'RA. (*a, æ.* f.; from *tingo,* to dye.) A tincture. A solution of any substance in spirit of wine. Rectified spirit of wine is the direct menstruum of the resins, and essential oils of vegetables, and totally extracts these active principles from several vegetable matters, which yield them to water not at all, or only in part. It dissolves likewise the sweet saccharine matter of vegetables, and generally those parts of animal bodies in which their peculiar smell and taste reside.

The virtues of many vegetables are extracted almost equally by water and rectified spirit; but in the watery and spirituous tinctures of them there is this difference, that the active parts in the watery extractions are blended with a large proportion of inert gummy matter, on which their solubility in this menstruum in a great measure depends, while rectified spirit extracts them almost pure from gum. Hence, when the spirituous tinctures are mixed with watery liquors, a part of what the spirit had taken up from the subject generally separates and subsides, on account of its having been freed from that matter, which, being blended with it in the original vegetable, made it soluble in water. This, however, is not universal, for the active parts of some vegetables, when extracted by rectified spirits, are not precipitated by water, being almost soluble in both menstrua.

Rectified spirit may be tinged by vegetables of all colours, except blue. The leaves of plants, in general, will give out little of their natural colour to watery liquors, but communicate to spirit the whole of their green tincture, which for the most part proves elegant, though not very durable.

Fixed alkaline salts deepen the colour of spirituous tinctures; and hence they have been supposed to promote the dissolving power of the menstruum, though this does not appear from experience. In the trials which have been made, no more was found to be taken up in the deep-coloured tinctures than in the paler ones, and often not so much. If the alkali be added after the extraction of the tincture, it will heighten the colour as much as when mixed with the ingredients at first. The addition of these salts in making tinctures is not only needless but prejudicial, as they generally injure the flavour of aromatics, and superadd a quality sometimes contrary to the intention of the medicine.

Volatile alkaline salts, in many cases, promote the action of the spirits. Acids generally weaken it; unless when the acid has been previously combined with the vinous spirit into a compound of new qualities, called dulcified spirit.

Tinctura aloes. Tincture of aloes. Take of aloes powdered, an ounce; extract of liquorice, three ounces; distilled water, a pint and a half; rectified spirit, half a pint: macerate for fourteen days, and strain. This preparation possesses stomachic and purgative qualities, but should never be given where there is a tendency to hæmorrhoids. In chlorotic cases, and amenorrhœa, it is preferred to other purges. The dose is from half to a whole fluid ounce.

Tinctura aloes composita. Compound tincture of aloes; formerly callad *elixir aloes,* and *elixir proprietatis.* Take of aloes powdered, four ounces; saffron, two ounces; tincture of myrrh, two pints: macerate for fourteen days, and strain. A more stimulating compound than the former. It is a useful application to old indolent ulcers. The dose is from half a fluid drachm to two.

Tinctura aloes vitriolata. With the bitter infusion, a drachm or two of this elegant tincture is extremely serviceable against gouty and rheumatic affections of the stomach and bowels, and also in the weaknesses of those organs which frequently attend old age.

Tinctura ammoniæ composita. Take of mastich, two drachms; rectified spirit, nine fluid drachms; oil of lavender, fourteen minims; oil of amber, four minims; strong solution of ammonia, a pint: macerate the mastich in the spirit, that it may be dissolved, and pour off the defecated tincture, then add the other ingredients and shake them altogether. This preparation of the present London Pharmacopœia corresponds nearly with the *spiritus ammoniæ succinatus* of the former one.

Tinctura assafœtidæ. Tincture of assafœtida; formerly known by the name of *tinctura fœtida.* Take of assafœtida, five ounces; rectified spirit, two pints: macerate for fourteen days, and strain. Diluted with water, this is mostly given in all kinds of fits by the vulgar. It is a useful preparation as an antispasmodic, especially in conjunction with sulphate of zinc. The dose is from half a fluid drachm to two drachms.

Tinctura aurantii. Tincture of orange-peel; formerly *tinctura corticis aurantii.* Take

of fresh orange-peel, three ounces and a half; proof spirit, two pints: macerate for fourteen days, and strain. A mild and pleasant stomachic bitter.

Tinctura balsami tolutani. Tincture of balsam of tolu. Take of balsam of tolu, an ounce and a half; rectified spirit, a pound: digest until the balsam be dissolved, and strain. This is used chiefly for making the syrup of tolu.

Tinctura benzoini composita. *Tinctura benzoes composita, Balsamum traumaticum.* Compound tincture of benzoin. Friars' balsam. Take of benzoin, three ounces and a half; storax balsam, strained, two ounces and a half; balsam of tolu, ten drachms; aloes, five drachms, rectified spirit, two pints: macerate for fourteen days, and strain. This tincture is more generally applied externally to ulcers and wounds than given internally, though possessing expectorant, antispasmodic, and stimulating powers. Against coughs, spasmodic affections of the stomach and bowels, and diarrhœa, produced by ulcerations of those parts, it is a very excellent medicine. The dose, when given internally, is from half a fluid drachm to two.

Tinctura calumbæ. *Tinctura columbæ.* Tincture of calumba. Take of calumba root, sliced, three ounces, proof spirit, two pints: macerate for fourteen days, and strain. This tincture contains the active part of the root, and is generally given with the infusion of it, as a stomachic and astringent. The dose is from one to three drachms.

Tinctura camphoræ. This is the *spiritus camphoræ* of the former London Pharmacopœia.

Tinctura camphoræ composita. Compound tincture of camphire; formerly called *tinctura opii camphorata*, and *elixir paregoricum*. Take of camphire, two scruples and a half; opium, dried and powdered, benzoic acid, of each seventy-two grains; oil of anise, a fluid drachm; proof spirit, two pints: macerate for fourteen days, and strain. This is a useful diaphoretic anodyne, and is much used in catarrhal affections. The dose is from a drachm to half an ounce.

Tinctura cantharidis. Tincture of blistering fly: formerly called *tinctura lyttæ*, and *tinctura cantharidum*. Take of blistering flies, bruised, four drachms; proof spirit, two pints: macerate for fourteen days, and strain. This is a very acrid, diuretic, and stimulating preparation, which should always be administered with great caution. For its properties, see *Cantharis vesicatories.*

Tinctura capsici. Tincture of capsicum. Take of capsicum, bruised, ten drachms; proof spirit, two pints: macerate for fourteen days, and strain. See *Capsicum annuum.*

Tinctura cardamomi. Tincture of cardamom. Take of cardamom seeds, bruised, three ounces and a half; proof spirit, two pints: macerate for fourteen days, and strain. A powerful stimulating carminative. In spasm of the stomach an ounce, with some other diluted stimulant, is given with advantage. The dose may vary according to circumstances, from half a drachm to an ounce and upwards.

Tinctura cardamomi composita. Compound tincture of cardamom; formerly called *tinctura stomachica.* Take of cardamom seeds, caraway seeds, of each, powdered, two drachms and a half; cochineal, powdered, a drachm; cinnamon bark, bruised, five drachms; raisins, stoned, five ounces; proof spirit, two pints: macerate for fourteen days, and strain. A useful and elegant carminative and cordial. The dose from half a fluid drachm to half a fluid ounce.

Tinctura cascarillæ. Tincture of cascarilla. Take of cascarilla bark, powdered, five ounces; proof spirit, two pints: macerate for fourteen days, and strain. A stimulating aromatic tonic, that may be exhibited in debility of the bowels and stomach, and in those cases of fever in which the Peruvian bark proves purgative. The dose from half a drachm to two drachms.

Tinctura castorei. Tincture of castor. Take of castor, powdered, two ounces and a half; rectified spirit, two pints: macerate for seven days, and strain. A powerful stimulant and antispasmodic, mostly exhibited in hysterical affections in a dilute form. The dose is from half a fluid drachm to two.

Tinctura catechu. Tincture of catechu; formerly known by the name *tinctura japonica.* Take of extract of catechu, three ounces and a half; cinnamon bark, bruised, two ounces and a half; proof spirit, two pints: macerate for fourteen days, and strain. An aromatic astringent, mostly given in protracted diarrhœa. The dose is from half a fluid drachm to two.

Tinctura cinchonæ. Tincture of cinchona; formerly known by the name of *tinctura corticis peruviani simplex.* Take of heart-leaved cinchona bark, powdered, eight ounces; proof spirit, two pints: macerate for fourteen days, and strain. The dose is from a fluid drachm to half a fluid ounce. For its virtues, see *Cinchona.*

Tinctura cinchonæ ammoniata. Ammoniated tincture of cinchona. Volatile tincture of bark. Take of lance-leaved cinchona bark, powdered, four ounces; aromatic spirit of ammonia, two pints: macerate for ten days, and strain.

Tinctura cinchonæ composita. Compound tincture of cinchona. Take of lance-leaved cinchona bark, powdered, four ounces: orange-peel, dried, three ounces; serpentary root, bruised, six drachms; saffron, two drachms; cochineal, a drachm; proof spirit, two pints: macerate for fourteen days, and strain. The dose is from one fluid drachm to half a fluid ounce. For its virtues, see *Cinchona.*

Tinctura cinnamomi. Tincture of cinnamon; formerly called *aqua cinnamomi fortis.* Take of cinnamon bark, bruised, three ounces and a half; proof spirit, two pints: macerate for fourteen days, and strain. The dose is from a fluid drachm to three or more.

Tinctura cinnamomi composita. Compound tincture of cinnamon; formerly called *tinctura aromatica.* Take of cinnamon bark, bruised, an ounce; cardamon seeds, bruised, half an ounce; long pepper, powdered, ginger root, sliced, of each two drachms and a half; proof spirit, two pints: macerate for fourteen days, and strain.

The dose is from half a fluid drachm to two or more.

Tinctura colchici. Tincture of colchicum. Take of the seeds of colchicum, five ounces; proof spirit, two pints: macerate for fourteen days, and strain. The virtues of this preparation are similar to those of the wine of colchicum. Dose from ♏ xx. to ʒ j.

Tinctura colchici composita. *Spiritus colchici ammoniatus* of the last London Pharmacopœia. Compound tincture of colchicum. Take of colchicum seeds, bruised, five ounces; aromatic spirit of ammonia, two pints: macerate for fourteen days, and strain. By this preparation the action of the colchicum is determined to the kidneys, and a diuretic effect combined with its ordinary operation. Dose half a drachm to a drachm.

Tinctura conii. Tincture of hemlock. Take of the dried leaves of hemlock, five ounces; cardamom seeds, bruised, an ounce; proof spirit, two pints. Digest for fourteen days, and strain. This tincture possesses all the active properties of the hemlock. Dose from half a drachm to a drachm.

Tinctura cubebæ. Tincture of cubebs. Take of cubebs, bruised, five ounces; rectified spirit, two pints: macerate for fourteen days, and strain. A weak tincture, which to produce any effect, should be given in full doses, as two or three drachms.

Tinctura digitalis. Tincture of fox-glove. Take of fox-glove leaves, dried, four ounces; proof spirit, two pints: macerate for fourteen days, and strain. This tincture possesses the properties of the plant in a convenient, uniform, and permanent form. It is a saturated tincture, and in the same proportions has been long used in general practice. The dose is from ten to forty minims. For its virtues, see *Digitalis.*

Tinctura ferri acetatis. This preparation is directed in the Dublin Pharmacopœia, with acetate of potash, two parts; sulphate of iron, one part; and rectified spirit, twenty-six parts. It is a mild chalybeate. Dose from ♏ x. to ʒ j.

Tinctura ferri ammoniati. See *Tinctura ferri ammonio-chloridi.*

Tinctura ferri ammonio-chloridi. Tincture of ammonio-chloride of iron; formerly called *tinctura ferri ammoniati, tinctura ferri ammoniacalis, tinctura florum martialium,* and *tinctura martis Mynsichti.* Take of ammonio-chloride of iron, four ounces; proof spirit, a pint: digest and strain. This is a most excellent chalybeate in all atonic affections, and may be given with cinchona in the cure of dropsical and other cachectic diseases. The dose is from half a fluid drachm to two.

Tinctura ferri muriatis. See *Tinctura ferri ammonio-chloridi.*

Tinctura ferri sesqui-chloridi. Tincture of muriate of iron: formerly called *tinctura ferri muriatis, tinctura martis in spiritu salis,* and *tinctura martis cum spiritu salis;* and lately known by the name of *tinctura ferri muriati.* Take of sesquioxide of iron, six ounces; muriatic acid, a pint; rectified spirit, three pints. Pour the acid upon the subcarbonate of iron in a glass vessel, and shake it occasionally for three days; then add the spirit, and strain. Cline strongly recommends this in ischuria, and many diseases of the kidneys and urinary passages. The dose is from ten to twenty drops. It is a good chalybeate, and serviceable against most diseases of debility without fever.

Tinctura gallæ. Tincture of galls. Take of galls, powdered, five ounces; proof spirit, two pints: macerate for fourteen days, and strain. This tincture contains all the virtues of the galls. Dose from ʒ ss. to ʒ ij. See *Quercus.*

Tinctura gentianæ composita. Compound tincture of gentian; formerly called *tinctura amara.* Take of gentian root, sliced, two ounces and a half; orange-peel, dried, ten drachms; cardamom seeds, bruised, five drachms; proof spirit, two pints: macerate for fourteen days, with a gentle heat, and strain. The dose is from one fluid drachm to two. For its virtues, see *Gentiana.*

Tinctura guai'aci. Tincture of guaiacum. Take of guaiacum resin, powdered, seven ounces; rectified spirit, two pints: macerate for fourteen days, and strain. This tincture possesses all the active properties of guaiacum. The dose is from one fluid drachm to two. For its virtues, see *Guaiacum.*

Tinctura guaiaci composita. *Tinctura guaiaci ammoniata.* Ammoniated tincture of guaiacum; formerly called *tinctura guaiacina volatilis.* Take of guaiacum resin, powdered, seven ounces; aromatic spirit of ammonia, two pints: macerate for fourteen days, and strain. The dose is from one fluid drachm to two.

Tinctura helle'bori. *Tinctura hellebori nigri.* Tincture of black hellebore; formerly called *tinctura melampodii.* Take of black hellebore root, sliced, five ounces; proof spirit, two pints: macerate for fourteen days, and strain. The dose is from half to a whole fluid drachm. For its virtues, see *Helleborus niger.*

Tinctura humuli. See *Tinctura lupuli.*

Tinctura hyoscy'ami. Tincture of henbane. Take of henbane leaves, dried, five ounces; proof spirit, two pints: macerate for fourteen days, and strain. That the henbane itself is narcotic is abundantly proved; that the same power is also found in its tincture is also certain; but to produce the same effects requires a much larger dose, as from one to two drachms or more. For the virtues, see *Hyoscyamus niger.*

Tinctura iodi'nii composita. Compound tincture of iodine. Take of iodine, an ounce; iodide of potassium, two ounces; rectified spirit, two pints: macerate until they are dissolved, and strain. A convenient formula for administering iodine. Dose ten minims, gradually increased to sixty.

Tinctura jalapæ. Tincture of jalap; formerly called *tinctura jalapii.* Take of jalap root, powdered, ten ounces; proof spirit, two pints: macerate for fourteen days, with a gentle heat, and strain. The dose is from one fluid drachm to half a fluid ounce. For its virtues, see *Convolvulus jalapa.*

Tinctura kino. Tincture of kino. Take of kino, powdered, three ounces and a half;

proof spirit, two pints: macerate for fourteen days, and strain. All the astringency of kino is possessed by this preparation. The dose is from half a fluid drachm to two. See *Kino.*

Tinctura lupuli. *Tinctura humuli.* Tincture of hops. Take of hops, six ounces; proof spirit, two pints; macerate for fourteen days, and strain. Dose ʒj. to ʒij. or more. For its virtues, see *Humulus lupulus.*

Tinctura lyttæ. See *Tinctura cantharidis.*

Tinctura myrrhæ. Tincture of myrrh. Take of myrrh, bruised, three ounces; rectified spirit, two pints: macerate for fourteen days, and strain. The dose is from half to a whole fluid drachm. For its virtues, see *Myrrha.*

Tinctura opii. Tincture of opium. Laudanum. Take of hard opium, powdered, three ounces; proof spirit, two pints: macerate for fourteen days, and strain. This is the most common form in which opium is administered, and possesses all the active properties of the drug.

The tincture of opium of the London Pharmacopœia of 1836 is considerably stronger than that of its predecessor. Of the present preparation nineteen drops are equal to about a grain of opium. Such unnecessary and whimsical changes in the constitution of very active medicines in common use cannot be too strongly reprobated. The ordinary dose of tincture of opium is from ♏ x. to l.

Tinctura rhei. Tincture of rhubarb; formerly known by the names of *tinctura rhabarbari*, and *tinctura rhabarbari spirituosa.* Take of rhubarb root, sliced, two ounces; cardamom seeds, bruised, half an ounce; saffron, two drachms; proof spirit, two pints: macerate for fourteen days, with a gentle heat, and strain. The dose is from half a fluid ounce to one and a half. For its virtues, see *Rheum.*

Tinctura rhei composita. Compound tincture of rhubarb; formerly called *tinctura rhabarbari composita.* Take of rhubarb root, sliced, two ounces and a half; liquorice root, bruised, six drachms; ginger root, sliced, saffron, of each three drachms; proof spirit, two pints: macerate for fourteen days, with a gentle heat, and strain. This is a mild stomachic aperient. The dose is from half a fluid ounce to one and a half.

Tinctura scillæ. Tincture of squill. Take of squill root, fresh dried, five ounces; proof spirit, two pints: macerate for fourteen days, and strain. The virtues of the squill reside in the tincture, which is administered in doses of from ten drops to a fluid drachm. See *Scilla.*

Tinctura sennæ composita. *Tinctura sennæ.* Tincture of senna; formerly called *elixir salutis.* Take of senna leaves, three ounces and a half; caraway seeds, bruised, three drachms and a half; cardamom seeds, bruised, a drachm; raisins, stoned, five ounces; proof spirit, two pints: macerate for fourteen days, and strain. A carminative, aperient, and purgative, in doses from two fluid drachms to a fluid ounce. See *Senna.*

Tinctura serpentariæ. Tincture of serpentary; formerly called *tinctura serpentariæ virginianæ.* Take of serpentary root, three ounces and a half; proof spirit, two pints: macerate for fourteen days, and strain. This tincture possesses, in addition to the virtues of the spirit, those of the serpentaria. The dose is from half a fluid drachm to two. See *Aristolochia serpentaria.*

Tinctura valerianæ. Tincture of valerian; formerly called *tinctura valerianæ simplex.* Take of valerian root, five ounces; proof spirit, two pints: macerate for fourteen days, and strain. A useful antispasmodic in conjunction with others. The dose from half a fluid drachm to two. See *Valeriana.*

Tinctura valerianæ composita. *Tinctura valeriana ammoniata.* Ammoniated tincture of valerian; formerly called *tinctura valerianæ volatilis.* Take of valerian root five ounces; aromatic spirit of ammonia, two pints: macerate for fourteen days, and strain. A strong antispasmodic and stimulating tincture. The dose is from half a fluid drachm to two.

Tinctura vera'tri. A very active alterative, recommended in the cure of epilepsy and cutaneous eruptions. Its administration requires great caution, the white hellebore being a powerful poison.

Tinctura zingiberis. Tincture of ginger. Take of ginger-root, sliced, two ounces and a half; proof spirit, two pints: macerate for fourteen days, and strain. A stimulating carminative. The dose is from a fluid drachm to three.

Tincture. See *Tinctura.*

Ti'nea. (*a*, *æ*. f.; from *teneo*, to hold.) *Tinea capitis.* The scald-head. See *Porrigo.*

Tinnitus aurium. Ringing in the ears. A common symptom in many diseases.

TISSUE. A term introduced by the French anatomists to express the textures which compose the different organs of animals. The word has been improperly adopted into our own language.

TITA'NIC. (*Titanicus*; from *titanium*, its base.) Appertaining to titanium.

Titanic acid. *Acidum titanicum.* The peroxide of titanium, which acts on alkalis as an acid.

TITA'NIUM. (*um*, *ii*. n.) The name of a metal which exists in the state of an oxide in the minerals called *tetanite* and *menachanite.* In *tetanite*, the oxide is nearly pure; in *menachanite*, so called, because it is found in the bed of a stream at Menachan, in Cornwall, the oxide of turanium is blended with oxide of iron. It exists also in several other minerals. There appear to be two oxides of this metal, a *protoxide* and a *peroxide*; the constitution of the former is yet imperfectly known; the latter has acid properties.

Tithy'malus. (*us*, *i*. m.; from τιθος, a dug, and μαλος, tender; so called from its smooth leaves and milky juice.) Cypress spurge. Poor man's rhubarb. Once in use as a purgative. See *Euphorbia cyparissias.*

Tithymalus cyparissius. See *Euphorbia cyparissias.*

Tithymalus paralios. See *Euphorbia paralias.*

Tithymelæa. See *Daphne.*

Titi'llicum. (*um*, *i*. n.; from *titillo*, to tickle: so called from its being easily tickled.) The arm-pit.

Titubatio. (*o*, *onis*, f.; from *titubo*, to stagger

or waver.) Restlessness, with an inclination to constant change of position. The fidgets.

Toad-flax. See *Antirrhinum.*

Tobacco. See *Nicotiana.*

Tobacco, English. See *Nicotiana rustica.*

Tobacco, Virginian. See *Nicotiana.*

TOE. *Digitus pedis.* The toes are terminated by nails, are covered by the common integuments, under which the vessels and tendons run, protected by their ligaments, which extend or bend them, to be inserted into their respective phalanges. Each toe consists of three distinct bones disposed in rows, called phalanges, or ranks of the toes. The great toe has but two phalanges; the others have three ranks of bones, which have nothing particular, only the joints are made round and free, formed by a round head on one bone, and by a pretty deep hollow for receiving it, in the one above it.

Toffania aqua. See *Aquetta.*

Tolu balsam. See *Toluifera balsamum.*

TOLUI'FERA. (*a, æ.* f.; so called because it produces the balsam of Peru.) A genus of plants in the Linnæan system. Class, *Decandria;* Order, *Monogynia.*

Toluifera balsamum. The systematic name of the tree which affords the Tolu balsam. *Balsamum Tolutanum.* Balsam of Tolu. It grows in South America, in the province of Tolu, behind Carthagena, whence we are supplied with the balsam, which is brought to us in little gourd-shells. The balsam is obtained by making incisions into the bark of the tree, and is collected in spoons, which are made of black wax, from which it is poured into proper vessels. It thickens, and in time becomes concrete: it has a fragrant odour, and a warm sweetish taste. It dissolves entirely in alkohol, and communicates its odour and taste to water by boiling. It contains acid of benzoin. This is the mildest of all the balsams. It has been used as an expectorant; but its powers are very inconsiderable, and it is at present employed principally on account of its flavour, somewhat resembling that of lemons. It is directed by the pharmacopœias, in the *syrupus tolutanus,* and *tinctura tolutana.*

Tolutanum balsamum. See *Toluifera balsamum.*

Toma'tum. (*um, i.* n.) The tomato or love-apple. See *Solanum lycopersicum.*

TOMBAC. A white alloy of copper with arsenic.

Tomei'um. (From τεμνω, to cut.) An incision-knife.

TOMENTO'SUS. Downy; woolly; cottony. Applied to stems, leaves, &c.; as the stem of the *Geranium rotundifolium.*

TOME'NTUM. (*um, i.* n.; a flock of wool.) 1. In *Anatomy,* applied to the small vessels on the surface of the brain, which appear like wool.

2. In *Botany,* a species of pubescence, very soft to the touch, of a white or ferruginous colour, giving the surface a downy appearance, and so thick that they cannot be seen separately.

Tomentum cerebri. The small vessels that penetrate the cortical substance of the brain from the pia mater, which, when separated from the brain, and adhering to the pia mater, give it a flocky appearance.

TONGUE. *Lingua.* A soft fleshy viscus, very moveable in every direction, situated inferiorly in the cavity of the mouth, and constituting the organ of taste. It is divided into a base, body, and back, a superior and inferior surface, and two lateral parts. It is composed of muscular fibres, covered by a nervous membrane, on which are a great number of nervous papillæ, particularly at the apex and lateral parts; the rete mucosum, and epidermis. About a quarter of an inch from its base is a little round pit, called *foramen cæcum,* which seems to form a sort of reservoir for the contiguous mucous follicles. The papillæ of the tongue are distinguished into *lenticulares,* which are from ten to fifteen in number, and are situated near the base of the tongue; *capitatæ* or *fungiformes,* smaller and more numerous than the preceding, and situated towards the edges and tip of the tongue; *conicæ* or pyramidales, which are very numerous, and dispersed over the whole upper surface of the tongue; *filiformes,* which are few in number, and situated close to the tip of the tongue. The arteries of the tongue are branches of the ranine and labial. The veins empty themselves into the great linguals, which proceed to the external jugular. The nerves come from the eighth, ninth, and fifth pair. The use of this organ is for chewing, swallowing, sucking, and tasting. See also *Taste.*

Tongue-shaped. See *Lingulatus.*

TONE. (Τονος, from τεινω, to extend.) The natural and healthy tension of the muscular fibre.

TO'NIC. (*Tonicus.* Τονικος; from τεινω, to pull or draw.) A rigid contraction of the muscles, which lasts for some time without relaxation, is called a *tonic spasm.*

TO'NIC. (From τονοω, to strengthen.) Applied to that which increases the tone of the muscular fibre, and imparts vigour to the whole system. Tonics are divided into *mineral* and *vegetable.* The principal mineral tonics are iron, zinc, copper, arsenic, silver, bismuth, mercury, and the mineral acids. The vegetable tonics consist chiefly of the bitters: the aromatics also have a degree of tonic power.

Toni'city. The elasticity of living parts is so named by some writers.

TO'NSIL. (*Tonsilla, æ.* f.) *Amygdala. Tola. Toles. Tolles.* An oblong, sub-oval gland, situated on each side of the fauces, and opening into the cavity of the mouth by twelve or more large excretory ducts.

TONSILLI'TIS. (*is, idis.* f.; from *tonsilla,* the seat of the disease, and *itis,* which signifies inflammation.) This is described by Dr. Cullen, and other writers, as a species of sore throat, under the name of cynanche tonsillaris, and cynanche maligna. There are, therefore, two species of inflammation of the tonsils: the one is phlegmonoid, the other erythematous or erysipelatous: they are perfectly distinct diseases.

1. *Tonsillitis phlegmonoides.* This is the common quinsey, or inflammation of the cellular tissue of or about the tonsils. The com-

mon quinsey, or inflammatory sore throat, of most writers. It begins with a soreness or stiffness about one side of the throat; the swallowing becomes impeded; the mouth is clammy; and when the jaw is moved, or there is any attempt to swallow, there is a pain extending from the throat to the ear. As these symptoms come on, there is an accession of fever; a shivering often announces the disease: the pulse becomes frequent, the face flushed, and exacerbations of fever are established of an inflammatory character. As the local disease advances, the fever increases; deglutition becomes more difficult; the speech is obstructed; a great secretion of saliva or a salivation supervenes; and, if the inflammation be not resolved, which it seldom is, the part becomes more tumid, deglutition more impeded, the febrile symptoms exacerbate more violently: a tumour is felt in the gland, if the mouth can be opened so as to permit the finger to reach the gland; suppuration soon follows, and, though the patient be in the greatest misery from the symptoms already mentioned, the abscess bursts, and he is instantly relieved. In eight or ten cases suppuration results, and all inconvenience is soon removed: but it sometimes happens, that no sooner is one abscess burst, before the state of the opposite gland tells us that the same symptoms are to be encountered from inflammation there; which, in its turn, suppurates also. The suppuration occasionally extends round the pharynx, and a large quantity of pus evacuated, either by spontaneous rupture or by an opening from the lancet. This species of tonsillitis is produced by cold, and is a common disease in spring and autumn, and seldom attended with any danger.

The chief danger arising from this species of quinsey is, the inflammation occupying both tonsils, and proceeding to such a degree as to prevent a sufficient quantity of nourishment for the support of nature from being taken, or to occasion suffocation; but this seldom happens, and its usual termination is either in resolution or suppuration. It is never contagious, and mostly attacks the young and sanguine. It is apt to produce a disposition to return from slight causes.

At the very commencement, the inflammation is occasionally, though not often, resolved: to effect this, blood is seldom taken from the arm; but if the febrile and local symptoms are strongly marked, and the patient is young and robust, and there is no reason why blood should not be abstracted, recourse should be had to the lancet: leeches externally are proper. A purgative and antiphlogistic diet are required, with iced acidulated gargles, and such antifebrile remedies as are recommended against inflammation. Very many quinseys are resolved by the following: —

℞. Antimonii tartarisati, gr. vj.; sacchari purificati, ʒiij. Optimè in pulverem contere; dein divide in partes duodecim æquales: sumat unam in horas.

The patient is to be directed to put one of these powders into his mouth, and to let it dissolve in his saliva, and to swallow it; and to continue through the day, every hour or every two hours, keeping up a constant nausea or vomiting during that time.

It is during the inflammatory stage of quinsy that blisters are useful, and particularly so when there is external as well as internal swelling: blisters do no good when suppurative action has commenced. Writers mention danger of suffocation in some cases, and recourse to tracheotomy. There is occasionally danger of suffocation; but the surgeon is to open the abscess, and not the trachea.

When the abscess has burst, or the pus is evacuated, the after-treatment is very little required: detergent gargles and nourishment soon put all right again.

2. *Tonsillitis maligna.* This is the ulcerated, specky, malignant, putrid, gangrenous sore throat of authors. It is also called *angina maligna*, and *cynanche maligna.* Malignant sore throat prevailed as a very destructive epidemic in Spain and Italy at the beginning of the last century, and was described by some authors of those nations. In 1754 an excellent account of it was published in England by Dr. Fothergill, and another appeared soon after by Dr. Huxham. The inflammation is usually superficial on the membrane which covers the tonsils, and does not affect the cellular tissue beneath. No sooner does the inflammation take place, than it passes immediately into small ulcers, which have a varied appearance; being whitish, cineritious, brown, or black; of smaller or larger extent, sometimes the size of a lentil or pea, and sometimes much larger, mostly spreading so as to extend over the pharynx and the whole fauces, into the nostrils, and even around the glottis, and down the œsophagus. As these ulcerations increase, they have a sloughing appearance; and the membrane of the fauces is occasionally separated in large sloughs. The local affection is attended from its commencement with typhoid fever; the pulse is small, and rapid; the heat considerable; the prostration of strength great; and there is mostly some disturbance of the sensorium. The disease is highly contagious, and usually epidemic; and according to the nature of the epidemic, the character of the fever, and other circumstances, the danger is to be appreciated. A very frequent concomitant of the malignant, ulcerated sore throat is a scarlet eruption over the body, in a simple form, or with blotches of a scarlet colour, or petechiæ, or vibices. This mostly increases the danger, though very many fall victims to the malignant form of tonsillitis without any eruption on the skin. When attended with an eruption, malignant tonsillitis appears entirely similar to scarlet fever of a bad type; and, after much controversy, it is now generally agreed that malignant sore throat and scarlet fever are merely modifications of the same disease. See *Scarlatina.* Malignant tonsillitis is generally produced by a particular state of the atmosphere; hence it is mostly epidemic. The system under its influence generates more contagion; so that when it attacks one of a family, scarcely any escape its ravages.

When the local symptoms are mild, the fever

is seldom great, and the danger comparatively little: but when the ulcerations assume a sloughing character, spread rapidly, and the fever is high, with delirium, and more especially if, in addition to this, there be purple spots or gangrene, the danger is great indeed. The known nature of the disease, when epidemic, is also to be borne in mind: many are carried off, especially children, without any apparent malignancy of the symptoms; and in other epidemics the malignancy is obvious, and yet, under proper management, most recover.

In conducting the cure, cleanliness, pure air, and a free ventilation are here of the utmost importance, and especially the removing of all the excretions and cleansings of the fauces, which contain the contagion in its most active form. The remedies are similar to those recommended against typhus, which the fever of malignant tonsillitis is, and against gangrene. Many are fond of emetics in the beginning; but they more frequently increase the debility and disturb the sensorium than produce any good effect. The nitro-muriatic acid is here an excellent remedy, and possesses great advantages with children and youth, who cannot, perhaps, be prevailed on to take the other less palatable medicines.

R. Aquæ cinnamomi, f. ʒx.
Acidi muriatici,
Acidi nitrici, singulorum, ♏j.

Misce pro haustu, tertia, vel quarta, vel quinta quaque hora sumendo.

This is the dose for an adult.

All the acids are proper: the sulphuric, in the infusum rosæ compositum, is an excellent drink when more diluted; the citric acid is grateful in lemonade; and the tartaric in the drink called imperial. The subacid fruits, in their season, are also good assistants.

The antiseptic tonics are more powerful in destroying the fever and the disease than the former medicines, and in the more malignant forms are not to be forgotten. Cinchona, cascarilla, and columba are the best: their infusions and decoctions, and the sulphate of the first, may be made into mixtures, and acidulated with either of the acids.

When these are required, port wine is also, and is to be given freely, as being, perhaps, more efficacious. When wine, from any circumstance, does not agree, brandy should be substituted in a dilute form.

If the bowels, from the free use of acids, become loose, aromatics and astringents are proper, with spiced wine and cordials.

The local treatment consists in the use of stimulating gargles, especially of port wine, capsicum, or the mineral acids. In administration of these, the best rule is to proportion them to the effect they produce: their biting or stimulating the part is necessary; and, in some cases, half a fluid drachm of the tincture of Cayenne pepper will produce as much effect, in half a pint of dilute port wine or compound infusion of roses, as three times that quantity in others. The diet should consist of arrow-root, sago, gruel, and the like, with wine or brandy. Bottled porter, that gives off its carbonic acid gas freely, is a good medicine.

Tooth. See *Teeth.*

Tooth-ache. See *Odontalgia.*

Tooth-rash. See *Strophulus.*

Tooth-shape. See *Dentatus.*

TO'PHUS. (*us, i.* m. *Toph*, Hebrew.) 1. A toph, or soft swelling on a bone.
2. A concretion in the joints.
3. Gravel.

TO'PICAL. (*Topicus;* from τοπος, a place.) Medicines applied to a particular part are called *topical.*

TOPINA'RIA. A species of tumour under the scalp; the same as *talpa.*

TO'RCULAR. (From *torqueo*, to twist.) A press for wine, oil, or cider. The tourniquet. See *Tourniquet.*

TORCULAR HERO'PHILI. *Lechenon. Lenos.* The press of Herophilus. So named after Herophilus, who described it. The fourth sinus of the dura mater.

TORDY'LIUM. (*um, ii.* n.; *quasi tortilium;* from *torqueo*, to twist: so named from its tortuous branches, or from the neat orbicular figure of its seeds, which seem as if artificially wrought or turned.) A genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Digynia.*

TORDYLIUM OFFICINALE. The officinal *seseli creticum.* The seeds are said to be diuretic.

Tormentil. See *Tormentilla.*

TORMENTI'LLA. (*a, æ,* f.; from *tormentum*, pain: because it was supposed to relieve pain in the teeth.) 1. The name of a genus of plants in the Linnæan system. Class, *Icosandria;* Order, *Monogynia.*

2. The pharmacopœial name of the upright septfoil. See *Tormentilla erecta.*

TORMENTILLA ERECTA. The systematic name of the upright septfoil. *Heptaphyllum. Consolida rubra. Tormentilla—caule erecti usculo, foliis sessilibus,* of Linnæus. The root is the only part of the plant which is used medicinally: it has a strong styptic taste, but imparts no peculiar sapid flavour: it has been long held in estimation as a powerful astringent; and, as a proof of its efficacy in this way, it has been substituted for oak bark in the tanning of skins for leather. Tormentil is ordered in the *Pulvis cretæ compositus,* of the London Pharmacopœia.

TORME'NTUM. The ileac passion was so called from its severely painful nature. See *Ileac passion.*

TO'RMINA. (*Tormen, inis.* n.) Severe griping pains in the bowels.

TORO'SUS. Protuberant: applied to seed-vessels enlarged by the swelling of the enclosed seeds; as in the pods of the *Sinapis.*

Torpe'do. See *Raia torpedo.*

TO'RPOR. A numbness, or deficient sensation.

Torsk. See *Gadus ciliaris* and *brosme.*

TORTICO'LLIS. (*is, is.* m.; from *torqueo*, to twist, and *collum*, the neck.) The wry-neck. See *Wry-neck.*

TO'RTILIS. Twisted. Applied in *Natural History.*

TORTUO'SUS. Tortuous: twisted. Applied in *Natural History.*

TORTU'RA ORIS. A wry-mouth.

TORULO'SUS. Torulous. Bulged out at intervals, like a cord with several knots in it. Applied in *Botany* and *Zoology:* thus, the *Sinapis alba*, white mustard, has a torulous pod.

Tota bona. See *Chenopodium.*

TOUCH. *Tactus.* The sense by which we are enabled to know the properties of bodies; and as it is less subject to deception than the other senses, enabling us in certain cases to clear up errors into which the others have led us, it has been considered the first, and the most excellent of all the senses; but several of the advantages which have been attributed to it by physiologists and metaphysicians should be considerably limited.

Tact should be distinguished from touch. *Tact* is, with some few exceptions, generally diffused through all our organs, and particularly over the cutaneous and mucous surfaces. It exists in all animals; whilst touch is exerted evidently only by parts that are intended particularly for this use. It does not exist in all animals, and it is nothing else but *tact* united to muscular contractions directed by the will.

In the exercise of *tact*, we may be considered as passive, whilst we are essentially active in the exercise of *touch.*

Physical properties of bodies which employ the action of touch. — Almost all the physical properties of bodies are susceptible of acting upon the organs of touch: form, dimensions, different degrees of consistence, weight, temperature, locomotion, vibration, &c., are all so many circumstances that are exactly appreciated by the touch.

The organs destined to touch do not alone exercise this function; so that in this respect the touch differs much from the other senses. As in most cases it is the skin which receives the tactile impressions produced by the bodies which surround us, it is necessary to say something of its structure.

The skin forms the envelope of the body: it is lost in the mucous membranes at the entrance of all the cavities; but it is improper to say that these membranes are a continuation of it.

The skin is formed principally by the *cutis vera*, a fibrous layer of various thickness, according to the part which it covers: it adheres by a cellular tissue, more or less firm; at other times by fibrous attachments. The *cutis* is almost always separated from the subjacent parts by a layer of a greater or less thickness, which is of use in the exercise of touch.

The external side of the *cutis vera* is covered by the epidermis, a solid matter secreted by the skin. We ought not to consider the epidermis as a membrane: it is a homogeneous layer, adherent by its internal face to the *chorion*, and full of a great number of holes, of which the one sort are for the passage of the air, and the other for that of cutaneous perspiration: they serve at the same time for the absorption which takes place by the skin. These last are called the pores of the skin.

It is necessary to notice, with regard to the epidermis, that it is void of feeling; that it possesses none of the properties of life; that it is not subject to putrefaction; that it wears and is renewed continually; that its thickness augments or lessens as it may be necessary: it is even said to be proof to the action of the digestive organs.

The connexion of the epidermis to the *cutis vera* is very close; and yet it cannot be doubted that there is a particular layer between these two parts, in which certain particular phenomena take place. The organisation of this layer is yet little known. Malpighi believed it to be formed of a particular mucus, the existence of which has been long admitted, and which bore the name of the corpus mucosum of Malpighi. Other authors have considered it, more justly, as a vascular network. Gall makes it similar to the grey matter which is seen in many parts of the brain.

Gautier, in examining attentively the external surface of the true skin, has noticed some small reddish projections, disposed in pairs: they are easily perceived when the skin is laid bare by a blister. These little bodies are regularly disposed upon the palm of the hand, and on the sole of the foot. They are sensible, and are reproduced when they have been torn out. They appear to be essentially vascular. These bodies, without being understood, have been long called the *papillæ* of the skin. The epidermis is pierced by little holes, opposite their tops, through which small drops of sweat are seen to issue, when the skin is exposed to an elevated temperature. The skin contains a great number of sebaceous follicles: it receives a great number of vessels and nerves, particularly at the points where the sense of touch is more immediately exercised. The mode in which the nerves are terminated in the skin is totally unknown: all that has been said of the cutaneous nervous papillæ is entirely hypothetical.

The exercise of tact and of touch is facilitated by the thinness of the *cutis vera*, by a gentle elevation of temperature, by an abundant cutaneous perspiration, as well as by a certain thickness and flexibility of the epidermis: when the contrary dispositions exist, the tact and the touch are always more or less imperfect.

Mechanism of Tact. — The mechanism of tact is extremely simple: it is sufficient that bodies be in contact with the skin to furnish us with *data*, more or less exact, of their tactile properties. By tact we judge particularly of the temperature. When bodies deprive us of caloric, we call them cold; when they yield it to us, we say they are hot; and according to the quantity of caloric which they give or take, we determine their different degrees of heat or cold. The notions that we have of temperature are, nevertheless, far from being exactly in relation to the quantity of caloric that bodies yield to us, or take from us; we join with it unawares a comparison with the temperature of the atmosphere, in such a manner that a body colder than ours, but hotter than the atmosphere, appears hot, though it really deprive us of caloric when we touch it. On this account, places which have a uniform temperature, such as cellars or wells, appear cold in summer, and hot in winter. The

capacity also of bodies for caloric has a great influence upon us with regard to temperature: as an example of this we have only to notice the great difference of sensation produced by iron and wood, though the temperature of both be the same.

A body which is sufficiently hot to cause a chemical decomposition of our organs, produces the sensation of burning. A body whose temperature is so low as to absorb quickly a great portion of the caloric of any part, produces a sensation of the same sort nearly: this may be proved in touching frozen mercury.

The bodies which have a chemical action upon the epidermis, those that dissolve it, as the caustic alkalies, and concentrated acids, produce an impression which is easy to be recognised, and by which these bodies may be known.

Every part of the skin is not endowed with the same sensibility; so that the same body applied to different points of the skin in succession, will produce a series of different impressions.

The mucous membranes possess great delicacy of tact. Every one knows the great sensibility of the lips, the tongue, of the conjunctiva, the pituitary membrane, of the mucous membrane, of the trachea, of the urethra, of the vagina, &c. The first contact of bodies, which are not destined naturally to touch these membranes, is painful at first, but this soon wears off.

Mechanism of Touch. — In man the hand is the principal organ of touch: all the most suitable circumstances are united in it. The epidermis is thin, smooth, flexible; the cutaneous perspiration abundant, as well as the oily secretion. The vascular eminences are more numerous there than any where else. The *cutis vera* has but little thickness; it receives a great number of vessels and nerves; it adheres to the subjacent *aponeuroses* by fibrous adhesions; and it is sustained by a highly elastic cellular tissue. The extremities of the fingers possess all these properties in the highest degree: the motions of the hand are very numerous, and performed with facility, and it may be applied with ease to any body of whatsoever form.

As long as the hand remains immoveable at the surface of a body, it acts only as an organ of *tact*. To exercise *touch*, it must move, either by passing over the surface, to examine form, dimensions, &c., or it must press for the purpose of determining its consistence, elasticity, &c.

We use the whole hand to touch a body of considerable dimensions: if, on the contrary, a body is very small, we employ only the points of the fingers. This delicacy of touch in the fingers has given man a great advantage over the animals. His touch is so delicate, that it has been considered the source of his intelligence.

From the highest antiquity the touch has been considered of more importance than any of the other senses: it has been supposed the cause of human reason. This idea has continued to our times: it has been even remarkably extended in the writings of Condillac, of Buffon, and other modern physiologists. Buffon, in particular, gave such an importance to the touch, that he thought one man had little more ability than another, but only in so far as he had been in the habit of making use of his hands. He said it would be well to allow children the free use of their hands, from the moment of their birth.

The touch does not really possess any prerogative over the other senses; and if in certain cases it assists the eye or the ear, it receives aid from them in others, and there is no reason to believe that it excites ideas in the brain of a higher order than those which are produced by the action of the other senses.

Of internal sensations. — All the organs, as well as the skin, possess the faculty of transmitting impressions to the brain, when they are touched by exterior bodies, or when they are compressed, bruised, &c. It may be said, that they generally possess *tact*. There must be an exception made of the bones, the tendons, the aponeuroses, the ligaments, &c., which in a healthy state are insensible, and may be cut, burned, or torn without any thing being felt by the brain.

This important fact was not known to the ancients: they considered all the white parts as nervous, and attributed to them all those properties which we now know belong only to the nerves. These useful results, which have had a great influence upon the recent progress of surgery, we owe to Haller and his disciples.

All the organs are capable of transmitting spontaneously a great number of impressions to the brain without the intervention of any external cause. They are of three sorts. The first kind take place when it is necessary for the organs to act: they are called *wants, instinctive desires.* Such are hunger, thirst; the necessity of making water, of respiration; the venereal impulse, &c. The second sort take place during the action of the organs; they are frequently obscure, sometimes very violent. The impressions which accompany the different excretions, as of the semen, the urine, are of this number.

Such are also the impressions which inform us of our motions, of the periods of digestion: even thought seems to belong to this kind of impression.

The third kind of internal sensations are developed when the organs have acted. To this kind belongs the feeling of fatigue, which is variable in the different sorts of functions.

The impressions which are felt in sickness ought to be added to these three sorts: these are much more numerous than the others. The study of them is absolutely necessary to the physician.

All those sensations which proceed from within, and which have no dependence upon the action of exterior bodies, have been collectively denominated *internal sensations*, or *feelings*. — *Magendie's Physiology.*

Touch-me-not. See *Noli me tangere.*

Touchwood. See *Agaricus.*

TOU'RNIQUET. (French; from *tourner*, to turn.) An instrument used for stopping the flow of blood into a limb by compressing the main artery. The tourniquet is used to stop

hæmorrhage till some more permanent means can be put in effect, as during the amputation of a limb. It is unnecessary to describe the tourniquet, which is in constant use among surgeons.

Toxica'ria macassarie'nsis. A name of the *bohun upas*. See *Upas*.

Toxicode'ndrum. (*um*, *i.* n.; from τοξικον, a poison, and δενδρον, a tree.) The poison oak. See *Rhus toxicodendron*.

TOXICO'LOGY. (*Toxicologia*, *æ.* f.; from τοξικον, a poison, and λογος, a discourse.) The study of poisons. See *Poison*.

TO'XICUM. (*um*, *i.* n.; τοξικον, from τοξον, a bow or a quiver of arrows; because arrows are sometimes poisoned.) A poison. See *Poison*.

Toxite'sia. The artemisia or mugwort.

TRABE'CULA. (*a*, *æ.* f.; a small beam.) This word is mostly applied by anatomists to the thread-like processes in the longitudinal sinus of the dura mater, and to the small medullary fibres of the brain, which constitute the commissures.

TRACHE'A. (*a*, *æ.* f. Τραχεια, from its roughness; from τραχυς, rough.) *Trachelos*. The windpipe. The trachea is a cartilaginous and membraneous canal, through which the air passes into the lungs. Its upper part, which is called the larynx, is composed of five cartilages. The uppermost and smallest of these cartilages is placed over the glottis or mouth of the larynx, and is called epiglottis, as closing the passage to the lungs in the act of swallowing. The sides of the larynx are composed of the two arytenoid cartilages, which are of a very complex figure, not easy to be described. The anterior and larger part of the larynx is made up of two cartilages, one of which is called *thyroides* or *scutiformis*, from its being shaped like a buckler; and the other *cricoides* or *annularis*, from its resembling a ring. Both these cartilages may be felt immediately under the skin, at the fore-part of the thorax; and the thyroides, by its convexity, forms an eminence called the pomum adami, which is usually more considerable in the male than in the female subject.

All these cartilages are united to each other by means of very elastic ligamentous fibres; and are enabled, by the assistance of their several muscles, to dilate or contract the passage of the larynx, and to perform that variety of motion which seems to point out the larynx as the principal organ of the voice; for when the air passes through a wound in the trachea, it produces little or no sound.

These cartilages are moistened by a mucus, which seems to be secreted by minute glands situated near them. The upper part of the trachea, and the cricoid and thyroid cartilages, are in some measure covered anteriorly by a considerable body, which is supposed to be of a glandular structure, and from its situation is called the thyroid gland, though its excretory duct has not yet been discovered, or its real use ascertained. The glottis is entirely covered by a very fine membrane, which is moistened by a constant supply of a watery fluid. From the larynx the canal begins to take the name of trachea, or aspera arteria, and extends from thence as far down as the fourth or fifth vertebræ of the back, where it divides into two branches, which are the right and left bronchial tube. Each of these bronchia ramifies through the substance of that lobe of the lungs, to which it is distributed by an infinite number of branches, which are formed of cartilages, separated from each other like those of the trachea, by an intervening membraneous and ligamentary substance. Each of these cartilages is of an annular figure; and as they become gradually less and less in their diameter, the lower ones are in some measure received into those above them, when the lungs, after being inflated, gradually collapse by the air being pushed out from them in expiration. As the branches of the bronchia become more minute, their cartilages become more and more annular and membraneous, till at length they become perfectly membraneous, and at last become invisible. The trachea is furnished with fleshy or muscular fibres, some of which pass through its whole extent longitudinally, while the others are carried round it in a circular direction, so that, by the contraction or relaxation of these fibres, it is enabled to shorten or lengthen itself, and likewise to dilate or contract the diameter of its passage. The trachea and its branches, in all their ramifications, are furnished with a great number of small glands, which are lodged in their cellular substance, and discharge a mucous fluid on the inner surface of these tubes.

The cartilages of the trachea, by keeping it constantly open, afford a free passage to the air which we are obliged to be incessantly respiring; and its membraneous part, by being capable of contraction or dilatation, enables us to receive and expel the air in a greater or less quantity, and with more or less velocity, as may be required in singing and declamation. This membraneous structure of the trachea posteriorly seems likewise to assist in the descent of the food, by preventing that impediment to its passage down the œsophagus, which might be expected if the cartilages were complete rings. The trachea receives its arteries from the carotid and subclavian arteries, and its veins pass into the jugulars. Its nerves arise from the recurrent branch of the eighth pair, and from the cervical plexus.

Trache'lagra. (*a*, *æ.* f.; from τραχηλος, the throat, and αγρα, a seizure.) The gout or rheumatism in the neck.

Trache'lium. (*um*, *ii.* n.; from τραχηλος, the throat: so called from its efficacy in diseases of the throat.) The herb throat-wort, *Campanula trachelium*; now disused.

Tracheloce'le. (*e*, *es.* f.; from τραχηλος, the throat, and κηλη, a tumour.) A bronchocele. See *Bronchocele*.

Trache'lo-mastoide'us. A muscle situated on the neck, which assists the complexus, but pulls the head more to one side. It is the *complexus minor seu mastoideus lateralis*, of Winslow. It arises from the transverse processes of the five inferior cervical vertebræ, where it is connected with the transversalis cer-

vicis, and of the three superior dorsal, and it is inserted into the middle of the posterior part of the mastoid process.

TRACHELO'PHYMA. (*a, atis.* n.; from *τραχηλος*, the throat, and *φυμα*, a tumour.) A bronchocele.

TRACHEO'TOMY. (*Trachcotomia, æ.* f.; from *τραχεια*, the trachea, and *τεμνω*, to cut.) See *Bronchotomy.*

TRACHI'TIS. (*is, idis.* f.; from *τραχεια*, the windpipe, and *itis*, the terminal, which denotes inflammation.) Inflammation of the trachea. See *Croup.*

TRACHO'MA. (*a, atis.* n.; from *τραχυς*, rough.) An asperity in the internal superficies of the eyelid. The effects are a violent ophthalmia, and a severe pain, as often as the eyelid moves. It may be produced from sand falling between the eye and the eyelid of persons travelling, blown by a high wind: this happens chiefly in sandy situations, and may be prevented by spectacles for the purpose, or by guarding against the flights of sand by covering the eyes. It also arises from caruncles, or fleshy warts, growing in the internal superficies of the eyelid, and by hard pustules in the internal superficies of the eyelids.

TRACTUS OPTICUS. The elongation of the optic thalamus, which is continued on each side to form the optic nerve, is termed *tractus opticus.*

Tragacanth. See *Astragalus tragacantha.*

TRAGACA'NTHA. (*a, æ.* f.; from *τραγος*, a goat, and *ακανθα*, a thorn: so called on account of its hirsute or woolly boughs.) See *Astragalus tragacantha.*

TRA'GICUS. A proper muscle of the ear, which pulls the point of the tragus a little forward.

TRA'GIUM. (*um, ii.* n.; from *τραγος*, a goat, so named from its filthy smell.) 1. The name of a genus of plants. Class, *Pentandria;* Order, *Digynia.*

2. The bastard dittany, or *Dictamnus albus.*

TRAGO'CERUS. (From *τραγος*, a goat, and *κερας*, a horn: so named from the supposed resemblance of its leaves to the horn of a goat.) The aloe plant.

TRAGOPO'GON. (*on, onis.* m.; from *τραγος*, a goat, and *πωγων*, a beard: so called because its downy seed, while enclosed in the calyx, resembles a goat's beard.) 1. The name of a genus of plants in the Linnæan system. Class, *Syngenesia;* Order, *Polygamia.*

2. The pharmacopœial name of the goat's beard. See *Tragopogon pratense.*

TRAGOPOGON PRATENSE. The common goat's beard. The young stems of this plant are eaten like asparagus, and are a pleasant and wholesome food. The root is also excellent, and was formerly used medicinally as a diuretic.

TRAGO'PYRUM. (*um, i.* n.; from *τραγος*, a goat, and *πυρον*, wheat: so named from its beard.) Buck-wheat, the *Polygonum fagopyrum*, of Linnæus.

TRAGO'RCHIS. (*is, is.* m.; from *τραγος*, a goat, and *ορχις*, a testicle: so named from the supposed resemblance of its roots to the testicles of a goat.) One or more of the orchis tribe have received this name.

TRAGORI'GANUM. (*um, i.* n.; from *τραγος*, a goat, and *οριγανον*, marjoram: so called because goats are fond of it.) Applied formerly to several species of origanum.

TRAGOSELI'NUM. (*um, i.* n.; from *τραγος*, a goat, and *σελινον*, parsley: named from its hairy coat like the beard of a goat.) The burnet saxifrage. See *Pimpinella saxifraga.*

TRA'GUS. (*us, i.* m. *Τραγος*, a goat: so called from its being furnished, in some persons, with a tuft of hair like a goat's beard.) 1. In *Anatomy*, a small cartilaginous eminence of the external ear. See *Auris.*

2. In *Botany*, this name has been variously applied, by Dioscorides, to meal or flour, and to a maritime shrub.

Trailing. See *Procumbens.*

TRA'MIS. *Τραμις.* The line which divides the scrotum, and runs on to the anus. See *Raphe.*

Trance. See *Catalepsy.*

Transcendental anatomy. See the *Supplement.*

TRANSFORMATION. In *Pathology*, a morbid change in a part, which consists in the conversion of its texture into one which is natural to some other part; as when soft parts are converted into cartilage or bone.

TRANSFUSION. (*Transfusio, onis.* f.; from *transfundo*, to pour from one vessel into another.) The transmission of blood from one living animal to another by means of a canula. Harvey was thirty years before he could get his discovery admitted, though the most evident proofs of it were every where perceptible; but as soon as the circulation was acknowledged, people's minds were seized with a sort of delirium: it was thought that the means of curing all diseases was found, and even of rendering man immortal. The cause of all our evils was attributed to the blood: in order to cure them, nothing more was necessary but to remove the bad blood, and to replace it by pure blood, drawn from a sound animal.

The first attempts were made upon animals, and they had complete success. A dog having lost a great part of its blood, received, by transfusion, that of a sheep, and it became well. Another dog, old and deaf, regained, by this means, the use of hearing, and seemed to recover its youth. A horse of twenty-six years, having received in his veins the blood of four lambs, recovered his strength.

Transfusion was soon attempted upon man. Denys and Emerez, the one a physician, the other a surgeon, of Paris, were the first who ventured to try it. They introduced into the veins of a young man, an idiot, the blood of a calf, in greater quantity than that which had been drawn from them, and he appeared to recover his reason. A case of lepra and one of quartan ague, were also cured by this means; and several other transfusions were made upon healthy persons without any disagreeable result.

However, some sad events happened to calm the general enthusiasm caused by these repeated successes. The young idiot we mentioned fell into a state of madness a short time after the

experiment. He was submitted a second time to the transfusion; and he was immediately seized with a *Hæmaturia*, and died in a state of sleepiness and torpor. A young prince of the blood royal was also the victim of it. The parliament of Paris prohibited transfusion. A short time after, G. Riva having, in Italy, performed the transfusion upon two individuals, who died of it, the Pope prohibited it also.

In 1785, Dr. Harwood, of Cambridge, made some experiments on transfusion, from which he inferred that the blood of a herbivorous animal may be substituted for a carnivorous, or *vice versâ*, without danger or inconvenience to the animal.

The recent experiments of MM. Prevost and Dumas tend to an opposite conclusion.

The most important experiments on transfusion which have lately been performed, are those of Dr. Blundell, who has established both the safety and utility of replenishing the vessels of persons sinking from the effects of hæmorrhage, from the veins of another healthy human being. In the opinion of Dr. Blundell, a very moderate quantity of fresh blood is sufficient to turn the balance wavering between life and death: he considers half a pint or a pint as an ample supply. The operation of transfusion must be performed with a well-adjusted apparatus, and with the utmost caution, that no air be injected from the syringe along with the blood — an accident the fatal consequences of which are well known. For further information on the subject of transfusion, the reader is referred to Dr. Blundell's tract, appended to *Ashwell on Parturition*, London, 8vo. 1828, and to the article by Dr. Kay in the Cyclopædia of Practical Medicine.

TRANSPIRA'TION. (*Transpiratio, onis.* f.; from *trans*, through, and *spiro*, to breathe.) See *Perspiration.*

TRANSUDA'TION. *Transudatio.* The passing through the cells or pores of any thing. The term should be distinguished from perspiration, which implies a function by which the perspired fluid is secreted from the blood, whereas by transudation the blood or other fluid merely oozes through unaltered.

TRANSVERSA'LIS. Transverse. Applied very generally in the several departments of nature, especially in *Anatomy*, to muscles, vessels, &c. which have a transverse direction.

TRANSVERSALIS ABDOMINIS. A muscle situated on the anterior part of the abdomen: so named from its direction. It arises internally or posteriorly from the cartilages of the seven lower ribs, being there connected with the intercostals and diaphragm; also from the transverse process of the last vertebra of the back, from those of the four upper vertebræ of the loins, from the inner edge of the crista ilii, and from part of Poupart's ligament; and it is inserted into the inferior bone of the sternum, and almost all the length of the linea alba. Its use is to support and compress the abdominal viscera.

Transversalis anticus primus. See *Rectus capitis lateralis.*

Transversalis cervicis. See *Longissimus dorsi.*

TRANSVERSALIS COLLI. A muscle, situated on the posterior part of the neck, which turns the neck obliquely backwards, and a little to one side.

Transversalis dorsi. See *Multifidus spinæ.*

Transversalis major colli. See *Longissimus dorsi.*

TRANSVERSALIS PEDIS. A muscle of the foot, which it contracts, by bringing the great toe and the two outermost toes nearer each other.

TRANSVERSE SUTURE. *Sutura transversalis.* This suture runs across the face, and sinks down into the orbits, joining the bones of the skull to the bones of the face; but with so many irregularities and interruptions, that it can scarcely be recognised as a suture.

Transversospinalis. See *Multifidus spinæ.*

TRANSVE'RSUS. Transverse: placed across.

TRANSVERSUS AURIS. A muscle of the external ear, which draws the upper part of the concha towards the helix.

TRANSVERSUS PERINÆI. A muscle of the organs of generation, which dilates the bulb of the urethra, and assists the action of the levator ani.

TRANSVERSUS PERINÆI ALTER. *Prostaticus inferior*, of Winslow. A small muscle occasionally found accompanying the former.

TRA'PA. (*a, æ.* f.; a name given by Linnæus, whose idea is certainly taken from the warlike instrument called caltrop, the tribulus of the ancients, which consisted of four iron radiated spikes, so placed that one of them must always stand upwards, in order to wound the feet of the passengers. Such is the figure of the singular fruit of this genus; hence named by Tournefort *Tribuloides. Calcitrapa*, an old botanical term of similar meaning to *tribulus*, is compounded, perhaps, of *calco*, to tread or kick, and τρεπω, to turn; because the caltrops are continually kicked over if they fail of their intended mischief: here we have the immediate origin of *trapa.*) The name of a genus of plants. Class, *Tetrandria;* Order, *Monogynia.*

TRAPA NATANS. The systematic name of the plant which affords the *nux aquatica. Tribulus aquaticus.* Caltrops. The fruit is of a quadrangular and somewhat oval shape, including a nut of a sweet farinaceous flavour, somewhat like that of the chesnut, which is apt to constipate the bowels, and produce disease: however, it is said to be nutritious and demulcent, and to be useful in diarrhœas from abraded bowels, and against calculus. Likewise a poultice of these nuts is said to be efficacious in resolving hard and indolent tumours.

TRAPE'ZIFORM. *Trapeziformis.* Of the shape of a trapezium.

TRAPE'ZIUM. (*um, ii.* n.; a geometrical figure.) The first bone of the second row of the carpus, so called from its shape.

TRAPE'ZIUS. (*us, ii.* m.; from τραπεζιον, the name of a geometrical figure: so named from its shape.) *Cucullaris.* A muscle situated immediately under the integuments of the posterior part of the neck and back. It arises by a thick, round, and short tendon from the lower part of a protuberance in the middle of

the occipital bone backwards, and from the rough line that is extended from thence towards the mastoid process of the os temporis, and by a thin membranous tendon, which covers part of the complexus and splenius. It then runs downwards along the nape of the neck, and rises tendinous from the spinous processes of the two lowermost vertebræ of the neck, and from the spinous processes of all the vertebræ of the back, being inseparably united to its fellow, the whole length of its origin, by tendinous fibres, which, in the nape of the neck, form what is called *ligamentum colli*, or the cervical ligament. It is inserted fleshy into the broad and posterior half of the clavicle, tendinous and fleshy into one half of the acromion, and into almost all the spine of the scapula.

This muscle serves to move the scapula in different directions. Its upper descending fibres pull it obliquely upwards; its middle transverse ones pull it directly backwards; its inferior fibres, which ascend obliquely upwards, draw it obliquely downwards and backwards.

The upper part of the muscle acts upon the neck and head, the latter of which it draws backwards, and turns upon its axis. It likewise concurs with other muscles in counteracting the flexion of the head forwards.

TRAPEZOI'DES OS. (From τραπεζιος, the trapezium, and ειδος, resemblance.) The second bone of the second row of the carpus.

TRAUMA'TIC. (*Traumaticus*; from τραυμα, a wound.) Relating to a wound.

Traveller's joy. See *Clematis.*

Treacle. See *Saccharum officinale.*

Treacle, mustard. See *Thlaspi.*

Treacle, Venice. See *Mithridatum.*

Tree liver-wort. See *Lichen olivarius.*

Trefoil. See *Trifolium.*

TREFOIL, ACACIA. The *Spartium spinosum*, of Linnæus.

Trefoil, marsh. See *Menyanthes.*

Trefoil, water. See *Menyanthes trifoliata.*

TREME'LLA. (*a, æ.* f.; from *tremo*, to tremble or quake: and so called because of its gelatinous, tender, and tremulous substance.) The name of a genus of plants, of the Class *Cryptogamia*; Order, *Algæ.*

TREMELLA NOSTOC. *Nostoc commune.* An indigenous greenish jelly, which is edible.

TRE'MOR. (*or, oris.* m.) Trembling.

TREPA'N. (*Tre'panum, i.* n.; from τρυπαω, to perforate.) A surgical instrument bearing much resemblance to a wimble, and worked in the same manner. It is used for sawing a circular portion of bone out of the skull. On the Continent the trepan is generally used; in England it is superseded by the trephine.

TREPHINE. An instrument generally used by English surgeons instead of the trepan. It consists of a cylindrical saw, with a handle placed transversely, like that of a gimlet, and has a perforator or centre pin, which is fixed into the skull, and forms an axis on which the circular edge of the saw rotates, and which is removed as soon as the teeth of the saw have made a groove in which they can work steadily.

TRIA'NDRIA. (*a, æ.* f.; from τρεις, three, and ανηρ, a man.) 1. The name of the third class in the sexual arrangement of Linnæus's system. It embraces hermaphrodite plants which have three distinct stamens. It has three orders, — Monogynia, Digynia, and Trigynia.

2. The name of several orders of the Linnæan system; as the first of the Monadelphia, the third of the Gynandria, the third of the Monœcia, and the third of Dicœcia.

TRIANGULA'RIS. Triangular: a term very generally applied, in the different departments of science, to parts of animals, vegetables, minerals, &c., from their form. See *Caulis, Folium*, &c.

Triangularis sterni. See *Sternocostales.*

TRI'BULUS. (*us. i.* m. Τριβολος; from τριβω, to tear or injure: an instrument of war to be thrown in the way to annoy the enemy's horse: hence the name of an herb from its resemblance to this instrument.) 1. The name of a genus of plants. Class, *Decandria*; Order, *Monogynia.*

2. See *Trapa natans.*

Tribulus aquaticus. See *Trapa.*

TRI'CA. (*a, æ.* f.; from θριξ, τριχος, a hair: because they seem composed of a horse-hair rolled, or partly folded, into a little round black head.) A term applied by Dr. Acharius to the black filaments, resembling a curled horse-hair, in the *Gyrophora* and *Umbilicaria*, of Hoffmann.

TRICAUDA'LIS. (From *tres*, three, and *cauda*, a tail.) Having three tails.

TRI'CEPS, (*eps, ipitis.*, sc. *musculus*; from *tres*, three, and *caput*, a head.) Three-headed.

TRICEPS ADDUCTOR FEMORIS. Under this appellation are comprehended three distinct muscles. See *Adductor brevis, longus*, and *magnus femoris.*

Triceps auris. See *Retrahens auris.*

TRICEPS EXTENSOR CUBITI. This muscle occupies all the posterior part of the os humeri, and is described as two distinct muscles by Douglas, and as three by Winslow. The upper part of its long head is covered by the deltoides: the rest of the muscle is situated immediately under the integuments.

It arises, as its name indicates, by three heads. The first, or long head (the long head of the *biceps externus*, of Douglas; *anconeus major*, of Winslow, as it is called) springs, by a flat tendon of an inch in breadth, from the anterior extremity of the inferior costa of the scapula, near its neck, and below the origin of the teres minor. The second head (the short head of the *biceps externus*, of Douglas; *anconeus externus*, of Winslow) arises by an acute, tendinous, and fleshy beginning from the upper and outer part of the os humeri, at the bottom of its great tuberosity. The third head (*brachialis externus*, of Douglas; *anconeus internus*, of Winslow), which is the shortest of the three, originates by an acute fleshy beginning, from the back part of the os humeri, behind the flat tendon of the latissimus dorsi. These three portions unite about the middle of the arm, so as to form one thick and powerful muscle,

which adheres to the os humeri to within an inch of the elbow, where it begins to form a broad tendon, which, after adhering to the capsular ligament of the elbow, is inserted into the upper and outer part of the olecranon, and sends off a great number of fibres, which help to form the fascia on the outer part of the fore-arm. The use of this muscle is to extend the fore-arm.

TRI'CHIA. (*a, æ.* f.; from θριξ, a hair.) The same as *Trichiasis.*

TRICHI'ASIS. (From θριξ, a hair.) 1. A disease of the eyelashes, in which they are turned in towards the bulb of the eye.

2. A disease of the hair. See *Plica.*

TRICHI'SMUS. (*us, i.* m.; from θριξ, a hair.) A species of fracture which appears like a hair, and is almost imperceptible.

TRICHOCE'PHALUS. (*us. i.* m.; from θριξ, hair, and κεφαλη, the head.) The hair-headed worm. See *Entozoa.*

Trichocephalus dispar. See *Entozoa.*

TRICHO'MA. (*a, atis.* n.; from θριξ, a hair.) The plaited hair. See *Plica.*

TRICHO'MANES. (*es, is.* m.; from τριχες, hair, and μανος, thin, lax: so called because it resembles fine hair.) The trivial name of a plant. See *Asplenium trichomanes.*

TRICHO'SIS. (Τριχωσις, *pilare malum;* from θριξ, a hair.) Under this name Good arranges a genus, which embraces most of the diseases of the hair.

TRICHO'TOMOUS. *Trichotomus.* Divided by threes. Applied in *Natural History.*

TRICHU'RIS. (*is, idis.* f.; from θριξ, a hair.) The long hair-worm. See *Entozoa.*

TRICO'CCÆ. The name of an order in Linnæus's Fragments of a Natural Method, consisting of those which have a triangular capsule with three seeds.

TRICO'CCUS. (From τρεις, three, and κοκκος, a grain.) Three-seeded.

TRICU'SPID. (*Tricuspis, tricuspidatus;* from *tres,* three, and *cuspis,* a point.) Three pointed.

TRICUSPID VALVE. The valve situated between the auricle and ventricle on the right side of the heart. See *Heart.*

Tricuspidatus. See *Tricuspid.*

TRIFACIAL NERVE. The fifth nerve is so called from its division into three great branches, and distribution to the face.

TRI'FIDUS. (From *tres,* three, and *findo,* to cut.) Three-cleft.

TRIFO'LIUM. (*um, ii.* n.; from *tres,* three, and *folium,* a leaf: so called because it has three leaves on each stalk.) The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Monogynia.* Trefoil.

Trifolium acetosum. See *Oxalis.*

Trifolium aquaticum. See *Menyanthes.*

TRIFOLIUM ARVENSE. The hare's foot trefoil: not now used.

TRIFOLIUM AUREUM. The *Anemone hepatica,* of Linnæus.

Trifolium caballinum. See *Trifolium melilotus officinalis.*

TRIFOLIUM CÆRULEUM. Sweet trefoil.

Trifolium falcatum. See *Hieracium.*

Trifolium fibrinum. See *Menyanthes.*

Trifolium hepaticum. See *Anemone.*

TRIFOLIUM MELILOTUS OFFICINALIS. The systematic name of the officinal melilot; called in the shops *Melilotus,* and formerly *Lotus sylvestris, Serratula campana, Trifolium caballinum, Corona regia,* and *Trifolium odoratum.* This plant has been said to be resolvent, emollient, anodyne, and to participate of the virtues of chamomile. Its taste is unpleasant, subacrid, subsaline, but not bitter; when fresh it has scarcely any smell; in drying it acquires a pretty strong one of the aromatic kind, but not agreeable. The principal use of melilot has been in clysters, fomentations, and other external applications.

Trifolium odoratum. See *Trifolium melilotus officinalis.*

Trifolium paludosum. See *Menyanthes.*

TRIGE'MINI. (*Trigeminus;* from *tres,* three, and *geminus,* double: three-fold.) *Nervi innominati.* The fifth pair of nerves. See *Nerve.*

TRIGONE'LLA. (*a, æ.* f.; a diminutive of *trigona,* three-sided, alluding to its little triangular flower.) The name of a genus of plants. Class, *Diadelphia;* Order, *Decandria.*

TRIGONELLA FŒNUM GRÆCUM. The systematic name of the fœnugreek; called also, *Fœnum græcum, Buceras,* and *Ægoceras.*

Trigonella — leguminibus sessilibus strictis erectiusculis subfalcatis acuminatis, caule erecto, of Linnæus. A native of Montpellier. The seeds are brought to us from the southern parts of France and Germany: they have a strong disagreeable smell, and an unctuous farinaceous taste, accompanied with a slight bitterness. They are esteemed as assisting the formation of pus, in inflammatory tumours; and the meal, with that intention, is made into a poultice with milk.

TRIGO'NUS. (From τρεις, three, and γωνια, an angle.) Trigonal, or three-cornered.

TRIGY'NIA. (*a, æ.* f.; from τρεις, three, and γυνη, a female.) The name of an order in many of Linnæus's classes of the sexual system of plants, distinguished by the flowers having three pistils.

TRIHILA'TÆ. The name of a class of plants in Linnæus's Fragments of a Natural Method, consisting of plants the seeds of which have the *hilum* or scar well marked; the style has three stigmas.

TRIHILA'TUS. (From *tres,* three, and *hilum,* the scar or external mark on the seed.) Having three *hila* or scars.

Trilobatus. See *Trilobus.*

TRI'LOBUS. *Trilobatus.* Trilobate: three-lobed. Applied to parts of animals and plants which are so shaped.

TRILO'CULAR. *Trilocularis.* Three-celled.

TRINE'RVIS. Three-nerved. Three-ribbed; as applied to leaves, &c.

Trinitatis herba, See *Anemone.*

Trinity-herb. See *Anemone.*

TRIPARTI'TUS. Tripartite: divided into three. Applied to parts of animals and vegetables.

TRIPA'STRUM APE'LLIDIS. *Tripastrum Archimedis.* A surgical instrument for extending fractured limbs: so named because it resembled

a machine invented by Apellides or Archimedes, for launching of ships, and because it was worked with three cords.

TRIPHY'LLUS. (From τρεις, three, and φυλλον, a leaf.) Triphyllous: three-leaved.

TRIPI'NNATE. (*Tripinnatus*; from τρεις, three, and πινναι, a wing.) *Triplicato-pinnatus.* Triply pinnate. Applied to a pinnated leaf, of which the secondary petioles produce tertiary petioles on which the leaflets are implanted.

TRIPLINE'RVIS. Triply-ribbed: applied to a leaf which has a pair of large ribs branching off from a main one above the base, which is the case in every species of sunflower, and the *Blakea triplinervis.*

TRIPLO'PIA. (*a, æ.* f.; from τρεις, three, and οπτομαι, to see.) *Visus triplicatus.* A species of disordered vision, in which objects are seen triple.

TRIQUE'TRA OSSI'CULA. *Ossicula Wormiana.* The triangular-shaped bones which are found mostly in the course of the lambdoidal suture of the skull.

TRIQUE'TRUM. (*um, i.* n.) A triangle.

TRIQUE'TRUS. (From *tres.*) Three-sided. Applied to some parts of animals, plants, &c.; as bones, stems, flowerstalks, leaves, seeds, &c.

TRI'SMUS. (*us, i.* m.; from τριζω, to gnash.) Locked jaw. Spastic rigidity of the under jaw. There are two species: — 1. *Trismus nascentium*, attacking infants during the two first weeks from their birth. 2. *Trismus traumaticus*, attacking persons of all ages, and arising from cold or a wound. See *Tetanus.*

TRI'SSAGO. (*o, inis.* f.; *quasi tristago*, from *tristis*, sad: because it dispels sadness.) See *Teucrium chamædrys.*

Trissago palustris. See *Teucrium.*

TRITÆO'PHYA. (*a, æ.* f.; from τριταιος, tertian, and φυω, to arise.) A fever much of a nature with a tertian, and taking its rise from it.

TRITÆOPHYA CAUSUS. The fever called *causus* by Hippocrates.

TRITÆ'US. Tertian. See *Ague.*

TRITERNA'TUS. *Triplicato-ternatus.* The term applied to a leaf when the divisions of a triple leafstalk are again subdivided into threes, and there are three leaflets at the end of each subdivision.

TRI'TICUM. (*um, i.* n.; from *tero*, to thresh from the husk.) The name of a genus of plants. Class, *Triandria*; Order, *Digynia.* See *Wheat.*

TRITICUM REPENS. *Gramen caninum. Gramen Dioscoridis. Gramen repens. Loliaceum radice repente.* Dog's-grass. Couch-grass. A very common grass, the roots of which are agreeably sweet, and possess aperient properties. The expressed juice is recommended to be given largely.

TRITO'RIUM. (From *tritus*, beat small.) 1. A mortar.

2. A glass for separating the oil from the water in distilling.

TRITURA'TION. (*Trituratio, onis.* f.; from *tero*, to rub or grind.) *Tritura. Tritus.* The act of reducing a solid body into a subtile powder; as woods, barks, &c. It is performed mostly by the rotatory motion of a pestle in metallic, glass, or wedgewood mortars.

TRI'VIAL. In *Botany*, the *trivial* name means the same as the *specific*: it is that which is added to the generic name for the more ready discrimination of the species of the same genus: thus, in *Plantago*, the name of a genus, the trivial names are, *major, lanceolata, coronopus*, &c.

TROCA'R. (Corrupted from *un trois quart*, French, *a three quarters*; from the three sides with which the point is made. The name of an instrument used in tapping for the dropsy.

TROCHA'NTER. (*er, ri.* m.; from τροχαζω, to run: because the muscles inserted into them perform the office of running.) The name of two processes of the thigh-bone, which are distinguished into the greater and lesser. See *Femur.*

TROCHI'SCUS. (*us, i.* m.; diminutive of τροχος, a wheel.) A troch or round tablet. Troches and lozenges are composed of powders made up with glutinous substances into little cakes, and afterwards dried. This form is principally used for the more commodious exhibition of certain medicines, by fitting them to dissolve slowly in the mouth, so as to pass by degrees into the stomach; and hence these preparations have generally a considerable portion of sugar or other materials grateful to the palate. Some powders have likewise been reduced into troches, with a view to their preparation, though possibly for no very good reasons: for the moistening them, and afterwards drying them in the air, must on this account be of greater injury than any advantage accruing from this form can counterbalance.

General rules for making troches: —

1. If the mass proves so glutinous as to stick to the fingers in making up, the hands may be anointed with any sweet or aromatic oil; or else sprinkled with starch, or liquorice powder, or with flour.

2. In order to thoroughly dry the troches, put them on an inverted sieve, in a shady airy place, and frequently turn them.

3. Troches are to be kept in glass vessels, or in earthen ones well glazed.

TRO'CHLEA. (*a, æ.* f. Τροχλεα, a pulley; from τρεχω, to run.) A kind of cartilaginous pulley, through which the tendon of one of the muscles of the eye passes.

TROCHLEA'RIS. A muscle so called because its tendon passes through a pulley. See *Obliquus superior oculi.*

TROCHLEA'TOR. A nerve: so called because it supplies the musculus trochlearis of the eye. See *Pathetici.*

TROCHOI'DES. (From τροχος, a wheel, and ειδος, resemblance.) *Axea commissura.* A species of movable connexion of bones, in which one bone rotates upon another; as the first cervical vertebra upon the odontoid process of the second.

TROPÆ'OLUM. (*um, i.* n.; a diminutive of *tropæum*, or τρωπαιον, a warlike trophy. This fanciful but elegant name was chosen by Linnæus for this singular and striking genus, because he conceived the shield-like

leaves and the brilliant flowers, shaped like golden helmets, pierced through and through, and stained with blood, might well justify such an allusion.) The name of a genus of plants. Class, *Octandria;* Order, *Monogynia.*

TROPÆOLUM MAJUS. The systematic name of the Indian cress. Greater Indian cress or Nasturtium. *Nasturtium indicum. Acriviola. Flos sanguineus monardi. Nasturtium Peruvianum. Cardaminum minus.* This plant is a native of Peru: it was first brought to France in 1684, and there called *Le grande capucine.* In its recent state this plant, and more especially its flowers, have a smell and taste resembling those of water-cress; and the leaves, on being bruised in a mortar, emit a pungent odour, somewhat like that of horse-radish. By distillation with water they impregnate the fluid in a considerable degree with the smell and flavour of the plant. Hence the antiscorbutic character of the nasturtium seems to be well founded, at least as far as we are able to judge from its sensible qualities: therefore, in all those cases where the warm and antiscorbutic vegetables are recommended, this plant may be occasionally adopted as a pleasant and effectual variety. Patients, to whom the nauseous taste of scurvy-grass is intolerable, may find a grateful substitute in the nasturtium. The flowers are frequently used in salads, and the capsules are by many highly esteemed as a pickle. The flowers, in the warm summer months, about the time of sunset, have been observed to emit sparks like those of the electrical kind.

TROPHIS AMERICANA. Red-fruited bucephalon. The fruit of the plant is a rough red berry, which is eaten in Jamaica, though not very pleasant.

Trough, pneumatic. See *Apparatus, pneumatic.*

Trowel-shaped. See *Deltoides.*

TRUE. *Verus.* Formerly applied to designate diseases, when they were really what the name implied, and in opposition to those which only simulated them: hence *peripneumonia vera* and *notha.*

Truffle. See *Lycoperdon tuber.*

Truffle, Piedmont. See *Lycoperdon tuber.*

TRUNCA'TUS. Truncate: lopped; appearing as if cut off with a pair of scissors. A truncate leaf is one which has the extremity cut off, as it were, by a transverse line; as in *Liriodendrum tulipifera,* and the petals of *Hura crepitans.*

TRU'NCUS. (*us, i.* m.) The trunk.

I. In *Anatomy,* applied to the body strictly so called. It is divided into the *thorax,* or chest, the *abdomen,* or belly, and the *pelvis.* See *Body.*

II. In *Botany,* that part of a plant which emerges from the root, and sustains all other parts. The genera of trunks are, —

1. *Truncus:* applied to trees and shrubs which are thick and woody.

2. *Caulis:* the stem of herbs.

3. *Culmus:* the stem of grasses.

4. *Stipes:* the trunk of funguses, ferns, and palms.

5. *Scapus:* which is not a trunk, but a flower-stalk, emerging from the root.

TRUSS. (From the French *trousse. Bracherium.*) A bandage for a hernia.

TU'BA. (*a, æ. f.*; from *tubus,* any hollow vessel.) A tube. 1. In *Anatomy,* applied to several canals; as the Eustachian tube, Fallopian tube, &c.

2. In *Botany,* the inferior part of a monopetalous coral. It is the cylindrical part which is enclosed in the calyx of the primrose. See *Corolla.*

8. In *Surgery,* applied to hollow instruments.

TUBA EUSTACHIA'NA. (So called because it was first described by Eustachius.) *Tuba Aristotelica. Aquæductus. Aquæ ductus Fallopii. Meatus siccus. Palatinus ductus. Ductus auris palatinus.* The Eustachian tube. A tube which forms a communication between the cavity of the tympanum and the posterior nares. See *Auris.*

TUBA FALLOPIA'NA. (So called because it was first described by Fallopius.) The Fallopian tube. A canal which arises at each side of the fundus of the uterus, and ends at the ovarium. See *Uterus.*

Tube. See *Tuba.*

TU'BER. (*er, eris.* n.; from *tumeo,* to swell.) An old name for an excrescence. 1. In *Anatomy,* applied to some parts which are rounded; as *tuber, annulare,* &c.

2. In *Surgery,* a knot or swelling in any part.

3. In *Botany,* applied to a kind of round turgid root, as a turnip: hence these are called tuberose roots.

4. The name of a genus of plants in the Linnæan system. Class, *Cryptogamia;* Order, *Fungi.*

Tuber album. See *Lycoperdon.*

TUBER ANNULARE. *Tuberculum annulare.* See *Pons varolii.*

Tuber cibarum. See *Lycoperdon tuber.*

Tuber griseum. See *Lycoperdon.*

Tuber moschatum. See *Lycoperdon.*

Tuber rufum. See *Lycoperdon.*

TU'BERCLE. (*Tuberculum, i.* n.; diminutive of *tuber.*) A tubercle. 1. In *Anatomy,* applied to several elevations.

2. In *Pathology,* a peculiar morbid product occurring in various textures of the body, in connexion with the scrofulous, or, as it is now frequently termed, the tubercular diathesis. It occurs in isolated roundish masses, or infiltrated in the texture of organs. The matter which forms tubercles is unorganised, of a dull whitish yellow, or yellowish-gray colour, opake, and varying in form and consistence according to the stage of development of the tubercle, and the texture of the part in which it is formed.

According to Laennec, tubercular matter, in whatever form it presents itself, is at first gray and semi-transparent, which, by degrees, becomes yellow, opake, and very dense; lastly, it undergoes a softening process, and is converted into a matter resembling pus. Isolated tubercles of the lungs are described by this distinguished pathologist as making their first appearance as gray semi-transparent grains resembling millet seeds; and hence named *miliary.* After a while, a yellowish-white opake

spot is seen in the centre of each tubercle, and gradually pervades the whole, and the tubercle is then said to be in the *crude* state. A number of these crude tubercles coalesce, undergo the softening process, and form a vomica. Tubercle is thus regarded by Laennec as an *organised* product, which undergoes changes by virtue of actions carried on within itself. This opinion, however, is now generally considered erroneous, and tubercular matter is regarded as a mere unorganised deposit. The softening process does not arise from any action carried on by the tubercle itself, but from the action of the surrounding living parts. Laennec, in supposing that it commenced in the centre of the tubercle, appears to have been misled by an anatomical deception which has been pointed out by Dr. Carswell. The softening generally commences at the circumference, and is always caused by the admixture of fluid secreted by the vessels of the surrounding texture, which are irritated by the presence of the tubercle, acting as a foreign body.

According to the analysis of M. Thenard, as given by M. Andral, crude pulmonary tubercle consisted of

Animal matter	98·15
Muriate of soda... Phosphate of lime Carbonate of lime	1·185
	100·00

It is the general opinion of pathological anatomists, that there is scarcely any texture of the body which may not occasionally become the seat of tubercle. It has been found on the surface of mucous and serous membranes, within mucous follicles, within lymphatic vessels, in the cellular membrane, and in the blood, especially in that contained in the cells of the spleen. Dr. Carswell regards the mucous and serous surfaces, and the blood, as the exclusive seats of the tubercular deposition, which, according to him, is never to be found in the molecular structure of organs. The same able pathologist contends that the free surface of the mucous membrane is the most frequent seat of tubercle, and has adduced strong arguments in favour of this position. The cellular tissue has hitherto been regarded as most subject to tubercular disease.

The presence of tubercles gives rise to many severe and incurable diseases, as well as to the less formidable glandular affections which infest the scrofulous constitution, especially in early life. See *Phthisis*, *Scrofula*, *Tubes*, &c.

3. In *Botany*, applied to the hemispherical projections; as in the fruit of the *Lichen caninus*.

TUBE'RCULA. The name of an order in Dr. Willan's Cutaneous Diseases, defined small, hard, superficial tumours, circumscribed and permanent, or suppurating partially. It comprehends nine genera; viz. *phyma*, *verruca*, *molluscum*, *virtiligo*, *acne*, *sycosis*, *lupus*, *elephantiasis*, and *frambœsia*.

TUBERCULA QUADRIGE'MINA. *Corpora quadrigemina. Eminentiæ quadrigeminæ. Natulæ. Nates cerebri.* Four white oval tubercles of the brain, two of which are situated on each side, at the posterior part of the third ventricle and over the aqueduct of Sylvius. The ancients called them nates and testes, from their resemblance in shape to those parts. See *Encephalos*.

TUBE'RCULAR. *Tuberculatus.* Tuberculate: tubercled; having small warts or tubercles.

Tuberculum annulare. See *Tuber annulare.*

TUBERCULUM LOWERI. An eminence in the right auricle of the heart where the two venæ cavæ meet: so called from Lower, who first described it. See *Heart.*

TU'BEROSE. *Tuberosus.* Tuberous: knobbed. Applied to parts of plants. The root so called is of many kinds. The most genuine consists of fleshy knobs, various in form, connected by common stalks or fibres; as the potato and Jerusalem artichoke.

TU'BULAR. *Tubularis.* Tube-like.

TU'BULATED. *Tubulatus.* 1. Synonymous with *tubulous.*

2. A retort which has a small tubular production at its upper and back part, with a stopper adapted to it, is called a *tubulated retort.*

TU'BULI LACTI'FERI. The ducts or tubes in the nipple through which the milk passes.

TU'BULOUS. *Tubulosus.* Tubular: a leaf is so called which is hollow within, as that of the common onion.

The florets of a compound flower are called *tubulosi*, tubular or cylindrical, to distinguish them from such as are ligulate, or riband-like.

TU'BULUS. A small tube or duct.

Tuft. See *Capitulum*, and *Cyma.*

TUMOUR. (*Tumor, oris.* m.; from *tumeo*, to swell.) In a wide acceptation, a tumour means a swelling of any part of whatever kind, and from whatever cause. The term, however, is usually restricted to a permanent swelling, while the swelling which arises from inflammation, and ceases along with the cause, is more generally called *tumefaction.* Tumours are commonly distinguished into *Sarcomatous*, firm and of a fleshy consistence; and *Encysted*, consisting of a sac containing matter more or less pulpy, or fluid.

I. *Sarcomatous tumours.* These are divided by Abernethy into, —

1. *Common vascular*, or *organised sarcoma*, including tumours which appear to be composed of the lymph of the blood, rendered more or less vascular by the growth of vessels through it.

2. *Adipose sarcoma*, including fatty tumours which are originally formed like the preceding, and afterwards become fat owing to a particular action of their vessels.

3. *Pancreatic sarcoma*, so called from the resemblance of its structure to that of the pancreas.

4. The *Mastoid*, or *Mammary sarcoma*, so called from the resemblance of its structure to that of the mammary gland.

5. The *Tuberculated sarcoma*, composed of numerous small firm roundish tumours of various sizes and colours, connected with each other by cellular membrane.

6. *Medullary sarcoma*, so called from its resembling the medullary matter of the brain. It is the *fungus hæmatodes* of other writers.

7. The *Carcinomatous sarcoma*, or cancerous tumour. Of these different kinds of tumours,

the *common vascular*, the *adipose*, and the *pancreatic*, are considered as devoid of any malignity; the *tuberculated, medullary*, and *carcinomatous*, are highly malignant: the *mammary* sarcoma is placed by Mr. Abernethy between the two.

II. *Encysted tumours.* These are distinguished into, —

1. *Steatomatous*, or those containing a fatty matter.

2. *Melicerous*, containing matter somewhat resembling honey.

3. *Atheromatous*, containing a pap-like matter.

TUNBRIDGE. Tunbridge Wells is a populous village in the county of Kent, which contains many chalybeate springs, all of which resemble each other very closely in their chemical properties. Two of these are chiefly used, which yield about a gallon in a minute, and therefore afford an abundant supply for the numerous invalids who yearly resort thither. The Tunbridge waters derive their characteristic properties from a strong impregnation of iron and carbonic acid. The saline ingredients are similar to those of spring waters in general. The general operation of this chalybeate water is to increase the power of the secretory system in a gradual, uniform manner, and to impart tone and strength to all the functions: hence it is asserted to be of eminent service in irregular digestion; flatulency; in the incipient stages of those chronic disorders which are attended with great debility; in chlorosis; and numerous other complaints incident to the female sex. The prescribed method of using the Tunbridge water, observes Dr. Saunders, is judicious. The whole of the quantity daily used is taken at about two or three intervals, beginning at eight o'clock in the morning, and finishing about noon. The dose at each time varies from about one to three quarters of a pint, according to the age, sex, and general constitution of the patient, and especially the duration of the course; for it is found that these waters lose much of their effect by long habit.

TU'NGSTATE. *Tungstas.* A salt formed by the combination of the tungstic acid with a salifiable base.

TU'NGSTEN. (*Tungstenum*, *i.* n.) This name, signifying heavy stone, was given by the Swedes to a mineral, which Scheele found to contain a peculiar metal, as he supposed, in the state of an acid, united with lime. The same metallic substance was afterwards found by the Don d'Elhuyarts united with iron and manganese in wolfram.

From the first of these the oxide may be obtained by digesting its powder in thrice its weight of nitric acid; washing the yellow powder that remains, and digesting it in ammonia, by which a portion of it is dissolved. These alternate digestions are to be repeated, and the tungstic oxide precipitated from the ammoniacal solutions by nitric acid. The precipitate is to be washed with water, and exposed to a moderate heat, to expel any ammonia that may adhere to it. Or the mixture may be evaporated to a dry mass, which is to be calcined under a muffle, to dissipate the nitrate of ammonia. From wolfram it may be obtained by the same process, after the iron and manganese have been dissolved by muriatic acid.

The Spanish chemists reduced the oxide of tungsten to the metallic state, by exposing it, moistened with oil, in a crucible lined with charcoal, to an intense heat. After two hours a piece of metal weighing 40 grains, but slightly agglutinated, was found at the bottom of the crucible. Some have attempted its reduction in vain, but Guyton, Ruprecht, and Messrs. Aikin and Allen, have been more successful. The latter gentlemen produced it from the ammoniuret. From 240 grains of this substance, in acicular crystals, exposed for two hours to a powerful wind-furnace, in a crucible lined with charcoal, they obtained a slightly cohering mass of roundish grains, about the size of a pin's head, with a very brilliant metallic lustre, and weighing in the whole 161 grains.

Tungsten is said to be of a greyish-white or iron colour, with considerable brilliancy, very hard and brittle. Its specific gravity Don d'Elhuyarts found to be 17.6; Messrs. Aikin and Allen, above 17.22.

There are two oxides of tungstenum, the brown, and the yellow or tungstic acid.

The brown oxide is formed by transmitting hydrogen gas over tungstic acid in an ignited glass tube. It has a flea-brown colour, and when heated in the air it takes fire and burns like tinder, passing into *tungstic acid*; which see.

The brown oxide consists of

Tungstenum,	100	
Oxygen,	16.6. — *Berzelius.*	

Hence, if we regard it as composed of 2 primes oxygen + 1 metal, its composition will be

Tungstenum,	12.05	100
Oxygen,	2.00	16.6

Hence the acid prime ought probably to be 12.05 + 3 = 15.05 or 15; and that of the metal 12.

But from Berzelius's experiments, tungstate of lime seems to consist of

Tungstic acid,	100	14.50
Lime,	24.12	3.50

The difference indeed is not great.

Sir H. Davy found that tungstenum burns with a deep red light when heated in chlorine, and forms an orange-coloured volatile substance, which affords the yellow oxide of tungstenum, and muriatic acid, when decomposed by water.

Scheele supposed the white powder obtained by digesting the ore in an acid, adding ammonia to the residuum, and neutralising it by nitric acid, to be pure acid of tungsten. In fact it has a sour taste, reddens litmus, forms neutral crystallisable salts, with alkalies, and is soluble in 20 parts of boiling water. It appears, however, to be a triple salt, composed of nitric acid, ammonia, and oxide of tungsten; from which the oxide may be obtained in a yellow powder, by boiling with a pure concentrated acid. In this state it contains about 20 per cent. of oxygen; part of which may be expelled by a red heat, when it assumes a green colour.

Tungsten is insoluble in the acids; and its oxide is nearly the same. It appears to be

capable of uniting with most other metals, but not with sulphur. Guyton found that the oxide gives great permanence to vegetable colours.

M. Wöhler has written a memoir on tungsten and its combination in the *Annales de Chimie*, xxix. 43. Oxide of tungsten inflames in the air, and becomes tungstic acid. 100 of the former absorb 8 of oxygen; while 100 of metallic tungsten absorb 25 in becoming tungstic acid. M. Wöhler describes three chlorides of tungsten.

TUNGSTIC ACID. *Acidum tungsticum.* See *Tungsten.*

TUNGSTOUS ACID. What has been thus called appears to be merely an oxide of tungsten.

TUNGSTEN OF BASTNAS. *False tungsten.* Cerium has been so called. See *Cerium.*

TU'NIC. (*Tunica, æ.* f.; a coat, *à tuendo corpore*, because it defends the body.) A membrane or covering; as the coats of the eye, &c.

Tunic of a seed. See *Arillus.*

Tunica aciniformis. See *Iris.*

Tunica albuginea oculi. See *Adnata tunica.*

Tunica albuginea testis. See *Albuginea testis.*

Tunica Arachnoides. See *Arachnoid.*

TUNICA CELLULOSA RUYSCHII. The cellular coat of the intestines.

Tunica choroides. See *Choroid.*

Tunica conjunctiva. See *Conjunctive.*

Tunica cornea. See *Cornea.*

TUNICA FILAMENTOSA. The false or spongy chorion. See *Chorion.*

Tunica retina. See *Retina.*

Tunica vaginalis testis. See *Testis.*

TUNICA VILLOSA. The villous, or inner coat of the intestines.

TUNICA'TUS. Coated.

Turbeth mineral. See *Subsulphas hydrargyri flavus.*

Turbeth root. See *Convolvulus turpethum.*

TU'RBINATE. (*Turbinatus*; from *turbo*, a top.) Shaped like a top.

TURBINATED BONES. The superior spongy portion of the ethmoid bone, and the inferior spongy bones, are so called by some writers. See *Spongiosa ossa.*

TURBINA'TUM. The pineal gland.

TURBINA'TUS. Turbinate, top-shaped. Applied in *Zoology* and *Botany.*

Turbith. See *Convolvulus turpethum.*

Turbith mineral. See *Subsulphas hydrargyri flavus.*

TURBITH, MONTPELLIER. The *Globularia alypum.*

Turbot. See *Pleuronectes maximus.*

TURGID. *Turgidus.* Swollen; turgid.

Turkey. See *Meleagris gallipova.*

Turkey rhubarb. See *Rheum.*

TU'RIO. (*o, nis.* m.; from *tyro.*) A young unexpanded shoot, as that of the asparagus in the state it is gathered for eating.

Turmeric. See *Curcuma.*

TURNER'S CERATE. The *Ceratum calaminæ* of the London Pharmacopœia.

Turnip. See *Brassica rapa.*

Turnip, French. See *Brassica rapa.*

Turnsole. See *Heliotropium.*

TURPENTINE. *Terebinthina.* There are many kinds of turpentine. Those employed medicinally are, —

1. The Chian or Cyprus turpentine. See *Pistacia terebinthus.*

2. The common turpentine. See *Pinus sylvestris.*

3. The Strasburg turpentine. See *Pinus picea.*

4. The Venice turpentine. See *Pinus larix.*

All these have been considered as hot, stimulating corroborants and detergents,— qualities which they possess in common. They stimulate the primæ viæ, and prove laxative; when carried into the blood-vessels they excite the whole system, and thus prove serviceable in chronic rheumatism and paralysis. Turpentine readily passes off by urine, which it imbues with a peculiar odour; also by perspiration, and by exhalation from the lungs; and to these respective effects are ascribed the virtues it possesses in gravelly complaints, scurvy, and pulmonic disorders. Turpentine is much used in gleets and fluor albus, and in general with much success. The essential oil, in which the virtues of turpentine reside, is not only preferred for external use, as a rubefacient, but also internally as a diuretic and styptic; the latter of which qualities it possesses in a very high degree. Turpentine is a powerful local stimulant and detersive. It is much used by some surgeons as an application to burns. See *Ambustio.*

Turpeth mineral. See *Subsulphas hydrargyri flavus.*

TURPE'THUM. (*um, i.* n.; from *Turpeth*, an Indian word.) See *Convolvulus turpethum.*

Turpethum minerale. See *Subsulphas hydrargyri flavus.*

TURU'NDA. (*a, æ.* f.; *à terendo*, from its being rolled up.) A tent, or suppository.

TUSSILA'GO. (*o, inis.* f.; from *tussis*, a cough: because it relieves coughs. 1. The name of a genus of plants in the Linnæan system. Class, *Syngenesia*; Order, *Polygamia superflua.*

2. The pharmacopœial name of the coltsfoot. See *Tussilago farfara.*

TUSSILAGO FA'RFARA. The systematic name of the *Bechium. Bechion. Calceum equinum. Chamæleuce. Filius ante patrem. Farfarella. Farfara. Tussilago vulgaris. Farfara bechium. Ungula caballina.* Coltsfoot. *Tussilago farfara — scapo unifloro imbricato, foliis subcordatis angulatis denticulatis.* The sensible qualities of this plant are very inconsiderable: it has a rough mucilaginous taste, but no remarkable smell. The leaves have always been esteemed as possessing demulcent and pectoral virtues; and hence they have been exhibited in pulmonary consumptions, coughs, asthmas, and catarrhal affections. It is used as tea, or given in the way of infusion with liquorice-root or honey. Fuller thought well of it in the cure of scrofula, which induced Dr. Cullen to try it. He gave the expressed juice and the decoction in large quantities, which induced the scrofulous sores, he tells us, to heal. It has fallen into disuse.

TUSSILAGO PETASITES. The systematic name of the butter-bur. *Petasites.* Pestilent-wort. The roots of this plant are recommended as aperient and alexipharmic, and promise, though

now forgotten, to be of considerable activity. They have a strong smell, and a bitterish acrid taste, of the aromatic kind, but not agreeable.

TU'SSIS. (*is, is.* f.; from the Hebrew word for sneezing.) A cough. See *Cough.*

Tussis convulsiva. See *Pertussis.*

Tussis ferina. See *Pertussis.*

TUTENA'G. 1. A name given in India to zinc.

2. A metallic compound brought from China, and called *Pakfong* or Chinese copper. See *Pakfong.*

TU'TIA. (*a, æ.* f.; Persian.) *Pompholyx. Cadmia. Cadmia factitia. Cadmia fornacum.* Tutty. A grey oxide of zinc. It is generally formed by fusing brass or copper, mixed with blende, when it is incrusted in the chimneys of the furnace.

TUTIA PRÆPARATA. Mixed with any common cerate, or diffused in distilled water, it was formerly in common use to apply to the eye, in debilitated states of the conjunctive membrane.

TUTSAN. (A corruption of the French *toutsain*, which means all heal.) See *Hypericum androsæmum.*

Tutty. See *Tutia.*

Twining. See *Volubilis.*

Twinforked. See *Bigeminus.*

TYLO'SIS. (From τυλος, a callus.) *Tyloma.* An induration of the margin of the eyelids.

Tympani membrana. See *Membrana tympani.*

TYMPANI'TES. (*es, æ.* m.; from τυμπανον, a drum: so called because the belly is distended with wind, and sounds like a drum when struck.) Tympany. Drum-belly. An elastic distension of the abdomen, which sounds like a drum when struck, with costiveness and atrophy, but no fluctuation. Species: — 1. *Tympanites intestinalis*, a lodgment of wind in the intestines, known by the discharge of wind giving relief.

2. *Tympanites abdominalis*, when the wind is in the cavity of the abdomen.

The intestinal species of tympanites is seldom an idiopathic disease, but mostly dependant on some other—as indigestion, colic, &c.; in which case it is removed by those remedies which are proper against dyspepsia, colic, &c. There is, however, a species of intestinal tympanites which is idiopathic, and that is when the arteries of the stomach and intestines secrete a gaseous fluid. This now and then occurs, and to a great extent, so as to inflate the abdomen to an enormous size. Warm and, as they are called, carminative medicines are to be exhibited with purgatives, as aloes, rhubarb, and the like, unless the bowels are purged; and, in this case, astringents are to be combined with the carminatives; spirituous, camphorated, and other cordials are calculated to give tone to the bowels, the loss of which mostly exists in intestinal flatulency.

The tympanites abdominalis is a very rare disease indeed: in it the gas is collected within the cavity of the peritonæum. When it exists, it mostly supervenes other diseases, and is then called *meteorismus.* Ulcerated bowels, strangulated hernia, gangrene of the intestines, produce it, when the parietes of the bowels burst. It may also be caused by abscesses bursting into the abdomen, and by gangrene of any of its viscera. Tapping the belly has been resorted to, but without effecting a cure. The disease is generally fatal.

TY'MPANUM. (*um, i.* n. Τυμπανον, a drum.) The drum or barrel of the ear. See *Auris.*

TY'PHA. (*a, æ.* f. Τυφη of the ancient Greeks; from τιφος, a bog or marsh: because it grows in marshy places.) The name of a genus of plants in the Linnæan system. Class, *Monœcia;* Order, *Triandria.* The cat's-tail, or reed-mace.

Typha aromatica. See *Acorus calamus.*

TYPHA LATIFOLIA. The broad-leaved cat's-tail, or reed-mace. The young shoots, cut before they reach the surface of the water, eat like asparagus when boiled, and are equally nourishing.

TYPHOMA'NIA. (*a, æ.* f.; from τυφος, stupor, and μανια, madness.) The low muttering delirium which accompanies typhoid fevers.

TY'PHUS. (*us, i.* m.; derived according to some etymologists from τυφω, to smoulder, or to burn and smoke without vent; a term applied to this genus, in opposition to a *cauma* or inflammatory fever, because it burns, not in open violence as a cauma does, but with a sort of concealed and smothered flame. According to others, the term is derived from τυφος, stupor.) A form of continued fever characterised by extreme depression of the nervous powers, and imperfect reaction of the vascular system, giving rise to changes in the circulating fluids, and remarkable disorder of all the secretions.

It has already been stated in the article *febris*, that there is much reason to believe that all the varieties of continued fever are modifications of a disease essentially the same.

Any of the ordinary causes of fever may give rise to typhus; for the typhoid form is often dependant upon the state of the constitution on which the cause is acting, as evincing a great deficiency of sensorial power: and hence cold, mental agitation, excess of muscular labour, and intemperance, which, in strong and sanguineous habits, might generate an inflammatory fever, will often in a debilitated and nervous constitution, and especially when the debility depends primarily upon the state of the nervous system, give a typhous complexion to the disease from the first. But the most common cause by far is contagion, or a febrile miasm, the activity of which is much increased by the crowding of a number of individuals in close and ill-ventilated places, filth, insufficient nutriment, and other causes which tend to depress the vital power. When any of the remote causes of fever act on the system of those whose vital power is in a very depressed state from any cause, typhus is far more likely to take place than any other form of fever: but when the effluvium from the bodies of those labouring under the disease cooperates with the other causes, it is almost impossible for an individual to escape; for the contagion thus generated has a specific power

—a power beyond all other febrile causes whatever — of lowering still farther the vital energy as soon as it impresses the system, and thus of confirming any previous tendency to this fever. The contagion of typhus, as of other diseases propagable in the same way, is much more active at one time than another, from causes which are not understood, hence it sometimes prevails as a most alarming epidemic, and the healthiest individuals using every precaution against it, fall victims to its violence, while in sporadic cases, however severely the individual may be affected, the disorder has little tendency to spread. The contagion of typhus, like that of the plague and several other diseases, sometimes adheres with great tenacity to porous bodies, as woollen or linen cloths, feathers, &c. Some speculative writers utterly deny that typhus is ever contagious—an opinion, however, which very few practical men will be found to adopt.

As typhous fever originates from different causes, and all these causes are modified in their action by collateral circumstances, it follows that it must be accompanied by different symptoms, and appear under different degrees of severity. Hence a general distinction of typhus into *typhus mitior*, mild typhus or nervous fever; and *typhus gravior*, severe or malignant typhus.

I. *Typhus mitior. Nervous fever. Slow fever.*— Characterised by slight shiverings; heavy or vertiginous headach; great oppression about the præcordia; nausea; frequent sighing; despondency; whey-like urine; with the ordinary heat of skin, thirst, and febrile symptoms, which exacerbate once or twice a day, and are accompanied in many cases by low muttering delirium.

There is seldom any thing alarming in the commencement. The first symptoms are slight: the tongue exhibits little change, and the pulse is only a little quickened, and somewhat smaller than usual; at the same time, however, there is great anxiety and depression of mind; so that the symptoms do not much differ from a mild and comparatively insignificant fever of any kind operating on a nervous temperament. But as the disease advances, all the symptoms of sensorial debility become severer; the skin, which has hitherto been mostly dry, will now be covered with profuse, clammy, weakening sweats, while the heat is still inconsiderable, and the countenance pale and sunk. The perspiration is often offensive to the smell, and has a sour odour. About the tenth day, the weakness greatly increases; all the limbs become tremulous; and the tremors soon become convulsive, with a despondency and alienation of mind, at first observable only in the night, but soon continuing with little intermission. This delirium is of the mildest form. The disease often runs on to the twenty-first day, and occasionally to a much longer period. It very seldom vanishes under an obvious crisis, but gradually becomes more aggravated in its symptoms, till it reaches a fatal termination; or, by a gradual subsidence of the severity of the symptoms, it slowly advances to convalescence, indicated by a disposition to natural sleep; more steadiness, and firmness of pulse; a more favourable countenance; a tongue more florid at its edges; a firmer and more collected mind; and a returning desire for food.

Where the patient is of a sound constitution, and not debilitated by age, nervous fever is seldom fatal. In some instances, however, it is protracted without any obvious cause, and continues till the vital powers are completely exhausted, and the patient sinks. Nervous fever, when characterised by slight symptoms, but an unusually lengthened and tedious course, forms what is more especially called *slow fever:* the case is a very intractable one, and very little under the control of art.

II. *Typhus gravior. Malignant typhus. Putrid fever. Pestilential fever. Petechial fever. Spotted fever. Jail fever. Camp fever. Hospital fever.* — At the onset of this form of fever, the patient is seized with great languor and dejection of spirits, extreme depression and loss of muscular strength, universal weariness and soreness, pains in the head, back, and extremities, and rigors; the eyes appear full, heavy, yellowish, and often a little inflamed; the temporal arteries throb; the tongue is covered with a brownish-coloured mucus, and soon becomes dry and parched; the proper taste is lost; the respiration is commonly laborious, and interrupted with deep sighing; the breath is offensive and hot; the body costive; the urine very natural, or pale; the pulse is frequent, small, hard, and fluttering, a trifling circumstance causing it to become very rapid, and unequal. There is sometimes a great load, feeling of heat, and oppression of the stomach, and not uncommonly bilious vomiting, when the disease is called *typhus biliosus.* As the disease advances, the pulse generally increases in frequency, but is, in many cases, not above the healthy standard, and in some cases below it, not being more than forty or sixty in the minute. Great debility is now present, and great heat and dryness of the skin; oppression of the heart, with anxiety, sighing, and moaning; the thirst is usually moderate, and the tongue, gums, teeth, mouth, and lips are covered with a brown or blackish tenacious fur; the speech becomes inarticulate, scarcely intelligible; the patient consequently mutters, and is mostly very delirious. The fever continuing to increase still more in violence, symptoms of an altered state of fluids occur, which were referred by the older writers to *putrefaction;* but real putrefaction never happens in the living body, and modern pathologists are therefore content to admit that a change takes place, the nature of which is not understood. The breath becomes highly offensive; the urine deposits a black and fœtid sediment; the stools are dark, offensive, and pass off insensibly; hæmorrhages issue from the gums, nostrils, mouth, and other parts of the body; petechiæ, and sometimes vibices, appear on the surface; the pulse intermits and sinks; the extremities grow cold; and hiccough ensues, followed by death. In the older writers we find cases described in which a dissolved state of the fluids, with large livid blotches on the skin, and

copious passive hæmorrhages from the mucous surfaces, seem to indicate a combination of the worst form of fever with scurvy. M. Andral aptly calls this state *un scorbut aigu*, an acute scurvy. Such cases are rarely if ever to be met with in the practice of the present day, nor are we able to account for this diversity of character in the febrile epidemics of different ages: they ought, however, to impress upon us the Protean character of fever, and to teach us to be careful how we fix upon this or that particular condition as a permanent and essential characteristic of the disease. See *Febris*.

When typhus does not terminate fatally, it generally begins, in temperate and cold climates, to diminish about the fourteenth day, or beginning of the third week, and goes off gradually without any evident crisis; it is not uncommon, however, for sleep and perspiration to announce the favourable change. In warm climates, the fever seldom lasts so long, but mostly terminates in five or eight days.

Our opinion as to the event is to be formed from the degree of violence of the symptoms, particularly from the strength of the heart's action, the state of the nervous power, the tendency to a dissolved state of the fluids and the local complications, bearing in mind that recoveries have taken place under the most unpromising appearances, and that, in many epidemics of this disease, some have fallen victims to it without any apparent malignancy of the symptoms. An abatement of febrile heat and thirst; a gentle moisture diffused equally over the whole surface of the body; loose bilious stools; deposition of lateritious sediment in the urine; more strength in the pulse; and the abscence of stupor and delirium; are always to be regarded as favourable. On the contrary, a fœtid odour from the body, effusions of blood under the skin, dark, highly offensive, and dysenteric evacuations from the bowels; involuntary discharges by urine and stool; hæmorrhages, hiccough, continued delirium and stupor, denote the almost certain dissolution of the patient.

The appearances, on dissection, are very varied: traces of subacute inflammation are generally to be found in some of the great cavities; but these do not occur in any one organ with sufficient uniformity to warrant us in regarding any one of them as a constant concomitant, much less as the proximate cause of typhus: the remarks which have been already made on the morbid anatomy of continued fever in general, are equally applicable to that of typhus. See *Febris*.

The division of typhus by Dr. Armstrong into *simple*, *inflammatory*, and *congestive*, is of little value in a pathological point of view, because every case is more or less congestive at its commencement, and any case may become complicated with local inflammation during its progress. This distinction, however, is a very useful one in relation to the treatment.

In simple typhus, that is, where the disease is characterised by its general symptoms, with a moderate reaction of the arterial system, and without marked symptoms of local inflammation, the efforts of art should be directed to sustaining the vital powers by a proper regulation of the diet, to keeping the bowels regular, and to obviating the disordered state of the secretions, rather than to any more active contest with the disease, which will generally run its course and terminate favourably. The diet should be light and moderately nutritious, consisting of farinaceous substances; the bowels, if torpid, should be stimulated by gentle purgatives; the disordered state of the abdominal secretions obviated by occasional doses of calomel; diarrhœa, if excessive, restrained by the cretaceous mixture, combined, if necessary, with small doses of opium; the hot and dry state of the skin obviated by saline diaphoretics, with minute doses of antimony, and by sponging the surface with tepid vinegar and water. Thirst is to be allayed by the free use of acidulated drinks.

In the advanced stages of the disease, if there be much nervous irritation, opiates combined with diaphoretics are highly serviceable; and, if great debility prevail, wine in moderate quantities may be given with advantage, but it is seldom required.

In the *inflammatory* form of typhus, or that in which the disease is complicated with membranous or visceral inflammation, the means available for the subjugation of ordinary inflammation are indicated, in conjunction with the treatment of simple fever; but these means are to be used under strict limitations. In this case there are two circumstances which should never be lost sight of: the one is, that the inflammation which accompanies fever differs entirely from ordinary idiopathic inflammation, and is much less under the control of bloodletting and other antiphlogistic measures; the other is, that this inflammation occurs in connexion with a protracted and debilitating disorder of the whole system, which forbids our drawing too largely on the vital powers. It sometimes, though very rarely, happens that the local affection may be subdued at the commencement, and the case converted into one of simple fever; but it much more frequently happens that the local inflammation cannot be entirely subdued, and the object of the practitioner should then be so to moderate it as to prevent its terminating in organic lesion. It is here that rash antiphlogistic practice is so pernicious, and the bad effect of certain exclusive pathological views so conspicuous.

The practitioner who, having detected inflammation of an important organ in a case of fever, makes up his mind that the essence of the disease consists therein — that such inflammation must at all events be entirely subdued — and that depletion must be persevered in till this end be attained — will generally fail in his immediate object, will find that the inflammation cannot be entirely subdued, and, what is worse, will too often sink the vital powers of the patient into an irrecoverable state of exhaustion. The practitioner who regards fever as simple inflammation of the brain, bowels, or any other part, and acts implicitly on this sup-

position, will destroy many patients who, if left to nature, would have recovered. A moderate general bleeding at the beginning of inflammatory typhus is often beneficial; and still more frequently the occasional application of leeches in the early stage of the disease. By such treatment the local affection is kept below the point of disorganisation, the fever runs its course, and the patient recovers.

The treatment of inflammation accompanying adynamic fever often severely taxes the judgment of the practitioner: it may happen on the one hand, that local inflammation continues so acute as to endanger disorganisation of a vital part, and on the other hand, that antiphlogistic means have been pushed as far as prudence will admit; under these circumstances mercury is sometimes a valuable auxiliary, enabling us to arrest the local inflammation and to save the patient. Much more extensive utility has been ascribed to mercury in fever, and a specific power of arresting the disease has been claimed for it; but the validity of such a claim is subverted by the numerous instances in which patients have died of fever while the mouth was sore from the effect of mercury. It is true, also, that patients labouring under continued fever have a peculiar insusceptibility of the action of mercury, and that in many cases no effect whatever is produced by its fullest administration.

In the advanced stages of typhus, complicated with local inflammation, the vital power, if severely depressed, must be supported by stimulants, even though the inflammatory action still continue. The case is one which, in a great measure, baffles our art; we have two opposite evils to contend against, and we must choose the less: if the patient can be kept alive for a certain time, there is a hope that the local affection may subside as the fever approaches the termination of its natural course; while, if we persevere in an antiphlogistic regimen, the powers of life will almost inevitably sink. Wine is the best stimulant in typhus, and is most effectual when given in moderate quantities frequently repeated. Opium, in small and repeated doses, is also a valuable medicine, and camphor may be usefully combined with it. Sulphate of quinine is much relied on by some practitioners, but it generally does more harm than good where there is local inflammation. Blisters afford a means of combating inflammation after bloodletting is inadmissible, but they often increase the general irritation and distress: their effect seems to be more beneficial where the seat of the inflammatory action is within the cranium, than when it is in the thorax or abdomen.

In the *congestive* form of typhus, either the morbid cause is so concentrated, or the powers of the system so inadequate to contend against it, that arterial reaction is overpowered, or very insufficiently established: hence the pulse is extremely feeble, the surface cold, and the countenance collapsed. The first indication, therefore, is, if possible, to rouse the arterial system, and thus to convert the disease into one or other of its more tractable forms — the simple or the inflammatory. For this purpose there is perhaps no more effectual means than to excite strong vomiting, by which a salutary reaction is often established. A full dose of ipecacuanha will generally be the most eligible emetic, as it has little tendency to irritate the gastro-enteric membrane: tartrate of antimony is to be avoided, as it has that tendency in a high degree. In addition to full vomiting, the warm bath and gentle stimulants will be found serviceable. If reaction cannot be set up, the case will be speedily fatal. It is from this cause that fever, in its more formidable epidemic visitations, is, in a few instances, so rapidly fatal. Dr. Fordyce gives the following description of this overwhelming invasion of fever. "When the attack is fatal, it sometimes kills in five minutes, sometimes it requires half an hour, seldom longer than that time. While the patient is yet sensible, violent headach, with great sense of chilliness, take place; the extremities become very cold and perfectly insensible; there is great prostration of strength, so that the patient is incapable of supporting himself in an erect posture; he becomes pale, his skin of a dirty brown, and he is soon insensible to external objects; the eyes are half open, the cornea somewhat contracted. If the patient goes off very soon, the pulse is diminished and at last lost, without frequency taking place; but if it be long before he dies, the pulse becomes excessively small and frequent, all the appearances of life gradually subside, and the patient is carried off."

If we succeed in establishing reaction, which is generally the case, the disease assumes a simple or inflammatory form, more frequently the latter, and is to be treated on the principles already explained.

We have hitherto said nothing of the several means which have been proposed for arresting fever *in limine*, or *cutting it short*, as it is called. This is sometimes spoken of in books as if it were a frequent occurrence; but we venture to assert that it is in reality extremely rare, and not generally to be looked for. The means which have been principally used with this intention are, —

1. *Venesection.* This, as before observed, is often useful, when prudently employed, in checking inflammation at the commencement of fever; but when it is had recourse to simply as a means of cutting short the fever, it is not only, in most cases, entirely ineffectual, but is injurious, in as much as it diminishes the vital power.

2. The *cold affusion.* This has already been treated of under the head *Affusion.* All that need be said of it here is, that its inutility has nearly banished it from practice.

3. *An emetic of tartrate of antimony.* This is, for the most part, as ineffectual as the means already noticed, and is often extremely injurious by setting up inflammation of the gastro-enteric mucous membrane.

It is not to be inferred from the distinctions just laid down, that the two severer forms of

typhus are exclusively inflammatory or congestive; for a low insidious form of inflammation is frequently going on in the gastro-enteric or bronchial membrane, or in the membranes of the brain, while the general character of the disease is that of deficient arterial action. In these cases all that we have to do is to support nature, for assuredly art can do very little.

From the brief survey we have just taken of the treatment of typhous fever, three prominent general indications may be deduced:

1. To assist arterial reaction when deficient.

2. To subdue local inflammation, or, if we cannot do so (which happens in a great majority of cases), to keep it below the point of disorganisation.

3. To sustain the vital powers by a proper regulation of the diet, and the judicious use of stimulants when required.

Typhus ca'rcerum. The gaol fever.

Typhus castrensis. The camp fever.

Typhus gravior. The more malignant species of typhus.

Typhus ictero'des. The yellow fever. See *Remittent fever.*

Typhus mitior. The milder form of typhus or *nervous fever.*

Typhus nervosus. The nervous fever.

Typhus petechialis. Typhus with purple spots.

Tyrannis. *Τυραννις.* An antidote mentioned by Galen, consisting of an immense number of aromatics, gums, balsams, &c., and the flesh of the lizard called *skink.* It was esteemed lithontriptic, antipodagric, alexiphamic, &c.

Tyri'asis. A corruption of *satyriasis.* An old name of the tubercular elephantiasis, on account of the morbid salacity which has been alleged to attend the disease.

Tyrium emplastrum. A plaster described by Aëtius, and so named from its purple colour. It consisted of litharge, oxide, and scales of copper, verdigris, galbanum, wax, pitch, and oil. It was esteemed vulnerary, discutient, &c.

Tyrrhenicum emplastrum. *Emplastrum Persicum. Pampathes.* A plaster to which Aëtius ascribes the most extraordinary virtues in a variety of cases. It consisted of various metallic ingredients, the magnet, gums, aromatics, &c.

U.

Ulcer. (*Ulcus, eris.* n.; from the Greek ἕλκος.) A purulent solution of continuity of the soft parts of an animal body. Ulcers may arise from a variety of causes, as all those which produce inflammation, from wounds, specific irritations of the absorbents, from scurvy, cancer, the venereal or scrofulous virus, &c. The proximate or immediate cause is an increased action of the absorbents, and a specific action of the arteries, by which a fluid is separated from the blood upon the ulcerated surface. They are variously denominated: the following is the most frequent division: —

1. The *simple ulcer,* which takes place generally from a superficial wound.

2. The *sinuous,* that runs under the integuments, and the orifice of which is narrow, but not callous.

3. The *fistulous ulcer,* or *fistula,* a deep ulcer with a narrow and callous orifice.

4. The *fungous ulcer,* the surface of which is covered with fungous flesh.

5. The *gangrenous,* which is livid, fœtid, and gangrenous.

6. The *scorbutic,* which depends on a scorbutic acrimony.

7. The *venereal,* arising from the venereal disease.

8. The *cancerous ulcer,* or open cancer. See *Cancer.*

9. The *carious ulcer,* depending upon a carious bone.

10. The *inveterate ulcer,* which is of long continuance, and resists the ordinary applications.

11. The *scrofulous ulcer,* known by its having arisen from indolent tumours, its discharging a viscid, glairy matter, and its indolent nature.

Ulcera serpentia oris. See *Aphtha.*

Ulcerated sore throat. See *Cynanche.*

Ulma'ria. (*a, æ.* f.; from *ulmus,* the elm: so named because it has leaves like the elm.) See *Spiræa ulmaria.*

U'lmine. A peculiar vegetable principle. It exuded spontaneously from the trunk of a species of elm, which Klaproth conjectures to be the *Ulmus nigra,* and was sent to him from Palermo in 1802. In its external characters it resembles gum. It is solid, hard, of a black colour, and has considerable lustre. Its powder is brown. It dissolves readily in the mouth, and is insipid.

U'lmus. (*us, i.* f.) 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Digynia.*

2. The pharmacopœial name of the common elm. See *Ulmus campestris.*

Ulmus campestris. The systematic name of the common elm. *Ulmus — foliis duplicato-serratis, basis inæqualibus,* of Linnæus. The

inner tough bark of this tree, which is directed for use by the pharmacopœias, has no remarkable smell, but a bitterish taste, and abounds with a slimy juice, which has been recommended in nephritic cases, and externally as an useful application to burns. It is also highly recommended in some cutaneous affections allied to herpes and lepra. It is mostly exhibited in the form of decoction, by boiling four ounces in four pints of water to two pints; of which from four to eight ounces are given two or three times a day.

U'LNA. (*a*, *æ*. f.; from ωλενη, the ulna, or cubit.) *Cubitus.* The larger bone of the fore-arm. It is smaller and shorter than the os humeri, and becomes gradually smaller as it descends to the wrist. We may divide it into its upper and lower extremities, and its body, or middle part. At its upper extremity are two considerable processes, of which the posterior one and largest is named *olecranon*, and the smaller and interior one the *coronoid* process. Between these two processes, the extremity of the bone is formed into a deep articulating cavity, which, from its semicircular shape, is called the *greater sigmoid cavity*, to distinguish it from another, which has been named the *lesser sigmoid cavity*. The *olecranon*, called also the *anconoid* process, begins by a considerable tuberosity, which is rough, and serves for the insertion of muscles, and terminates in a kind of hook, the concave surface of which moves upon the pulley of the os humeri. This process forms the point of the elbow. The *coronoid process* is sharper at its extremity than the olecranon, but is much smaller, and does not reach so high. In bending the arm, it is received into the fossa at the fore part of the pulley. At the external side of the coronoid process is the lesser sigmoid cavity, which is a small, semilunar, articulating surface, lined with cartilage, on which the round head of the radius plays. At the fore part of the coronoid process we observe a small tuberosity, into which the tendon of the brachialis internus is inserted. The greater sigmoid cavity, the situation of which we just now mentioned, is divided into four surfaces by a prominent line, which is intersected by a small sinuosity that serves for the lodgment of mucilaginous glands. The whole of this cavity is covered with cartilage. The body or middle part of the ulna is of a prismatic or triangular shape, so as to afford three surfaces and as many angles. The external and internal surfaces are flat and broad, especially the external one, and are separated by a sharp angle, which, from its situation, may be termed the internal angle. This internal angle, which is turned towards the radius, serves for the attachment of the ligament that connects the two bones, and which is, therefore, called the *interosseous* ligament. The posterior surface is convex, and corresponds with the olecranon. The borders or angles, which separate it from the other two surfaces, are somewhat rounded. At about a third of the length of this bone from the top, in its fore part, we observe a channel for the passage of vessels. The lower extremity is smaller as it descends, nearly cylindrical, and slightly curved forwards and outwards. Just before it terminates, it contracts so as to form a neck to the small head with which it ends. On the outside of this little head, answering to the olecranon, a small process, called the *styloid* process, stands out, from which a strong ligament is stretched to the wrist. The head has a rounded articulating surface on its internal side, which is covered with cartilage, and received into a semi-lunar cavity formed at the lower end of the radius. Between it and the os cuneiforme a moveable cartilage is interposed, which is continued from the cartilage that covers the lower end of the radius, and is connected by ligamentous fibres to the styloid process of the ulna. The ulna is articulated above with the lower end of the os humeri. This articulation is of the species called ginglymus: it is articulated also both above and below to the radius, and to the carpus at its lowest extremity. Its chief use seems to be to support and regulate the motions of the radius. In children, both extremities of this bone are first cartilaginous, and afterwards epiphyses, before they are completely united to the rest of the bone.

U'LNAR. (*Ulnaris*; from *ulna*, the bone, so named.) Belonging to the ulna.

Ulnar artery. One of the branches into which the brachial artery divides it, bend of the arm. It passes down the inner side of the fore-arm, gives off the ulnar recurrent, the anterior and posterior interosseous, and terminates by forming the superficial palmar arch.

Ulnar nerve. See *Nerve.*

Ulnaris externus. See *Extensor carpi ulnaris.*

Ulnaris internus. See *Flexor carpi ulnaris.*

U'LVA. (*a*, *æ*. f.; from *uligo*, moisture, ooziness.) The name of a genus in the Linnæan system of plants. Class, *Cryptogamia*; Order, *Algæ*. Laver.

Ulva lactu'ca. *Lichen marinus.* Oyster-green laver. It is refrigerant and nutritive, and was probably first used in an anti-scrofulous diet, but is now introduced as a luxury.

Ulva umbilicalis. Shield laver. This is said to be catable and nourishing when well baked.

U'mbel. See *Umbella.*

UMBE'LLA. (*a*, *æ*. f.; a little shade or umbrella.) An umbel. The *rundle* of some authors. A species of inflorescence, in which several flower-stalks, nearly equal in length, spread from one common centre, their summits forming a level, convex, or even globose surface; more rarely a concave one, as hemlock, carrot, cow-parsnip, &c.

From the *insertion* of the umbel, it is distinguished into *pedunculate* and *sessile*. The former implies that the flower-stalks come from one common peduncle; and the latter, that the stalklets come, not from a common peduncle, but from the stem or branch of the plant; as in *Sium nodiflorum*, and *Prunus avium*.

From the *division* of the umbel, it is, —

1. *Simple*, when single-flowered; as in *Allium ursinum*.

2. *Compound*, when each ray or stalk bears an *umbellula*, or partial umbel; as in the *Anethum fœniculum*.

The *umbella involucrata* is supplied with involucra.

UMBELLI'FEROUS. Plants are so called which have umbels. The *umbelliferæ* form an important natural order.

UMBE'LLULA. A partial or little umbel. The flower-stalks or spokes, which compose an umbel, are often divided at the top into several smaller ones; and these smaller sets of flowers are called umbellules. See *Umbella*.

Umbellule. See *Umbellula.*

UMBILICAL. (*Umbilicalis;* from *umbilicus*, the navel.) Of or belonging to the navel.

Umbilical cord. *Funis umbilicalis. Funiculus umbilicalis.* The navel-string. A cord-like substance, of an intestinal form, about half a yard in length, that proceeds from the navel of the fœtus to the centre of the placenta. It is composed of a cutaneous sheath, cellular substance, one umbilical vein, and two umbilical arteries: the former conveys the blood to the fœtus from the placenta, and the latter return it from the fœtus to the placenta.

Umbilical hernia. See *Hernia umbilicalis.*

Umbilical region. See *Abdomen.*

UMBILICA'TUS. Having a cavity or dimple resembling a navel. Applied in *Natural History*, and in *Botany*, to leaves, fruits, stigmata, &c.

UMBILI'CUS. The navel.

Umbilicus marinus. *Cotyledon marina. Androsace. Acetabulum marinum. Androsace Matthioli. Fungus petræus marinus.* A submarine production, found on rocks and the shells of fishes, about the coast of Montpellier, &c. It is said to be, in the form of powder, a useful anthelmintic and diuretic.

U'MBO. (The boss of a shield.) The knob or more prominent part in the centre of the hat or pilus of the fungus tribe.

U'NCIFORM. (*Unciformis;* from *uncus*, a hook, and *forma*, a likeness.) Hook-like: applied to bones, &c.

Unciform bone. The last bone of the second row of the carpus, or wrist: so named from its hook-like process, which projects towards the palm of the hand, and gives origin to the great ligament by which the tendons of the wrist are bound down.

Unciform processes. See *Sphenoides os.*

UNCINA'TUS. (From *uncus*, a hook.) Uncinate, or hooked at the end: applied to the stigma of the *Lantana.*

UNDULA'TUS. Undulated: waved. Applied to a leaf when the disk near the margin is waved obtusely up and down, as in *Reseda lutea.*

Unedo papyracea. See *Arbutus unedo.*

Unequal. See *Inequalis.*

UNGUE'NTUM. (*um*, *i.* n.; from *ungo*, to anoint.) An ointment. The usual consistence of ointments is about that of butter.

Unguentum apostolorum. *Dodecapharmicum.* The apostles' ointment: so called because it consisted of twelve ingredients, exclusive of a little vinegar. These ingredients were, turpentine, resin, yellow wax, aristolochia longa, frankincense, bdellium, myrrh, galbanum, opopanax, verdigris, litharge, and oil. It was formerly used as a detergent.

Unguentum arma'rium. A celebrated sympathetic ointment, which it was believed would cure wounds if the weapon which inflicted them were smeared with it, without any application to the wound itself. It consisted of the usnea of the human skull, human fat, of each two ounces; mummy, human blood, of each half an ounce; linseed oil, turpentine, Armenian bole, of each an ounce. A present of the prescription for this mess was made by Paracelsus to the Emperor Maximilian, who esteemed it a great treasure. Much was written at one time for and against the efficacy of such applications. It is singular, it never occurred to the wise men, that wounds heal of themselves if there be nothing particular to prevent it.

Unguentum cantha'ridis. *Unguentum lyttæ.* Ointment of the blistering-fly. Take of the blistering-fly, rubbed to a very fine powder, an ounce; distilled water, four fluid ounces; resin cerate, four ounces. Boil the water with the blistering-fly to one half, and strain: mix the cerate with the liquor, and then let it evaporate to the proper consistence. This is sometimes used to keep a blister open; but the savine cerate is to be preferred.

Unguentum ceta'cei. Spermaceti ointment; formerly called *linimentum album*, and *unguentum spermaceti.* Take of spermaceti, six drachms; white wax, two drachms; olive oil, three fluid ounces. Having melted them together over a slow fire, constantly stir the mixture until it gets cold. A simple emollient ointment.

Unguentum cicu'tæ. Hemlock ointment. Take of the fresh leaves of hemlock, and prepared hog's lard, of each four ounces. The hemlock is to be bruised in a marble mortar, after which the lard is to be added, and the two ingredients thoroughly incorporated by beating. They are then to be gently melted over the fire; and after being strained through a cloth, and the fibrous parts of the hemlock well pressed, the ointment is to be stirred till quite cold. It is applied to cancerous, scrofulous, and other ill-conditioned sores.

Unguentum creaso'ti. Take of creasote, half a fluid drachm; lard, an ounce. Rub them together till they are mixed. A stimulant ointment. It has been used in porrigo.

Unguentum e'lemi. *Unguentum elemi compositum*, ointment of elemi; formerly called *linimentum arcæi*, and *unguentum è gummi elemi.* Take of elemi, a pound; common turpentine, ten ounces; prepared suet, two pounds; olive oil, two fluid ounces: melt the elemi with the suet, then remove it from the fire, and immediately mix in the turpentine and oil; then strain through a linen cloth. Applied to indolent ulcers, chilblains, chronic ulcers after burns, and indolent tumours.

Unguentum gallæ compositum. Take of galls very finely powdered, two drachms; lard, two ounces; hard opium powdered, half a

drachm. Mix them. An astringent and anodyne ointment, applied chiefly to hæmorrhoidal tumours.

Unguentum hydrargyri ammonio-chloridi. *Unguentum hydrargyri precipitati albi. Unguentum calcis hydrargyri albæ. Unguentum mercurio-precipitati.* Take of ammonio-chloride of mercury, a drachm; lard, an ounce and a half. Dissolve the lard with a gentle heat, then add the ammonio-chloride of mercury, and mix. A mild detergent ointment. It is little used.

Unguentum hydrargyri fortius. Strong mercurial ointment; formerly called *unguentum cæruleum fortius.* Blue ointment. Take of purified mercury, two pounds; prepared lard, twenty-three ounces; prepared suet, an ounce: first rub the mercury with the suet and a little of the lard, until the globules disappear; then add the remainder of the lard, and mix. In very general use for mercurial frictions.

Unguentum hydrargyri mitius. Mild mercurial ointment; formerly called *unguentum cæruleum mitius.* Take of strong mercurial ointment, a pound; prepared lard, two pounds: mix. Weaker than the former.

Unguentum hydrargyri nitratis. *Unguentum hydrargyri nitrati.* Ointment of nitrate of mercury. Take of purified mercury, an ounce; nitric acid, eleven fluid drachms; prepared lard, six ounces; olive oil, four fluid ounces; first dissolve the mercury in the acid; then, while the liquor is hot, mix it with the lard and oil melted together. A stimulating and detergent ointment. Tinea capitis, psorophthalmia, indolent tumours on the margin of the eyelid, and ulcers in the urethra, are cured by its application.

Unguentum hydrargyri nitratis mitius. Weaker than the preceding.

Unguentum hydrargyri nitrico-oxidi. Ointment of nitric oxide of mercury. Take of nitric oxide of mercury, an ounce; white wax, two ounces; prepared lard, six ounces: having melted together the wax and lard, add thereto the nitric oxide of mercury in very fine powder, and mix. A most excellent stimulating and escharotic ointment.

Unguentum hydrargyri præcipitati albi. Ointment of white precipitate of mercury; formerly called *unguentum è mercurio præcipitato albo;* and latterly, *unguentum calcis hydrargyri albæ.* Take of white precipitate of mercury, a drachm; prepared lard, an ounce and a half: having melted the lard over a slow fire, add the precipitated mercury, and mix. A useful ointment to destroy vermin in the head, and to assist in the removal of scald-head, venereal ulcers of children, and cutaneous eruptions.

Unguentum hydrargyri biniodidi. Prepared in a similar manner to the *unguentum hydrargyri nitrico-oxidi.*

Unguentum hydrargyri iodidi. Prepared in a similar manner with the preceding.

Unguentum iodinii compositum. Compound ointment of iodine. Take of iodine, half a drachm; iodide of potassium, a drachm; rectified spirit, a fluid drachm; lard, two ounces. Rub down the iodine and the iodide of potassium with the spirit, and then mix them with the lard. Applied by way of friction to goitre, scrofulous tumours, &c.

Unguentum lyttæ. See *Unguentum cantharidis.*

Unguentum ophthalmicum. Ophthalmic ointment of Janin. Take of prepared hog's lard, half an ounce; prepared tutty, Armenian bole, of each two drachms; white precipitate, one drachm: mix. This celebrated ointment may be used for the same diseases of the eye and eyelid as the ung. hydrarg. nitratis. It must be at first weakened with about twice its quantity of hog's lard.

Unguentum picis aridæ. See *Unguentum resinæ nigræ.*

Unguentum picis liquidæ. Tar ointment; formerly called *unguentum picis,* and *unguentum è pice.* Take of tar, prepared suet, of each a pound: melt them together, and strain the mixture through a linen cloth. This is applicable to cases of tinea capitis, and some eruptive complaints; also to some kinds of irritable sores.

Unguentum plumbi compositum. Compound ointment of lead. Take of prepared chalk, eight ounces; distilled vinegar, six fluid ounces; plaster of lead, three pounds; olive oil, a pint. Melt the plaster in the oil with a slow fire; then gradually add the chalk separately mixed with the vinegar, the effervescence being finished, and stir constantly until they are cooled. Used as a dressing for indolent ulcers.

Unguentum plumbi iodidi. Ointment of iodide of lead. Take of iodide of lead, an ounce; lard, eight ounces. Rub together, and mix. Employed by way of friction in chronic enlargement of the joints, and indolent scrofulous tumours.

Unguentum resinæ flavæ. Yellow basilicon is in general use as a stimulant and detersive; it is an elegant and useful form of applying the resin.

Unguentum resinæ nigræ. *Unguentum picis aridæ.* Pitch ointment; formerly called *unguentum basilicum nigrum,* vel *tetrapharmacum.* Take of pitch, yellow wax, yellow resin, of each nine ounces; olive oil, a pint: melt them together, and strain the mixture through a linen cloth. This is useful for the same purposes as the tar ointment.

Unguentum sambuci. Elder ointment; formerly called *unguentum sambucinum.* Take of elder flowers, two pounds; prepared lard, two pounds: boil the elder flowers in the lard until they become crisp; then strain the ointment through a linen cloth. A cooling and emollient preparation.

Unguentum sulphuris. Sulphur ointment; formerly called *unguentum è sulphure.* Take of sublimed sulphur, three ounces; prepared lard, half a pound: mix. The most effectual preparation to destroy the itch. It is also serviceable in the cure of other cutaneous eruptions.

Unguentum sulphuris compositum. Compound sulphur ointment. Take of sublimed sulphur, half a pound; white hellebore-root, powdered, two ounces; nitrate of potash, a

drachm; soft soap, half a pound; prepared lard, a pound and a half: mix. This preparation was introduced into the London Pharmacopœia, as a more efficacious remedy for itch than common sulphur ointment. In the army, where it is generally used, the sulphur vivum, or native admixture of sulphur, with various heterogeneous matters, is used instead of sublimed sulphur.

Unguentum vera'tri. White hellebore ointment; formerly called *unguentum hellebori albi.* Take of white hellebore-root, powdered, two ounces; prepared lard, eight ounces; oil of lemons, twenty minims: mix.

Unguentum zinci. Zinc ointment. Take of the oxide of zinc, an ounce; prepared lard, six ounces: mix. A very useful application in chronic ophthalmia and relaxed ulcers.

U'NGUIS. (*is, is.* m.; from *ονυξ*, a hook.) 1. In *Anatomy*, the nail. The nails are horny laminæ situated at the extremities of the fingers and toes; composed of coagulated albumen, and a little phosphate of lime. The lachrymal bone is named *os unguis*, from its resemblance to a nail of the finger.

2. In *Surgery*, an abscess or collection of pus between the lamellæ of the cornea transparens of the eye: so called from its resemblance to the lunated portion of the nail of the finger.

3. In *Botany*, the claw: applied to the thin part of the petal of a polypetalous corolla.

Ungula caballina. See *Tussilago.*

UNGULA'TUS. Hoof-shaped.

U'NICUS. Single.

UNIFLO'RUS. Bearing one flower.

Uniform. See *Æqualis.*

UNILA'TERAL. *Unilateralis.* On one side only.

UNILO'CULAR. *Unilocularis.* One-celled.

U'NIO. (*o, onis.* m.) A pearl. See *Margarita.*

Union by the First Intention. This phrase is applied by surgeons to the healing of wounds by adhesion, without suppuration or granulation. See *Inflammation*, and *Wounds.*

United. See *Connatus.*

U'NIVALVE. One-valved.

U'PAS. The name given in Java to several deadly poisons, of which the *Bohun upas* and *upas tieuté* are the most remarkable. They belong to different genera, and owe their poisonous properties to different principles.

1. The *Bohun upas.* This is a bitter gum resin, which exudes from incisions in the bark of a large tree which grows in Java and the neighbouring islands, and is called *antiar*, or *antshar*, by the Javanese. It is the *Antiaris toxicaria*, or *Ipo toxicaria*, of botanists. The *Bohun upas* is a deadly and rapid poison, which, if excluded from the air, retains its activity for an unlimited time. MM. Pelletier and Caventou attribute its deleterious powers to a new alkali not hitherto obtained in a separate state. Wonderful stories have been told of the blighting effect of the upas tree, which was said to make a complete desert of the country for ten or twelve miles round it, in which space no animal or vegetable could live. The poison was said to be fetched from the tree by condemned malefactors, who sometimes succeeded, by the greatest precautions, in procuring some of the poison, and returning in safety, in which case they were pardoned. All these marvels were believed on the credit of a tract published in Dutch by a surgeon named Foërsch. This all turns out to be mere romance. The tree grows in the most fertile places, and twining plants grow around it.

Some persons, however, on approaching it nearly, have experienced unpleasant sensations analogous to those caused by the exhalation from the manchineel and some other plants. The production of M. Foërsch is supposed by some to have originated in a confusion of the *upas tree* and the *upas valley* in Java, an interesting account of which has been published by Mr. Barrow in the Philosophical Transactions, from the notes of Mr. Loudon: these materials are thought to have been worked up by a talent for invention into the monstrous fable above alluded to. According to Mr. D'Israeli, however, the hoax was still more complex. The account was published in English, in the London Magazine, but it has no existence in the Dutch work, from which it professes to be translated. The lying Dutchman, therefore, is as fictitious as the tree he is made to describe. Mr. D'Israeli believes the whole affair to have been a fabrication of that mischievous individual George Stevens, whose principal delight was in literary impostures. See *Curiosities of Literature, Second Series*, vol. iii. p. 39.

2. The *Upas tieuté.* This poison is the produce of the *strychnos tieuté*, and owes its deadly power to *strychnia.*

Both of the above poisons are used, by the natives of the islands where they grow, to poison arrows.

Upright. See *Erectus.*

U'RACHUS. (*us, i.* m.; *ουρακος*, from *ουρον*, urine.) *Urinaculum.* The ligamentous cord that arises from the basis of the urinary bladder, which it runs along, and terminates in the umbilical cord. In the fœtuses of brute animals, which the ancients mostly dissected, it is a hollow tube, and conveys the urine to the allantoid membrane.

Ura'gium. (From *ουραγος*, the leader of the last band of an army.) The apex or extreme point of the heart.

Urani'scus. (From *ουρανος*, the firmament: so called from its arch.) The palate.

Uranite. See *Uranium.*

URA'NIUM. (*um, ii.* n.) Uranite. This metal was discovered by Klaproth in the year 1789. It exists combined with sulphur, and a portion of iron, lead, and silex, in the mineral termed *pechblende*, or *oxide of uranium.* Combined with carbonic acid it forms the *chalcolite*, or *green mica*; and mixed with oxide of iron, it constitutes the *uranitic ochre.* It is always found in the state of an oxide, with a greater or smaller portion of iron, or mineralised with sulphur and copper. The ores of uranium are of a blackish colour, inclining to a dark iron

grey, and of a moderate splendour: they are of a close texture, and when broken present a somewhat uneven, and, in the smallest particles, a conchoidal surface. They are found in the mines of Saxony.

Properties of Uranium. — Uranium exhibits a mass of small metallic globules, agglutinated together. Its colour is a deep grey on the outside, in the inside it is a pale brown. It is very porous, and is so soft that it may be scraped with a knife. It has but little lustre. Its specific gravity is between eight and nine. It is more difficult to be fused than even manganese. When intensely heated with phosphate of soda and ammonia, or glacial phosphoric acid, it fuses with them into a grass-green glass. With soda or borax it melts only into a grey, opake, scoriaceous bead. It is soluble in sulphuric, nitric, and muriatic acids. It combines with sulphur and phosphorus, and alloys with mercury. It has not yet been combined with other combustible bodies. It decomposes the nitric acid, and becomes converted into a yellow oxide. The action of uranium alone upon water, &c. is still unknown, probably on account of its extreme scarcity.

Method of obtaining Uranium. — In order to obtain uranium, the *pechblende* is first freed from sulphur by heat, and cleared from the adhering impurities as carefully as possible. It is then digested to nitric acid: the metallic matter that it contains is thus completely dissolved, while part of the sulphur remains undissolved, and part of it is dissipated under the form of sulphuretted hydrogen gas. The solution is then precipitated by a carbonated alkali. The precipitate has a lemon-yellow colour when it is pure. This yellow carbonate is made into a paste with oil, and exposed to a violent heat, bedded in a crucible well lined with charcoal.

Klaproth obtained a metallic globule 28 grains in weight, by forming a ball of 50 grains of the yellow carbonate with a little wax, and by exposing this ball in a crucible lined with charcoal to a heat equal to 170° of Wedgwood's pyrometer. Richter obtained in a single experiment 100 grains of this metal, which seemed to be free from all admixture. There are probably but two oxides of uranium, the *protoxide*, which is a greyish black, and the *peroxide*, which is yellow.

U'RATE. (*Uras, atis.* f.) A compound of uric or lithic acid with a salifiable base.

URCE'OLA. (*a, æ.* f.; from *urceolus*, a small pitcher: so named from its uses in scouring glazed vessels.) The *Parietaria officinalis* of Linnæus.

URCEOLA'TUS. Urceolate or pitcher-shaped: swelling or bellying out like a common jug. Applied in *Botany* to calyces, &c.

URE'A. (*a, æ.* f.; from *urina.*) A constituent of urine. The best process for preparing it is to evaporate urine to the consistence of syrup, taking care to regulate the heat towards the end of the evaporation; to add very gradually to the syrup its volume of nitric acid; to stir the mixture, and immerse it in a bath of iced water; to harden the crystals of the acidulous nitrate of urea which precipitate; to wash these crystals with ice-cold water, to drain them, and press them between the folds of blotting paper. When the adhering heterogeneous matter is thus separated, redissolve the crystals in water, and add to them a sufficient quantity of carbonate of potash to neutralise the nitric acid. Then evaporate the new liquor at a gentle heat, almost to dryness, and treat the residuum with a very pure alkohol, which dissolves only the urea. On concentrating the alkoholic solution, the urea crystallises.

The preceding is Thénard's process, which Dr. Prout has improved. He separates the nitrate of potash by crystallisation, makes the liquid urea into a paste with animal charcoal, digests this with cold water, filters, concentrates, then dissolves the new colourless urea in alkohol, and lastly crystallises.

Urea crystallises in four-sided prisms, which are transparent and colourless, with a slight pearly lustre. It has a peculiar, but not urinous odour; it does not affect litmus or turmeric papers; it undergoes no change from the atmosphere, except a slight deliquescence in very damp weather. In a strong heat it melts, and is partly decomposed and partly sublimed without change. The specific gravity of the crystals is about 1·35. It is very soluble in water. Alkohol, at the temperature of the atmosphere, dissolves about 20 per cent.; and, when boiling, considerably more than its own weight, from which the urea separates, on cooling, in its crystalline form. The fixed alkalis and alkaline earths decompose it. It unites with most of the metallic oxides, and forms crystalline compounds with the nitric and oxalic acids.

Urea has been recently analysed by Dr. Prout and Berard. The following are its constituents: —

	PER CENT.	PER CENT.	PER ATOM.
Hydrogen,	10·80	6·66	2 = 2·5
Carbon,	19·40	19·99	1 = 7·5
Oxygen,	26·40	26·66	1 = 10·0
Azote,	43·40	46·66	1 = 17·5
	100·00	100·00	37·5

Uric, or lithic acid, is a substance quite distinct from urea in its composition. This fact, according to Dr. Prout, explains why an excess of urea generally accompanies the phosphoric diathesis, and not the lithic. He has several times seen urea as abundant in the urine of a person, where the phosporic diathesis prevailed, as to crystallise spontaneously on the addition of nitric acid, without being concentrated by evaporation.

As urea and uric acid, says Berard, are the most azotised of all animal substances, the secretion of urine appears to have for its object the separation of the excess of azote from the blood, as respiration separates from it the excess of carbon. "The relation," says Dr. Prout, "which exists between urea and sugar, seems to explain, in a satisfactory manner, the phænomena of diabetes, which may be considered as a depraved secretion of sugar. The weight of the atom of sugar is just half that of the weight of the atom of urea; the absolute quantity of hydrogen in a given weight of both, is equal; while

the absolute quantities of carbon and oxygen in a given weight of sugar, are precisely twice those of urea."

The constituents of these two bodies and lithic acid, are thus expressed by that ingenious philosopher: —

Elements.	Urea.			Sugar.			Lithic acid.		
	No.	Per Atom.	Per Cent.	No.	Per Atom.	Per Cent.	No.	Per Atom.	Per Cent.
Hydrogen .	2	2·5	6·66	1	1·25	6·66	1	1·25	2·85
Carbon . .	1	7·5	19·99	1	7·50	39·99	2	15·00	34·28
Oxygen . .	1	10·0	26·66	1	10·00	53·33	1	10·00	22·85
Azote . . .	1	17·5	46·6				1	17·50	40·00
	5	37·5	100·00	3	18·75	100·00	5	43·75	100·00

The above compounds appear to be formed by the union of more simple compounds: as sugar, of carbon and water; urea, of carburetted hydrogen and nitrous oxide; lithic acid, of cyanogen and water, &c.: whence it is inferred, that their artificial formation falls within the limits of chemical operations.

URE'DO. (From *uro*, to burn.) An itching or burning sensation of the skin, which accompanies many diseases. The nettle-rash is also so called.

URE'TER. (*er, eris.* m.; from *ουρον*, urine). The membraneous canal which conveys the urine from the kidney to the urinary bladder. At its superior part it is considerably the largest, occupying the greatest portion of the pelvis of the kidney; it then contracts to the size of a goose-quill, and descends over the psoas magnus muscle and large crural vessels into the pelvis, in which it perforates the urinary bladder very obliquely. Its internal surface is lubricated with mucus to defend it from the irritation of the urine in passing.

URETERI'TIS. (*is, idis.* f.; from *ουρητηρ*, the ureter.) Inflammation of the ureter. Its symptoms and treatment are the same as those of inflammation of the kidney and urinary bladder.

URE'THRA. (*a, æ.* f.; from *ουρον*, the urine: because it is the canal through which the urine passes.) A membranous canal, which in the male runs from the neck of the bladder, through the inferior part of the penis, to the extremity of the glans penis, in which it opens by a longitudinal orifice, called *meatus urinarius*. In this course, it first passes through the prostate gland, and is there distinguished by the name of the *prostatic urethra*; it then becomes much dilated, and is known by the name of the *bulbous part*, in which is situated a small round eminence, called the *caput gallinaginis*, or *verumontanum*, around which are ten or twelve orifices of the excretory ducts of the prostate gland, and two of the spermatic vessels. The remaining part of the urethra contains a number of triangular mouths, which are the *lacunæ*, or openings of the excretory ducts of the mucous glands of the urethra. In the female the urethra is much shorter and straighter than in the male. It is about an inch and a half long, and appears a little below the clitoris.

URETHRI'TIS. (*is, idis.* f.; from *ουρηθρα*, the urethra.) An inflammation in the urethra. Inflammation may take place on this membrane, as on other mucous membranes, and from the same causes; but it is, however, generally excited by calculous and gouty complaints, and most commonly by the venereal poison, which gives rise to the

Urethritis venerea. This is the proper term to be applied to that form of the venereal disease which consists of a discharge or running of a more or less puriform fluid from the urethra of men, and the vagina and urethra of women. Many names have been given to it by nosologists. Dr. Cullen arranges it in his genus gonorrhœa, under the trivial name of *impura*, *maligna*, *syphilitica*; but it is not a flow or emission of semen, and therefore should not be called a gonorrhœa. Dr. Good and Dr. Swediaur call it blennorrhœa; but this term is equally applicable to a discharge of mucus from any other part. The poison, which is the exciting cause of it, produces a specific inflammation of the membrane it acts on, whether it be the urethra, the vagina, or the nose, or the eye. Inflammation, therefore, is the disease; and the proper term for it is *urethritis venerea*, when the urethra is the seat of it. It has been called *elytritis venerea*, when occurring in the female vagina; but the term *elytritis* is not well derived. See *Elytritis*.

In Germany, the disorder is named *tripper*, from dripping; and in French, *chaudpisse*, from the heat and scalding in making water.

It has been long a disputed point, whether the morbid poison which gives rise to urethritis venerea, be identical or not with that of syphilis, nor can the question be considered as yet settled; but the general impression is, that they are different.

No certain rule can be laid down with regard to the time that a clap will take before it makes its appearance, after infection has been conveyed. With some persons it will show itself in the course of three or four days; while, with others, there will not be the least appearance of it before the expiration of some weeks. It most usually is perceptible, however, in the space of from six to fourteen days, and, in a male, begins with an uneasiness about the parts of generation, such as an itching in the glans penis, and a soreness and tingling sensation along the whole course of the urethra; soon after which, the person perceives an appearance of whitish

matter at its orifice, and also some degree of pungency upon making water.

In the course of a few days, the discharge of matter will increase considerably; will assume, most probably, a greenish or yellowish hue; and will become thinner, and lose its adhesiveness: the parts will also be occupied with some degree of redness and inflammation, in consequence of which the glans will put on the appearance of a ripe cherry; the stream of urine will be smaller than usual, owing to the canal being made narrower by the inflamed state of its internal membrane; and a considerable degree of pain and scalding heat will be experienced on every attempt to make water. Sometimes, though rarely, the poison acts on the mucous membrane behind and all around the glans penis, and a similar discharge of vitiated mucus takes place to that which escapes from the urethra.

Where the inflammation prevails in a very high degree, it prevents the extension of the urethra, on the taking place of any erection, so that the penis is, at that time, curved downwards, with great pain, which is much increased if an attempt be made to straighten the penis, and the stimulus occasions it often to be erected, particularly when the patient is warm in bed, and so deprives him of sleep, producing, in some cases, an involuntary emission of semen. This is called a *chordee*.

In consequence of the inflammation, it sometimes happens that, at the time of making water, owing to the rupture of some small blood-vessel, a slight hæmorrhage ensues, and a small quantity of blood is voided. In consequence of inflammation, the prepuce likewise becomes often so swelled at the end that it cannot be drawn back, which symptom is called a *phimosis;* or that, being drawn behind the glans, it cannot be returned, which is known by the name of *paraphimosis*. Now and then, from the same cause, little hard swellings arise on the lower surface of the penis, along the course of the urethra, and these perhaps suppurate and form into fistulous sores.

The adjacent parts sympathising with those already affected, the bladder becomes irritable and incapable of retaining the urine for any length of time, which gives the patient a frequent inclination to make water, and he feels an uneasiness about the scrotum, perinæum, and fundament. Moreover, the glans of the groins grow indurated and enlarged, or perhaps the testicles become swelled and inflamed, in consequence of which he experiences excruciating pains, extending from the seat of the complaint up into the small of the back: he gets hot and restless, and a small symptomatic fever arises.

Where the parts are not occupied by much inflammation, few or none of the last-mentioned symptoms will arise, and only a discharge with a slight heat or scalding in making water will prevail.

If the disease be neither irritated by any irregularity of the patient, nor prolonged by the want of timely and proper assistance, then, in the course of about a fortnight or three weeks, the discharge, from having been thin and discoloured at first, will become thick, white, and of a ropy consistence; and, from having gradually begun to diminish in quantity, will at last cease entirely, together with every inflammatory symptom whatever: whereas, on the contrary, if the patient has led a life of intemperance and sensuality, has partaken freely of the bottle and high-seasoned meats, and has, at the same time, neglected to pursue the necessary means, it may then continue for many weeks or months; and, on going off, may leave a weakness or gleet behind it, besides being accompanied with the risk of giving rise, at some distant period, to a constitutional affection, especially if there has been a neglect of proper cleanliness; for where venereal matter has been suffered to lodge between the prepuce and glans penis for any time, so as to have occasioned either excoriation or ulceration, there will be more danger of its having been absorbed.

Another risk, arising from the long continuance of a clap, especially if it has been attended with inflammatory symptoms, or has been of frequent recurrence, is the taking place of one or more strictures in the urethra. These are sure to occasion a considerable degree of difficulty, as well as pain, in making water, and, instead of its being discharged in a free and uninterrupted stream, it splits into two, or perhaps is voided drop by drop. Such affections become, from neglect, of a most serious and dangerous nature, as they not unfrequently block up the urethra, so as to induce a total retention of urine.

Where the disease has been of long standing, warty excrescences are likewise apt to arise about the parts of generation, owing to the matter falling and lodging thereon; and they not unfrequently prove both numerous and troublesome.

Having noticed every symptom which usually attends this disease in the male, it will only be necessary to observe, that the same heat and soreness in making water, and the same discharge of discoloured mucus, together with a slight pain in walking, and an uneasiness in sitting, take place in females as in the former; but as the parts in women which are most apt to be affected by the venereal poison are less complex in their nature and fewer in number than in men, so of course the former are not liable to many of the symptoms which the latter are, and from the urinary canal being much shorter and of a more simple form in them than in men, they are seldom, if ever, incommoded by the taking place of strictures.

With women it, indeed, often happens, that all the symptoms of the disease are so very slight, that they experience no other inconvenience than the discharge, except perhaps immediately after menstruation, at which period it is no uncommon occurrence for them to perceive some degree of aggravation in the symptoms.

Women of a relaxed habit, and such as have had frequent miscarriages, are apt to be afflicted with a disease known by the name of fluor albus, which it is often difficult to distinguish from a

clap, as the matter discharged in both is, in many cases, of the same colour and consistence. The surest way of forming a just conclusion, in instances of this nature, will be to draw it from an accurate investigation, both of the symptoms which are present, and those which have preceded the discharge; as, likewise, from the concurring circumstances, such as the character and mode of life of the person, and the probability there may be of her having had venereal infection conveyed to her by any connection in which she may be engaged.

It was once generally supposed, that the discharge depended always upon ulcers in the urethra, producing a discharge of purulent matter; and such ulcers do, indeed, occur in consequence of a high degree of inflammation and suppuration: but many dissections of persons, who have died whilst labouring under a clap, have clearly shown that the disease exists without any ulceration in the urethra, so that the discharge which appears is a puriform secretion, such as often takes place from the surface of other mucous membranes. On opening this canal, in recent cases, it usually appears red and inflamed: its mucous glands are somewhat enlarged, and its cavity is filled with matter to within a small distance from its extremity. Where the disease has been of long continuance, its surface all along, even to the bladder, is generally found pale and relaxed, without any erosion.

The cure of this disease is, in the present day, very simple; for the poison appears to have lost very much of its virulence, by passing from one constitution to another, which it evinced on its first detection. Rest, diluent drinks, and an antiphlogistic regimen, will often effect a cure alone; but it may be expedited by cooling laxatives and topical applications.

The remedies employed are of two kinds, and very opposite characters, — stimulant and sedative. Both also are used generally and locally: with a view of taking off the irritation directly, by exciting a new action; or indirectly, by rendering the parts affected torpid to the existing action, and thus allowing it to die away of its own accord. Many of these remedies, indeed, as well the local as the general, were at one time supposed to be natural antidotes, and to cure by a specific power, — an idea, however, which has been long banished from the minds of most practitioners.

The general sedatives that have hitherto been principally employed, are opium, conium, hyosciamus, papaver, nitrate of potash, oily emulsions, and mucilages. The first has often succeeded, but with considerable and very unnecessary inconvenience to the constitution: the others are not much to be depended on. They may have co-operated with a rigidly reducent diet, but have seldom answered alone. Employed locally, some of them, and particularly opium, have proved far more beneficial. The best form of this last is that of an injection. Practitioners usually direct it mixed with some oil or mucilage, both of which have a greater chance of acting as demulcents, and sheathing or inviscating the acrimonious corpuscles in this case, than in the irritable surface of the lungs in catarrh and asthma when given by the lungs. Two drachms of powder of gum acacia, five grains of powdered opium, and half a pint of distilled water, form a good injection; also, six fluid drachms of almond oil, half an ounce of powdered gum acacia, ten grains of powdered opium, and seven fluid ounces of distilled water, made into an emulsion: also, ten grains of powdered opium, and half a pint of decoction of marshmallows, or decoction of barley. The quantity of opium, and of the mucilaginous material, may be increased or diminished according to circumstances; and it is necessary, in the preparation of all these, to dissolve the opium first in the water, which should be distilled, or the purest soft water that can be obtained; then to filter or strain it through the finest gauze or lint before the mucilage is added. The chill should be taken off before the injection is used. The compound powder of ipecacuanha, the pilula opii, the extractum conii, the extractum hyosciami, and extractum papaveris, are the best forms of sedatives for internal use, and the dose must be accommodated to the effect which is required. To that which is selected, it is a good practice to add two or three grains of the piluia hydrargyri at bedtime, which has the beneficial effect of inducing an action under which the mucus is secreted of a less virulent nature, and the inflammation is more speedily removed.

The stimulant process has, however, been found to answer so much more rapidly, and more effectually, that it has almost superseded the use of sedatives in modern practice. Formerly this process was also employed generally; and it was supposed, and in many cases sufficiently ascertained, that by strongly irritating some other part, the morbid excitement of the urethra would subside, and the organ have time to recover its natural action: hence the intestines were daily stimulated by cathartics, as the neutral salts, mercury, and colocynth, which last was at one time regarded as a specific; or terebinthinates, as copaiba, camphire, and turpentine itself.

The stimulating plan is still continued with another remedy, imported from the East. In Bengal and Java, the common remedy is cubebs, the *Piper cubeba* of Linnæus. This pepper, well pounded, is exhibited in a little water, five or six times a day, in the quantity of a dessert spoonful, or about three drachms, during which time all heating aliments are to be carefully abstained from. The cure, we are told, is entirely completed in two or three days, the heat in making water first ceasing, and the discharge becoming viscid. A slight diarrhœa is sometimes produced, with a flushing in the face, and a sense of heat in the palms of the hands and the soles of the feet. There is no necessity, however, for subjecting the constitution to so severe a discipline; for the stimulant process, and particularly that of astringent stimulants, when employed locally, succeeds ordinarily in a few days without any trouble. These consist chiefly of the metallic salts in solution; as the oxymuriate, the submuriate of mercury, the sulphate and the acetate of zinc, the acetate of

lead, the sulphate of copper, and ammoniacal copper.

℞. Liquoris hydrargyri oxymuriatis, f. ℥j.; aquæ distillatæ, f. ℥vij.: misce.

℞. Liquoris oxymuriatis hydrargyri, f. ℥j.; aquæ distillatæ, f. ℥vij.; extracti hyosciami, gr. x.: misce et cola.

℞. Liquoris hydrargyri oxymuriatis, f. ℥j.; pulveris acaciæ, ℥ss.; aquæ distillatæ, f. ℥vij.: misce.

℞. Liquoris hydrargyri oxymuriatis, f. ℥j.; tincturæ opii, f. ℥j.; pulveris acaciæ, ℥ss.; aquæ distillatæ, f. ℥vij.: misce.

℞. Liquoris hydrargyri oxymuriatis, f. ℥jss.; aquæ distillatæ, f. ℥vjss.: misce.

℞. Hydrargyri submuriatis, ℈j.; liquoris calcis, f. ℥iij.; aquæ distillatæ, f. ℥iv.: misce.

After these have been mixed and occasionally shaken during one hour, pour off the clear liquor from the sediment.

℞. Hydrargyri submuriatis, ℈j.; liquoris calcis, f. ℥iij.; tincturæ opii, f. ℥j.; aquæ distillatæ f. ℥v.: misce.

℞. Zinci sulphatis, gr. v.; aquæ distillatæ, f. ℥viij.: misce.

℞. Zinci sulphatis, gr. x.; aquæ distillatæ, f. ℥viij.: misce.

℞. Zinci acetatis, ℈ss.; aquæ distillatæ, f. ℥viij.: misce.

℞. Plumbi acetatis, gr. iv.; spiritus tenuioris, f. ℥j.; aquæ distillatæ, f. ℥vij.: misce.

The sulphate of copper and the ammoniacal copper require much more caution in their use: they are to be ordered in a very weak solution, which should be tasted before it is used; and if the tongue be sensible of their taste, the solution must be still further diluted, until the taste is scarcely perceptible.

These injections should be applied three times a day, with a proper instrument, and should be retained about a minute. The ill effect of them is a sudden stoppage of the discharge, from which swelled testicle, inflammation of the prostate gland and bladder, occasionally result; but the most frequent of all the sequels of the use of astringent injections, during the organic inflammation of the mucous membrane of the urethra, is stricture, which, though it seldom places the patient's life in any danger, proves a constant source of distress and anxiety, requires the long-continued use of bougies, and the attendance of the surgeon. Where the complaint, however, has been improperly treated with stimulating, and particularly stimulating-astringent injections, or where it has continued too long before application for medical assistance, the whole range of the urethra, or some particular parts of it, are apt to become so irritable as to excite spasmodic contractions, which commonly pass under the name of strictures, without being so in reality; and this irritation sometimes extends to the bladder. The most sensible parts of fibrous structures and canals are their extremities; and hence the portions of the urethra which suffer most from irritation, are the interior membrane of the glans and prostate, particularly the latter, in consequence of its direct connection with the bladder as well as the urethra. On this account, when a patient once labours under *spasmodic contractions*, or strictures, as they are called, from clap, whatever other parts these may exist in, the introduction of a bougie will be almost sure to prove that there is also a constriction at the prostatical portion. Generally speaking, it will be found to originate here, and to occur in other parts of the canal from sympathy. But the case will often be reversed; and while the irritation originates in some other part, or in the bladder, it is by sympathy with these that the prostate itself is affected. Mr. Abernethy has pointed out this double source of spasmodic constriction in the prostate, in the clearest manner possible, in his surgical observations on diseases of the urethra; and the remarks he has there offered upon the propriety of employing or withholding the bougie, as an instrument of cure, cannot be too deeply imprinted on every student's mind. It is almost unnecessary to add, that the utmost cleanliness, by frequent washing, should be maintained from the first appearance of the disease.

When urethritis is a secondary disease, or produced by accidents, operations, &c., it requires the same local treatment as inflammation of other mucous membranes; viz. leeches, cold lotions, and aperients. The view taken of the treatment of gonorrhœa in the preceding article is that which prevailed a few years back. The treatment of the inflammatory stage is now generally conducted on very different principles See the *Supplement*, art. *Urethritis venerea.*

Ure'ticus. (From *ουρον*, urine.) Applied to that which promotes a discharge of urine.

U'rias. (From *ουρον*, urine.) The urethra.

URIC. *Uricus.* Appertaining to urine.

Uric acid. See *Lithic acid.*

Urina'culum. See *Urachus.*

Uri'næ ardor. See *Dysuria.*

Urina'ria. (*a, æ.* f.; from *urina*, urine: so named from its diuretic qualities.) See *Leontodon taraxacum.*

U'RINARY. (*Urinarius*; from *urina*, urine.) Appertaining to urine.

Urinary bladder. *Vesica urinaria.* The bladder is a membraneous pouch, capable of dilatation and contraction, situated in the lower part of the abdomen, immediately behind the symphysis pubis, and opposite to the beginning of the rectum. Its figure is nearly that of a short oval. It is broader on the fore and back than on the lateral parts; rounder above than below, when empty; and broader below than above, when full. It is divided into the body, neck, and fundus, or upper part; the neck is a portion of the lower part, which is contracted by a sphincter muscle. This organ is made up of several coats; the upper, posterior, and lateral parts are covered by a reflection of the peritonæum, which is connected by cellular substance to the muscular coat. This is composed of several strata of fibres, the outermost of which are mostly longitudinal, the interior becoming gradually more transverse, connected together by reticular membrane. Under this is the cellular coat, which is nearly of the same structure with the tunica nervosa of the stomach. Winslow describes the internal or villous coat as somewhat granulated and glandular; but this

has been disputed by subsequent anatomists. However, a mucous fluid is poured out continually from it, which defends it from the acrimony of the urine. Sometimes the internal surface is found very irregular, and full of rugæ, which appear to be occasioned merely by the strong contraction of the muscular fibres, and may be removed by distending it. The sphincter does not seem to be a distinct muscle, but merely formed by the transverse fibres being closely arranged about the neck. The urine is received from the ureters, which enter the posterior part of the bladder obliquely; and when a certain degree of distension has occurred, the muscular fibres are voluntarily exerted to expel it.

Urinary calculus. See *Calculus, urinary.*

URINE. (*Urina, æ.* f. Ουρον; from ορουω, to rush out.) The saline liquid secreted in the kidneys, and dropping down from them, *guttatim*, through the ureters, into the cavity of the urinary bladder. *The secretory organ* is composed of the arterious vessels of the cortical substance of the kidneys, from which the urine passes through the uriniferous tubuli and renal papillæ, into the renal pelvis, whence it flows, drop by drop, through the ureters into the cavity of the urinary bladder, where it is detained some hours, and at length, when *abundant*, eliminated through the urethra.

Few of the apparatus of secretion are so complicated as that of the urine: it is composed of the two kidneys, of the *ureters*, of the bladder, and the *urethra;* besides the abdominal muscles contribute to the action of these different parts, amongst which the kidneys alone form urine: the others serve in its transportation and expulsion.

Situated in the abdomen, upon the sides of the vertebral column, before the last false ribs and the *quadratus lumborum*, the kidneys are of small volume relatively to the quantity of fluid they secrete. They are generally surrounded with a great deal of fat. Their parenchyma is composed of two substances: the one exterior, vascular, or *cortical;* the other called *tubular*, disposed in a certain number of cones, the base of which corresponds to the surface of the organ, and their summits unite in the membranous cavity called *pelvis*. Its cones appear formed by a great number of small hollow fibres, which are excretory canals of a particular kind, and which are generally filled with urine.

In respect of its volume, no organ receives so much blood as the kidney. The artery which is directed there is large, short, and proceeds immediately from the aorta: it has easy communication with the veins and the tubulous substance, as may be easily ascertained by means of the most coarse injections, which, being thrown into the renal artery, pass into the veins and into the pelvis, after having filled the cortical substance.

The filaments of the great sympathetic alone are distributed to the kidneys. The *calices*, pelvis, and ureter, form together a canal which commences in the kidneys, where it embraces the top of the mamillary processes; and, placed at the sides of the vertebral column, it goes in the bottom of the pelvis to the bladder, where it terminates. This last organ is an extensible and contractile sac, intended to hold the fluid secreted by the kidneys, and which communicates with the exterior by a canal of considerable length in man, but very short in woman, called *urethra.*

The posterior extremity of the urethra is only in man, surrounded by the *prostate* gland, which is considered by certain anatomists as a collection of mucous follicles. Two small glands placed before the anus pour a particular fluid into this canal. Two muscles which descend from the pubis towards the rectum, pass upon the sides of the part of the bladder which ends in the urethra, approach one another behind, and form a small arc which surrounds the neck of the bladder, and carries it more or less upwards.

If the pelvis is cut open in a living animal, the urine is seen to pass out slowly by the summits of the excretory cones. This liquid is deposited in the pelvis of the kidney, and then by little and little it enters into the *ureter*, through the whole length of which it passes. It thus arrives at the bladder, into which it penetrates by a constant exudation or dribbling.

A slight compression upon the uriniferous cones makes the urine pass out in considerable quantity; but, instead of being limpid, as when it passes out naturally, it is muddy and thick. It appears, then, to be filtered by the hollow fibres of the tubular substance.

Neither the *pelvis* nor the *ureter* being contractile, probably the power which produces the motion of the urine is, on one hand, that by which it is poured into the *pelvis;* and, on the other, the pressure of the abdominal muscles; to which may be added, when we stand upright, the weight of the liquid.

Under the influence of these causes, the urine passes into the bladder, and slowly distends this organ, sometimes to a considerable degree; this accumulation being permitted by the extensibility of different organs.

How does the urine accumulate in the bladder? Why does it not flow immediately by the urethra? and why does it not flow back into the ureter? The answer is easy: for the ureters. These conduits pass a considerable distance into the sides of the bladder. In proportion as the urine distends this organ, it flattens the ureters, and shuts them so much more firmly as it is more abundant. This takes place in the dead body as well as in the living; also, a liquid, or even air, injected into the bladder by the urethra, never enters the ureters. It is then, by a mechanism analogous to that of certain valves, that the urine does not return towards the kidneys.

It is not so easy to explain why the urine does not flow by the urethra. Several causes appear to contribute to this. The sides of this canal, particularly towards the bladder, have a continual tendency to contract, and to lessen the cavity; but this cause alone would be insufficient to resist the efforts of the urine to escape, when the bladder is full. In the dead body, in which the canal contracts nearly in the

same manner, it has but a very weak resistance, and does not prevent the passage of the liquid outwards, though the bladder may be very little compressed.

The angle of the bladder with the urethra, when it is strongly distended, may also present an obstacle to the passage of the urine; but the principal cause, most probably, is the contraction of the elevating muscles of the anus, which, either by the disposition to contraction of the muscular fibres, or by their contraction under the influence of the brain, press the urethra upwards, compress its sides with more or less force against each other, and thus shut its posterior orifice.

Excretion of Urine. — As soon as there is a certain quantity of urine in the bladder, we feel an inclination to discharge it. The mechanism of this expulsion deserves particular attention, and has not always been well understood.

If the urine is not always expelled, this ought not to be attributed to the want of contraction in the bladder — for this organ always tends to contract; but, by the influence of the causes that we have noticed, the internal orifice of the urethra resists with a force that the contraction of the bladder cannot surmount. The will produces this expulsion: — 1st, By adding the contraction of the abdominal muscles to that of the bladder; 2dly, By relaxing the *levatores ani*, which shut the urethra. The resistance of this canal being once overcome, the contraction of the bladder is sufficient for the complete expulsion of the urine it contained; but the action of the abdominal muscles may be added, and then the urine passes out with much greater force. We may also stop the flowing of the urine all at once, by contracting the levators of the anus.

The contraction of the bladder is not voluntary, though, by acting on the abdominal muscles, and the levators of the anus, we may cause it to contract when we choose.

The urine that remains in the urethra after the bladder is empty, is expelled by the contraction of the muscles of the perinæum, and particularly by that of the *acceleratores urinæ*.

Though the quantity of urine is very copious, and though it contains several proximate principles which are not found in the blood, and consequently a chemical action takes place in the kidneys, the secretion of the urine is nevertheless very rapid.

The physical properties of urine are subject to great variations. If rhubarb or madder has been used it becomes of a deep yellow, or blood-red; if one has breathed an air charged with vapours of oil or turpentine, or if a little rosin has been swallowed, it takes a violet colour. The disagreeable odour that it takes by the use of asparagus is well known.

Its chemical composition is not less variable. The more use that is made of watery beverages, the more considerable the total quantity and proportion of water becomes. If one drinks little, the contrary happens.

The uric acid becomes more abundant when the regimen is very substantial, and the exercise trifling. This acid diminishes, and may even disappear altogether, by the constant and exclusive use of unazotised food, such as sugar, gum, butter, oil, &c. Certain salts, carried into the stomach, even in small quantity, are found in a short time in the urine.

The extreme rapidity with which this translation takes place, has made it be supposed there is a direct communication between the stomach and the bladder. Even now there are considerable numbers of partisans in favour of this opinion.

It is not yet long since a direct canal from the stomach to the bladder was supposed to exist; but this passage has no existence. Others have supposed, without giving any proof, that the passage took place by the cellular tissue, by the anastomoses of the lymphatic vessels, &c.

Darwin having given to a friend several grains of nitrate of potash, in half an hour he had him bled, and collected his urine. The salt was found in the urine, but not in the blood. Brande made similar observations with prussiate of potash. He concluded from it, that the circulation is not the only means of communication between the stomach and the urinary organs, but without giving any explanation of the existing means. Sir Everard Home is also of this opinion.

Professor Magendie made experiments in order to clear up this important question; and found, 1st, That whenever prussiate of potash is injected into the veins, or absorbed in the intestinal canal, or by a serous membrane, it very soon passes into the bladder, where it is easily recognised amongst the urine. 2dly, That if the quantity of prussiate injected is considerable, the tests can discover it in the blood; but if the quantity is small, its presence cannot be recognised by the usual means. 3dly, That the same result takes place by mixing the prussiate and blood together in a vessel. 4thly, That the same salt is recognised in all proportions in the urine. It is not extraordinary, then, that Darwin and Brande did not find in the blood the substance that they distinctly perceived in the urine.

With regard to the organs that transport the liquids of the stomach and intestines into the circulating system, it is evident, according to what we have said, in speaking of the chyliferous vessels, and the absorption of the veins, that these liquids are directly absorbed by the veins, and transported by them to the liver and the heart; so that the direction which these liquids follow, in order to reach the veins, is much shorter than is generally admitted, viz. by the lymphatic vessels, the mesenteric glands, and the thoracic duct. — *Magendie.*

The urine of a healthy man is divided in general into, —

1. *Crude*, or that which is emitted one or two hours after eating. This is for the most part aqueous, and often vitiated by some kinds of food.

2. *Cocted*, which is eliminated some hours after the digestion of the food, as that which is emitted in the morning after sleeping. This is generally in smaller quantity, thicker, more

coloured, more acrid, than at any other time. Of such cocted urine, the *colour* is usually citrine.

The *degree of heat* agrees with that of the blood. Hence in atmospheric air it is warmer, as is perceived if the hand be washed with urine. The *specific gravity* is greater than that of water; and that emitted in the morning is always heavier than at any other time. The *smell* of fresh urine is not disagreeable. The *taste* is saltish and nauseous. The *consistence* is somewhat thicker than water. The *quantity* depends on that of the liquid drank, its diuretic nature, and the temperature of the air.

Changes of urine in the air. — Preserved in an open vessel, it remains pellucid for some time, and at length there is perceived at the bottom a *nubecula*, or little cloud, consolidated, as it were, from the gluten. This nubecula increases by degrees, occupies all the urine, and renders it opake. The natural smell is changed into a putrid *cadaverous* one; and the surface is now generally covered with a *cuticle*, composed of very minute crystals. At length the urine regains its transparency, and the *colour* is changed from a yellow to a brown; the cadaverous smell passes into an *alkaline;* and a brown, grumous *sediment* falls to the bottom, filled with white particles, deliquescing in the air, and so conglutinated as to form, as it were, little soft calculi.

Thus *two sediments* are distinguishable in the urine: the *one* white and gelatinous, and separated in the beginning; the *other* brown and grumous, deposited by the urine when putrid.

Spontaneous degeneration. — Of all the fluids of the body, the urine first putrefies. In summer, after a few hours, it becomes turbid, and sordidly black; then deposits a copious sediment, and exhales a fœtor like that of putrid cancers, which at length becomes cadaverous. Putrid urine effervesces with acids; and, if distilled, gives off, before water, an urinous volatile spirit.

The properties of healthy urine are, —

1. It reddens paper stained with turnsole and with the juice of radishes, and therefore contains an acid. This acid has been generally considered as the phosphoric, but Thénard has shown that, in reality, it is the *acetic*.

2. If a solution of ammonia be poured into fresh urine, a white powder precipitates, which has the properties of *phosphate of lime*.

3. If the phosphate of lime precipitated from urine be examined, a little magnesia will be found mixed with it. Fourcroy and Vauquelin have ascertained that this is owing to a little *phosphate of magnesia* which urine contains, and which is decomposed by the alkali employed to precipitate the phosphate of lime.

4. Proust informs us that *carbonic acid* exists in urine, and that its separation occasions the froth which appears during the evaporation of urine.

5. Proust has observed, that urine kept in new casks deposits small crystals, which effloresce in the air, and fall to powder. These crystals possess the properties of the *carbonate of lime*.

6. When fresh urine cools, it often lets fall a brick-coloured precipitate, which Scheele first ascertained to be crystals of *uric acid*. All urine contains this acid, even when no sensible precipitate appears when it cools.

7. During intermitting fevers, and especially during diseases of the liver, a copious sediment of a brick-red colour is deposited from urine. This sediment contains the *rosacic acid* of Proust.

8. If fresh urine be evaporated to the consistence of a syrup, and muriatic acid be then poured into it, a precipitate appears which possesses the properties of *benzoic acid*.

9. When an infusion of tannin is dropped into urine, a white precipitate appears, having the properties of the combination of tannin and *albumen*, or gelatine. Their quantity in healthy urine is very small, often indeed not sensible. Cruickshank found that the precipitate afforded by tannin in healthy urine amounted to 1-240th part of the weight of the urine.

10. If urine be evaporated, by a slow fire, to the consistence of a thick syrup, it assumes a deep brown colour, and exhales a fœtid ammoniacal odour. When allowed to cool, it concretes into a mass of crystals, composed of all the component parts of urine. If four times its weight of alkohol be poured into this mass at intervals, and a slight heat be applied, the greatest part is dissolved. The alkohol which has acquired a brown colour is to be decanted off, and distilled in a retort in a sand heat till the mixture has boiled for some time, and acquired the consistence of a syrup. By this time the whole of the alkohol has passed off, and the matter, on cooling, crystallises in quadrangular plates, which intersect each other. This substance is *urea*, which composes 9-20ths of the urine, provided the watery part be excluded. It is this substance which characterises urine, and constitutes it what it is, and to which the greater part of the very singular phenomena of urine are to be described.

11. According to Fourcroy and Vauquelin, the colour of urine depends upon the urea: the greater the proportion of urea the deeper the colour. But Proust has detected a *resinous matter* in urine, similar to the resin of bile, and to this substance he ascribes the colour of urine.

12. If urine be slowly evaporated to the consistence of a syrup, a number of crystals make their appearance on its surface: these possess the properties of the *muriate of soda*.

13. The saline residuum which remains after the separation of urea from crystallised urine by means of alkohol, has been long known by the names of *fusible salt of urine*, and *microcosmic salt*. When these salts are examined, they are found to have the properties of phosphates. The rhomboidal prisms consist of *phosphate of ammonia* united to a little *phosphate of soda*. The rectangular tables, on the contrary, are phosphate of soda united to a small quantity of phosphate of ammonia. Urine, then, contains *phosphate of soda*, and *phosphate of ammonia*.

14. When urine is cautiously evaporated, a few cubic crystals are often deposited among

the other salts: these crystals have the properties of *muriate of ammonia.*

15. When urine is boiled in a silver basin, it blackens it; and if the quantity of urine be large, small crusts of sulphuret of silver may be detached. Hence we see that urine contains *sulphur.*

Urine, then, contains the following substances: —

1. Water.
2. Acetic acid.
3. Phosphate of lime.
4. Phosphate of magnesia.
5. Carbonic acid.
6. Carbonate of lime.
7. Uric acid.
8. Rosacic acid.
9. Benzoic acid.
10. Albumen.
11. Urea.
12. Resin.
13. Muriate of soda.
14. Phosphate of soda.
15. Phosphate of ammonia.
16. Muriate of ammonia.
17. Sulphur.

According to Berzelius, healthy human urine is composed of water, 933; urea, 30·10; sulphate of potash, 3·71; sulphate of soda, 3·16; phosphate of soda, 2·94; muriate of soda, 4·45; phosphate of ammonia, 1·65; muriate of ammonia, 1·50; free acetic acid, with lactate of ammonia, animal matter soluble in alkohol, urea adhering to the preceding, altogether 17·14; earthy phosphates with a trace of fluate of lime, 1·0; uric acid, 1; mucus of the bladder, 0·32; silica, 0·03; in 1000·0.

No liquor in the human body, however, is so variable, in respect to *quantity* and *quality*, as the urine; for it varies,

1. *In respect to age.*—In the *fœtus* it is inodorous, insipid, and almost aqueous; but as the *infant* grows, it becomes more acrid and fœtid; and in *old age* more particularly so.

2. *In respect to drink.*— It is secreted in greater quantity, and of a more pale colour, from cold and copious draughts. It becomes green from an infusion of Chinese tea.

3. *In respect to food.*—From eating the heads of asparagus, or olives, it contracts a peculiar smell; from the fruit of the opuntia, it becomes red; and from fasting, turbid.

4. *In respect to medicines.*—From the exhibition of rhubarb root it becomes yellow; from cassia pulp, green; and from turpentine it acquires a violet odour.

5. *In respect to the time of the year.*—In the winter the urine is more copious and aqueous; but in the summer, from the increased transpiration, it is more sparing, higher coloured, and so acrid that it sometimes occasions strangury. The climate induces the same difference.

6. *In respect of the muscular motion of the body.*—It is secreted more sparingly, and concentrated by motion; and is more copiously diluted, and rendered more crude by rest.

7. *In respect of the affections of the mind.*—Thus fright makes the urine pale.

Use.—The urine is an excrementitious fluid, like lixivium, by which the human body is not only liberated from the superfluous water, but also from the superfluous salts and animal earth, and is defended from corruption.

Lastly, the vis medicatrix naturæ sometimes eliminates many morbid and acrid substances with the urine; as may be observed in fevers, dropsies, &c.

Urine, retention of. See *Retention.*

Urine, suppression of. See *Ischuria.*

UROCRI'SIA. (*a*, *æ. f.*; from *ουρον*, and *κρινω*, to judge.) The judgment formed of diseases by the inspection of urine.

UROPLA'NIA. (From *ουρον*, urine, and *πλαναω*, to wander.) Erratic urine. A translation of the urine to some part of the body where its presence is unnatural, as to the skin, the ventricles of the brain, &c.

UROSCO'PIA. (*a*, *æ. f.*; from *ουρον*, the urine, and *σκοπεω*, to inspect.) Inspection of urine, that a judgment of diseases may be made from its appearance.

URSI'NA RADIX. The root of the plant called baldmoney. See *Æthusa meum.*

URTI'CA. (*a*, *æ. f.*; *ab urendo*: because it excites a painful heat like that of a burn.) 1. The name of a genus of plants in the Linnæan system. Class, *Monœcia*; Order, *Tetrandria.* The nettle.

2. The pharmacopœial name of the common nettle. See *Urtica dioica.*

URTICA DIOICA. The systematic name of the common stinging nettle. This plant is well known, and though generally despised as a noxious weed, has been long used for medical, culinary, and economical purposes. The young shoots in the spring possess diuretic and antiscorbutic properties, and are with these intentions boiled and eaten like cabbage or other greens.

Urtica mortua. See *Lamium album.*

URTICA PILULIFERA. The systematic name of the pill-bearing nettle. *Urtica romana.* The seed was formerly given against diseases of the chest, but is now deservedly forgotten. To raise an irritation in paralytic limbs, the fresh plant may be employed, as producing a more permanent sting than the common nettle.

Urtica romana. See *Urtica pilulifera.*

URTICA URENS. The systematic name of a lesser nettle than the dioica, and possessing similar virtues.

URTICA'RIA. (*a*, *æ. f.*; from *urtica*, a nettle.) The nettle-rash; called also, *Febris urticata*, *Uredo*, *Purpura urticata*, and *Scarlatina urtica.* An eruption on the skin like the wheals caused by the sting of a nettle. The little elevations, called the nettle-rash, often appear instantaneously, especially if the skin be rubbed or scratched, and seldom stay many hours in the same place, and sometimes not many minutes. No part of the body is exempt from them; and where many of them rise together, and continue an hour or two, the parts are often considerably swelled, which particularly happens in the arms, face, and hands. These eruptions will continue to infest the skin, sometimes in one place, and sometimes in another, for one or two hours together, two or three times a day, or perhaps for the greatest part of twenty-four hours. In some constitutions they last only a few days, in others many months.

Urticaria is sometimes attended with fever and sometimes not. Bateman describes six varieties of this disease, viz. *Urticaria febrilis*, *U. evanida*, *U. perstans*, *U. conferta*, *U. subcutanea*, *U. tuberosa.*

All that is required in the treatment of this disease is gentle aperients, and not keeping the body too warm, but cool and lightly covered. The best application to allay the itching is dilute vinegar, or camphire water and vinegar. The decoction of Virginian snake-root is particularly useful in removing chronic urticaria.

URTICA'TIO. (*o, onis.* f.; from *urtica*, a nettle.) The whipping a paralytic or benumbed limb with nettles, in order to restore its feeling.

U'SNEA. (*a, æ.* f. An Arabic word.) A moss or lichen. More especially that which is found adhering to the skull when exposed to the air in damp places. It is the *Lichen saxatilis* of Linnæus. Extraordinary antiepileptic and antihæmorrhagic virtues were ascribed to the *usnea cranii humani*. It was an ingredient in the celebrated *unguentum armarium*.

USQUEBAUGH. (The Irish for *mad water*.) Originally the pure spirit called *whiskey*, which term is corrupted from usquebaugh. The usquebaugh of the present day is a strong rich compound spirit, chiefly taken as a dram, and made of cinnamon, coriander, nutmeg, mace, aniseed, citron, thyme, balm, savory, mint, rosemary, Spanish liquorice, sugar-candy, raisins, currants, and dates, infused in brandy.

USSAC. A name given by Serapion the Arabian to the gum ammoniacum of the Greek writers, which does not appear to be the same as that so called by us.

U'TERINE. *Uterinus.* Appertaining to the womb.

Uterine fury. See *Nymphomania.*

Uterine gestation. See *Pregnancy.*

U'TERUS. (*us, i.* m. Ὑστερα.) *Matrix. Ager naturæ. Hystera. Metra. Utriculus.* The womb. A spongy receptacle of the shape of a compressed pear, situated in the cavity of the pelvis, above the vagina, and between the urinary bladder and rectum.

The form of the uterus resembles that of an oblong pear flattened, with the depressed sides placed towards the ossa pubis and sacrum; but, in the impregnated state, it becomes more oval, according to the degree of its distension. For the convenience of description, and for some practical purposes, the uterus is distinguished into three parts, — the fundus, the body, and the cervix. The upper part is called the fundus, the lower the cervix; the space between them, the extent of which is undefined, the body. The uterus is about three inches in length, about two in breadth at the fundus, and one at the cervix. Its thickness is different at the fundus and cervix, being at the former usually rather less than half an inch, and at the latter somewhat more; and this thickness is preserved throughout pregnancy, chiefly by the enlargement of the veins and lymphatics, there being a smaller change in the size of the arteries. But there is so great a variety in the size and dimensions of the uterus in different women, independently of the states of virginity, marriage, or pregnancy, as to prevent any very accurate mensuration. The cavity of the uterus corresponds with the external form: that of the cervix leads from the os uteri, where it is very small, in a straight direction, to the fundus, where it is expanded into a triangular form, with two of the angles opposed to the entrance into the Fallopian tubes; and at the place of junction between the cervix and the body of the uterus, the cavity is smaller than it is in any other part. The angles above mentioned are called *cornua uteri*. There is a swell or fulness of all the parts towards the cavity, which is sometimes distinguished by a prominent line running longitudinally through its middle. The villous coat of the vagina is reflected over the os uteri, and is continued into the membrane which lines the cavity of the uterus. The internal surface of the uterus is corrugated in a beautiful manner, but the rugæ, or wrinkles, which are longitudinal, lessen as they advance into the uterus, the fundus of which is smooth. In the intervals between the rugæ are small orifices, like those in the vagina, which discharge a mucus, serving, besides other purposes, that of closing the os uteri very curiously and perfectly during pregnancy. The substance of the uterus, which is very firm, is composed of arteries, veins, lymphatics, nerves, and muscular fibres, curiously interwoven and connected together by cellular membrane. The muscular fibres are of a pale colour, and appear also in their texture somewhat different from muscular fibres in other parts of the body. The arteries of the uterus are the spermatic and hypogastric. The spermatic arteries arise from the anterior part of the aorta, a little below, and sometimes from the emulgents. They pass over the psoæ muscles behind the peritonæum, enter between the two laminæ or duplicatures of the peritonæum which form the broad ligaments of the uterus, and proceed to the uterus, near the fundus of which they insinuate themselves, giving branches in their passage to the ovaria and Fallopian tubes. The hypogastric arteries are on each side a considerable branch of the internal iliacs. They pass to the sides of the body of the uterus, sending off a number of smaller branches, which dip into its substance. Some branches also are reflected upwards to the fundus uteri, which anastomose with the spermatic arteries, and others are reflected downwards, supplying the vagina. The veins which reconduct the blood from the uterus are very numerous, and their size in the unimpregnated state is proportioned to that of the arteries; but their enlargement during pregnancy is such, that the orifices of some of them, when divided, will admit even of the end of a small finger. The veins anastomose in the manner of the arteries which they accompany out of the uterus, and then, having the same names with the arteries, spermatic and hypogastric, the former proceeds to the vena cava on the right side, and on the left to the emulgent vein; and the latter to the internal iliac.

From the substance and surfaces of the uterus an infinite number of lymphatics arise, which follow the course of the hypogastric and spermatic blood-vessels. The first pass into the gland of the internal iliac plexus, and the other into the glands which are situated near the origin of the spermatic arteries. Of these Nuck first gave a delineation.

The uterus is supplied with nerves from the lower mesocolic plexus, and from two small flat circular ganglions, which are situated behind the rectum. These ganglions are joined by a number of small branches from the third and fourth sacral nerves. The ovaria derive their nerves from the renal plexus. By the great number of nerves, these parts are rendered very irritable; but it is by those branches which the uterus receives from the intercostal, that the intimate consent between it and various other parts is chiefly preserved. The muscular fibres of the uterus have been described in a very different manner by anatomists, some of whom have asserted that its substance was chiefly muscular, with fibres running in transverse, orbicular, or reticulated order, whilst others have contended that there were no muscular fibres whatever in the uterus. In the unimpregnated uterus, when boiled for the purpose of a more perfect examination, the former seems to be a true representation, and when the uterus is distended towards the latter part of pregnancy, these fibres are very thinly scattered; but they may be discovered in a circular direction, at the junction between the body and the cervix of the uterus, and surrounding the entrance of each Fallopian tube in a similar order. Yet it does not seem reasonable to attribute the time of labour to its muscular fibres only, if we are to judge of the power of a muscle by the number of fibres of which it is composed, unless it is presumed that those of the uterus are stronger than in common muscles. With respect to the glands of the uterus, none are discoverable dispersed through its substance upon the inner surface of the cervix: between the rugæ there are lacunæ which secrete mucus, and there are small follicles at the edge of the os uteri. These last are only observable in a state of pregnancy, when they are much enlarged. From the angles at the fundus of the uterus, two processes of an irregular round form originate, called, from the name of the first describer, the *Fallopian tubes*. They are about three inches in length, and, becoming smaller in their progress from the uterus, have an uneven, fringed termination, called the fimbriæ. The canal which passes through these tubes is extremely small at their origin, but it is gradually enlarged, and terminates with a patulous orifice, the diameter of which is about one third of an inch, surrounded by the fimbriæ. It is also lined by a very fine vascular membrane, formed into serpentine plicæ. Through this canal the communication between the uterus and ovaria is preserved. The Fallopian tubes are wrapped in duplicatures of the peritonæum, which are called the broad ligaments of the uterus; but a portion of their extremities, thus folded, hangs loose on each side of the pelvis. From each lateral angle of the uterus, a little before and below the Fallopian tubes, the *round ligaments* arise, which are composed of arteries, veins, lymphatics, nerves, and a fibrous structure. These are connected together by cellular membrane, and the whole is much enlarged during pregnancy. They receive their outward covering from the peritonæum, and pass out of the pelvis through the ring of the external oblique muscle to the groin, where the vessels subdivide into small branches, and terminate at the mons veneris and contiguous parts. From the insertion of these ligaments into the groin, the reason appears why that part generally suffers in all the diseases and affections of the uterus, and why the inguinal glands are in women so often found in a morbid or enlarged state. The duplicatures of the peritonæum, in which the Fallopian tubes and ovaria are involved, are called the *broad ligaments* of the uterus. These prevent the entanglement of the parts, and are conductors of the vessels and nerves, as the mesentery is of those of the intestines. Both the round and broad ligaments alter their position during pregnancy, appearing to rise lower and more forward than in the unimpregnated state. Their use is supposed to be that of preventing the descent of the uterus, and to regulate its direction when it ascends into the cavity of the abdomen; but whether they answer these purposes may be much doubted. The use of the womb is for menstruation, conception, nutrition of the fœtus, and parturition. The uterus is liable to many diseases, the principal of which are retroversion and its falling down, hydatids, dropsy of the uterus, moles, polypes, ulceration, cancer, &c.

Uterus, inversion of. This is mostly produced by unskilfully and violently pulling away the placenta after delivery, and is only to be remedied by a restoration of the uterus to its proper state before it contracts; without which, perpetual barrenness must necessarily ensue, and the person be subject for life to a difficulty of walking, and other maladies.

Uterus, retroversion of. By the term retroversion such a change of the position of the uterus is understood, that the fundus is turned backwards and downwards upon its cervix, between the vagina and rectum, and the os uteri is turned forwards to the pubis, and upwards, in proportion to the descent of the fundus, so that, by an examination *per vaginam*, it cannot be felt, or not without difficulty, when the uterus is retroverted. By the same examination there may also be perceived a large round tumour, occupying the inferior part of the cavity of the pelvis, and pressing the vagina towards the pubes. By an examination *per anum*, the same tumour may be felt, pressing the rectum to the hollow of the sacrum; and if both these examinations are made at the same time, we may readily discover that the tumour is confined within the vagina and rectum. Besides the knowledge of the retroversion which may be gained by these examinations, it is found to be accompanied with other very distinguishing symptoms. There is in every case, together with extreme pain, a suppression of urine; and by the continuance of this distension of the bladder, the tumour formed by it in the abdomen often equals in size, and resembles in shape, the uterus in the sixth or seventh months of pregnancy: but it is necessary to observe, that the suppression of urine is frequently absolute only before the retroversion of the uterus, or during the time it is retroverted; for when

the retroversion is completed, there is often a discharge of urine, so as to prevent an increase of the distension of the bladder, though not in a sufficient quantity to remove it. There is also an obstinate constipation of the bowels, produced by the pressure of the retroverted uterus upon the rectum, which renders the injection of a clyster very difficult, or even impossible. But it appears that all the painful symptoms are chiefly in consequence of the suppression of urine; for none of those parts which are apt to sympathise in affections or diseases of the uterus are disturbed by its retroversion. The retroversion of the uterus has generally occurred about the third month of pregnancy, and sometimes after delivery it may likewise happen, where the uterus is, from any cause, enlarged to the size it acquires about the third month of pregnancy, but not with such facility as in the pregnant state, because the enlargement is then chiefly at the fundus. If the uterus is but little enlarged, or if it be enlarged beyond a certain time, it cannot well be retroverted: for, in the first case, should the cause of a retroversion exist, the weight at the fundus would be wanting to produce it; and, in the latter, the uterus would be raised above the projection of the sacrum, and supported by the spine.

UTRI'CULUS. (Dim. of *uter*, a bottle: so called from its shape.) 1. The womb.

2. A little bag, bladder, or hollow vesicle. Applied by botanists to a species of capsule, which varies in thickness, never opens by any valve, and falls off with the seed. Sir J. Smith believes it never contains more than one seed, of which it is most commodiously, in botanical language, called an external coat, rather than a capsule. Gærtner applies it to *Chenopodium* and *Clematis*: in the former it seems to be pellicula; in the latter, testa. — *Smith.*

U'VA. (*a*, *æ*. f.: *quasi uvida*, from its juice.) 1. An unripe grape.

2. A tumour resembling a grape.

Uva gruina. See *Vaccinium.*

Uva passa major. See *Vitis.*

Uva passa minor. See *Vitis.*

Uva ursi. See *Arbutus uva ursi.*

U'VEA. (*a*, *æ*. f.; from *uva*, an unripe grape: so called because, in beasts, which the ancients chiefly dissected, it is like an unripe grape.) The black pigment on the back part of the iris. See *Oculus.*

U'VULA. (*a*, *æ*. f.; dim. of *uva*, a grape.) *Columella. Cion. Gargareon. Columna oris. Gurgulio. Interseptum.* The small conical fleshy substance hanging in the middle of the *velum pendulum palati*, over the root of the tongue. It is composed of the common membrane of the mouth, and a small muscle resembling a worm, which arises from the union of the palatine bone, and descends to the tip of the uvula. It was called *Palato-staphilinus*, by Douglas, and *Staphilinus epistaphilinus*, by Winslow. By its contraction, the uvula is raised up.

U'VULA VESI'CÆ. A small eminence in the neck of the bladder, which constitutes the apex of the triangle at the fore-part of the bladder, of which the openings of the ureters indicate the posterior angles.

UVULA'RIA. (*a*, *æ*. f.; from *uvula*: because it cured diseases of the uvula.) See *Ruscus hypoglossum.*

V.

VA'CCA. The cow. See *Bos taurus.*

VACCINATION. The insertion of the matter to produce cow-pox. See *Cow-pox.*

Vaccinia. See *Cow-pox.*

VACCI'NIUM. (*um*, *ii*. n.; *quasi bacciniun*, from its berry.) The name of a genus of plants in the Linnæan system. Class, *Octandria*; Order, *Monogynia.*

VACCINIUM MYRTILLUS. The systematic name of the myrtle-berry. The berries, which are directed in the pharmacopœias by the name of *baccæ myrtillorum*, are the fruit of this plant. Prepared with vinegar they are esteemed as antiscorbutics, and when dry possess astringent virtues.

VACCINIUM OXYCOCCOS. The systematic name of the cranberry-plant. *Oxycoccus palustris. Vaccinia palustris. Uva gruina. Vitis idæa palustris.* Moor-berry. Cranberry. These berries are directed in some pharmacopœias. They are about the size of our haws, and are pleasantly acid and cooling, with which intention they are used medicinally in Sweden. In this country they are mostly preserved and made into tarts.

VACCINIUM VITIS IDÆA. The systematic name of the red whortle-berry. *Vitis idæa.* The leaves of this plant, *vaccinium vitis idæa*, of Linnæus, are so astringent as to be used in some places for tanning. They are said to mitigate the pain attendant on calculous diseases when given internally in the form of decoction. The ripe berries abound with a grateful acid juice; and are esteemed in Sweden as aperient, antiseptic, and refrigerant, and often given in typhoid diseases.

VAGI'NA. (*a*, *æ*. f.) *Vagina uteri.* The canal which leads from the external orifice of the female pudendum to the uterus. It is somewhat of a conical form, with the narrowest part downwards, and is described as being five or six inches in length, and about two in diameter. But it would be more proper to say, that it is capable of being extended to those

dimensions; for, in its common state, the os uteri is seldom found to be more than three inches from the external orifice, and the vagina is contracted as well as shortened. The vagina is composed of *two coats*, the first or innermost of which is villous, interspersed with many excretory ducts, and contracted into plicæ, or small transverse folds, particularly at the fore and back part; but, by child-bearing, these are lessened or obliterated. The second coat is composed of a firm membrane, in which muscular fibres are not distinctly observable, but which are endowed, to a certain degree, with contractile powers like a muscle. This is surrounded by cellular membrane, which connects it to the neighbouring parts. A portion of the upper and posterior part of the vagina is also covered by the peritonæum. The entrance of the vagina is constricted by muscular fibres originating from the rami of the pubis, which run on each side of the pudendum, surrounding the posterior part, and executing an equivalent office, though they cannot be said to form a true sphincter.

The upper part of the vagina is connected to the circumference of the os uteri, but not in a straight line, so as to render the cavity of the uterus a continuation of that of the vagina; for the latter stretches beyond the former, and being joined to the cervix, is reflected over the os uteri, which, by this mode of union, is suspended with protuberant lips in the vagina, and permitted to change its position in various ways and directions. When, therefore, these parts are distended and unfolded at the time of labour, they are continued into each other, and there is no part which can be considered as the precise beginning of the uterus or termination of the vagina.

The diseases of the vagina are, first, such an abbreviation and contraction as render it unfit for the uses for which it was designed; secondly, a cohesion of the sides in consequence of preceding ulceration; thirdly, cicatrices after an ulceration of the parts; fourthly, excrescences; fifthly, fluor albus. The abbreviation and contraction of the vagina, which usually accompany each other, are produced by original defective formation, and they are seldom discovered before the time of marriage, the consummation of which they sometimes prevent. The curative means are to relax the parts by the use of emollient applications, and to dilate them to their proper size by sponge or other tents, or, which are more effectual, by bougies gradually enlarged. But the circumstances which attend this disorder are sometimes such as might lead us to form an erroneous opinion of the disease. A case of this kind, which was under Dr. Denman's care, from the strangury, from the heat of the parts, and the profuse and inflammatory discharge, was suspected to proceed from venereal infection; and with that opinion the patient had been put upon a course of medicine composed of quicksilver, for several weeks, without relief. When she applied to the doctor, he prevailed upon her to submit to an examination, and found the vagina rigid, so much contracted as not to exceed half an inch in diameter, nor more than one inch and a half in length. The repeated, though fruitless attempts which had been made to complete the act of coition had occasioned a considerable inflammation upon the parts, and all the suspicious appearances before mentioned. To remove the inflammation she was bled, took some gentle purgative medicines, used an emollient fomentation, and afterwards some unctuous applications; she was also advised to live separate from her husband for some time. The inflammation being gone, tents of various sizes were introduced into the vagina, by which it was distended, though not very amply. She then returned to her husband, and in a few months became pregnant. Her labour, though slow, was not attended with any extraordinary difficulty. She was delivered of a full-sized child, and afterwards suffered no inconvenience. Another kind of constriction of the external parts sometimes occurs, and which seems to be a mere spasm. By the violence or long continuance of a labour, by the morbid state of the constitution, or by the negligent and improper use of instruments, an inflammation of the external parts, or vagina, is sometimes produced in such a degree as to endanger a mortification. By careful management this consequence is usually prevented: but in some cases, when the constitution of the patient was prone to disease, the external parts have sloughed away; and in others, equal injury has been done to the vagina. But the effect of the inflammation is usually confined to the internal or villous coat, which is sometimes cast off wholly or partially. An ulcerated surface being thus left, when the disposition to heal has taken place, cicatrices have been formed of different kinds, according to the depth and extent of the ulceration, and there being no counteraction to the contractile state of the parts, the dimensions of the vagina become much reduced; or, if the ulceration should not be healed, and the contractibility of the parts continue to operate, the ulcerated surfaces being brought together may cohere, and the canal of the vagina be perfectly closed.

Cicatrices in the vagina very seldom become an impediment to the connection between the sexes: when they do, the same kind of assistance is required as was recommended in the natural contraction or abbreviation of the part: they always give way to the pressure of the head of the child in the time of labour, though in many cases with great difficulty. Sometimes the appearances may mislead the judgment; for the above author was called to a woman in labour who was thought to have become pregnant though the hymen remained unbroken; but, on making very particular enquiry, he discovered that this was her second labour, and that the part, which, from its form and situation was supposed to be the hymen, with a small aperture, was a cicatrice, or unnatural contraction of the entrance into the vagina, consequent on an ulceration of the part after her former labour. Fungous excrescences, arising from any part of the vagina or uterus, have been distinguished, though not very properly, by the general term polypus. See *Polypus*.

VAGI'NAL. *Vaginalis.* 1. In *Anatomy*, of or belonging to the vagina.

2. In *Botany*, a sheath formed by a part of a leaf. It is a distinct thing from what is termed the spatha or sheath, which is a species of calyx. The vagina is very frequent in the grasses.

Vaginalis tunica. See *Tunica vaginalis testis.*

VAGINANS. Sheathing; applied to parts of animals and plants; especially to leaves which sheathe the stem, or each other, as in grasses; and to the leafstalk of the *Canna indica*, which surrounds the stem like a sheath; hence *petiolus vaginans.*

VAGINA'TUS. Sheathed.

Valerian. See *Valeriana.*

Valerian, celtic. See *Valeriana celtica.*

Valerian, garden. See *Valeriana major.*

Valerian, great. See *Valeriana major.*

Valerian, lesser. See *Valeriana officinalis.*

VALERIA'NA. (*a, æ.* f.; from *Valerius*, who first particularly described it.) 1. The name of a genus of plants in the Linnæan system. Class, *Triandria*; Order, *Monogynia.* Valerian.

2. The pharmacopœial name of the wild valerian. See *Valeriana officinalis.*

VALERIANA CELTICA. The Celtic nard. *Nardus celtica. Spica celtica Dioscoridis.* The root of this plant, a native of the Alps, has been recommended as a stomachic, carminative, and diuretic. At present it is only used in this country in the theriaca and mithridate, though its sensible qualities promise some considerable medicinal powers. It has a moderately strong smell, and a warm, bitterish, subacrid taste.

VALERIANA LOCUSTA. *Valerianella olitoria. Album olus.* Corn salad. This is cultivated in our gardens for an early salad. It is a wholesome esculent plant, gently aperient and antiscorbutic. This plant is now generally referred to another genus, under the name of *Fœdia olitoria.*

Valeriana major. See *Valeriana phu.*

Valeriana minor. See *Valeriana officinalis.*

VALERIANA OFFICINALIS. The systematic name of the *Valeriana minor, Valeriana sylvestris*, and *Leucho lachanum.* Officinal valerian. Wild valerian. *Valeriana — floribus triandris, foliis omnibus pinnatis*, of Linnæus. The root of this plant has been long extolled as an efficacious remedy in epilepsy, which caused it to be exhibited in a variety of other complaints termed nervous, in which it has been found highly serviceable. It is also in very general use as an antispasmodic, and is exhibited in convulsive and hysterical diseases. A simple and volatile tincture are directed in the pharmacopœias. The extract is not a good preparation, and is seldom used. The dose of the powder is from grs. x. to ʒ i. three times a day or oftener.

VALERIANA PHU. The systematic name of the garden valerian. *Valeriana major.* The root of this plant is said to be efficacious in removing rheumatism, especially sciatica; and also inveterate epilepsies.

Valeriana sylvestris. See *Valeriana officinalis.*

Valerianella olitoria. See *Valeriana locusta.*

VA'LGUS. Bandy-legged; having the legs bent outwards.

VALICA. An old name for an alkoholic tincture of jalap, coloured with saffron.

VA'LLUM. (From *vallus*, a rampart with palisades.) The eye-brow.

VALS. A town in the department of Ardèche, which has mineral waters containing carbonic acid and sulphates of iron and alumen.

VALVE. (*Valvæ*, folding-doors.) In *Anatomy*, a membranous elongation in canals which prevents the reflux of fluids: applied to the valve of the colon, and to thin and transparent membranes situated within arteries, veins, and absorbents.

Valve of the colon. See *Intestine.*

Valve, semilunar. See *Semilunar valves.*

Valve, tricuspid. See *Tricuspid valves.*

Valve, triglochin. See *Tricuspid valves.*

VA'LVULA. (*a, æ.* f.; from *valva*, a valve, of which it is a diminutive.) A little valve. I. Applied to the valves of the venous and lymphatic system of animals.

II. In *Botany*, applied to several parts: thus, 1. A capsule is composed of valves: the fruit of the *Datura stramonium* has four valves; a siliqua has two valves, as the pea tribe, &c.

2. The petals and calyxes which constitute the flowers of grasses are called valves: in the common meadow-grass, for example, the cup is a dry, chaffy husk, composed of two valves, and the blossom is formed of two others.

3. The mouth of the tube of a blossom is frequently closed by several projecting substances; thus, in the flower of the *Borago officinalis*, the tube is closed by five of the substances called valves.

Valvula coli. See *Intestine.*

VALVULA EUSTA'CHII. A membraneous semilunar valve, situated at the mouth of the inferior vena cava, first described by Eustachius. See *Heart.*

Valvula mitralis. See *Mitral valve.*

Valvula semilunaris. See *Semilunar valves.*

Valvula triglochin. See *Tricuspid valves.*

Valvula tulpii. See *Intestine.*

VALVULÆ CONNIVENTES. The semilunar folds formed of the villous coat of the small intestines. They are most numerous in the *jejunum*, and gradually disappear in the *ileum.* Their use appears to be to increase the internal surface of the intestines.

Vane-like. See *Versatilis.*

Vanelloe. See *Epidendrum vanilla.*

Vanilla. See *Epidendrum vanilla.*

VAPORA'RIUM. (From *vapor*, vapour.) A vapour-bath.

VARRE'CULÆ. The name of an order of plants in Linnæus's Fragments of a Natural Method, consisting of such as are, and have a monophyllous calyx, like a coloured corolla.

Varent. See *Flatus furiosus.*

VARICE'LLA. (Diminutive of *variola*, the small-pox.) The chicken-pox; called also, the *water-pox.* The eruption in this disease consists of vesicles scattered over the body: they are mostly smooth and transparent, lentil-shaped, or irregularly circular, flattened at the

top; the fluid at first pellucid, then whitish, afterwards straw-coloured; and this kind is called the *chicken-pox*. Sometimes the vesicles are pointed, and the fluid clear throughout the disease; and this is termed the *swine-pox*. In other cases, the vesicles are very large and globular, and the fluid, at first whey-coloured, is afterwards yellow; this form is denominated the *Hives*. In these several forms the eruption, though very generally distinct, is confluent; and when so, there is considerable fever and derangement of the system, which is not the case when the eruption is distinct and few. About the third or fourth day the vesicles burst, and concrete into puckered scabs, which fall off, and leave no cicatrices or marks.

The eruption of varicella does not come out all nearly together, but one crop after another, for several days.

Several of the varieties of this disease are sometimes intermixed, and the fluid, about three days after the eruption, occasionally becomes thickish, as well as yellowish, in the first and third variety, and possesses a purulent appearance; whence, in various instances, they have been mistaken for the small-pox. The eruptive fever in varicella is sometimes considerable, which has also led many to favour the opinion of its being small-pox. Varicella is now ascertained to originate from a specific contagion; and the characters by which it is sufficiently distinguished from small-pox are that its fluid, except in a few anomalous cases, is limpid throughout; and that, as early as the third or fourth day from the eruption, it concretes into crusts, which are thrown off without indenting the cutis: while, in small-pox, the fluid consists of pus as soon as formed, and does not concrete into crusts till the eleventh day, and often much later. Like the small-pox, it does not attack the same person a second time, excepting in a few anomalous constitutions.

This disease merely requires that the bowels be kept open, and that mild antiphlogistic or saline medicines be administered, if there be fever.

VARICOCE'LE. (*e, es.* f.: from *varix*, a distended vein, and *κηλη*, a tumour.) A swelling of the veins of the scrotum, or spermatic cord: hence it is divided into the *scrotal varicocele*, which is known by the appearance of livid and tumid veins on the scrotum; and *varicocele of the spermatic cord*, known by feeling hard vermiform vessels in the course of the spermatic cord. Varicocele mostly arises from excessive walking, running, jumping, wearing of trusses, and the like, producing at first a slight uneasiness in the part, which, if not remedied, continues advancing towards the loins.

VARICIFO'RMES PARA'STATÆ. This name has been given by some authors to the vasa deferentia at their commencement.

VARICIFO'RMIS. Variciform. Resembling a varix.

VARICO'MPHALUS. (From *varix*, and *ομφαλος*, the navel.) A varicose tumour of the navel.

VARI'CULA. (Diminutive of *varix*.) Varicose enlargement of the veins of the conjunctiva. — *M. A. Severinus.*

VARIEGA'TUS. Variegated: applied to an intermixture of colours; as in the leaves of some plants, *Mentha rotundifolia*, &c.

VARIETY. *Varietas.* In *Botany*, applied to such individual plants as differ in some circumstances from others of the same species, but not so essentially or permanently as to induce us to reckon them distinct species.

VARI'OLA. (*a, æ.* f.; from *varius*, changing colour: because it disfigures the skin.) The small-pox. A disease distinguished by acute fever, eruption of red pimples on the third day, which on the eighth contain pus, and afterwards drying, fall off in crusts. It is of a very contagious nature, supposed to have been introduced into Europe from the East. The first account we have of it is from Rhazes, the Arabian. No trace of it is to be found in the writings of the Greeks or Romans. For a long time the small-pox and the measles were supposed to be varieties of the same disease. This error prevailed as late as the days of Sydenham, who was the first to establish a decided distinction between them. It makes its attack on people of all ages, but the young of both sexes are more liable to it than those who are much advanced in life; and it may prevail at all seasons of the year, but is most prevalent in the spring and summer.

The small-pox is distinguished into the *distinct* and *confluent*; implying that, in the former, the eruptions are perfectly separate from each other; and that, in the latter, they run much into one another.

Both species are produced either by breathing air impregnated with the effluvia arising from the bodies of those who labour under the disease, or by the introduction of a small quantity of the variolous matter into the habit by inoculation; and it is probable that the difference of the small-pox is not owing to any difference in the contagion, but depends on the state of the person to whom it is applied, or on certain circumstances concurring with the application of it.

A variety of opinions have been entertained respecting the effect of the variolous infection on the fœtus in utero; a sufficient number of instances, however, have been recorded to ascertain that the disease may be communicated from the mother to the child. In some cases, the body of the child at its birth has been covered with pustules, and the nature of the disease has been most satisfactorily ascertained by inoculating with matter taken from the pustules. In other cases, there has been no appearance of the disease at the birth, but an eruption and other symptoms of the disease have appeared so early, as to ascertain that the infection must have been received previously to the removal of the child from the uterus.

Four different states, or stages, are to be observed in the small-pox: first, the febrile; second, the eruptive; third, the maturative; and fourth, that of the declination or scabbing. When the disease has arisen naturally, and is of the distinct kind, the eruption is commonly pre-

ceded by a redness in the eyes, soreness in the throat, pains in the head, back, and loins, weariness and faintness, alternate fits of chilliness and heat, thirst, nausea, inclination to vomit, and a quick pulse.

In some instances these symptoms prevail in a high degree, and in others they are very moderate. In very young children, startings and convulsions are apt to take place a short time previous to the appearance of the eruption, always giving great alarm to those not conversant with the frequency of the occurrence.

About the third or fourth day from the first seizure, the eruption shows itself in little red spots on the face, neck, and breast, and these continue to increase in number and size for three or four days longer; at the end of which time they are to be observed dispersed over several parts of the body.

If the pustules are not very numerous, the febrile symptoms will generally go off on the appearance of the eruption, or then will become very moderate. It sometimes happens, that a number of little spots, of an erysipelatous nature, are interspersed amongst the pustules; but these generally go in again, as soon as the suppuration commences, which is usually about the fifth or sixth day, at which period a small vesicle, containing an almost colourless fluid, may be observed upon the top of each pimple. Should the pustules be perfectly distinct and separate from each other, the suppuration will probably be completed about the eighth or ninth day, and they will then be filled with a thick yellow matter; but should they run much into each other, it will not be completed till some days later.

When the pustules are very thick and numerous on the face, it is apt, about this time, to become much swelled, and the eyelids to be closed up; previous to which there usually arises a hoarseness, and difficulty of swallowing, accompanied with a considerable discharge of viscid saliva. About the eleventh day, the swelling of the face usually subsides, together with the affection of the fauces, and is succeeded by the same in the hands and feet, after which the pustules break and discharge their contents; and then becoming dry, they fall in crusts, leaving the skin which they covered of a brown red colour, which appearance continues for many days. In those cases where the pustules are large, and are late in becoming dry and falling off, they are very apt to leave pits behind them; but where they are small, suppurate quickly, and are few in number, they neither leave any marks behind them, nor do they occasion much affection of the system.

In the confluent small-pox, the fever which precedes the eruption is much more violent than in the distinct, being attended usually with great anxiety, heat, thirst, nausea, vomiting, and a frequent and contracted pulse, and often with coma or delirium. In infants, convulsive fits are apt to occur, which either prove fatal before any eruption appears, or they usher in a malignant species of the disease.

The eruption usually makes its appearance about the third day, being frequently preceded or attended with a rosy efflorescence, similar to what takes place in the measles; but the fever, although it suffers some slight remission on the coming out of the eruption, does not go off as in the distinct kind; on the contrary, it becomes increased after the fifth or sixth day, and continues considerable throughout the remainder of the disease.

As the eruption advances, the face, being thickly beset with pustules, becomes very much swelled, the eyelids are closed up, so as to deprive the patient of sight, and a gentle salivation ensues, which, towards the eleventh day, is so viscid as to be spit up with great difficulty. In children, a diarrhœa usually attends this stage of the disease instead of a salivation, which is to be met with only in adults. The vesicles on the top of the pimples are to be perceived sooner in the confluent small-pox than in the distinct; but they never rise to an eminence, being usually flattened in; neither do they arrive to proper suppuration, as the fluid contained in them, instead of becoming yellow, turns to a brown colour.

About the tenth or eleventh day the swelling of the face usually subsides, and then the hands and feet begin to puff up and swell, and about the same time the vesicles break, and pour out a liquor that forms into brown or black crusts, which, upon falling off, leave deep pits behind them that continue for life; and where the pustules have run much into each other, they then disfigure and scar the face very considerably.

Sometimes it happens that a dissolved state of the fluids takes place at an early period of the disease, and shows itself in livid spots, interspersed among the pustules, and by a discharge of blood by urine, stool, and from various parts of the body.

In the confluent small-pox, the fever, which, perhaps, had suffered some slight remission from the time the eruption made its appearance to that of maturation, is often renewed with considerable violence at this last-mentioned period, which is what is called the secondary fever; and this is the most dangerous state of the disease. It has been observed, even amongst the vulgar, that the small-pox is apt to appear immediately before or after the prevalence of the measles. Another curious observation has been made relating to the symptoms of these complaints; namely, that if, while a patient labours under the small-pox, he is seized with the measles, the course of the former is retarded till the eruption of the measles is finished. The measles appear, for instance, on the second day of the eruption of small-pox; the progress of this ceases till the measles terminate by desquamation, and then it goes on in the usual way. Several cases are, however, recorded in the Medical and Physical Journal, as likewise in the third volume of the Medical Commentaries, in which a concurrence of the small-pox and measles took place without the progress of the former being retarded. The distinct small-pox is not attended with danger, except when it attacks pregnant women, or approaches nearly in its nature to that of the confluent; but this

last is always accompanied with considerable risk, the degree of which is ever in proportion to the violence and permanence of the fever, the number of pustules on the face, and the disposition to putrescency which prevails.

When there is a great tendency this way, the disease usually proves fatal between the eighth and eleventh day, but, in some cases, death is protracted till the fourteenth or sixteenth. The confluent small-pox, although it may not prove immediately mortal, is very apt to induce various morbid affections.

Both kinds of small-pox leave behind them a predisposition to inflammatory complaints, particularly to ophthalmia and visceral inflammations, but more especially of the thorax; and they do not unfrequently excite scrofula into action which might otherwise have lain dormant in the system.

The regular swelling of the hands and feet upon that of the face subsiding, and its continuance for the due time, may be regarded in a favourable light.

The dissections which have been made of confluent small-pox, have never discovered any pustules in the substance of the viscera. From them it also appears that variolous pustules never attack the cavities of the body, except those to which the air has free access; as the nose, mouth, trachea, the larger branches of the bronchia, and the outermost part of the meatus auditorius. In cases of prolapsus ani, they likewise frequently attack that part of the gut which is exposed to the air. Visceral inflammation and all its results may, and do occur, in small-pox as in ordinary fever, but these never present any indications of the effects of small-pox.

The treatment of small-pox will differ materially according to the species of the disease. In the distinct, ushered in by synochal pyrexia, it may be occasionally proper, in persons of a middle age, good constitution, and plethoric habit, to begin by taking away a moderate quantity of blood; the exhibition of an emetic will be generally advisable, provided there be no material tenderness of the stomach; the bowels must then be cleared, antimonial and other diaphoretics employed, and the antiphlogistic regimen strictly enforced. It is particularly useful in this disease during the eruptive fever to expose the patient freely to cold air, as taught by the celebrated Sydenham; and sponging the surface with cold water may be proper, where there is much heat and redness of the skin, unless the lungs be weak. After the eruption has come out, the symptoms are usually so much mitigated that little medical interference is necessary. But the confluent small-pox requires more management: after evacuating the primæ viæ, and employing other means to moderate the fever in the beginning, the several remedies adapted to support the strength and counteract the septic tendency must be resorted to, as the disease advances, such as have been enumerated under typhus. The chief points of difference are, that bark may be more freely given to promote the process of suppuration, and opium to relieve the irritation in the skin: when the eruption has come out, it will be generally proper to direct a full dose of this remedy every night, to procure rest, using proper precautions to obviate its confining the bowels, or determining to the head. Where alarming convulsions occur also, opium is the medicine chiefly to be relied upon, taking care subsequently to remove any source of irritation from the primæ viæ. Sometimes the tepid bath may be useful under these circumstances, and favour the appearance of the eruption, where the skin is pale and cold, the pulse weak, &c. Where, at a more advanced period, the pustules flatten, and alarming symptoms follow, the most powerful cordial and antispasmodic remedies must be tried, as the confectio opii, ether, wine, &c. For the relief of the brain, and other important part particularly affected, local means may be used, as in typhus. To prevent the eyes being injured, a cooling lotion may be applied, and blisters behind the ears, or leeches to the temples.

Variola vaccina. See *Cow-pox.*

Varium os. The cuboid bone was formerly called *os varium*, from its irregular shape.

VARI'OLOID. This term has been applied to diseases resembling the small-pox.

VA'RIX. (*ix, icis.* m.; from *varus*, i. e. *obtortus.*) A dilatation of a vein. A disease, known by a soft tumour on a vein which does not pulsate. Varicose veins mostly become serpentine, and often form a plexus of knots, especially in the groins and scrotum. This disease is relieved by cold applications, pressure from bandages, and by ligature.

VA'RUS. This term has been applied, *adjectively*, to one who has the legs bent inwards; *substantively*, to pimples on the face, and to misplaced gout.

Varus punctatus. The maggot pimple, so common in the skin of the face, especially of young persons.

VA'RVICITE. An oxide of manganese, which is found native, but has not hitherto been imitated by art. It appears to be a mixture of the peroxide and sesquioxide, but its exact constitution is not yet known.

VAS. (*Vas, vasis.* n.; from *vasum*: hence in the plural, *vasa, orum; à vescendo*, because it conveys drink.) A vessel: applied to arteries, veins, ducts, &c.

Vas de'ferens. A duct which arises from the epididymis, and passes through the inguinal ring, as part of the spermatic cord, into the cavity of the pelvis, and terminates in the vesicula seminalis. Its use is to convey the semen secreted in the testicle, and brought to it by the epididymis, into the vesicula seminalis.

Vasa brevia. The arteries which come from the spleen, and run along the large arch of the stomach to the diaphragm.

Vasa deferentia muliebria. The Fallopian tubes.

Vasa efferentia. The absorbent vessels, as they pass out of a lymphatic gland, are so called.

Vasa inferentia. The absorbent vessels which pass into a lymphatic gland.

Vasa præparantia. A name given by the old anatomists to the spermatic vessels.

Vasa vasorum. The very minute vessels which supply the tunics of the arteries and veins.

Vasa vortico'sa. The contorted vessels of the choroid membrane of the eye.

VA'STUS. (So called from its size.) A name given to certain muscles.

Vastus externus. A large, thick, and fleshy muscle, situated on the outer side of the thigh: it arises, by a broad thick tendon, from the lower and anterior part of the great trochanter, and upper part of the linea aspera; it likewise adheres, by fleshy fibres, to the whole outer edge of that rough line. Its fibres descend obliquely forwards, and after it has run four or five inches downwards, we find it adhering to the anterior surface and outer side of the cruræus, with which it continues to be connected to the lower part of the thigh, where we see it terminating in a broad tendon, which is inserted into the upper part of the patella laterally, and it sends off an aponeurosis that adheres to the head of the tibia, and is continued down the leg.

Vastus internus. This muscle, which is less considerable than the vastus externus, is situated at the inner side of the thigh, being separated from the preceding by the rectus.

It arises, tendinous and fleshy, from between the fore-part of the os femoris and the root of the lesser trochanter, below the insertion of the psoas magnus, and the iliacus internus; and from all the inner side of the linea aspera. Like the vastus externus it is connected with the cruræus, but it continues longer fleshy than that muscle. A little above the knee we see its outer edge uniting with the inner edge of the rectus, after which it is inserted tendinous into the upper part and inner side of the patella, sending off an aponeurosis which adheres to the upper part of the tibia.

Vaulted. See *Forniciformis.*

Vectis. A lever. See *Lever.*

VEGETABLE. *Vegetabilis.* A living body, distinguished from an animal by a number of characteristics, no one of which can be fixed on as absolute and definitive, but the aggregate of which, except in a few instances, abundantly suffice for their discrimination. The most general distinction between animals and vegetables consists in the mode and materials of their nutrition. Animals are nourished only by aliment which has undergone a process of digestion, and this process takes place in a canal contained within the body of the animal; vegetables are nourished by aliments already prepared for them, and which they absorb by tubes opening externally. Other distinctions will be found in the article *Body.*

Vegetables, like animals, are composed of *textures*, which, however, are much fewer than in animals. In the most simple or acotyledonous vegetables, the texture is uniform throughout, and consists of rounded or oblong cells, containing liquids, or a granular substance: these are called *cellular vegetables.* In the monocotyledonous and dicotyledonous plants, we find, in addition to the cellular, a vascular and cuticular texture: these are called *vascular plants.* We find the transition from the simple cellular to the vascular plants, in the ferns and allied cryptogamous genera, in which the heterogeneous textures of the higher vegetables begin to be perceived. The tubular or vascular texture of the higher plants exhibits two kinds of vessels, the *spiral* and the *nutritious.* The spiral vessels compose the greater part of the wood, and are found in the root, trunk, branches, flower-stalks, and leaf-stalks, spreading into the nerves of the leaves, into the veins of the petals, the filaments of the stamen, into the pistil, and into the joint: there is no trace of them in the bark. The spiral vessels contain the *sap* or liquid which rises from the root to different parts of the plant, especially in the spring season. The nutritive vessels are less obvious than the spiral, and very delicate in their texture. In herbaceous plants, they are found distributed in a fascicular manner along the spiral vessels of the leaves, stalks, and petals; in ligneous plants they are found in the soft internal layer of the bark, or in the cortical substance, whence they extend into the wood and cellular texture. These vessels contain the *cambium* or nutritive juice of the plant, analogous to the blood of animals. It is believed that the sap carried up from the root to the leaves undergoes, in the latter organs, certain changes by the influence of the air and light, analogous to those effected by *respiration* in the blood of animals, and is then distributed throughout the plant by the nutritive vessels. The cellular texture surrounds both the spiral and nutritious vessels, and it forms the basis of the pith in the centre of the wood. In the pith of many plants are hollows in the cellular tissue containing air; and in the bark and wood of some plants, it leaves hollow oblong spaces or reservoirs, containing resinous, oily, mucilaginous, or gummy matters. Plants afford an infinite variety of secretions, the uses of which, in the vegetable economy, are very obscure, while the uses of many of them to man are very familiar, as in the examples of sugar and gum.

The different parts and organs of plants, as the wood, bark, flowers, fruits, seed vessels, &c. are described under their respective heads.

The nutrition or support of plants appears to require water, earth, light, and air. Various experiments have been instituted to show that water is the only aliment which the root draws from the earth. Van Helmont planted a willow, weighing fifty pounds, in a certain quantity of earth covered with sheet-lead: he watered it for five years with distilled water; and at the end of that time the tree weighed one hundred and sixty-nine pounds three ounces, and the earth in which it had vegetated was found to have suffered a loss of no more than three ounces. Boyle repeated the same experiment upon a plant, which at the end of two years weighed fourteen pounds more, without the earth in which it had vegetated having lost any perceptible portion of its weight.

Duhamel and Bonnet supported plants with moss, and fed them with mere water: they observed, that the vegetation was of the most

vigorous kind; and the naturalist of Geneva observes, that the flowers were more odoriferous, and the fruit of a higher flavour. Care was taken to change the supports before they could suffer any alteration. Tillet has likewise raised plants, more especially of the gramineous kind, in a similar manner, with this difference only, that his supports were pounded glass, or quartz in powder. Hales has observed, that a plant, which weighed three pounds, gained three ounces after a heavy dew. Do we not every day observe hyacinths and other bulbous plants, as well as gramineous plants, raised in saucers or bottles containing mere water? Braconnot, also, has found mustard-seed to germinate, grow, and produce plants, that came to maturity, flowered, and ripened their seed, in litharge, flowers of sulphur, and very small unglazed shot. The last appeared least favourable to the growth of the plants, apparently because their roots could not penetrate between it so easily.

All plants do not demand the same quantity of water; and Nature has varied the organs of the several individuals conformably to the necessity of their being supplied with this food. Plants which transpire little, such as the mosses and the lichens, have no need of a considerable quantity of this fluid; and accordingly they are fixed upon dry rocks, and have scarcely any roots; but plants which require a larger quantity have roots which extend to a great distance, and absorb humidity throughout their whole surface.

The leaves of plants have likewise the property of absorbing water, and of extracting from the atmosphere the same principle which the root draws from the earth. But plants which live in the water, and as it were swim in the element which serves them for food, have no need of roots; they receive the fluid at all their pores; and we accordingly find that the fucus, the ulva, &c. have no roots whatever.

The dung which is mixed with earths, and decomposed, not only affords the alimentary principles we have spoken of, but likewise favours the growth of the plant by that constant and steady heat which its ulterior decomposition produces. Thus it is that Fabroni affirms his having observed the development of leaves and flowers in that part of a tree only which was in the vicinity of a heap of dung.

From the preceding circumstances it appears, that the influence of the earth in vegetation is almost totally confined to the conveyance of water, and probably the elastic products from putrefying substances, to the plant.

Vegetables cannot live without air. From the experiments of Priestley, Ingenhouz, and Sennebier, it is ascertained, that plants absorb the azotic part of the atmosphere; and this principle appears to be the cause of the fertility which arises from the use of putrefying matters in the form of manure. The carbonic acid is likewise absorbed by vegetables, when its quantity is small. If in large quantity, it is fatal to them.

Chaptal has observed, that carbonic acid predominates in the fungus, and other subterraneous plants. But, by causing these vegetables, together with the body upon which they were fixed, to pass, by imperceptible gradations, from an almost absolute darkness, into the light, the acid very nearly disappeared; the vegetable fibres being proportionally increased, at the same time that the resin and colouring principles were developed, which he ascribes to the oxygen of the same acid. Sennebier has observed, that the plants which he watered with water impregnated with carbonic acid transpired an extraordinary quantity of oxygen, which likewise indicates a decomposition of the acid.

Light is almost absolutely necessary to plants. In the dark they grow pale, languish, and die. The tendency of plants towards the light is remarkably seen in such vegetation as is effected in a chamber or place where the light is admitted on one side; for the plant never fails to grow in that direction. Whether the matter of light be condensed into the substance of plants, or whether it act merely as a stimulus or agent, without which the other requisite chemical processes cannot be effected, is uncertain.

It is ascertained, that the processes in plants serve, like those in animals, to produce a more equable temperature, which is for the most part above that of the atmosphere. Dr. Hunter, quoted by Chaptal, observed, by keeping a thermometer plunged in a hole made in a sound tree, that it constantly indicated a temperature several degrees above that of the atmosphere, when it was below the fifty-sixth division of Fahrenheit; whereas the vegetable heat, in hotter weather, was always several degrees below that of the atmosphere. The same philosopher has likewise observed, that the sap which, out of the tree, would freeze at 32°, did not freeze in the tree unless the cold were augmented 15° more.

The vegetable heat may increase or diminish by several causes, of the nature of disease; and it may even become perceptible to the touch in very cold weather, according to Buffon.

The principles of which vegetables are composed, if we pursue their analysis as far as our means have hitherto allowed, are chiefly carbon, hydrogen, and oxygen. Nitrogen is a constituent principal of several, but for the most part in small quantity. Potash, soda, lime, magnesia, silex, alumina, sulphur, phosphorus, iron, manganese, and muriatic acid, have likewise been reckoned in the number; but some of these occur only occasionally, and chiefly in very small quantities; and are scarcely more entitled to be considered as belonging to them than gold or some other substances, that have been occasionally procured from their decomposition.

The following are the principal products of vegetation: —

1. Sugar.
2. Sarcocol.
3. Asparagin.
4. Gum.
5. Ulmin.
6. Inulin.
7. Starch.
8. Indigo.
9. Gluten.
10. Albumen.
11. Fibrin.
12. Gelatine.
13. Bitter principle.
14. Extractive.
15. Tannin.
16. Fixed oil.
17. Wax.
18. Volatile oil.

19. Camphire.
20. Birdlime.
21. Resins.
22. Guaiacum.
23. Balsam.
24. Caoutchouc.
25. Gum resins.
26. Cotton.
27. Suber.
28. Wood.
29. Emetine.
30. Fungine.
31. Hematine.
32. Nicotine.
33. Pollenine.
34. Aconite.
35. Atropia.
36. Brucia.
37. Cicuta.
38. Datura.
39. Delphia.
40. Hyosciama.
41. Morphia.
42. Picotroxia.
43. Quina, cinchonia.
44. Strychnia.
45. Veratria.
46. The vegetable acids.

Vegetable kingdom. That department of nature which embraces the various organised bodies called vegetables or plants. The natural history of this department is called *Botany*, which embraces the anatomy, physiology, chemical composition, economical uses, and scientific classification of plants; see *Botany*, and *Vegetable*. The classification of plants, or systematic botany, is a science of modern origin. It commenced under the auspices of Conrad Gesner and Cæsalpinus, who, without any knowledge of each others plan, both conceived the idea of a classification founded upon the parts of fructification. Of the ideas of Gesner only scattered notices appear in his posthumous letters. Cæsalpinus, however, published his system in 1583. The primary division in this system was into trees and herbs. The subdivisions depended on the position of the embryo at the summit or base of the seed — on the superior or inferior position of the germen — on the number of the seeds, and that of the seed-vessels. Ray also formed a classification founded on the fruit, but different from that of Cæsalpinus. Several other systems have also been founded on the fruit.

Subsequently, the form of the corolla became a basis of classification, and was adopted as such by Rivinus, Ruppius, Ludwig, and the celebrated Tournefort.

The classification of Tournefort was the first that had any pretensions to be considered as at all complete. The sexual system of Linnæus immediately threw all former ones into the shade; and it may be fairly asserted that, as an *exclusive* one, it is to the present day by far the best, although it is incomplete by itself, and the greatest advantage is derived from the study of the more recent natural classifications along with it. The natural system of Jussieu gained high and deserved reputation; and has, since its original publication, been improved upon both by Decandolle and by Jussieu himself.

We proceed to give a view of the classifications of Tournefort, Linnæus, Decandolle, and Jussieu.

System of Tournefort.

First Division. — *Herbs.*

I. *Herbs with petalous flowers.*

A. *Herbs with simple petalous flowers.*

a. Corolla monopetalous and regular.

Class 1. *Campanulatæ.*—Bell-shaped flowers; as the *campanula.*

Class 2. *Infundibuliformes.* — Funnel-shaped flowers.

This class is divided into,

1. *Infundibuliformes, properly so called;* as the *hyoscyamus.*

2. *Hypocrateriformes.*—Salver-shaped; as the *primrose.*

3. *Infundibuliformes, with the limb of the corolla wheel-shaped;* as in the *veronica.*

b. Corolla monopetalous and irregular.

Class 3. *Personatæ.* — Flowers having some resemblance to a mask, or the muzzle of an animal; as in the *foxglove.*

Class 4. *Labiatæ.* — The limb of the corolla divided into an upper and lower lip; as in the *sage.*

c. Corolla polypetalous and regular.

Class 5. *Cruciformes.* — Flowers in the shape of a cross; as in *sinapis.*

Class 6. *Rosaceæ.* — Rose-shaped flowers; as the *strawberry.*

Class 7. *Umbelliferæ.* — Bearing umbels; as the *hemlock.*

Class 8. *Caryophylleæ.* — Clove-shaped flowers, having five petals with a long claw contained in a monophyllous calyx; as the *pink.*

Class 9. *Liliaceæ.* — Lily-like plants, having a corolla, or calyx resembling a corolla, divided into six petals; as the *lily, tulip,* &c.

d. Corolla polypetalous and irregular.

Class 10. *Papilionaceæ.* — Papilionaceous or butterfly-shaped flowers; as the *sweet pea.*

Class 11. *Anomalæ.* — Anomalous. Flowers composed of dissimilar and irregular shaped petals; as the *violet.*

B. *Herbs with compound petalous flowers.*

Class 12. *Flosculosæ.* — Having florets with a regular tubular corolla, with the limb divided into five segments; as the *artichoke.*

Class 13. *Semiflosculosæ.* — Composed of tubular florets terminating in a little tongue; as the *dandelion.*

Class 14. *Radiatæ.* — Flowers of a radiated shape, with entire florets in the centre, and demi-florets at the circumference; as the *sunflower.*

II. *Apetalous herbs.*

Class 15. *Staminous apetalous herbs,* in which the stamens are contained in a calyx; as in *atriplex.*

Class 16. *Apetalous herbs without flowers, but with visible grains;* as *lichens.*

Class 17. *Apetalous herbs without flowers or grains;* as *mosses.*

Second Division—. *Trees and shrubs.*

I. *Apetalous Trees.*

Class 18. Apetalous trees having flowers provided with a calyx, and not in a catkin; as the *ash.*

Class 19. Apetalous trees with flowers in a catkin; as the *poplar.*

II. *Petalous Trees.*

Class 20. *Petalous trees with a monopetalous corolla;* as the *lilac.*

Class 21. *Petalous trees with a regular polypetalous corolla;* as the *cherry.*

Class 22. *Petalous trees with an irregular polypetalous or papilionaceous corolla;* as the *laburnum.*

The sexual system of Linnæus, founded on the parts of fructification, is of all others best adapted to the purposes of practical botany, and the student who meets with a plant unknown to him, may discover what it is by a reference to the Linnæan system, with infinitely greater facility than by the use of any other. The following is a view of the Linnæan system, as given by Sir James Smith.

The *Classes* of the Linnæan system are 24, and their distinctions are founded on the number, situation, or proportion of the stamens. The orders are founded either on the number of the pistils, or on some other character equally obvious.

The first eleven classes are characterised solely by the number of the stamens, and distinguished by names, of Greek derivation, expressive of the number of these organs.

1. *Monandria* (a small class), stamen 1.
2. *Diandria*, stamens 2.
3. *Triandria*, stamens 3.
4. *Tetrandria*, stamens 4.
5. *Pentandria* (a numerous class), stamens 5.
6. *Hexandria*, stamens 6.
7. *Heptandria* (a very small class), stamens 7.
8. *Octandria*, stamens 8.
9. *Enneandria* (a small class), stamens 9.
10. *Decandria*, stamens 10.
11. *Dodecandria*, stamens 12 to 19.
12. *Icosandria*, stamens 20 or more, *inserted into the calyx*. Here we first find the *situation* of the stamens taken into consideration. They grow out of the sides of the calyx, often from a sort of ring, as in the strawberry. This is truly a natural class, as are several of the following ones; so that in these instances the Linnæan method of arrangement performs more than it promises. The character of this class is the more important, as such a mode of insertion indicates the pulpy fruits which accompany it to be infallibly wholesome, and this holds good, not only when the stamens are numerous, but in all other cases. Thus *ribes*, the currant and gooseberry genus, whose five stamens grow out of the calyx, stands in the fifth class, a wholesome fruit, among many poisonous berries. No traveller in the most unknown wilderness need scruple to eat any fruit whose stamens are thus situated; while, on the other hand, he will do well to be cautious of feeding on any other parts of the plant.
13. *Polyandria*. — Stamens numerous, commonly more so than in the last class, and *inserted into the receptacle*, or base of the flower, as in the poppy, anemone, &c. The plants of this fine and numerous class are very distinct in nature, as well as character, from those of the *icosandria*.
14. *Didynamia*. — Stamens two long and two short. Here *proportion* comes to our assistance. This is a natural class, and contains most of the labiate, ringent, or personate flowers, as the dead-nettle, snap-dragon, fox-glove, &c.
15. *Tetradynamia*. — Stamens four long and two short. A very natural class, comprehending all the cruciform flowers, as the wall-flower, stock, radish, mustard, &c. *Cleome* only does not properly belong to the rest.
16. *Monadelphia*. — Stamens united by their filaments, more or less extensively, into one tube, as the mallow tribe, in which such union is very remarkable; and the geranium family, in which it is less evident.
17. *Diadelphia*. — Stamens united into two parcels, both sometimes cohering together at the base. This class consists of papilionaceous flowers, and is therefore natural, except that some such genera, having distinct stamens, are excluded, and referred to the tenth class, in consideration of their number solely; as some ringent flowers with only two stamens are necessarily placed, not in the fourteenth class, but the second.
18. *Polyadelphia*. — Stamens united into more than two parcels, as in St. John's-wort. A small class, in some points related to *Icosandria*.
19. *Syngenesia*. — Stamens united by their anthers into a tube, rarely by their filaments also; and the flowers compound. A very natural and extremely numerous class. Examples of it are the dandelion, daisy, sunflower, &c.
20. *Gynandria*. — Stamens united with, or growing out of, the pistil; either proceeding from the germen, as in *aristolochia*, or from the style, as in the orchis family. The passion-flower is wrongly put by Linnæus and others into this class, as its stamens merely grow out of an elongated receptacle or column supporting the germen.
21. *Monoecia*. — Stamens and pistils in separate flowers, but both growing on the same plant, or, as the name expresses, dwelling in one house, as the oak, hazel, and fir.
22. *Dioecia*. — Stamens and pistils not only in separate flowers, but those flowers situated on two separate plants, as in the willow, hop, yew, &c.

These two last classes are natural when the barren flowers have, besides the difference in their essential organs, a different structure from the fertile ones in other respects; but not so when they have the same structure, because then both organs are liable to meet in the same flower. In some plants, as *rhodiola*, each flower has always the rudiments of the other organ, though generally inefficient.

23. *Polygamia*. — Stamens and pistils separate in some flowers, united in others, either on the same plant, or on two or three different ones.

This class is natural only when the several flowers have a different structure, as those of *atriplex*; but in this genus the pistil of the united flower scarcely produces seed. If, with Linnæus, we admit into *Polygamia* every plant on which some separated barren or fertile flowers may be found among the united ones, while all agree in general structure, the class will be overwhelmed, especially with Indian trees. I have therefore proposed that regard should be had to their general structure, which removes all such inconvenience, and renders the class much more natural.

24. *Cryptogamia*. — Stamens and pistils either not well ascertained, or not to be numbered with any certainty, insomuch that the plants cannot be referred to any of the foregoing classes. Of

this, ferns, lichens, sea-weeds, and mushrooms, are examples.

Appendix.—*Palmæ*, palm-trees, a magnificent tribe of plants, chiefly tropical, whose flowers were too little known, when Linnæus wrote, to serve the purposes of classification; but they are daily clearing up, and the palms are found generally to belong to the classes *Monoecia*, *Dioecia*, or *Hexandria*.

The orders of the Linnæan system are, in the first thirteen classes, founded on the number of the styles, or on that of the stigmas when the styles are wanting, which occurs in *viburnum*. Such orders are accordingly named —

Monogynia, style, or sessile stigma, 1.
Digynia, styles, or sessile stigmas, 2.
Trigynia, styles, or sessile stigmas, 3.
Tetragynia, styles, or sessile stigmas, 4.
Pentagynia, styles, or sessile stigmas, 5.
Hexagynia (of very rare occurrence), styles, or sessile stigmas, 6.
Heptagynia (still more unusual), styles, or sessile stigmas, 7.
Octagynia (scarcely occurs at all), styles, or sessile stigmas, 8.
Enneagynia (of which there is hardly an instance), styles, or sessile stigmas, 9.
Decagynia, styles, or sessile stigmas, 10.
Dodecagynia, styles, or sessile stigmas, about 12.
Polygynia, styles, or sessile stigmas, many.

The two orders of the fourteenth class, *Didynamia*, both natural, are characterised by the fruit, as follows: —

1. *Gymnospermia*. —Seeds naked, almost universally four, never more.
2. *Angiospermia*. — Seeds in a capsule, numerous.

The two orders of the fifteenth class, *Tetradynamia*, both very natural, are distinguished by the form of the fruit, thus:

1. *Siliculosa*.—Fruit a *silicula*, pouch, or roundish pod.
2. *Siliquosa*. — Fruit a *siliqua*, or long pod.

The orders of the sixteenth, seventeeth, and eighteenth classes, *Monadelphia*, *Diadelphia*, and *Polyadelphia*, are founded on the number of the stamens, that is, on the characters of the first thirteen classes.

The orders of the great natural nineteenth class, *Syngenesia*, are marked by the united or separated, barren, fertile, or abortive, nature of the florets.

1. *Polygamia æqualis*. — Florets all perfect or united, that is, each furnished with perfect stamens, a pistil, and one seed.
2. *Polygamia superflua*. — Florets of the disk with stamens and pistil; those of the radius with pistil only, but each, of both kinds, forming perfect seed.
3. *Polygamia frustranea*. — Florets of the disk as in the last; those of the radius with merely an abortive pistil, or with not even the rudiments of any. Sir J. Smith considers this a bad order, and proposes to abolish it.
4. *Polygamia necessaria*. — Florets of the disk with stamens only, those of the radius with pistils only.
5. *Polygamia segregata*. — Several flowers, either simple or compound, but with united anthers, and with a proper calyx, included in one common calyx.

Linnæus has a sixth order in this class, named *Monogamia*, consisting of simple flowers with united anthers; but this has been suppressed by Sir J. Smith, because the union of the anthers is not constant throughout the species of each genus referred to it, witness *lobelia* and *viola*, while, on the contrary, several detached species in other classes have united anthers, as in *gentiana*. These reasons, which show the connexion of the anthers of a simple flower to be neither important in nature, nor constant as an artificial character, are confirmed by the plants of this whole Linnæan order being natural allies of others in the fifth class, and totally discordant, in every point, from the compound syngenesious flowers.

The orders of the twentieth, twenty-first, and twenty-second classes are distinguished by the characters of some of the classes themselves which precede them, that is, almost entirely by the number of their stamens; for the union of the anthers in some of them is, for the reasons just given, of no moment.

The orders of the twenty-third class, *Polygamia*, are, according to the beautiful uniformity of plan which runs through this ingenious system, distinguished upon the principles of the classes immediately preceding.

1. *Monoecia* has flowers with stamens and pistils on the same plant with others that have only pistils, or only stamens; or perhaps all these three kinds of blossoms occur; but whatever the different kinds may be, they are confined to one plant.
2. *Dioecia* has the two or three kinds of flowers on two separate plants.
3. *Trioecia* has them on three separate plants, of which the fig is the only real example, and in that the structure of the flowers is alike in all.

The Orders of the twenty-fourth class, *Cryptogamia*, are professedly natural. They are four in Linnæus, but we now reckon five.

1. *Filices*.— Ferns, whose fructification is obscure, and grows either on the back, summit, or near the base of the leaf, thence denominated a frond.
2. *Musci*. — Mosses, which have real separate leaves, and often a stem; a hood-like corolla, or *calyptra*, bearing the style, and concealing the capsule, which at length rises on a stalk with the *calyptra*, and opens by a lid.
3. *Hepaticæ*. — Liverworts, whose herb is a frond, being leaf and stem united, and whose capsules do not open with a lid. Linnæus comprehends this order under the following.
4. *Algæ*. — Flags, whose herb is likewise a frond, and whose seeds are imbedded, either in its very substance, or in the disk of some appropriate receptacle.
5. *Fungi*.—Mushrooms, destitute of herbage, bearing their fructification in a fleshy substance.

Natural System of Decandolle.

It is to be observed, that in this and other natural systems, the names of the orders are taken from that of some genus which is considered as typical of the order; thus the *ranun-*

culaceæ are plants which more or less resemble the *ranunculus;* or, the names are from some still more general character; as *umbelliferæ*, plants bearing umbels.

Sect. I.—Vascular, or cotyledonous plants; plants the embryo of which is furnished with one or more cotyledons.

A. *Exogenæ*, or *Dicotyledones.*

1. *With a double perigonium, or with the corolla and calyx distinct.*

a. *With a polypetalous corolla.*

a. With hypogynous petals, that is, petals not adhering to the calyx.

1. Ranunculaceæ.
2. Dilleniaceæ.
3. Chlenaceæ.
4. Magnoliaceæ.
5. Annonaceæ.
6. Malvaceæ.
7. Sterculiaceæ.
8. Tiliaceæ.
9. Elæocarpeæ.
10. Maregraviaceæ.
11. Ochnaceæ.
12. Simaroubiaceæ.
13. Rutaceæ.
14. Caryophylleæ,—
    Dianthineæ.
    Alsineæ.
15. Linnæeæ.
16. Cistineæ.
17. Violaceæ.
18. Passifloreæ.
19. Camellieæ.
20. Hesperidiæ.
21. Meliaceæ.
22. Geraniaceæ.
23. Sarmentaceæ.
24. Guttiferæ.
25. Hypericineæ.
26. Hippocraticiæ.
27. Malpighiaceæ.
28. Acerineæ.
29. Sapindaceæ.
30. Droseraceæ.
31. Resedaceæ.
32. Capparideæ.
33. Cruciferæ.
34. Papaveraceæ,—
    Fumariæ,
    Papaveraceæ.
35. Nymphæaceæ.
36. Menispermeæ.
37. Berberideæ.

b. With perigynous petals, that is, petals inserted into the calyx.

38. Frangulaceæ.
39. Samydeæ.
40. Xanthoxyleæ.
41. Juglandeæ.
42. Terebinthaceæ.
43. Polygaleæ.
44. Leguminosæ.
45. Rosaceæ,—
    Drupaceæ,
    Prockieæ,
    Spiræeæ,
    Dryadeæ,
    Agrimonieæ,
    Roses,
    Pomaceæ.
46. Salicariæ.
47. Melastomeæ.
48. Myrtineæ.
49. Combretaceæ.
50. Loaseæ.
51. Onagræ.
52. Ficoides.
53. Portulaceæ.
54. Nopaleæ.
55. Gooseberries.
56. Crassulaceæ.
57. Saxifragiæ.
58. Umbelliferæ.
59. Araliaceæ.

b. With a monopetalous corolla.

b. With a perigynous corolla, or one attached to the calyx.

60. Caprifolieæ.
61. Loranthieæ.
62. Rubiaceæ,—
    Guettardaceæ,
    Cinchoniaceæ,
    Coffeaceæ,
    Stellatæ.
63. Operculatæ.
64. Valerianeæ.
65. Dipsaceæ.
66. Compositæ,—
    Corymbiferæ,
    Cynarocephaleæ,
    Labiatiflores,
    Cichoriaceæ.
67. Campanulaceæ.
68. Lobeliaceæ.
69. Cucurbitaceæ.
70. Gesnerieæ.
71. Vaccinieæ.
72. Ericineæ,—
    Ericineæ,
    Epacrideæ,
    Rhodoraceæ.
73. Aquifoliaceæ.

c. With an hypogynous corolla, or one not attached to the calyx.

74. Myrsineæ.
75. Sapoteæ.
76. Ebenaceæ.
77. Oleineæ.
78. Jasmineæ.
79. Pedalineæ.
80. Strychneæ.
81. Apocyneæ,—
    Rauvolfieæ,
    Apocyneæ,
    Asclepiadeæ.
82. Gentianeæ.
83. Bignoniaceæ.
84. Polemonideæ.
85. Convolvulaceæ.
86. Borragineæ,—
    Borragineæ,
    Sebestens.
87. Solanaceæ.
88. Personatæ,—
    Antirrhineæ,
    Rhinanthaceæ.
89. Labiatæ.
90. Myoporineæ.
91. Pyrenaceæ.
92. Acanthaceæ.
93. Lentibulareæ.
94. Primulaceæ.
95. Globulariæ.

2. *With a simple perigonum, or the calyx and corolla united.*

96. Plumbagineæ.
97. Plantagineæ.
98. Nyctagineæ.
99. Amaranthaceæ.
100. Chenopodeæ.
101. Polygoneæ.
102. Laurineæ.
103. Myristiceæ.
104. Proteaceæ.
105. Thymeleæ.
106. Santalaceæ.
107. Elæagneæ.
108. Aristolochiæ.
109. Euphorbiaceæ.
110. Monimieæ.
111. Urticeæ,—
    Urticeæ,
    Piperiteæ,
    Artocarpeæ.
112. Amentaceæ.
113. Coniferæ.

B. *Endogenous plants, or Monocotyledones.*

1. Phanerogamic plants, or those in which the fructification is visible and regular.

114. Cycadeæ.
115. Hydrocharideæ.
116. Alismaceæ.
117. Pandaneæ.
118. Aroides.
119. Orchideæ.
120. Drymyrrhizeæ.
121. Musaceæ.
122. Irideæ.
123. Hæmodorhaceæ.
124. Amaryllideæ.
125. Hemerocallideæ.
126. Dioscoreæ.
127. Smilaceæ.
128. Liliaceæ,—
    Asparageæ,
    Trilliaceæ,
    Asphodeliæ,
    Bromelieæ,
    Tulipaceæ.
129. Colchicaceæ.
130. Commelineæ.
131. Palms.
132. Junceæ.
133. Typhaceæ.
134. Cyperaceæ.
135. Gramineæ.

2. Cryptogamic plants, or those in which the fructification is concealed, unknown, or irregular.

136. Equisetaceæ.
137. Marsileaceæ.
138. Lycopodineæ.
139. Ferns.

Sect. II.— *Cellular* or *Acotyledonous* vegetables; composed of cellular substance, destitute of vessels, and the embryo of which is without cotyledons.

1. *Foliaceous; having leaves.*

140. Mosses.
141. Liver worts.

2. *Leafless.*

142. Lichens.
143. Hypoxyla.
144. Funguses.
145. Flags.

The following table exhibits Jussieu's classification, as modified in the latest edition of his work. It is founded principally on the number of the cotyledons, and the insertion of the stamina.

Class I. *Acotyledonia:* plants without cotyledons.

Families.

Flags.	Lichens.
Mushrooms.	Liverworts.
Hypoxyleæ.	Mosses.

Lycopodiaceæ. Equisetaceæ.
Ferns. Salvinieæ.
Characeæ.

Class II. *Monohypogynia :* monocotyledonous with hypogynous stamina, that is, stamina inserted below the pistil.

Families.

Fluviales. Typhineæ.
Saurureæ. Cyperaceæ.
Aroides. Gramineæ.
Piperiteæ.

Class III. *Monoperigynia :* monocotyledonous plants with peryginous stamina, that is, stamina inserted into the calyx around the pistil.

Families.

Palms. Butomeæ.
Asparagineæ. Juncagineæ.
Restiaceæ. Colchiceæ.
Junceæ. Liliaceæ.
Commelineæ. Bromeliaceæ.
Alismaceæ. Asphodeliæ.

Class IV. *Monœpigynia :* monocotyledonous plants with epigynous stamina.

Families.

Narcisseæ. Musaceæ.
Irideæ. Orchideæ.
Dioscoriæ. Nympheaceæ.
Amomieæ. Hydrocharideæ.
Hæmodoraceæ. Balanophoriæ.

Class V. *Epistaminia :* dicotyledonous apetalous plants, with epigynous stamina.

Family.

Aristolochiæ.

Class VI. *Peristaminia :* dicotyledonous apetalous plants, with peryginous stamina.

Families.

Osyrideæ. Laurineæ.
Myrobalaneæ. Polygoneæ.
Eleagneæ. Begoniaceæ.
Thymeleæ. Atripliceæ.
Proteaceæ.

Class VII. *Hypostaminia :* dicotyledonous apetalous plants, with hypogynous stamina.

Families.

Amaranthaceæ. Nyctagineæ.
Plantagineæ. Plumbagineæ.

Class VIII. *Hypocorollia :* dicotyledonous monopetalous plants, with hypogynous stamina.

Families.

Primulaceæ. Personatæ.
Utriculineæ. Solaneæ.
Rhinantheæ. Borragineæ.
Orobancheæ. Convolvulaceæ.
Acanthaceæ. Polemoniaceæ.
Jasmineæ. Bignonieæ.
Pedalineæ. Gentianeæ.
Verbenaceæ. Apocyneæ.
Myroporineæ. Sapoteæ.
Labiatæ. Ardisiaceæ.

Class IX. *Pericorollia :* dicotyledonous monopetalous plants with peryginous stamina.

Families.

Ebenaceæ. Campanulaceæ.
Klenaceæ. Lobeliaceæ.
Rhodoraceæ. Gesneriaceæ.
Epacrideæ. Stylidieæ.
Ericineæ. Goodenovieæ.

Class X. *Epicorollia, Synantheria :* dicotyledonous, monopetalous, and epigynous plants, with the anthers united.

Families.

Cichoreaceæ. Calycereæ.
Cinarocephaliæ. Corymbiferæ.

Class XI. *Epicorollia, Corysantheria :* dicotyledonous, monopetalous, and epigynous plants, with the anthers distinct.

Families.

Dipsaceæ. Caprifoliaceæ.
Valerianeæ. Lorantheæ.
Rubiaceæ.

Class XII. *Epipetalia :* plants dicotyledonous, polypetalous, and epigynous.

Families.

Araleaceæ. Umbelliferæ.

Class XIII. *Hypopetalia :* plants dicotyledonous, polypetalous, and hypogynous.

Families.

Ranunculaceæ. Buttneriaceæ.
Papaveraceæ. Magnoliaceæ.
Fumariaceæ. Dilleniaceæ.
Cruciferæ. Ochnaceæ.
Capparideæ. Simaroubeæ.
Sapindeæ. Anoniæ.
Acerineæ. Menispermeæ.
Hippocrateæ. Berberidiæ.
Malpighiaceæ. Hermanniæ.
Hypericeæ. Tiliaceæ.
Guttiferæ. Cisteæ.
Olacineæ. Violeæ.
Aurantiaceæ. Polygaleæ.
Ternstromieæ. Diosmeæ.
Theaceæ. Rutaceæ.
Meliaceæ. Caryophylleæ.
Viniferæ. Tremandreæ.
Geraniaceæ. Linaceæ.
Malvaceæ. Tamariscineæ.

Class XIV. *Peripetalia :* plants dicotyledonous, polypetalous, and perigynous.

Families.

Paronychieæ. Melastomeæ.
Portulaceæ. Lythrarieæ.
Saxifrageæ. Rosaceæ.
Cunoniaceæ. Amygdaleæ.
Crassuleæ. Spireaceæ.
Opuntiaceæ. Pomaceæ.
Ribesieæ. Sanguisorbeæ.
Loaseæ. Leguminosæ.
Ficoïdeæ. Terebinthaceæ.
Cercodeæ. Pittosporeæ.
Onagræ. Rhamneæ.
Myrteæ.

Class XV. *Diclinia :* dicotyledonous apetalous plants, which are *diclinic*, that is, each individual bearing flowers of one sex only.

Families.

Euphorbiaceæ. Quercineæ.
Cucurbitaceæ. Salicineæ.
Passifloreæ. Betulaceæ.
Myristiceæ. Ulmaceæ.
Urticeæ. Cycadeæ.
Monimieæ. Coniferæ.

VEGETATION. (*Vegetatio, onis*, f. ; from *vegeo*, to flourish.) 1. The state of a living vegetable.

2. The increase or extension of metallic veins in the earth was called the vegetation of metals by the alchemists.

Veil. See *Calyptra.*

VEIN. (*Vena, æ.* f.) A long membraneous canal, which continually becomes wider, does not pulsate, and returns the blood from the arteries to the heart. All veins originate from the extremities of arteries, or, more properly speaking, from the capillary vessels which connect the arteries and veins, and terminate in the auricles of the heart; *e. g.* the venæ cavæ in the right, and the pulmonary veins in the left auricle. They are composed, like arteries, of three tunics or coats, which are much more slender than in the arteries, and are supplied internally with semilunar membranes, or folds, called valves. Their use is to return the blood to the heart.

The blood is returned from every part of the body, except the lungs, into the right auricle, from three sources: —

1. The *vena cava superior*, which brings it from the head, neck, thorax, and superior extremities.

2. The *vena cava inferior*, from the abdomen and inferior extremities.

3. The *coronary vein* receives it from the coronary arteries of the heart.

1. The *vena cava superior.* This vein terminates in the superior part of the right auricle, into which it evacuates the blood from the *right* and *left subclavian vein*, and the *vena azygos.* The right and left subclavian veins receive the blood from the head and upper extremities, in the following manner: — The veins of the fingers, called *digitals* receive the blood from the digital arteries, and empty it into —

The *cephalic of the thumb*, which runs on the back of the hand along the thumb, and evacuates itself into the external radial.

The *salvatella*, which runs along the little finger, unites with the former, and empties its blood into the internal and external cubital veins. At the end of the fore-arm are three veins, called the great cephalic, the basilic, and the median.

The *great cephalic* runs along the superior part of the fore-arm, and receives the blood from the external radial.

The *basilic* ascends on the under side, and receives the blood from the *external* and *internal cubital veins*, and some branches which accompany the brachial artery, called *venæ satellites.*

The *median* is situated in the middle of the fore-arm, and arises from the union of several branches. These three veins all unite above the bend of the arm, and form

The *brachial vein*, which receives all their blood, and is continued into the axilla, where it is called, —

The *axillary vein.* This receives also the blood from the scapula, and superior and inferior parts of the chest, by the *superior* and *inferior thoracic vein*, the *vena muscularis*, and the *scapularis.*

The axillary vein then passes under the clavicle, where it is called the *subclavian*, which unites with the external and internal jugular veins, and the vertebral vein, which brings the blood from the vertebral sinuses; it receives also the blood from the *mediastinal, pericardiac, diaphragmatic, thymic, internal mammary*, and *laryngeal veins*, and then unites with its fellow, to form the vena cava superior, or, as it is sometimes called, *vena cava descendens.*

The blood from the external and internal parts of the head and face is returned, in the following manner, into the external and internal jugulars, which terminate in the sub-clavians: —

The *frontal, angular, temporal, auricular, sublingual*, and *occipital* veins receive the blood from the parts after which they are named; these all converge to each side of the neck, and form a trunk, called the *external jugular vein.*

The blood from the brain, cerebellum, medulla oblongata, and membranes of these parts, is received into the lateral sinuses, or veins of the dura mater, one of which empties its blood through the foramen lacerum in basii cranii on each side into the *internal jugular*, which descends in the neck by the carotid arteries, receives the blood from the *thyroideal* and *internal maxillary veins*, and empties itself into the subclavians within the thorax.

The vena azygos receives the blood from the *bronchial, superior, œsophageal, vertebral*, and *intercostal veins*, and empties it into the superior cava.

2. *Vena cava inferior.* The vena cava inferior is the trunk of all the abdominal veins, and those of the lower extremities, from which parts the blood is returned in the following manner. The veins of the toes, called the *digital veins*, receive the blood from the digital arteries, and form on the back of the foot three branches, one on the great toe, called the *cephalic*, another which runs along the little toe, called the *vena saphena*, and a third on the back of the foot, *vena dorsalis pedis;* and those on the sole of the foot evacuate themselves into the *plantar veins.*

The three veins on the upper part of the foot coming together above the ankle, form the *anterior tibial;* and the plantar veins, with a branch from the calf of the leg, called the *sural vein*, form the *posterior tibial;* a branch also ascends in the direction of the fibula, called the *peroneal vein.* These three branches unite before the ham into one branch, the *subpopliteal vein*, which ascends through the ham, carrying all the blood from the foot: it then proceeds upon the anterior part of the thigh, where it is termed the *crural* or *femoral vein*, receives several muscular branches, and passes under Poupart's ligament into the cavity of the pelvis, where it is called the *external iliac.*

The arteries which are distributed about the pelvis evacuate their blood into the *external hæmorrhoidal veins*, the *hypogastric veins*, the *internal pudendal*, the *vena magna ipsius penis*, and *obturatory veins*, all of which unite in the pelvis, and form the *internal iliac vein.*

The external iliac vein receives the blood from the external pudendal veins, and then unites with the internal iliac at the last vertebra of the loins, forming the *common iliac;* the two common iliacs then form the *vena cava inferior*, or *ascendens*, which ascends on the right side of the

spine, receiving the blood from the *sacral, lumbar, emulgent, right spermatic veins*, and the *vena cava hepatica*; and, having arrived at the diaphragm, it passes through the right foramen, and enters the right auricle of the heart, into which it evacuates all the blood from the abdominal viscera and lower extremities.

Vena cava hepatica. This vein ramifies in the substance of the liver, and brings the blood into the vena cava inferior from the branches of the *vena portæ*, a great vein which carries the blood from the abdominal viscera into the substance of the liver. The trunk of the vena portæ, about the fissure of the liver, in which it is situated, is *divided* into the hepatic and abdominal portions. The *abdominal portion* is composed of the *splenic, meseraic*, and *internal hæmorrhoidal veins*. These three venous branches carry all the blood from the stomach, spleen, pancreas, omentum, mesentery, gall-bladder, and the small and large intestines, into the *sinus* of the vena portæ. The *hepatic portion* of the vena portæ enters the substance of the liver, divides into innumerable ramifications, which secrete the bile, and the superfluous blood passes into corresponding branches of the *vena cava hepatica*.

The *action of the veins.* Veins do not pulsate: the blood which they receive from the arteries flows through them very slowly, and is conveyed to the right auricle of the heart, by the contractility of their coats, the pressure of the blood from the arteries, called the *vis à tergo*, the contraction of the muscles, and respiration; and it is prevented from going backwards in the vein by the valves, of which there are a great number.

Veinless leaf. See *Avenius.*

Veiny leaf. See *Venosus.*

VELAME'NTUM BOMBYCI'NUM. The interior soft membrane of the intestines.

VELNO'S VEGETABLE SYRUP. An old nostrum, the composition of which has been kept very secret. It has generally been supposed to consist of corrosive sublimate, rubbed up with honey and mucilage. Swediaur says, that it contains volatile alkali. Dr. Paris received from Sir B. Brodie, a formula by which a medicine, perfectly analogous to this syrup in its sensible properties, might be prepared, and the effects of which appear, also, to be in every respect similar. It is as follows. Take of burdock root, young, and fresh, sliced, ℥ij., dandelion root, ℥i., fresh spearmint, senna leaves, coriander seeds, bruised liquorice root fresh, of each, ℥iss., water, a pint and a half: boil gently down to a pint; then strain, and when cold, add a pound of lump sugar: boil it to the consistence of a syrup, and add a small proportion of oxymuriate of mercury.

VE'LUM, (*um, i.* n.) A veil.

VELUM PENDULUM PALATI. *Velum. Velum palatinum.* The soft palate. The soft part of the palate, which forms two arches, affixed laterally to the tongue and pharynx.

Velum pupillæ. See *Membrana pupillaris.*

VE'NA. (*a, æ.* f.; from *venio*, to come: because the blood comes through it.) A vein. See *Vein.*

Vena azygos. See *Azygos vena.*

Vena medinensis. See *Medinensis vena.*

VENA PORTÆ. *Vena portarum.* The great vein, situated at the entrance of the liver, which receives the blood from the abdominal viscera, and carries it into the substance of the liver. It is distinguished into the *hepatic* and *abdominal* portion: the former is ramified through the substance of the liver, and carries the blood destined for the formation of the bile, which is returned by branches to the trunk of the vena cava; the latter is composed of three branches; viz. the splenic, mesenteric, and internal hæmorrhoidal veins. See *Liver.*

VENÆ LACTEÆ. The lacteal absorbents were formerly so called. See *Lacteals.*

VENÆSE'CTION. (*Venæsectio, onis.* f.; from *vena*, a vein, and *sicco*, to cut.) The opening of a vein. By modern surgeons this operation is performed only on the veins, at the bend of the arm, and the external jugular. The ancients practised it on various veins, with a view to a more immediate effect on the diseased part; but this seems to be of very little consequence.

VENE'NUM. (*um, i.* n.) A poison. See *Poison.*

VENE'REAL. (*Venereus*; from *Venus*, because it belongs to acts of venery.) Of or belonging to sexual intercourse.

Venereal disease. See *Syphilis* and *Urethritis venerea.*

Venice turpentine. See *Pinus laryx.*

VENISON. (From *venaison*, French; from *venatio*, hunting.) The flesh of the deer kind, as the buck, the doe, the hart, the hind, &c. Venison that is well fed, and killed at a proper season, is a very wholesome meat, tenderer than mutton, and more easy of digestion. It is esteemed a great delicacy, and, like other game, is preferred by connoisseurs when it is *high*; that is, in a state of incipient putrefaction. See *Cervus.*

VENO'SUS. Veiny; veined: applied by botanists to a leaf which has the vessels, by which it is nourished, branched, subdivided, and more or less prominent, forming a net-work over either or both its surfaces; as in *Cratægus, Pyrolus terminalis*, &c.

VE'NTER. The belly. Old writers apply this term to the abdomen, *venter infimus*; the chest, *venter medius*; and the head, *venter supremus.*

VE'NTRICLE. (*Ventriculus*; from *venter.*) A term applied by anatomists to the cavities of the brain and heart. See *Cerebrum*, and *Heart.*

VENTRICO'SUS. (From *venter*, the belly.) Ventricose: distended; bellying. Applied, in *Botany*; as to the cup of the rose, or the under part of the blossom of the foxglove.

VENTRI'CULUS PULMONA'RIS. The right ventricle of the heart.

VENTRICULUS SUCCENTURIATUS. That portion of the duodenum which is surrounded by the peritonæum is sometimes so large as to resemble a second stomach, and is so called by some writers.

VENTRI'LOQUISM. (*Ventriloquismus*;

from *venter*, the belly, and *loquor*, to speak: because the voice seems to come from the belly.) Gastroloquism. The formation of the voice within the mouth in such a way as to imitate other voices than that which is natural to the person, and so as not to be seen to move the lips. Nothing is more easy to man than to imitate the different sounds he hears: this, in fact, he performs in many circumstances. Mimics imitate perfectly the voice and pronunciation of others. Hunters imitate the different cries of the game, and thus succeed in decoying it into their nets. This faculty of imitating the different sounds has given rise to the art called ventriloquism and gastroloquism. The persons who exercise this art are called ventriloquists, gastroloquists, and engastrimythists. They have no organisation different from that of other men: they require only to have the organs of voice and speech very perfect, in order that they may readily produce the necessary sounds.

The basis of this art is easily understood. We have found by experience, instinctively, that sounds are changed by many causes; for example, that they become feeble, less distinct, and that their expression changes, according as they are more distant from us: a man who is at the bottom of a well wishes to speak to persons who are at the top; but his voice will not reach their ears until it has received certain modifications, which depend upon the distance and the form of the tube through which it passes.

If a person remark these modifications with care, and endeavour to imitate them, he will produce acoustic illusions, which would be equally deceiving to the ear as the observation of objects through a magnifying glass is to the eye. The error will be complete if he employ those deceptions which are necessary to distract the attention.

These illusions will be numerous in proportion to the talents of the performer; but we must not imagine that a ventriloquist produces vocal sounds, and articulates, differently from other people. His voice is formed in the ordinary manner; only he is capable of modifying, according to his pleasure, the volume, the expression, &c. of it; and with regard to the words that he pronounces without moving his lips, he takes care to choose those into which no labial consonants enter, otherwise he would be obliged to move them. This art is, in certain respects, for the ear what painting is for the eye.

VE'NUS. Copper was formerly so called by the chemists.

VERA'TRIA. (*a*, *æ*. f.; so called because obtained from veratrum.) Veratrine. A new vegetable alkali, discovered lately by Pelletier and Caventou, in the *veratrum sabadilla*, or cevadilla, the *veratrum album*, or white hellebore, and the *colchicum autumnale*, or meadow-saffron.

The seeds of cevadilla, after being freed from an unctuous and acrid matter by ether, were digested in boiling alkohol. As this infusion cooled, a little wax was deposited; and the liquid being evaporated to an extract, redissolved in water, and again concentrated by evaporation, parted with its colouring matter. Acetate of lead was now poured into the solution, and an abundant yellow precipitate fell, leaving the fluid nearly colourless. The excess of lead was thrown down by sulphuretted hydrogen, and the filtered liquor being concentrated by evaporation, was treated with magnesia, and again filtered. The precipitate, boiled in alkohol, gave a solution, which on evaporation left a pulverulent matter, extremely bitter, and decidedly with alkaline characters. It was at first yellow, but by solution in alkohol, and precipitation by water, was obtained as a fine white powder.

The precipitate by the acetate of lead gave, on examination, gallic acid; and hence it is concluded, that the new alkali existed in the seed as a gallate.

Veratria was found in the other plants above mentioned. It is white, pulverulent, has no odour, but excites violent sneezing. It is very acrid, but not bitter. It produced violent vomiting in very small doses, and, according to some experiments, a few grains may cause death. It is very little soluble in cold water. Boiling water dissolves about $\frac{1}{1000}$ part, and becomes acrid to the taste. It is very soluble in alkohol, and rather less soluble in ether.

The London College of physicians in the last edition of their pharmacopœia, have given a process for the preparation of veratria. This substance, taken internally, is a drastic purgative, resembling elaterium in its operation: the dose is $\frac{1}{12}$ of a grain. It is hardly ever used internally, but has come into vogue lately as a topical stimulant in neuralgic, rheumatic, and other painful diseases. M. Magendie has used it successfully, and Dr. Turnbull has been lavish in his encomiums of it. It is applied in the form of liniment made with from six to twelve grains to an ounce of alkohol, or in that of an ointment consisting of ℥ss. of the veratria mixed with ℥i. of olive oil, and ℥j. of lard. Veratria has been considered as identical with the alkali of the colchicum, but this has lately been called in question. See *Colchicia* in the *Supplement*.

Veratrine. See *Veratria*.

VERA'TRUM. (*um*, *i*. n.; probably derived from *verè atrum*, truly black: because the root is externally of that colour.) 1. The name of a genus of plants in the Linnæan system. Class, *Polygamia*; Order, *Monœcia*.

2. The pharmacopœial name of white hellebore. See *Veratrum album*.

VERATRUM ALBUM. White hellebore, or veratrum: called also, *Helleborus albus*, and *Elleborum album*.

Veratrum — racemo supra-decomposito, corollis erectis, of Linnæus. This plant is a native of Italy, Switzerland, Austria, and Russia. Every part of the plant is extremely acrid and poisonous. The dried root has no particular smell, but a durable, nauseous, and bitter taste, burning the mouth and fauces: when powdered, and applied to issues or ulcers, it produces griping and purging; if snuffed up the nose, it proves a violent sternutatory. Gesner made

an infusion of half an ounce of this root with two ounces of water: of this he took two drachms, which produced great heat about the scapulæ and in the face and head, as well as the tongue and throat, followed by singultus, which continued till vomiting was excited. Bergius also experienced very distressing symptoms, upon tasting this infusion. The root, taken in large doses, discovers such acrimony, and operates by the stomach and rectum with such violence, that blood is usually discharged: it likewise acts very powerfully upon the nervous system, producing great anxiety, tremors, vertigo, syncope, aphonia, interrupted respiration, sinking of the pulse, convulsions, spasms, and death. Upon opening those who have died of the effects of this poison, the stomach discovered marks of inflammation, with corrosions of its internal coat. The ancients exhibited this active medicine in maniacal cases, and, it is said, with success. The experience of Greding is somewhat similar: out of twenty-eight cases, in which he exhibited the bark of the root collected in the spring, five were cured. In almost every case that he relates, the medicine acted more or less upon all the excretions; vomiting and purging were very generally produced, and the matter thrown off the stomach was constantly mixed with bile; a florid redness frequently appeared on the face, and various cutaneous efflorescences upon the body; and, in some, pleuritic symptoms, with fever, supervened, so as to require bleeding; nor were the more alarming affections of spasms and convulsions unfrequent. Critical evacuations were also very evident; many sweating profusely, in some the urine was considerably increased, in others the saliva and mucous discharges: the uterine obstructions, of long duration, were often removed by its use. Veratrum has likewise been found useful in epilepsy, and other convulsive complaints: but the diseases in which its efficacy seems least equivocal are those of the skin, as itch, and different prurient eruptions, herpes, morbus pediculosus, lepra, and other scaly diseases: in many of these it has been successfully employed both internally and externally. As a powerful stimulant and irritating medicine, its use has been resorted to in desperate cases only, and even then it ought first to be exhibited in very small doses, as a grain, and in a diluted state, and to be gradually increased, according to the effects, which are generally of an alarming nature. The active ingredient of this plant is an alkali lately detected. See *Veratria.*

Veratrum nigrum. See *Helleborus niger.*

Veratrum sabadilla. Indian caustic barley. Called also, *Cevadilla Hispanorum; Sevadilla; Sabadilla; Hordeum causticum;* and *Canis interfector.* The plant, the seeds of which are thus denominated, is a species of *veratrum:* they are powerfully caustic, and are administered with very great success as a vermifuge. They are also diuretic and emetic. The dose to a child, from two to four years old, is two grains; from hence to eight, five grains; from eight to twelve, ten grains. A new alkali has been detected in the seeds of this plant. See *Veratria.*

VERBA'SCUM. (*um, i.* n.; *quasi barbascum,* from its hairy coat.) 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Monogynia.*

2. The pharmacopœial name of the yellow and black mullein.

Verbascum blatta'ria. Moth mullein. This possesses demulcent properties, but is not used in the practice of the present day.

Verbascum nigrum. The systematic name of the black mullein: called also, *Candela regia, Tapsus barbatus, Candelaria,* and *Lanaria.* The *Verbascum nigrum* and *Verbascum thapsus,* appear to be ordered indifferently by this name in the pharmacopœias. The flowers, leaves, and roots, are used occasionally as mild astringents. The leaves possess a roughish taste, and promise to be of service in diarrhœas and other debilitated states of the intestines.

Verbascum thapsus. The systematic name of the yellow mullein. See *Verbascum nigrum.*

VERBE'NA. (*a, æ.* f.; *quasi herbena,* a name of distinction for all herbs used in sacred rites.) Vervain. 1. The name of a genus of plants in the Linnæan system. Class, *Decandria;* Order, *Monogynia.*

2. The pharmacopœial name of the vervain. See *Verbena officinalis.*

Verbena fœmina. The hedge mustard is sometimes so called. See *Erysimum alliaria.*

Verbena officinalis. Vervain. The systematic name of *Verbenaca, Peristerium, Hierobotane,* and *Herba sacra.* This plant is destitute of odour, and to the taste manifests but a slight degree of bitterness and astringency. In former times the verbena seems to have been held sacred, and was employed in celebrating the sacrificial rites; and with a view to this, more than the natural power of the plant, it was worn suspended about the neck as an amulet. This practice, thus founded on superstition, was, however, in process of time, adopted in medicine; and therefore, to obtain its virtues more effectually, the vervain was directed to be bruised before it was appended to the neck; and of its good effects thus used for inveterate headaches, Forestus relates a remarkable instance. In still later times it has been employed in the way of cataplasm, by which we are told the most severe and obstinate cases of cephalalgia have been cured, for which we have the authorities of Etmuller, Hartman, and more especially De Haën. Notwithstanding these testimonies in favour of vervain, it has deservedly fallen into disuse in Britain; nor has the pamphlet of Mr. Morley, written professedly to recommend its use in scrofulous affections, had the effect of restoring its medical character. This gentleman directed the root of vervain to be tied with a yard of white satin riband round the neck, where it was to remain till the patient recovered. He also had recourse to infusions and ointments prepared from the leaves of the plant, and occasionally called in aid the most active medicines of the Materia Medica.

Verdigris. See *Æruginis.*

Verjuice. An acid liquor prepared from grapes or apples that are unfit to be converted

into wine or cyder. It is also made from crab-apples. It is principally used in sauces and ragouts, though it sometimes forms an ingredient in medicinal compositions.

VERMICULA'RIS. (From *vermis*, a worm.) Vermicular: shaped like or having the properties of a worm: applied very generally in natural history.

VE'RMIFORM. (*Vermiformis*; from *vermis*, a worm, and *forma*, resemblance.) Worm-like.

Vermiform process. *Processus* and *Protuberantia vermiformis.* The substance which unites the two hemispheres of the cerebellum like a ring, forming a process, so called from its resemblance to an earth-worm rolled up.

VE'RMIFUGE. (*Vermifugus*; from *vermis*, a worm, and *fugo*, to drive away.) See *Anthelmintic.*

Vermilion. See *Cinnabar.*

VE'RMIS. (*is, is.* m.; *à vertendo*: because it twists itself about.) A worm. The name generally given to the parasitical animals that infest the animal body. See *Entozoa*, and *Invermination.*

Vermis cerebri. Brain-worm. This name has been given to the Hungarian camp fever.

Vermis mordicans. *Vermis repens.* A species of herpetic eruption on the skin.

Vermis terrestris. See *Lumbricus.*

VERNA'TIO. (From *ver*, the spring.) This term is applied to the manner in which the leaves are folded or wrapped up, and expand in the spring. See *Germ.*

VERO'NICA. 1. The name of a genus of plants in the Linnæan system. Class, *Diandria*; Order, *Monogynia.* Speedwell.

2. The pharmacopœial name of the male veronica. See *Veronica officinalis.*

Veronica beccabunga. The water-pimpernel and brooklime: called also, *Berula*, *Beccabunga*, *Anagallis aquatica*, *Laver germanicum*, *Veronica aquatica*, and *Cepæa.* The plant which bears these names is the *Veronica — racemis lateralibus, foliis ovatis planis, caule repente*, of Linnæus. It was formerly considered of much use in several diseases, and was applied externally to wounds and ulcers: but if it have any peculiar efficacy, it is to be derived from its antiscorbutic virtue. As a mild refrigerant juice, it is preferred where an acrimonious state of the fluids prevails, indicated by prurient eruptions upon the skin, or in what has been called the hot scurvy. To derive much advantage from it, the juice ought to be taken in large quantities, or the fresh plant eaten as food.

Veronica officinalis. The systematic name of the plant which is called in the phamacopœias *Veronica mas*; *Thea germanica*: *Betonica, pauli*; *Chamædrys spuria. Veronica — spicis lateralibus pedunculatis*; *foliis oppositis*; *caule procumbente*, of Linnæus, is not unfrequent on dry barren grounds and heaths, as that of Hampstead, flowering in June and July. This plant was formerly used as a pectoral against coughs and asthmatic affections, but it is now justly forgotten.

VE'RRES. (*es, is.* m.) The boar. See *Sus, scrofa.*

Verricula'ris tu'nica. (*Vericularis*, from *vericulum*, a drag-net.) The retina of the eye.

VERRU'CA. (*a, æ.* f.) 1. A wart, or thickening and induration of the cuticle, which is raised up in different forms, mostly the size of a lentil or flat pea.

2. In *Botany*, applied to a small round prominence on the inferior surface of funguses.

VERRUCA'RIA. (*a, æ.* f.; from *verruca*, a wart: because it was supposed to destroy warts.) The *Heliotropium europæum*, or turnsole.

VERRUCO'SUS. Warty; applied to smal rough tubercles on vegetables, as on the stem of the *Euonymus verrucosus*; and the seed-vessel of the *Cucurbita verrucosa.*

VERSA'TILIS. Versatile: vane-like; turning about like a vane or weathercock: applied to the anthers of the *Geranium Imperatoria*, &c.

VE'RTEBRA. (*a, æ.* f.; from *verto*, to turn.) The spine is a long bony column, which extends from the head to the lower part of the trunk, and is composed of irregular bones, which are called vertebræ.

The spine may be considered as being composed of two irregular pyramids, which are united to each other in that part of the loins where the last of the lumbar vertebræ is united to the os sacrum.

The vertebræ which form the upper and longest pyramid are called true vertebræ; and those which compose the lower pyramid, or the os sacrum and coccyx, are termed false vertebræ, because they do not in every thing resemble the others, and particularly because in the adult state, they become perfectly immoveable, while the upper ones continue to be capable of motion: for it is upon the bones of the spine that the body turns; and their name has its derivation from the Latin verb *verto*, to turn, as observed above.

The true vertebræ, from their situations with respect to the neck, back, and loins, are divided into three classes, — of cervical, dorsal, and lumbar vertebræ. We will first consider the general structure of all these, and then separately describe their different classes.

In each of the vertebræ, as in other bones, we may remark the body of the bone, its processes and cavities. The body may be compared to part of a cylinder cut off transversely: convex before, and concave behind, where it makes part of the cavity of the spine.

Each vertebra has commonly seven processes. The first of these is the *spinous* process, which is placed at the back part of the vertebra, and gives the name of spine to the whole of this bony canal. Two others are called *transverse* processes, from their situation with respect to the spine, and are placed on each side of the spinous process. The four others, which are called *oblique* processes, are much smaller than the other three. There are two of these on the upper and two on the lower part of each vertebra, rising from near the basis of the transverse processes. They are sometimes called *articular* processes, because they are articulated with each other; that is, the two superior pro-

cesses of one vertebra are articulated with the two inferior processes of the vertebra above it; and they are called oblique processes, from their situation with respect to the processes with which they are articulated. These oblique processes are articulated to each other by a species of ginglymus, and each process is covered at its articulation with cartilage.

There is in every vertebra, between its body and apophyses, a foramen, large enough to admit a finger. These foramina correspond with each other through all the vertebræ, and form a long bony conduit, for the lodgment of the spinal marrow.

Besides this great hole, there are four notches on each side of every vertebra, between the oblique processes and the body of the vertebra. Two of these notches are at the upper, and two at the lower part of the bone. Each of the inferior notches, meeting with one of the superior notches of the vertebra below it, forms a foramen; whilst the superior notches do the same with the inferior notches of the vertebra above it. These four foramina form passages for blood-vessels, and for the nerves that pass out of the spine.

The vertebræ are united together by means of a substance, compressible like cork, which forms a kind of partition between the several vertebræ. This intervertebral substance seems, in the fœtus, to approach nearly to the nature of ligament: in the adult it has a great resemblance to cartilage. When cut horizontally, it appears to consist of concentrical curved fibres: externally it is firmest and hardest; internally it becomes thinner and softer, till at length, in the centre, we find it in the form of a mucous substance, which facilitates the motions of the spine.

Genga, an Italian anatomist, long ago observed, that the change which takes place in these intervertebral cartilages (as they are usually called), in advanced life, occasions the decrease in stature, and the stooping forwards, which are usually to be observed in old people. The cartilages then become shrivelled, and consequently lose, in a great measure, their elasticity. But, besides this gradual effect of old age, these cartilages are subject to a temporary diminution, from the weight of the body in an erect posture; so that people who have been long standing, or who have carried a considerable weight, are found to be shorter than when they have been long in bed. Hence we are taller in the morning than at night. This fact, though seemingly obvious, was not ascertained till of late years. The difference in such cases depends on the age and size of the subject: in tall, young people, it will be nearly an inch; but in older, or shorter persons, it will be less considerable.

Besides the connection of the several vertebræ, by means of these cartilages, there are likewise many strong ligaments, which unite the bones of the spine to each other. Some of these ligaments are external, and others internal. Among the external ligaments, we observe one which is common to all the vertebræ, extending, in a longitudinal direction, from the fore part of the body, or the second vertebra of the neck, over all the other vertebræ, and becoming broader as it descends towards the os sacrum, where it becomes thinner, and gradually disappears. This external longitudinal ligament, if we may so call it, is strengthened by other shorter ligamentous fibres, which pass from one vertebra to another, throughout the whole spine. The internal ligament, the fibres of which, like the external one, are spread in a longitudinal direction, is extended over the back part of the bodies of the vertebræ, where they help to form the cavity of the spine, and reaches from the foramen of the occipital bone to the os sacrum.

We may venture to remark, that all the vertebræ diminish in density and firmness of texture, in proportion as they increase in size; so that the lower vertebræ, though larger, are not so heavy in proportion as those above them. In consequence of this mode of structure, the size of the vertebræ is increased without adding to their weight; and this is an object of no little importance in a part of the body, which, besides flexibility and suppleness, seems to require lightness as one of its essential properties.

In the fœtus, at the ordinary time of birth, each vertebra is found to be composed of three bony pieces, connected by cartilages which afterwards ossify. One of these pieces is the body of the bone; the other two are the posterior and lateral portions, which form the foramen for the medulla spinalis. The oblique processes are at that time complete, and the transverse processes beginning to be formed, but the spinous processes are totally wanting.

The cervical vertebræ are seven in number; their bodies are smaller, and of a firmer texture, than the other bones of the spine. The transverse processes of these vertebræ are short, and forked for the lodgment of muscles; and, at the bottom of each of these processes, there is a foramen, for the passage of the cervical artery and vein. The spinous process of each of these vertebræ is likewise shorter than the other vertebræ, and forked at its extremity; by which means it allows a more convenient insertion to the muscles of the neck. Their oblique processes are more deserving of that name than either those of the dorsal or lumbar vertebræ. The uppermost of these processes are slightly concave, and the lowermost slightly convex. This may suffice for a general description of these vertebræ; but the first, second, and seventh deserve to be spoken of more particularly. The first, which is called *atlas*, from its supporting the head, differs from all the other vertebræ of the spine. It forms a kind of bony ring, which may be divided into its anterior and posterior arches, and its lateral portions. Of these, the anterior arch is the smallest and flattest: at the middle of its convex fore-part we observe a small tubercle, which is here what the body is in the other vertebræ. To this tubercle a ligament is attached, which helps to strengthen the articulation of the spine with the os occipitis. The back part of this anterior portion is concave, and covered with cartilage, where it receives the odontoid process of the second vertebra. The posterior portion of the vertebra, or,

more properly speaking, the posterior arch, is larger than the anterior one. Instead of a spinous process, we observe a rising, or tubercle, larger than that which we have just now described on the fore-part of the bone. The lateral portions of the vertebra project, so as to form what are called the transverse processes, one on each side, which are longer and larger than the transverse processes of the other vertebræ. They terminate in a roundish tubercle, the end of which has a slight bend downwards. Like the other transverse processes, they are perforated at their basis, for the passage of the cervical artery. But, besides these transverse processes, we observe, both on the superior and inferior surface of these lateral portions of the first vertebra, an articulating surface, covered with cartilage, answering to the oblique processes in the other vertebræ. The uppermost of these are oblong, and slightly concave, and their external edges rise somewhat higher than their internal brims. They receive the condyloid processes of the os occipitis, with which they are articulated by a species of ginglymus. The lowermost articulating surfaces, or the inferior oblique processes, as they are called, are large, concave, and circular, and are formed for receiving the superior oblique processes of the second vertebra; so that the atlas differs from the rest of the cervical vertebræ in receiving the bones, with which it is articulated both above and below. In the fœtus we find this vertebra composed of five, instead of three pieces, as in the other vertebræ. One of these is the anterior arch; the other four are the posterior arch and the sides, each of the latter being composed of two pieces. The transverse process, on each side, remains long in a state of epiphysis with respect to the rest of the bone.

The second vertebra is called *dentata*, from the process on the upper part of its body, which has been, though perhaps improperly, compared to a tooth. This process, which is the most remarkable part of the vertebra, is of a cylindrical shape, slightly flattened, however, behind and before. Anteriorly it has a convex, smooth, articulating surface, where it is received by the atlas, as we observed in our description of that vertebra. It is by means of this articulation that the rotatory motion of the head is performed; the articulation of the os occipitis with the superior oblique processes of the first vertebra, allowing only a certain degree of motion backwards and forwards, so that when we turn the face either to the right or left, the atlas moves upon this odontoid process of the second vertebra. But as the face cannot turn a quarter of a circle, that is, to the shoulder, upon this vertebra alone, without being liable to injure the medulla spinalis, we find that all the cervical vertebræ concur in this rotatory motion, when it is in any considerable degree; and indeed we see many strong ligamentous fibres arising from the sides of the odontoid process, and passing over the first vertebra, to the os occipitis, which not only strengthen the articulation of these bones with each other, but serve to regulate and limit their motion. It is on this account that the name of *moderators* has sometimes been given to these ligaments. The transverse processes of the vertebra *dentata* are short, inclined downwards, and forked at their extremities. Its spinous process is short and thick. Its superior oblique processes are slightly convex, and somewhat larger than the articulating surfaces of the first vertebra, by which mechanism the motion of that bone upon this second vertebra is performed with greater safety. Its inferior oblique processes have nothing singular in their structure.

The seventh vertebra of the neck differs from the rest chiefly in having its spinous process of a greater length, so that, upon this account, it has been sometimes called *vertebra prominens*.

The dorsal vertebræ, which are twelve in number, are of a middle size, between the cervical and lumbar vertebræ; the upper ones gradually losing their resemblance to those of the neck, and the lower ones coming nearer to those of the loins. The bodies of these vertebræ are more flattened at their sides, more convex before, and more concave behind, than the other bones of the spine. Their upper and lower surfaces are horizontal. At their sides we observe two depressions, one at their upper, and the other at their lower edge, which, united with similar depressions in the vertebræ above and below, form articulating surfaces, covered with cartilage, in which the heads of the ribs are received. These depressions, however, are not exactly alike in all the dorsal vertebræ; for we find the head of the first rib articulated solely with the first of these vertebræ, which has therefore the whole of the superior articulating surface within itself, independently of the vertebra above it. We may likewise observe a similarity in this respect in the eleventh and twelfth of the dorsal vertebræ, with which the eleventh and twelfth ribs are articulated separately. Their spinous processes are long, flattened at the sides, divided at their upper and back part into two surfaces by a middle ridge, which is received by a small groove in the inner part of the spinous process immediately above it, and connected to it by a ligament. These spinous processes are terminated by a kind of round tubercle, which slopes considerably downwards, except in the three lowermost vertebræ, where they are shorter and more erect. Their transverse processes are of considerable length and thickness, and are turned obliquely backwards. Anteriorly they have an articulating surface, for receiving the tuberosity of the ribs, except in the eleventh and twelfth of the dorsal vertebræ, to which the ribs are articulated by their heads only. In the last of these vertebræ the transverse processes are very short and thick, because otherwise they would be apt to strike against the lowermost ribs, when we bend the body to either side.

The *lumbar vertebræ*, the lowest of the true vertebræ, are five in number. They are larger than the dorsal vertebræ. Their bodies are extremely prominent, and nearly of a circular form at their fore part; posteriorly they are concave. Their intermediate cartilages are of considerable thickness, especially anteriorly, by which means

the curvature of the spine forwards, towards the abdomen, in this part, is greatly assisted. Their spinous processes are short and thick, of considerable breadth, erect, and terminated by a kind of tuberosity. Their oblique processes are of considerable thickness: the superior ones are concave, and turned inwards; the inferior ones convex, and turned outwards. Their transverse processes are thin and long, except in the first and last vertebræ, where they are much shorter, that the lateral motions of the trunk might not be impeded. The inferior surface of all these vertebræ is slightly oblique, so that the fore part of the body of each is somewhat thicker than its hind part; but this is more particularly observable in the lowermost vertebra, which is connected with the os sacrum. Many anatomists describe the os sacrum and the os coccygis when considering the bones of the spine, whilst others regard them as belonging more properly to the pelvis. These bones the reader may consult. It now remains to notice the uses, of the spine. We find the spinal marrow lodged in this bony canal, secure from external injury. It defends the thoracic and abdominal viscera, and forms a pillar which supports the head, and gives a general firmness to the whole trunk.

To give it a firm basis, we find the bodies of the vertebræ gradually increasing in breadth as they descend; and to fit it for a variety of motion, it is composed of a great number of joints, with an intermediate elastic substance, so that to great firmness there is added a perfect flexibility.

We have already observed, that the lowermost and largest vertebræ are not so heavy in proportion as those above them; their bodies being more spongy excepting at their circumference, where they are more immediately exposed to pressure; so that nature seems every where endeavouring to relieve us of an unnecessary weight of bone. But behind, where the spinal marrow is more exposed to injury, we find the processes composed of very hard bone; and the spinous processes are in general placed over each other in a slanting direction, so that a pointed instrument cannot easily get between them, excepting in the neck, where they are almost perpendicular, and leave a greater space between them. Hence, in some countries, it is usual to kill cattle by thrusting a pointed instrument between the occiput and the atlas, or between the atlas and the second vertebra. Besides these uses of the vertebræ in defending the spinal marrow, and in articulating the several vertebræ, as is the case with the oblique processes, we shall find that they all serve to form a greater surface for the lodgment of muscles, and to enable the latter to act more powerfully on the trunk, by affording them a lever of considerable length.

In the neck, we see the spine projecting somewhat forward, to support the head, which, without this assistance, would require a greater number of muscles. Through the whole length of the thorax it is carried in a curved direction backwards, and thus adds considerably to the cavity of the chest, and consequently affords more room to the lungs, heart, and large blood-vessels. In the loins, the spine again projects forwards, in a direction with the centre of gravity, by which means the body is easily kept in an erect posture; for otherwise we should be liable to fall forwards. But, at its inferior part, it again recedes backwards, and helps to form a cavity called the pelvis, in which the urinary bladder, intestinum rectum, and other viscera are placed.

In a part of the body that is composed of so great a number of bones, and constructed for such a variety of motion, as the spine is, luxation is more to be expected than fracture; and this is very wisely guarded against in every direction, by the many processes that are to be found in each vertebra, and by the cartilages, ligaments, and other means of connection, which we have described as uniting them together.

VE'RTEBRAL. *Vertebralis.* Appertaining to the vertebræ, or bones of the spine.

Vertebral artery. *Arteria vertebralis.* A branch of the subclavian, proceeding through the vertebræ to within the cranium, where, with its fellow, it forms the basillary artery, the internal auditory, and the posterior artery of the dura mater.

Vertebral sinuses. See *Sinuses vertebral.*

VE'RTEX. (*ex, icis.* m.; from *verto.*) The crown of the head. The os verticis is the parietal bone.

VE'RTICAL. *Verticalis.* Perpendicular: applied to leaves which have both sides at right angles with the horizon; as in *Lactuca scariola.*

Verticalia ossa. See *Parietal bone.*

VERTICI'LLUS. A whorl. The botanical name of a species of inflorescence, in which the flowers surround the stem in a sort of ring.

From the *insertion* of the flowers, the *vesture,* and *distance* of the verticillus, it is called,

1. *Pedunculatus;* as in *Melissa officinalis.*
2. *Sessilis,* in *Mentha arvensis.*
3. *Dimidiatus,* going half round; as in *Ballota disticha.*
4. *Nudus,* without floral or other leaf; as in *Salvia verticellata.*
5. *Bracteatus,* in *Ballota nigra.*
6. *Distans,* in *Salvia indica.*
7. *Confertus,* when crowded together.

Verticis os. See *Parietal bone.*

VERTI'GO. (*o, inis.* f.; from *verto, à vertendo.*) Giddiness or swimming of the head. This carries its own meaning, but there are some varieties of it. It is, in the generality of cases, a dizziness, with a fear of falling, and more or less of mental confusion. Objects appear to be moving horizontally or perpendicularly, and not unfrequently the person thinks he is also moving. In many cases, the person hears whispering sounds, ringing of bells, or sounds like the beating of drums. This affection takes place whether the person be in the dark or light, whether the eyes be closed or open. In some cases the representations of objects are very numerous and rapid, and in others far less so; and as the affection advances the representations are confused, indistinct, and more rapid in succession, often conjoined with a sense of dimness or darkness, forming the *scotodinus* of Hippocrates and the Greek writers.

The predisposing causes of this affection are such as produce debility or exhaustion of the nervous power; and the exciting causes are, whatever has a tendency to disturb the uniformity with which the nervous power is supplied through the whole of its channels, and from one fibre to another. Hence they are the most subject to vertiginous affections whose nervous systems are constitutionally weak, or have become so by disease or accident: dyspeptic persons are peculiarly subject to them; as are those who are faint from sudden and violent evacuations, want of food, or a long course of labour: indulgence in the pleasures of the table and sexual intercourse produce vertigo in the same way; and hence also it is so frequently symptomatic of fevers, inflammations, and many other diseases.

In attempting the removal of vertiginous states, the attention must be directed to the removal of determination or congestion of blood to the head; the clearing the stomach and bowels, which done, ammoniated and camphorated remedies will generally allay the nervous agitation: but if, on the other hand, it proceeds from emptiness of the stomach, hæmorrhage, or the like debilitating causes, food and stimulants are the immediate restoratives.

Vervain. See *Verbena officinalis.*

Vervain, female. See *Erysimum alliaria.*

VESA'NIÆ. (The plural of *vesania*, madness.) The fourth order in the Class *Neuroses* of Cullen's nosological arrangement; comprehending diseases in which the judgment is impaired, without either coma or pyrexia.

VESI'CA. (*a, æ.* f.; a diminutive of *vas*, a vessel.) A bladder.

Vesica fellis. The gall-bladder. See *Gall-bladder.*

Vesica natato'ria. The air bladder of fishes. A pneumatic apparatus situated immediately under the spine, which, by its contraction or dilatation, renders the animal specifically heavier or lighter, and enables it to rise or sink in the water. It exists in a great number of fishes, but not in all. According to M. Biot and others, fish that inhabit the deep waters have their air bladders filled with a mixture of oxygen and nitrogen, in which the former greatly preponderates; while fish which swim nearer the surface have their air bladders filled chiefly or entirely with nitrogen.

Vesica urinaria. The urinary bladder. See *Urinary bladder.*

VESICATO'RIUS. (From *vesica*, a bladder: because it raises a bladder.) Having the property when applied to the skin of raising a bladder, by causing a fluid to collect between the cuticle and cutis. Various substances produce this effect on the skin: but the powder of the *cantharis*, or blistering fly, is what operates with most certainty and expedition, and is now invariably made use of for the purpose.

It is a principle sufficiently established with regard to the living system, that where a morbid action exists, it may often be removed by inducing an action of a different kind in the same or a neighbouring part. On this principle is explained the utility of blisters in local inflammation and spasmodic action, and it regulates their application in pneumonia, gastritis, hepatitis, phrenitis, angina, rheumatism, colic, and spasmodic affections of the stomach; diseases in which they are employed with the most marked advantage. A similar principle exists with respect to pain; exciting one pain often relieves another. Hence blisters often give relief in toothache, and some other painful affections. Lastly, blisters, by their operation, communicate a stimulus to the whole system, and raise the vigour of the circulation. Hence, in part, their utility in fevers of the typhoid kind, though in such cases they are used with still more advantage to obviate or remove local inflammation.

When it is not wished to maintain a discharge from the blistered part, it is sufficient to make a puncture in the cuticle to let out the fluid; but when the case requires keeping up a secretion of pus, the surgeon must remove the whole of the detached cuticle with a pair of scissars, and dress the excoriated surface in a particular manner. Practitioners used formerly to mix powder of cantharides with an ointment, and dress the part with this composition. But such a dressing not unfrequently occasioned very painful affections of the bladder, a scalding sensation in making of water, and very afflicting stranguries. The treatment of such complaints consists in removing every particle of the fly from the blistered part, and making the patient drink abundantly of mucilaginous drinks. According to some practitioners, camphor has a specific effect in removing this kind of strangury; but it has failed in the hands of others.

These objections to the employment of salves containing the lytta, for dressing blistered surfaces, led to the use of mezereon, euphorbium, and other irritating substances, which, when incorporated with ointment, form very proper compositions for keeping blisters open, which they do without the inconvenience of irritating the bladder, like the blistering fly. The favourite application, however, for keeping open blisters, is the savine cerate, which was brought into notice by Mr. Crowther, in his book on white swellings. (See *Ceratum sabinæ.*) On the use of the savine cerate, immediately after the cuticle raised by the blister is removed, says Mr. Crowther, it should be observed that experience has proved the advantage of using the application lowered by half or two thirds of the unguentum ceræ. An attention to this direction will produce less irritation and more discharge than if the savine cerate were used in its full strength. Mr. Crowther says also, that he has found fomenting the part with flannel, wrung out of warm water, a more easy and preferable way of keeping the blistered surface clean, and fit for the impression of the ointment, than scraping the part, as has been directed by others. An occasional dressing of unguentum resinæ flavæ, he has found a very useful application for rendering the sore free from an appearance of slough, or rather dense lymph, which has sometimes been so firm in its texture as to be separated by the probe, with as much readiness as the cuticle is detached after blistering. As the

discharge diminishes, the strength of the savine dressing should be proportionably increased. The ceratum sabinæ must be used in a stronger or weaker degree, in proportion to the excitement produced on the patient's skin.

VE'SICLE. (*Vesicula, æ.* f.; a diminutive of *vesica*, a bladder.) An elevation of the cuticle or bladder-like tumour in any part, containing a transparent watery fluid.

Vesicula fellis. The gall-bladder.

Vesiculæ divæ barbaræ. The confluent small-pox.

Vesiculæ gingivarum. The thrush.

Vesiculæ graafianæ. Graafian vesicles. The vesicles contained in the ovarium, named after De Graaf. See *Ovarium*.

Vesiculæ nabothi. Vesicles of Naboth. The follicles in the interior of the cervix uteri.

Vesiculæ pulmonales. The air-cells of the lungs. See *Pulmo*.

Vesiculæ seminales. Two membraneous receptacles, situated on the back part of the bladder, above its neck. The excretory ducts are called ejaculatory ducts. They proceed to the urethra, into which they open by a peculiar office at the top of the verumontanum. They have vessels and nerves from the neighbouring parts, and are well supplied with absorbent vessels, which proceed to the lymphatic glands about the loins. The use of the vesiculæ seminales is to receive the semen brought into them by the vasa deferentia, to retain, somewhat inspissate, and to excern it *sub coitu* into the urethra, from whence it is propelled into the vagina uteri.

Vesicular fever. See *Pemphigus*.

VE'SPA. (*a, æ.* f.) The name of a genus of insects, of the order *Hymenoptera*. The wasp.

Vespa crabro. The hornet. The sting of this insect is very severe, and the effect best allayed by dilute subcarbonate of ammonia.

Vespa vulgaris. The common wasp, the sting of which produces much irritation. The best application is diluted ammonia, alone or with oil.

VESTI'BULUM. (*um, i.* n.) A cavity of the internal ear, between the cochlea and semicircular canals. See *Auris*.

Vetonica cordi. See *Betonica*.

VEXI'LLUM. (*um, i.* n.; a banner or standard.) The standard, or large uppermost petal at the back of a papilionaceous flower.

VI'A. (*a, æ.* f.) A way or passage. Used in anatomy. See *Primæ viæ*.

Viability. The state of a child which is *viable*. See *Viable*.

VIABLE. A term adopted from the French, and applied to a new-born child, to express its capability of sustaining extrauterine and independent life. If a fœtus be properly organised and sufficiently developed to live, it is said to be *viable*.

VI'BEX. (*ex, icis.*; plu. *Vibices.*) A large purple spot which appears under the skin in certain malignant fevers.

VIBRI'SSÆ. (*æ, arum.* f.) The hairs growing inside the nostrils. See *Capillus*.

VIBU'RNUM. (*um, i.* n.; from *vieo*, to bind.) The name of a genus of plants. Class, *Pentandria*; Order, *Trigynia*.

Viburnum lantana. *Liburnum.* The pliant mealy tree. The berries are considered as astringent.

VICHY. A small town in the department of Allier, in France, where there are seven mineral springs, known by the names of *source de grande Grille, des Bains, de l'Hôpital, le petit Puits*, or *source Chomel, les Celestins, les Acacias*, or *source des Galeux*, and the *source Lucas*.

Most of the springs are thermal. These waters contain variable proportions of carbonic acid, subcarbonate of soda, subcarbonates of lime, magnesia, and iron, sulphate and muriate of soda, silica, and a green vegeto-animal matter, which abounds particularly in the source *de l'Hôpital*. These waters are both taken internally and used as a bath. They are particularly recommended in chronic obstructions of the liver and spleen, rheumatism, and gout.

VI'CIA. (*a, æ.* f.; an old Latin name, derived by some etymologists from *vincio*, to bind together; as the various species of this genus twine, with their tendrils, round other plants.) The name of a genus of plants in the Linnæan system. Class, *Diadelphia*; Order, *Decandria*.

Vicia faba. The systematic name of the common bean plant. It is a native of Egypt. There are many varieties. Beans are very wholesome and nutritious to those whose stomachs are strong, and accustomed to the coarser modes of living. In delicate stomachs they produce flatulency, dyspepsia, cardialgia, &c., especially when old.

Victorialis longa. See *Allium*.

VIGILANCE. *Pervigilium.* Continued wakefulness. This, when attended by anxiety, pain in the head, loss of appetite, and diminution of strength, is by Sauvages and Sagar considered as a genus of disease, and is called *Agrypnia*.

VILLO'SUS. Villous, shaggy: applied, in *Anatomy*, to a velvet-like arrangement of fibres or vessels, as the villous coat of the intestines; and, in *Botany*, to stems, as that of *Cineraria integrifolia*, and to other parts of plants; as the receptacle of the *Artemisia absinthium*.

VI'LLUS. (*us, i.* m.) A species of hairy pubescence of plants, consisting of soft, slender, upright, short, scarcely conspicuous, and for the most part white hair-like filaments.

VI'MEN. (*en, inis.* n.; from *vieo*, to bind.) A slender and flexible twig.

VINCA. (From *vincio*, to bind: because of its usefulness in making bands.) The name of a genus of plants in the Linnæan system. Class, *Pentandria*; Order, *Monogynia*.

Vinca minor. The systematic name of the lesser periwinkle. *Vinca pervinca. Clematis daphnoides major.* It possesses bitter and astringent virtues, and is said to be efficacious in stopping nasal hæmorrhages when bruised and put into the nose. Boiled, it forms a useful astringent gargle in common sore throat, and it is given by some in phthisical complaints.

Vinca pervinca. See *Vinca minor*.

Vincetoxicum. (*um, i.* n.; from *vinco*, to overcome, and *toxicum*, poison: so named from

its supposed virtue of resisting and expelling poison.) See *Asclepias vincetoxicum.*

Vine. See *Vitis.*

Vine, white. See *Bryonia alba.*

Vine, wild. See *Bryonia alba.*

Vinegar. See *Acetum.*

Vinegar, aromatic. See *Acetum aromaticum.*

Vinegar, distilled. See *Acetum.*

Vinegar of squills. See *Acetum scillæ.*

Vinegar, radical. See *Acetum radicale.*

Vinegar, spirits of. See *Acetum.*

Vinegar, thieves'. See *Acetum prophylacticum.*

Vinum. See *Wine.*

VINUM ALOES. Wine of aloes. Formerly known by the names of *Tinctura hieræ*, and *Tinctura sacra.* Take of extract of aloe, two ounces; canella-bark, four drachms; sherry wine, two pints. Macerate for fourteen days, occasionally shaking the mixture, and afterwards strain. A stomachic purgative, calculated for the aged and phlegmatic, who are not troubled with the piles. The dose is from a half to a whole fluid ounce.

VINUM ANTIMONII POTASSIO-TARTRATIS. The antimonial wine is so named in the London Pharmacopœia of 1836. See *Antimonii tartarizati liquor.*

Vinum antimonii tartarizati. See *Antimonium tartarizatum.*

VINUM CO'LCHICI. Wine of colchicum. Take of the cormus of colchicum, dried and sliced, eight ounces; sherry wine, two pints. Macerate for fourteen days, shaking occasionally, and strain. For its virtues, see *Colchicum.*

VINUM FERRI. Wine of iron; formerly called *Vinum chalybeatum.* Take of iron filings, two ounces; wine, two pints: mix, and set the mixture by for a month, occasionally shaking it; then filter it through paper. For its virtues, see *Ferrum tartarizatum.*

VINUM IPECACUANHÆ. Wine of ipecacuanha. Take of ipecacuanha root, bruised, two ounces and a half; sherry wine two pints: macerate for fourteen days, and strain. The dose, when used as an emetic, is from two fluid drachms to half a fluid ounce. As a diaphoretic the dose is about half a drachm, and it produces an expectorant effect in the dose of ten or fifteen drops several times a day.

VINUM OPII. Wine of opium; formerly known by the names of *Laudanum liquidum Sydenhami*, and *Tinctura thebaica.* Take of purified extract of opium, two ounces and a half; cinnamon bark, bruised, cloves, bruised, of each two drachms and a half; sherry wine, two pints: macerate for eight days, and strain. This preparation, as an internal medicine, agrees nearly in its virtues with tincture of opium, but it is hardly ever given internally. It is very useful in chronic opthalmia, two or three drops being introduced into the eye every day. This practice was introduced by Mr. Ware.

VINUM VERA'TRI. Wine of white hellebore. Take of white hellebore-root, sliced, eight ounces; sherry wine, two pints and a half: macerate for fourteen days, and strain. See *Veratrum.*

VI'OLA. (From Ιον: because it was first found in Ionia.) 1. The name of a genus of plants in the Linnæan system. Class, *Syngenesia*; Order, *Monogynia.* The violet.

2. The pharmacopœial name of the sweet violet. See *Viola odorata.*

VIOLA CALCEOLARIA. One of the emetic species of violet. It affords a kind of ipecacuanha.

VIOLA CANINA. The dog violet. The root of this plant excites vomiting and purging; with which intention a scruple of the dried root must be exhibited. It appears, though neglected in this country, worthy the attention of physicians.

VIOLA IPECACUANHA. This plant affords a species of ipecacuanha-root. See *Ipecacuanha.*

Viola lutea. See *Cheiranthus cheiri.*

VIOLA ODORATA. The systematic name of the sweet violet. *Viola — acaulis, foliis cordatis, stolonibus repentibus*, of Linnæus. The recent flowers of this plant are received into the catalogues of the Materia Medica. They have an agreeable sweet smell, and a mucilaginous bitterish taste. Their virtues are purgative or laxative, and by some they are said to possess an anodyne and pectoral quality. The officinal preparation of this flower is a syrup, which, to young children, answers the purpose of a purgative; it has also been used as a test in chemical experiments, to detect an acid or an alkali; the former changing the blue colour to a red, and the latter to a green.

Viola palustris. See *Pinguicula.*

VIOLA PARVIFLO'RA. This plant affords a kind of ipecacuanha.

VIOLA TRI'COLOR. Heart's-ease. Pansy. This well-known beautiful little plant grows in corn-fields, and in waste and cultivated grounds, flowering all the summer months. It varies much by cultivation; and by the vivid colouring of its flowers often becomes extremely beautiful in gardens, where it is distinguished by various names. To the taste, this plant in its recent state is extremely glutinous, or mucilaginous, accompanied with the common herbaceous flavour and roughness. By distillation with water, according to Haase, it affords a small quantity of odorous essential oil, of a somewhat acrid taste. The dried herb yields about half its weight of watery extract, the fresh plant about one eighth. Though many of the old writers on the Materia Medica represent this plant as a powerful medicine in epilepsy, asthma, ulcers, scabies, and cutaneous complaints, yet the viola tricolor owes its modern character as a medicine to the authorities of Stoerck, Metzger, Haase, and other writers, especially as a remedy for the crusta lactea. For this purpose, a handful of the fresh herb, or half a drachm of it dried, boiled two hours in milk, is to be strained, and taken night and morning. Bread, with this decoction, is also to be formed into a poultice, and applied to the part. By this treatment, it has been observed, that the eruption, during the first eight days, increases, and that the urine, when the medicine succeeds, has an odour similar to that of cats; but on continuing the use of the plant a sufficient time, this smell goes off, the scabs disappear, and the skin recovers its natural

purity. Instances of the successful exhibition of this medicine, as cited by these authors, are very numerous; indeed, this remedy, under their management, seems rarely, if ever, to have failed. It appears, however, that Mursinna, Akermann, and Henning were less fortunate in the employment of this plant; the last of whom declares, that in the different cutaneous disorders in which he used it, no benefit was derived. Haase, who administered this species of violet in various forms, and large doses, extended its use to many chronic disorders; and, from the great number of cases in which it proved successful, it has as good a claim to further trial as many other medicines.

It is remarkable that Bergius speaks of this plant as a useful mucilaginous purgative, and takes no notice of its efficacy in the crustea lactea, or in any other disease.

VIOLA'CEOUS. *Violaceus.* 1. Applied to a deep bluish purple or violet colour.

2. Applied to a smell like that of the *Viola odorata*, or sweet-smelling violet.

Viola'ria. See *Viola.*

Violet. See *Viola odorata.*

Violet dog. See *Viola canina.*

VI'OLINE. The emetic principle of the ipecacuhan violets, similar to emetine.

Viper. See *Vipera.*

Viper-glass. See *Scorzonera.*

VI'PERA. (*Quod vi pariat;* because it was thought that its young eat through the mother's bowels.) The viper or adder. See *Coluber berus.*

Viperaria. See *Aristolochia serpentaria.*

VIPERI'NA. (From *vipera*, a snake: so called from the serpentine appearance of its roots.) See *Aristolochia serpentaria.*

Viperina virginiana. See *Aristolochia.*

Virga aurea. See *Solidago virga aurea.*

VIRGA'TA SUTURA. The sagittal suture of the skull.

VIRGA'TUS. Rodshaped.

Virgin's bower. See *Clematis.*

Virgin's milk. See *Lac virgineum*, in the *Supplement.*

VIRGINA'LE CLAUSTRUM. The hymen.

Virginian snake root. See *Aristolochia.*

Virginian tobacco. See *Nicotiana.*

VI'RUS. A poison. In the language of pathology, any matter which is the product of a disease, and is capable of producing that disease in a healthy individual by inoculation or absorption through the cuticle, is called the virus of that disease: thus we speak of the *virus of small-pox*, of the *venereal virus*, &c.

VIS. (*Vis, viris.* f.) Power. In *Physiology*, applied to the vital power and its effects: hence *vis vitæ*, *vis insita*, *vis irritabilis*, *vis nervea*, &c.

VIS A TERGO. Any moving power acting from behind.

Vis conservatrix. See *Vis medicatrix.*

VIS ELASTICA. Elasticity.

VIS INSITA. This property is defined by Haller to be that power by which a muscle, when wounded, touched, or irritated, contracts, independently of the will of the animal that is the object of the experiment, and without its feeling pain. See *Irritability.*

VIS MEDICATRIX NATURÆ. *Vis conservatrix.* A term employed by physicians to express that healing power in an animated body, by which, when diseased, the body is enabled to regain its healthy actions.

VIS MORTUA. That property by which a muscle, after the death of the animal, or immediately after having been cut out from a living body, contracts.

Vis nervea. See *Vis nervosa.*

VIS NERVOSA. *Vis nervea.* The power of the muscles by which they act when excited by the nerves, as opposed to the *vis insita*, or *irritabilis.*

VIS PLASTICA. The formative energy which spontaneously operates in animals.

VIS VITÆ. The vital power or energy. See *Life.*

VISCID. *Viscidus.* 1. Of the nature of ropy pulp of the *viscum*, or misletoe. In general use to imply viscidity in fluids, &c.

2. See *Lentor.*

VISCIDITY. (*Visciditas;* from *viscus.*) Viscosity: glutinous, sticky, like the bird-lime.

VISCOSITY. *Viscositas.* Viscidity: clamminess.

VIS'CUM. (*um, i.* n.; and *us, i.* m. Derived from the Greek, ἰξος, altered by the Æolians into βισκος.) 1. The fruit of the misletoe. See *Viscum album.*

2. The name of a genus of parasitical plants in the Linnæan system. Class, *Diœcia;* Order, *Tetandria.*

VISCUM ALBUM. *Viscus quercinus.* Misletoe. This singular parasitical plant most commonly grows on apple-trees, also on the pear, hawthorn, service, oak, hazel, mapel, ash, lime-tree, willow, elm, horn-bean, &c. It is supposed to be propagated by birds, especially by the fieldfare and thrush, which feed upon its berries, the seeds of which pass through the bowels unchanged, and, along with the excrement, adhere to the branches of trees, where they vegetate.

The misletoe of the oak has, from the times of the ancient Druids, been always preferred to that produced on other trees; but it is now well known that the *viscus quercinus* differs in no respect from others.

This plant is the ἰξ of the Greeks, and was in former times thought to possess many medicinal virtues; however, we learn but little concerning its efficacy from the ancient writers on the Materia Medica, nor will it be deemed necessary to state the extraordinary powers ascribed to the misletoe by the crafty designs of druidical knavery. Both the leaves and branches of the plant have very little smell, and a very weak taste of the nauseous kind. In distillation they impregnate water with their faint unpleasant smell, but yield no essential oil. Extracts, made from them by water, are bitterish, roughish, and subsaline. The spirituous extract of the wood has the greatest austerity, and that of the leaves the greatest bitterness. The berries abound with an extremely tenacious and sweet mucilage.

The *viscus quercinus* obtained great reputation for the cure of epilepsy; and a case of this disease, in a lady of quality, in which it proved remarkably successful, is mentioned by Boyle.

Some years afterwards its use was strongly recommended in various convulsive disorders by Colbach, who has related several instances of its good effects. He administered it in substance, in doses of half a drachm or a drachm of the wood or leaves, or in the form of infusion. This author was followed by others, who have not only given testimony of the efficacy of the misletoe in different convulsive affections, but also in those complaints denominated nervous, in which it was supposed to act in the character of a tonic. But all that has been written in favour of this remedy, has not prevented it from falling into general neglect; and the British colleges of physicians have, perhaps not without reason, expunged it from their catalogues of the Materia Medica.

VISCUS. (*us, eris.* n.; plural, *viscera.*) 1. A bowel. The organs contained in any of the three great cavities, especially of the thorax and abdomen, are called *viscera.*

2. (*Viscus, i.* m.) The name of the misletoe. See *Viscum album.*

VISION. (*Visus, ûs.* m.) The function which enables us to perceive the magnitude, figure, colour, distance, &c., of bodies. The organs which compose the apparatus of vision enter into action under the influence of a particular excitant, or stimulus, called *light.*

We perceive bodies, we take cognisance of many of their properties, though they are often at a great distance; — there must then be between them and our eye some intermediate agent; this intermediate substance we denominate *light.* Light is an excessively subtle fluid, which emanates from those bodies called *luminous;* as the sun, the fixed stars, bodies in a state of ignition, phosphorescence, &c. Light is composed of atoms, which move with a prodigious rapidity, since they pass through about eighty thousand leagues of space in a second.

A series of atoms, or particles, which succeed each other in a right line without interruption, are denominated a *ray of light.* The atoms which compose every ray of light are separated by intervals, that are considerable in proportion to their mass; which circumstance permits many rays to cross each other in the same point, without their particles coming in contact.

The light that proceeds from luminous bodies forms diverging cones, which would prolong themselves indefinitely, did they meet with no obstacles. Philosophers have from thence concluded, that the intensity of light in any place is always in an inverse ratio to the square of the distance of the luminous bodies from which it proceeds. The cones that are formed by the light in passing from luminous bodies are, in general, called pencils of light, or pencils of rays; and the bodies through which the light moves are designated by the name of *media.*

When light happens to come in contact with certain bodies that are called opake, it is repulsed, and its direction is modified according to the disposition of those bodies. — The change that light suffers in its course is, in this case, called *reflection.* The study of reflection constitutes that part of physics which is named *catoptrics.*

Certain bodies allow the light to pass through them; for instance, glass: they are said to be *transparent.* In passing through these bodies, light suffers a certain change, which is called *refraction.* As the mechanism of vision rests entirely upon the principles of refraction, the examination of these becomes, therefore, a matter of importance.

The point where a ray of light enters into a medium is called the point of immersion; and that where it goes out is called the point of emergence.

If the ray comes in contact with a medium in a line perpendicular to its surface, the ray then continues its direction without any change; but if its direction is oblique to the surface of the medium, the ray is then turned out of its course, and appears broken at the point of immersion.

The *angle of incidence* is that which the incident ray makes with a perpendicular line drawn over the point of immersion upon the surface of the medium, and the *angle of refraction* is that which the broken ray makes with the perpendicular.

If the ray of light pass from a rare medium into one more dense, it inclines towards the perpendicular at the point of contact; but it declines from it if it pass from a dense medium into one that is rarer. The same phænomenon takes place, but in a contrary direction, when the ray enters into the first medium: this takes place in such a manner, that if the two surfaces of the medium traversed by the ray are parallel to each other, the ray, in passing into the surrounding medium, will take a direction parallel to that of the incident ray.

Bodies refract the light in proportion to their density and combustibility. Thus, of two bodies of equal density, one of which being composed of more combustible elements than the other, the refractive power of the first will be greater than that of the second.

All transparent bodies refract at the same time that they reflect the light. On account of this property, these bodies are capable of being used as a sort of mirror. When their density is very inconsiderable, such as that of the air, they are not visible unless their mass be considerable.

The form of a refractive body has no influence upon its refractive power; but it modifies the disposition of the refracted rays in respect to each other. In fact, the perpendiculars to the surfaces of the body approaching or receding according to the form of the body, the refracting rays should at the same time approach or recede.

When, by the effort of a refractive body, the rays tend towards each other, the point where they unite is called *the focus of the refractive body.* Bodies of a lenticular form are those which present principally this phænomenon.

A refractive body, with parallel surfaces, does not change the direction of the rays, but it inclines them towards its axis by a sort of *transportation.* A refractive body of two convex sides does not possess a greater refractive power than a body convex on one side, and plane on

the other; but the point behind it, in which the rays are united, is much nearer.

The discovery of the action of refractive bodies upon light has not been an object of simple curiosity; it has led to the construction of ingenious instruments, by means of which the sphere of human vision has been extended to an extraordinary degree.

Apparatus of Vision. — The apparatus of vision is composed of three distinct parts.

The *first* modifies the light.

The *second* receives the impression of that fluid.

The *third* transmits this impression to the brain.

The apparatus of vision is of an extremely delicate texture, capable of being deranged by the least accident. Nature has also placed before this apparatus a series of organs, the use of which is to protect and maintain it in those conditions necessary to the perfect exercise of its functions. Those protecting parts are the eyebrows, the eyelids, and the *secreting* and *excreting* apparatus of the tears.

The eyebrows, which are peculiar to man, are formed, —

1. By *hair*, of a variable colour.
2. By the *skin*.
3. By *sebaceous follicles* placed at the root of every hair.
4. By *muscles* destined for their various motions; viz. the frontal portion of the occipito-frontalis, the superior edge of the orbicularis palpebrarum, the supercilium.
5. Numerous *vessels*.
6. *Nerves*.

The eye is composed of parts which have very different uses in the production of vision. They may be distinguished into refractive, and non-refractive.

The refractive parts are, —

A. The *transparent cornea*, a refractive body, convex and concave, which, in its transparency, its form, and its insertions, pretty much resembles the glass that is placed before the face of a watch.

B. The *aqueous humour* which fills the chambers of the eye; a liquid which is not purely aqueous, as its name indicates, but is essentially composed of water, and of a little albumen.

C. The *crystalline humour*, which is improperly compared to a lens. The comparison would be exact, were it merely for the form; but it is defective in regard to structure. The crystalline is composed of concentric layers, the hardness of which increases from the surface to the centre, and which probably possess different refractive powers. The crystalline is, besides, surrounded by a membrane, which has a great effect upon vision, as experience teaches us. A lens is homogeneous in all its parts; at its surface, as in every point of its substance; it possesses every where the same refractive power. However, it is necessary to remark, that the curve of the anterior surface of the crystalline is very far from being similar to that of the posterior aspect. This last belongs to a sphere, of which the diameter is much less than that of the sphere to which the curve of the anterior surface belongs. Until lately it has been understood that the crystalline was composed mostly of albumen; but, according to a new analysis of Berzelius, it does not contain any: it is formed almost entirely of water, and of a peculiar matter, that has a great analogy, in its chemical properties, to the colouring matter of the blood.

D. Behind the crystalline is the *vitreous humour*, so called because of its resemblance to melted glass.

Each of the parts which we have noticed is enveloped by a very thin membrane, which is transparent like the part that it covers: thus, before the cornea is the conjunctiva; behind it is the membrane of the aqueous humour, which lines all the anterior chamber of the eye; that is, the anterior surface of the iris, and the posterior surface of the cornea.

The crystalline is surrounded by the crystalline capsule, which adheres by its circumference to the membrane that covers the vitreous humour. This, in passing from the circumference of the crystalline upon the anterior and posterior surfaces, leaves between an interval, which has been called the *canal goudronné*.

The vitreous humour is contained in the innumerable cells of a membrane called the *hyaloid*, which also surrounds the whole. The details of anatomy, with regard to the disposition of the cells, have not hitherto added any thing to what is known of the use of the vitreous humour.

The eye is not only composed of parts that are refractive, but it is composed also of membranes which have each a particular use; these are, —

a. The *sclerotic*, the exterior envelope of the eye, which is a membrane of a fibrous nature; it is thick and resisting, and its use is evidently to protect the interior parts of the organ; it serves besides as a point of insertion for many muscles that move the eye.

b. The *choroid*, a vascular and nervous membrane, formed by two distinct plates; it is impregnated with a dark matter which is very important to vision.

c. The *iris*, which is seen behind the transparent cornea, is differently coloured in different individuals; it is pierced in the centre by an opening called the *pupil*, which dilates or contracts according to certain circumstances which we shall notice. The iris adheres outwardly, and by its circumference, to the sclerotic, by a cellular tissue of a particular nature, which is called the *ciliary*, or *iridian* ligament. There are behind the iris a great number of white lines, arranged in the manner of rays, which would unite at the centre of the iris, if they were sufficiently prolonged: these are the *ciliary processes*.

Neither the use nor the structure of these bodies have been properly determined: they are believed by some to be nervous, by others to be muscular; whilst others think them glandular, or vascular. The truth is, their real structure is not understood.

The colour of the iris depends on its structure, which is variable, and on that of the dark layer of its posterior surface, the colour of

which shines through the iris. For instance, the tissue of the iris is nearly white in blue eyes; in this case the dark colour behind appears almost alone, and determines the colour of the eyes.

Anatomists differ about the nature of the tissue of the iris: some think it entirely like that of the choroid, essentially composed of vessels and of nerves; others have imagined they saw a great many muscular fibres in it; others consider this membrane a tissue *sui generis;* and others confound it with the *erectile* structure. Edwards has shown that the iris is formed by four layers very easy to be distinguished, two of which are a continuation of the laminæ of the choroid; a third belongs to the membrane of the aqueous humour; and a fourth forms the proper tissue of the iris.

Between the choroid and the hyaloid there exists a membrane essentially nervous. This membrane, known by the name of the *retina*, is almost transparent; it presents a slight opacity, and a tint feebly inclining to *lilac;* it is composed of the expansion of the threads which compose the optic nerve.

The eye receives a great number of vessels, the *ciliary arteries* and *veins*, and many nerves, the greater part of which come from the *ophthalmic ganglion*.

The *optic nerve* preserves the communication between the brain and the eye.

Mechanism of Vision. — In order the better to explain the action of light in the eye, let us suppose a luminous cone commencing in a point placed in the prolongation of the *anterior posterior axis* of the eye. We see that only the light which falls upon the cornea can be useful for vision; that which falls on the white of the eye, the eyelids, and eyelashes, contributes nothing: it is reflected by those parts differently according to their colour. The cornea itself does not receive the light on its whole extent; for it is generally covered in part by the border of the eyelids.

The cornea having a fine polish on its surface, as soon as the light reaches it, part of it is reflected, which contributes to form the brilliancy of the eye. The same reflected light forms the images which one sees behind the cornea. In this case the cornea acts as a convex mirror. The form of the cornea indicates the influence it should have upon the light which enters the eye: on account of its thickness, it only causes the rays to converge a little towards the axis of the pencil; in other words, it increases the intensity of the light which penetrates into the anterior chamber.

The rays, in traversing the cornea, pass from a more rare to a denser medium: consequently they ought to converge from the perpendicular towards the point of contact. If, on entering into the anterior chamber, they passed out again, they would diverge as much from the perpendicular as they had converged before; and would, therefore, assume their former divergence: but as they enter into the aqueous humour, which is a medium more refractive than air, they incline less from the perpendicular, and consequently diverge less than if they had passed back into the air.

Of all the light transmitted to the anterior chamber, only that which passes the pupil can be of use to vision; all that which falls upon the iris is reflected, returns through the cornea, and exhibits the colour of the iris.

In traversing the posterior chamber the light undergoes no new modification, as it proceeds always in the same medium (the aqueous humour).

It is in traversing the crystalline that light undergoes the most important modification. Philosophers compare the action of this body to that of a lens, the use of which would be to assemble all the rays of any cone of light upon a certain point of the retina. But as the crystalline is very far from being like a lens, we merely mention this opinion, which is generally received, to remark that it merits a fresh investigation. Every thing positive which can be said on the subject is, that the crystalline ought to increase the intensity of the light which is directed towards the bottom of the eye, with an energy proportionate to the convexity of its posterior surface. It may be added, that the light which passes near the circumference of the crystalline is probably reflected in a different manner from that which passes through the centre; and that, therefore, the contraction and dilatation of the pupil ought to possess an influence upon the mechanism of vision, which deserves the attention of philosophers.

The whole of the light which arrives at the anterior surface of the crystalline does not penetrate into the vitreous body; it is partly reflected. One part of this reflected light traverses the aqueous humour and the cornea, and contributes to form the brilliancy of the eye; another falls upon the posterior surface of the iris, and is absorbed by the dark matter found there.

It is probable that something of this sort happens at every one of the strata or layers which forms the crystalline.

The vitreous body possesses a less refractive power than the crystalline: consequently the rays of light which, after having passed the crystalline, penetrate into the vitreous body, diverge from the perpendicular at the point of contact. Its use then, with regard to the direction of the rays in the eye, is to increase their convergence. It might be said, that, in order to produce the same result, Nature had only to render the crystalline a little more refractive; but the vitreous humour has another most essential use, which is, to give a larger extent to the retina, and thus to increase the field of vision.

What we said about a cone of light, commencing in a point placed in the prolongation of the anterio-posterior axis of the eye, must be repeated for every luminous cone commencing in other points, and directed towards the eye; with this difference, that, in the first case, the light tends to unite at the centre of the retina; whilst the light of the other cones tend to unite in different points, according to that form which they commence. Thus the lumi-

nous cones commencing from below, unite at the upper parts of the retina; whilst those that come from above, unite at the lower part of this membrane. The other rays follow a direction analogous; so that there will be formed at the bottom of the eye an exact representation of every body placed before it, with this difference, that the images will be inverted, or in a position contrary to that of the objects they represent.

This result is ascertained by different means. For this purpose, eyes, constructed artificially of glass, which represent the transparent cornea, and the crystalline; and of water, which represent the aqueous and vitreous humours, have long been employed.

Motions of the Iris. — Some say that the pupil varies its dimensions according to the distance of the object. This fact has not been sufficiently demonstrated: hitherto the influence of the intensity of light is the only thing that has been correctly observed.

The choroid is of use to vision, principally by the dark matter with which it is impregnated, and which absorbs the light immediately after it has traversed the retina. One may consider as a confirmation of this opinion what happens to some individuals, in whom some parts of this membrane become *varicose*: the dilated vessels throw off the dark matter which covered them, and every time that the image of the object falls upon the point of the retina corresponding to these vessels, the object appears spotted with red.

The state of vision in Albino men and animals, in which the choroid and the iris are not coloured black, supports still more this assertion; vision is extremely imperfect in them: during the day, they can scarcely see sufficiently to go about. Mariotte, Lecat, and others have allowed to the choroid the faculty of perceiving light. This idea is completely without proof.

We know very little, that is certain, of the ciliary processes. They are generally supposed *contractile*; but some think that they are destined to the motions of the iris, whilst others imagine they are intended to bring forward the crystalline.

The rays of light have now reached the retina, which receives the impression of light when it is within certain limits of intensity. A very feeble light is not felt by the retina; too strong a light hurts it, and renders it unfit for action.

When the retina receives too strong a light, the impression is called *dazzling*; the retina is then incapable for some time of feeling the presence of the light. This happens when one looks at the sun. After having been long in the dark, even a very feeble light produces dazzling. — When the light is exceedingly weak, and the eye made to observe objects narrowly, the retina becomes fatigued, there follows a painful feeling in the orbit, and also in the head.

A light, of which the intensity is not very strong, but which acts for a certain time upon a determined point of the retina, renders it at last insensible in this point. When we look for some time at a white spot upon a black ground, and afterwards carry the eye to a white ground, we seem to perceive a black spot; this happens because the retina has become insensible in the point which was formerly fatigued by the white light. In the same manner, after the retina has been some time without acting in one of its points whilst the others have acted, the point which has been in repose becomes of an extreme sensibility, and on this account objects seem as if they were spotted. In this manner it is explained, why, after having looked a long time at a red spot, white bodies appear as if spotted with green: in this case, the retina has become insensible to the red rays; and we know that a ray of white light, from which the red is subtracted, produces the sensation of green.

The same sort of phenomena happens when we have looked long at a red body, or one of any other colour, and afterwards look at white or differently coloured bodies. — We perceive with facility the *direction* of the light received by the retina. We believe instinctively that light proceeds in a right line, and that this line is the prolongation of that according to which the light penetrated into the cornea. Therefore, whenever the light has been modified in its direction, before reaching the eye, the retina gives us nothing certain. Optical illusions proceed principally from this cause.

The retina can receive at the same time impressions in every point of its extent, but the sensations which result from them are then incorrect. It may be affected by the image of one or two objects only, though a much greater number be impressed on it; the vision is then much more defined.

The central part of the membrane appears to possess much more sensibility than the rest of its extent; we therefore make the image fall on this part when we wish to examine an object with attention.

Does the light act upon the retina by simple contact only, or must it traverse this membrane? The presence of the choroid in the eye, or rather the dark matter which covers it, renders this second opinion the most probable.

That part of the retina which corresponds with the centre of the optic nerve, has been said to be insensible to the impression of light. No experiment has hitherto directly proved this assertion.

There is no doubt that the optic nerve transmits to the brain, in an instant, the impression that the light makes on the retina; but by what mechanism we are entirely ignorant. The manner in which the two optic nerves are confounded upon the *sphenoid bone*, ought, doubtless, to have a considerable influence upon the transmission of the impressions received by the eyes; — but this is also a point upon which it is difficult to form any probable conjecture.

Notwithstanding what has been said at different periods, as well as the late efforts of Gall, to prove that we see with only one eye at a time, there seems sufficient proof not only that the two eyes concur at the same time in the production of vision, but that it is absolutely necessary this should be so, for certain most important operations of this function.

There are, however, certain cases in which it is more convenient to employ only one eye; for instance, when it is necessary to understand perfectly the *direction* of the light, or the *situation* of any body relative to us. Thus we shut one eye to take aim with a gun, or to place a number of bodies upon a level in a right line.

Another case in which it is advantageous to employ only one eye is, when the two organs are unequal, either in refractive power or in sensibility. For the same reason we shut one eye when we employ a telescope. But, except in these particular cases, it is of the utmost importance to employ both eyes at once. The following experiment proves that both eyes see the same object at the same time.

Receive the image of the sun upon a plane in a dark chamber; put before your eyes two thick glasses, each of which presents one of the prismatic colours. If your eyes are good, and both equally strong, the image of the sun will appear of a dirty white, whatever be the colour of the glasses employed. If one of your eyes is much stronger than the other, the image of the sun will be seen of the same colour as the glass which is before the strongest eye.

One object produces, then, really two impressions, while the brain perceives only one. To produce this the motions of the two eyes must be in unison. If, after a disease, the movements of the eyes are no longer regular, we receive two impressions from the same object, which constitutes *strabismus*, or squinting. We may also, at pleasure, receive two impressions from one body; for that purpose, it is only necessary to derange the harmony of the two eyes.

Estimation of the Distance of Objects. — Vision is produced essentially by the action of light upon the retina, and yet we always consider the bodies from which light proceeds as being the cause of it, though they are often placed at a considerable distance. This result can be produced only by an intellectual operation.

We judge differently of the distance of bodies according to the degree of that distance; we judge correctly when they are near us, but it is not the same when they are at a short distance; our judgment is then often incorrect: but when they are at a great distance, we are constantly deceived. The united action of the two eyes is absolutely necessary to determine exactly the distance, as the following experiment proves: —

Suspend a ring by a thread, and fix a hook to the end of a long rod, of a size that will easily pass the ring; stand at a convenient distance, and try to introduce the hook: in using both eyes, you may succeed with ease in every attempt you make; but if you shut one eye, and then endeavour to pass the hook through, you will not succeed any longer; the hook will go either too far or else not far enough, and it will only be after trying repeatedly that it will be got through. Those persons whose eyes are very unequal in their power, are sure to fail in this experiment, even when they use them both.

When a person loses an eye by accident, it is sometimes a whole year before he can judge correctly of the distance of a body placed near him. Those who have only one eye, determine distance, for the most part, very incorrectly. The size of the object, the intensity of the light that proceeds from it, the presence of intermediate bodies, &c. have a great influence upon our just estimation of distance.

We judge most correctly of objects that are placed upon a level with our bodies. Thus, when we look from the top of a tower at the objects below, they appear much less than they would if they were placed at the same distance on the same plane with ourselves. Hence the necessity of giving a considerable volume to objects that are intended to be placed on the tops of buildings, and which are to be seen from a distance. The smaller the dimensions of an object are, the nearer it ought to be to the eye, in order to be distinctly seen. What is called the distinct point of view, is also very variable. A horse is seen very distinctly at six yards, but a bird could not be distinctly seen at the same distance. If we wish to examine the hair or the feathers of those animals, the eye requires to be much nearer. However, the same object may be seen distinctly at different distances; for example, it is quite the same to many persons whether they place the book that they are reading at one or two feet of distance from the eye. The intensity of the light which illuminates an object, has a considerable effect upon the distance at which it can be distinctly seen.

Estimation of the Size of Bodies. — The manner in which we arrive at a just determination of the size of bodies depends, more upon knowledge and habit than upon the action of the apparatus of vision. We form our judgment relative to the dimensions of bodies, from the size of the image which is formed in the eye, from the intensity of the light which proceeds from the object, from the distance at which we think it is placed, and, above all, from the habit of seeing such objects. We therefore judge with difficulty of the size of a body that we see for the first time, when we cannot appreciate the distance. A mountain which we see at a distance for the first time, appears generally much less than it really is; we think it is near us when it is very far away.

Beyond a distance somewhat considerable we are so completely deceived, that judgment is unable to correct us. Objects appear to us infinitely less than they really are: as happens with the celestial bodies.

Estimation of the Motion of Bodies. — We judge of the motion of a body by that of its image upon the retina, by the variations of the size of this image, or, which is the same thing, by the change of the direction of the light which arrives at the eye.

In order that we may be able to follow the motion of a body, it ought not to be displaced too rapidly, for we could not then perceive it; this happens with bodies projected by the force of gunpowder, particularly when they pass near us. When they move at a distance from us, the light comes from them to the eye for a much longer space of time, because the field of view

is much greater, and we can see them with more facility. We ought to be ourselves at rest, in order to judge correctly of the motions of bodies.

When bodies are at a considerable distance from us, we cannot easily perceive their motions to or from us. In this case, we judge of the motion of the body only by the variation of the size of its image. Now this variation being infinitely small, because the body is at a great distance, it is very difficult, and frequently impossible, for us to estimate its motion. Generally we perceive with great difficulty, sometimes we cannot perceive at all, the motion of a body which moves extremely slow: this may be on account of the slowness of its own motion, as in the case of the hand of a watch; or it may be the result of the slow motion of the image, which happens with the stars, and objects very far from us.

Of Optical Illusions. — After what we have just said, of the manner in which we estimate the distance, the size, and the motion of bodies, we may easily see that we are often deceived by sight. These deceptions are known in *Physics*, and in *Physiology*, by the name of optical illusions. Generally we judge pretty well of bodies placed near us; but we are most commonly deceived with regard to those that are distant. Those illusions which happen to us with regard to objects that are near us, are the result, sometimes of the reflection, sometimes of the refraction, of light before it reaches the eye; and sometimes of the law that we establish instinctively; namely, that light proceeds always in right lines.

We must refer to this cause those illusions occasioned by mirrors: objects are seen in plane mirrors at the same distance behind them, as the mirrors are distant from the eye. To this cause may be attributed also the apparent increase or diminution of bodies seen through a glass. If the glass make the rays converge, the body will appear greater; if it cause them to diverge, the body will appear less. These glasses produce still another illusion: objects appear surrounded by the colours of the solar spectrum, because their surfaces not being parallel, they decompose light in the manner of the prism.

We are constantly deceived by objects at a distance, in a manner that we cannot prevent, because those deceptions result from certain laws which govern the animal economy. An object seems near us in proportion as its image occupies a greater space upon the retina; or in proportion to the intensity of the light which proceeds from it.

Of two objects of a different volume, equally illuminated and placed at the same distance, the greatest will appear the nearest, should circumstances be such as to admit of the distance being justly estimated. Of two objects of equal volume, placed at an equal distance from the eye, but unequally illuminated, the brightest will appear the nearest; it would be the same if the objects were at unequal distances, as can be easily seen in looking at a string of lamps: if there happen to be one of them brighter than the rest, it will appear the nearest, whilst that which is really the nearest will appear the farthest if it is the least bright. An object seen without any intermedium always appears nearer than when there happens to be between it and the eye some body that may have an influence upon the estimation that we make of its distance.

When a bright object strikes the eye whilst all the objects around it are obscured, it appears much nearer than it really is; a light in the night produces this effect.

Objects appear always small in proportion as they are distant; thus, the trees in a long alley appear so much smaller, and so much nearer together, in proportion as they are farther from us. It is by observing these illusions, and the laws of the animal economy, upon which they are founded, that art has been enabled to imitate them. The art of painting, in certain cases, merely transfers to the canvass those optical errors into which we most habitually fall.

The construction of optical instruments is also founded upon these principles: some of them augment the intensity of the light, which proceeds from the objects observed; others cause it to diverge, or converge, in order to increase or diminish their apparent volume, &c.

By the constant exercise of the sense of sight, we are enabled to get over many optical illusions, as will be proved by the curious history of the blind youth, spoken of by Cheselden. This celebrated surgeon, by a surgical operation, generally said to be that for cataract, but, more probably, it was a division of the *membrana pupillaris*, procured sight to a very intelligent person who was born blind: and he observed the manner in which this sense was developed in this young man. "When he saw the light for the first time, he knew so little how to judge of distances, that he believed the objects which he saw touched his eyes (and this was his expression), as the things which he felt touched his skin. The objects which were most pleasant to him were those whose form was regular and smooth, though he had no idea of their form, nor could he tell why they pleased him better than the others. During the time of his blindness he had such an imperfect idea of colours, that he was then able to distinguish, by a very strong light, that they had not left an impression sufficient by which he could again recognise them. Indeed, when he saw them, he said the colours he then saw were not the same as those he had seen formerly; he did not know the form of any object; nor could he distinguish one object from another, however different their figure or size might be; when objects were shown to him which he had known formerly by the touch, he looked at them with attention, and observed them carefully in order to know them again; but as he had too many objects to retain at once, he forgot the greater part of them; and when he first learned, as he said, to see and to know objects, he forgot a thousand for one that he recollected. It was two months before he discovered that pictures represent solid bodies; until that time he had considered them as planes and surfaces differently coloured, and diversified by a variety of shades: but when he began to conceive that these pictures represented solid

bodies, in touching the canvass of a picture with his hand he expected to find in reality something solid upon it, and he was much astonished when, upon touching those parts which seemed round and unequal, he found them flat, and smooth like the rest; he asked, which was the sense that deceived him, — the sight or the touch? There was shown to him a little portrait of his father, which was in the case of his mother's watch: he said, that he knew very well it was the resemblance of his father; but he asked, with great astonishment, how it was possible for so large a visage to be kept in so small a space, as that appeared to him as impossible as that a bushel should be contained in a pint. He could not support much light at first, and every object seemed very large to him; but after he had seen larger things he considered the first smaller: he thought there was nothing beyond the limits of his sight. The same operation was performed on the other eye about a year after the first, and it succeeded equally well. At first he saw objects with his second eye much larger than with the other, but not so large, however, as he had seen them with the first eye; and when he looked at the same object with both eyes at once, he said that it appeared twice as large as with the first eye; but he did not see double, at least it could not be ascertained that he saw objects double, after he had got the sight of the second eye."

This observation is not singular; there exists a number of others, and they have all given results nearly alike. The conclusion that may be drawn from it is, that the exact manner in which we determine the distance, size, and form of objects, is the result of habit, or, which is the same thing, of the education of the sense of sight.

Vision, defective. See *Dysopia.*
Vision, lateral. See *Dysopia.*
Visus. See *Vision.*
Visus defiguratus. See *Pseudoblepsis.*
Visus duplicatus. See *Diplopia.*
Visus lateralis. See *Dysopia.*
Visus triplex. See *Diplopia.*

VI'TA. (*a, æ.* f.; from *vivo*, to live.) See *Life.*
Vitæ arbor. See *Arbor vitæ.*
Vitæ lignum. See *Guaiacum.*
Vital actions. See *Action* and *Function.*
Vital air. See *Oxygen.*
Vital force. See *Vis vitæ.*
Vital functions. See *Function.*
Vital principle. See *Life.*
Vitalba. See *Clematis vitalba.*

VITE'LLINE. (*Vitellinus*, from *vitellus*, the yolk of an egg.) Of a colour which is yellow, verging to orange.

VITE'LLUS. (*us, i.* m.; from *vita*, life: because the life of the chick is in it.) 1. The yolk of an egg. See *Ovum.*

2. In *Botany*, applied, by Gærtner, to that part of a seed which is very firmly and inseparably connected with the embryo, yet never rising out of the integuments of the seed in germination, but absorbed, like the albumen, for the nourishment of the embryo. If the albumen be present, the vitellus is always situated between it and the embryo, and yet is constantly distinct from the former. It is esteemed, by Gærtner, to compose the bulk of the seed in the fusci, mosses, and ferns. In the natural order of grasses, the vitellus forms a scale between the embryo and the albumen. Sir J. Smith thinks the vitellus is nothing else than a subterraneous cotyledon. See *Albumen.*

VI'TEX. (*ex, icis.* f.; from *vieo*, to bind.) The name of a genus of plants in the Linnæan system. Class, *Didynamia;* Order, *Angiospermia.*

VITEX AGNUS CASTUS. The systematic name of the *Agnus castus. Elæagnon.* The chaste tree. *Vitex — foliis digitatis, serratis, spicis verticillatis,* of Linnæus. The seeds are the medicinal part, which have, when fresh, a fragrant smell, and an acrid, aromatic taste. Formerly they were celebrated as antiphrodisiacs; but experience does not discover in them any degree of such virtue, and some have ascribed to them an opposite one. They are now fallen into disuse.

Viti saltus. See *Chorea.*

VITILI'GO. (*o, inis.* f.; from *vitulus*, a calf: the white and glistening appearance of the skin in this disease bearing some resemblance to the flesh of calves.) Veal skin. Celsus includes the three varieties of lepra, the *alphos, melas,* and *leuce* under the name vitiligo. Dr. Willan applies the name to a tubercular disease which is somewhat rare, and perhaps but little known. It is characterised by the appearance of smooth, white, shining tubercles, which rise on the skin, sometimes in particular parts, as about the ears, neck, and face, and sometimes over nearly the whole body, intermixed with shining papulæ. They vary much in their course and progress: in some cases they reach their full size in the space of a week (attaining the magnitude of a large wart), and then begin to subside, becoming flattened to the level of the cuticle in about ten days; in other instances, they advance less rapidly, and the elevation which they acquire is less considerable; in fact, they are less distinctly tubercular. But in these cases they are more permanent; and, as they gradually subside to the level of the surface, they creep along in one direction, as, for example, across the face or along the limbs, checkering the whole superfices with a veal-skin appearance. All the hairs drop out where the disease passes, and never re-sprout; a smooth shining surface, as if polished, being left, and the morbid whiteness remaining through life. The eruption never goes on to ulceration.

There is no considerable constitutional disorder combined with this affection; but it has proved exceedingly unmanageable under the use of both internal and external medicines. The mineral acids internally, and the application of diluted caustic and spirituous substances externally, have been chiefly employed, but with little obvious effect.

VI'TIS. 1. The name of a genus of plants in the Linnæan system. Class, *Pentandria;* Order, *Monogynia.*

2. The pharmacopœial name of the grape. See *Vitis vinifera.*

Vitis alba. See *Bryonia alba.*

Vitis corinthiaca. The dried fruit of this tree is the kind of raisin called *Passa corinthiaca.* See *Vitis vinifera.*

Vitis idæa. See *Vaccinium.*

Vitis marina. See *Fucus natans.*

Vitis sylvestris. White bryony.

Vitis vini'fera. The sytematic name of the grape-tree. *Vitis—foliis lobatis sinuatis nudis,* of Linnæus. Vine-leaves and the tendrils have an astringent taste, and were formerly used in diarrhœas, hæmorrhages, and other disorders requiring refrigerant and styptic medicines. The juice or sap of the vine, called lachryma, has been recommended in calculous disorders: and it is said to be an excellent application to weak eyes and specks of the cornea. The unripe fruit has a harsh, rough, sour taste: its expressed juice, called verjuice, was formerly much esteemed, but is now superseded by the juice of lemons; for external use, however, particularly in bruises and pains, verjuice is still employed and considered to be a very useful application. The dried fruit is termed *Uva passa major. Passula major,* the raisin. Raisins are prepared by immersing the fresh fruit into a solution of alkaline salt and soap-ley, made boiling hot, to which is added some olive oil, and a small quantity of common salt, and afterwards drying them in the shade. They are used as agreeable, lubricating, acescent sweets, in pectoral decoctions, and for obtunding the acrimony in other medicines, and rendering them grateful to the palate and stomach. They are directed in the *decoctum hordei compositum, tinctura sennæ,* and *tinctura cardamomi composita.* See also *Wine,* and *Acetum.*

Vitra'ria. The pellitory of the wall. See *Parietaria officinalis.*

VITREOUS. (*Vitreus;* from *vitrum,* glass: so named from its transparency.) Glassy: applied to parts of the body.

Vitreous body. See *Vitreous humour.*

Vitreous humour. *Humor vitreus. Corpus vitreum.* Vitreous body. The pellucid body which fills the whole bulb of the eye behind the crystalline lens. See *Oculus.*

VITRIFICATION. The conversion of any subtance into a glass.

Vitriol. See *Vitriolum.*

Vitriol, acid of. See *Sulphuric acid.*

Vitriol, blue. See *Cupri sulphas.*

Vitriol, green. See *Ferri sulphas.*

Vitriol, oil of. The sulphuric acid was so called because it was obtained from green vitriol, and because, when rubbed between the fingers, it combines with the skin, and has an unctuous, soapy feel.

Vitriol, Roman. See *Cupri sulphas.*

Vitriol, sweet spirit of. See *Spiritus ætheris sulphurici.*

Vitriol, white. See *Zinci sulphas.*

Vitriolated kali. See *Potassæ sulphas.*

VITRI'OLUM. (*um, i.* n.; from *vitrum,* glass: so called from its likeness to glass. Hollandus says this word is fictitious, and composed from the initials of the following sentence: *Vade in terram rimando, invenies optimum lapidem, veram medicinam.*) *Calcadinum. Colcothar. Calcotar. Calcanthos. Calcanthum. Calcitea.* Vitriol, or sulphate of iron. See *Ferri sulphas.*

Vitriolum album. See *Zinci sulphas.*

Vitriolum cæruleum. See *Cupri sulphas.*

Vitriolum romanum. See *Cupri sulphas.*

Vitriolum viride. See *Ferri sulphas.*

VI'TRUM. (*um, i.* n.) See *Glass.*

Vitrum antimonii. Glass of antimony. See *antimonii vitrum.*

Vitrum antimonii ceratum. A diaphoretic compound, made of powdered glass of antimony and yellow wax melted together and pulverised when cold. Once employed in the cure of dysenteries arising from checked perspiration.

Vitrum hypocletticum. A funnel to separate oil from water.

Vitulus. See *Bos taurus.*

VIVE'RRA. (*a, æ.* f.) The name of a genus of digitigradous quadrupeds.

Viverra civetta. The systematic name of the ash-coloured weazel, which, with the following species, affords the perfume called civet. See *Zibethum.*

Viverra zibe'tha. The systematic name of the civet-cat. See *Civetta.*

VIVI'PAROUS. *Viviparus.* 1. In *Zoology,* an animal which brings forth its young alive and perfect, is styled *viviparous,* in opposition to one which is *oviparous,* or lays eggs.

2. In *Botany,* it is applied to stems or stalks, producing bulbs, that are capable of vegetation. In *Dentaria,* these bulbs are found at the basis of the leaves; in some species of *Allium,* at the origin of the umbel.

VI'VUS. Living: variously applied: to mercury, because it moves about as if it were alive; hence *argentum vivum:* to lime, because, when moisture is added, it cracks and swells, as if alive.

Vocal chords. *Chordæ vocales.* Vocal ligaments. Two ligaments which pass, one on each side, from the base of the arytenoid cartilage, and are inserted into the thyroid cartilage. They are supposed to be particularly connected with the formation of the voice. See *Voice.*

VOICE. *Vox.* By *voice,* we understand the sound which is produced in the larynx, at the instant when the air traverses this organ, either to enter or go out of the *trachea.*

In order to understand the mechanism by which the voice is produced and modified, we must say something of the manner in which sound is produced, in which it is propagated and modified in wind instruments, particularly those that have most analogy with the organ of voice.

A wind instrument is generally formed of a tube, either straight or bent, in which, by various processes, the air is made to vibrate.

Wind instruments are of two sorts: the one sort are called *mouth* instruments, the other sort *reed* instruments.

In the mouth instruments (the horn, trumpet, *trombone,* flageolet, flute, organ), the column of air contained in the tube is the sonorous body. The air must be caused to vibrate in it in order to produce sounds. For this purpose, the means

employed are variable, according to the sort of instrument. The length, the width, the form of the tube, the openings in its sides, or its extremities, the power of the vibrations, and the manner in which they are excited, are the causes of the various sounds of this sort of instruments. The nature of the matter which forms the sounds has no influence but upon the tone.

The reed instruments are the most necessary to be known, for the organ of the voice is of this kind. Their theory is, unfortunately, much more imperfect than that of the other sort. In this sort of instruments (the clarionet, hautboy, bassoon, voice organ, &c.), we ought to distinguish between the reed, or *anche*, and the body of the tube. Their mechanism is essentially different.

A reed is always formed of one, and sometimes of two, thin plates, susceptible of a rapid motion, the alternate vibrations of which are intended to intercept and permit, *by turns*, the passage of a current of air. For this reason, the sounds which they produce do not follow the same laws as the sounds formed by elastic plates, with one end fixed and the other free, which produce sonorous undulations in the open air. In the reed instruments, the reed alone produces and modifies the sound. If the plate is long, the motions are long, slow, and, consequently, the sounds are grave. On the contrary, a short plate produces acute sounds, because the alternations of transmission and interception of the current of air are more rapid.

When a number of different sounds are intended to be produced by a reed, it is necessary to vary the length of the plate. The bassoon and clarionet players do this when they wish to produce different sounds on the same instrument. We add, as an important circumstance, that the greater or less elevation of sound produced by the instrument, partly depends on the elasticity, the weight, and the form of the little tongue, or plate, and on the force of the current of air. If all these elements are not the same, the length being invariable, the tone will be different.

A reed is never employed alone; it is always fitted to a tube through which the wind passes that has been blown into the reed, and which ought, on this account, to be open at the two extremities. The tube has no influence upon the tone of the music; it acts only upon the intensity, the *timbre*, and upon the power of making the reed *speak*.

Apparatus of Voice. — The larynx ought properly to be considered as the organ of voice.

The size of the larynx varies according to age and sex. It is placed at the anterior part of the neck, where a small projection is seen, between the tongue and the trachea. It is small in children and women, greater in young men, and still larger in adult age.

The larynx not only produces the voice, but it is also the agent of its principal modifications; on which account, a knowledge of the anatomy of this organ is indispensably necessary in order to be well acquainted with the mechanism of voice. As we cannot enter here into all the details of the structure of the larynx, we will only touch upon such as are most necessary to be known, many of which are not yet well understood.

Four cartilages and three fibro-cartilages enter into the composition of the larynx, and form the skeleton of it. The cartilages are the *cricoid*, the *thyroid*, and the two *arytænoid*. The *thyroid* joins with the *cricoid* by the extremity of its two inferior *horns*. In the living state, the *thyroid* is fixed with respect to the *cricoid*, which is contrary to what is generally supposed. Every *arytænoid* cartilage is articulated with the *cricoid* by means of a surface, which is oblong, and concave in a transverse direction. The *cricoid* presents a surface which is similarly disposed to that of the *arytænoid*, with this difference, that it is convex in the same direction in which the other is concave. Round the articulation there is a *synovial capsule*, firm before and behind, and moveable without and within. Before the articulation is the *thyro-arytænoid* ligament; behind is a strong ligamentous band, that might be called *crico-arytænoid*, on account of the manner in which it is fixed.

Thus disposed, the articulation admits only of lateral movements of the *arytænoid* upon the *cricoid cartilage*. No movement forward or backward can take place, nor a certain movement up and down, mentioned in anatomical books, which none of the muscles is so disposed as to produce. This articulation ought to be considered as a simple lateral *ginglymus*. The fibro-cartilages of the larynx are the *epiglottis*, and two small bodies that are found above the top of the *arytænoid* cartilages, and that have been called by Santorini, *capitula cartilaginum arytænoidearum*.

There are a great many muscles attached to the larynx. These muscles are called external: they are intended to move the whole organ, either in carrying it up or down, backward or forward, &c. The larynx has also other muscles, whose use is to give a movement to the different parts in respect of each other. These muscles have been called internal. They are,

1st, The *crico-thyroid*, the use of which is not, as has hitherto been believed, to lower the thyroid upon the cricoid cartilage, but, on the contrary, to raise the cricoid towards the thyroid cartilage, or in making it pass a little below its inferior edge.

2d, The muscles *crico-arytænoideus posterior*, and the *crico-arytænoideus lateralis*, the use of which is to draw outwards the arytænoid cartilages, in separating them from one another.

3d, The *arytænoid* muscle, which draws the arytænoid cartilages together.

4th, The *thyro-arytænoideus*, a knowledge of which is more important than that of all the muscles of the larynx, because its vibrations produce the vocal sound. This muscle forms the lips of the *glottis*, and the inferior, superior, and lateral sides of the ventricles of the larynx.

5th, Lastly, the muscles of the *epiglottis*, which are the *thyro-epiglottideus*, the *arytæno-epiglottideus*, and some fibres that may be considered

as the vestige of the *glosso-epiglottidæus* muscle that exists in some animals, whose contraction has an influence upon the position of the *epiglottis*.

The larynx is covered within by a *mucous membrane*. This membrane, in passing from the epiglottis to the arytænoid and thyroid cartilages, forms two folds, called lateral ligaments of the epiglottis. They concur in the formation of the superior and inferior ligaments of the glottis.

In the substance of the epiglottis, and behind it, are found a great number of *mucous follicles*, and some *mucous glands*. Within the mass of the ligaments of the epiglottis, there exists a collection of those bodies that have been very improperly called *arytænoid glands*.

Between the epiglottis behind, and the os hyoides and thyroid cartilage before, there is seen a considerable quantity of the adipose *cellular tissue*, which is very elastic, and similar to that which exists near certain articulations. There has been no use assigned to this body. Dr. Magendie believes it serves to facilitate the frequent movements of the thyroid cartilage upon the posterior face of the os hyoides, and to keep the epiglottis separated from the upper part of this bone, whilst, at the same time, it provides it with a very elastic support, favourable to the action of the *fibro-cartilages* in the production of the voice, or in deglutition.

The *vessels* of the larynx present nothing remarkable. It is not so with the nerves of this organ. Their distribution merits a careful examination. There are four of these nerves, the *superior laryngeal* and the *inferior*.

The *recurrent nerve* is distributed to the posterior crico-arytænoid, to the lateral crico-arytænoid, and thyro-arytænoid. None of the ramifications of this nerve go to the arytænoid, or to the crico-thyroid, muscles. On the contrary, the superior nerve of the larynx goes to the arytænoid muscle, which it provides with a considerable branch; and to the crico-thyroid, to which it gives a small filament, more remarkable for the distance it proceeds than for its size. In certain cases this filament does not exist. The external branch of the nerve of the larynx is then of a larger size. The remainder of the filaments of the laryngeal nerves are distributed to the epiglottis, and to the mucous membrane which covers the entrance of the larynx. This part possesses an extraordinary sensibility.

The interval which separates the thyro-arytænoid muscles, and the arytænoid cartilages, is called *glottis*. In the dead body, the glottis presents the appearance of a longitudinal slit of about eight or ten lines long, and two or three wide: it is wider behind than before. Here the two sides meet at the point of their insertion into the *thyroid* cartilage. The posterior extremity of the glottis is formed by the *arytænoid* muscles.

If the arytænoid cartilages are brought together so as to touch on their internal faces, the glottis is diminished nearly a third of its length. It then presents a slit which is from five to six inches long, and from half a line to a line long. The sides of this slit are called the *lips of the glottis*. They present a sharp edge, turned upward and inward. They are essentially formed by the arytænoid muscle, and by the ligament of the same name, which, as an *aponeurosis*, covers the muscle to which it adheres strongly, and which, being itself covered by the mucous membrane, forms the thinnest parts or edge of the *lip*. These lips of the glottis vibrate in the production of the voice; they might be called the *human reed*. Above the inferior ligaments of the glottis are the *ventricles of the larynx*, the cavity of which is larger than it seems at first sight. The superior, inferior, and external sides of it are formed by the thyro-arytænoid muscle, turned upon itself. The extremity, or anterior side, is formed by the thyroid cartilage. By means of these ventricles, the lips of the glottis are completely isolated upon their upper side.

Above the opening of the ventricles we see two bodies, which, in their manner of being disposed, have a great deal of analogy with the vocal chords, and which form a sort of second glottis above the first. These bodies are called the *superior ligaments of the glottis*. They are formed by the superior edge of the thyro-arytænoid muscle, a little adipose cellular tissue, and the mucous membrane of the larynx, which covers them before penetrating into the ventricles. These observations are easily made upon the larynx of dead bodies. The glottis of a living person has never been examined, at least there has been nothing written on this subject; but when those of animals, as of dogs, are examined, they contract and enlarge alternately. The arytænoid cartilages are directed outwards when the air penetrates into the lungs; and in the instant when the air passes out, they come close together.

Mechanism of the Production of Voice. — If we take the trachea and the larynx of an animal or of a man, and blow air strongly into the trachea, directing it towards the larynx, there is no sound produced, but only a slight noise, resulting from the pressure of the air against the sides of the larynx. If, in blowing, we bring together the arytænoid cartilages, so that they may touch upon their internal face, a sound will be produced, something like the voice of the animal to which the larynx used in the experiment belongs.

The sound will be dull or sharp, according as the cartilages are pressed more or less forcibly together: its intensity will be more or less, according to the intensity of the air. It is easily seen, in this experiment, that the sound is produced by the vibrations of the inferior ligament of the glottis.

Both man and the animals are deprived of voice by making an opening below the larynx. The voice is reproduced if the opening is closed mechanically. Dr. Magendie knows a person who has been in this situation for four years. He cannot speak without pressing a cravat strongly against a fistulous opening in the larynx. The same thing takes place when the larynx is opened below the inferior ligaments of the glottis.

But if a wound exist above the glottis, if the

epiglottis and its muscles are affected, if the superior ligament of the glottis, even if the superior aspect of the *arytænoid* cartilages are injured, the voice continues.

Lastly, the glottis of an animal being laid bare in the instant that it cries, shows very well that voice is produced by the vibrations of the vocal chords, or lips of the glottis. This is enough to prove, beyond all doubt, that the voice is formed in the glottis by the motion of its inferior ligaments.

This fact being established, is it possible, on physical principles, to account for the formation of the voice? The following explanation appears the most probable: —

The air being pressed from the lungs, proceeds in a pipe of a considerable size. This pipe very soon becomes contracted, and the air is forced to pass through a narrow slit, the two sides of which are vibrating plates, which permit and intercept the air, like the plates of reeds, and which ought, in the same manner, by these alternations, to produce sonorous undulations in the transmitted current of air.

But, in blowing into the trachea of a dead body, why does it not produce a sound like that of the human voice? Why is the palsied state of the internal muscles of this organ followed by the loss of the voice? Why, in a word, is an act of the will necessary to produce the vocal sound? The answer to this is not difficult. The ligaments of the glottis have not the faculty of vibrating like the plates of reeds, except the thyro-arytænoid muscles are contracted; and, therefore, in every case in which the muscles are not contracted the voice will not be produced.

Experiments performed on animals are perfectly in unison with this doctrine. Divide the two recurrent nerves, and the voice will cease. If only one is cut, the voice will be only half lost.

Dr. Magendie, however, has seen a number of animals, in which the two recurrent nerves had been cut, cry very loud when they suffered severe pain. These sounds were very similar to the sounds that would be produced mechanically with the larynx of the animal when dead, by blowing into the trachea, and bringing together the arytænoid cartilages. This phænomenon is easily understood by the distribution of the nerves of the larynx. The recurrents being cut, the thyro-arytænoid muscles do not contract, and thence results the loss of voice; but the arytænoid muscle, that receives its nerves from the superior laryngeal, contracts, and brings together, in the instant of a strong expiration, the arytænoid cartilages, and the slit of the glottis becomes sufficiently narrow for the air to throw the thyro-arytænoid muscles, though they are not contracted, into vibration.

Intensity or Volume of the Voice. — The intensity of the voice, like that of all other sounds, depends upon the extent of the vibrations.

The vibrations of the *vocal chords* will be in proportion to the force with which the air is expelled from the breast; and the longer the chords are, — that is, the more voluminous the larynx is, — the more considerable will be the extent of the vibrations. A strong person, with a large chest, and a larynx of large dimensions, presents the most advantageous condition for the intensity of the voice. If such a person becomes sick, his voice, on account of his weakness, loses much of its intensity, because it is no longer expelled with the same force from the chest.

Children, women, and eunuchs, whose larynx is proportionably less than that of a man in adult age, have also much less intensity of voice.

In the ordinary production of the voice, it results from the simultaneous motions of the two sides of the glottis. Were one of these sides to lose the faculty of causing the air to vibrate, the voice would lose, necessarily, half its intensity, the force of expiration being the same. This may be proved in cutting one of the recurrent nerves of a dog, or in paying attention to the voice of a person who has had a complete attack of *hemiplegia*.

Tone of the Voice. — Every individual has a particular tone of voice by which he is known: there is also a particular tone which belongs to the different sexes and ages. The tone of the voice presents an infinite number of modifications. Upon what circumstances do these depend? This is unknown. The feminine tone, however, which is found in children and eunuchs, generally agrees with the state of the cartilages of the larynx. On the contrary, the masculine tone which women sometimes possess appears to be connected with the state of these cartilages, and particularly with that of the thyroid. Tone is a modification of sound, of which philosophers have by no means given an exact explanation.

Of the Extent of the Voice. — The sounds which the human larynx is capable of producing are very numerous. Many celebrated authors have endeavoured to explain the manner of their formation; but they have rather given us comparisons than explanations.

We have examined the reed of the organ of voice; we shall now consider the tube that the vocal sound traverses after having been produced. In proceeding from below upwards, the tube is composed, 1st, of the interval between the epiglottis before, its lateral ligaments upon the sides, and of the posterior side of the pharynx; 2dly, of the pharynx behind, and laterally, and of the most posterior part of the base of the tongue before; 3dly, sometimes of the mouth, and sometimes of the nasal cavities; at other times of these two cavities together.

This tube, capable of being prolonged or shortened, of being made wider or narrower; being susceptible of assuming an infinite variety of forms, ought to be very capable of performing all the functions of the body of a reed instrument; — that is, to be capable of harmonising with the larynx, and of thus favouring the production of the numerous tones of which the voice is susceptible; of increasing the intensity of the vocal sound, by taking a conical form, with the base outwards; of giving a roundness and agreeableness to the sound, by suitably dis-

posing its exterior opening, or by almost entirely shutting it, &c.

Until the influence of the tube of reed instruments has been determined with precision, it is evident that we can form only probable conjectures respecting the influence of the tube of the organ of voice. In this respect we can make only a small number of observations, which relate particularly to the most apparent phænomena.

A. The larynx is raised in the production of acute sounds; it is lowered, on the contrary, in the formation of those that are grave: consequently the vocal tube is shortened in the first case, and lengthened in the second.

We suppose that a short tube is more favourable to the transmission of acute sounds, whilst a long one is more so for those that are grave. The tube changes its length at the same time that it changes its breadth; and this is remarkable, as we have seen above that the breadth of the tube has a great influence upon its facility of transmitting sounds.

When the larynx descends, that is, when the vocal tube is prolonged, the thyroid cartilage descends, and removes from the os hyoides the whole height of the thyro-hyoid membrane. By this separation the gland of the epiglottis is carried forward, and places itself in the cavity of the posterior aspect of the os hyoides; this gland draws after it the epiglottis: from this results a considerable enlargement of the inferior part of the vocal tube.

The contrary phenomenon happens when the larynx is raised. The thyroid cartilage then rises, and becomes engaged behind the os hyoides, by displacing and pushing backward the epiglotted gland; this pushes the epiglottis, and the vocal tube is much contracted. By imitating the motion upon the dead body, we may easily ascertain that the narrowing may proceed to five sixths of the breadth of the tube. Now, we adapt a large tube to a reed for the purpose of producing grave sounds; on the contrary, it is a narrow tube which is generally employed for the purpose of transmitting acute sounds. We can then, to a certain degree, account for the utility of the changes of breadth which take place in the inferior part of the vocal tube.

B. The presence of the ventricles of the larynx immediately above the inferior ligaments of the glottis, appears intended to isolate those ligaments, so that they may vibrate freely in the air. When foreign bodies enter the ventricles, or when a false membrane or mucosities are formed, the voice is generally extinguished, or much weakened.

C. From its form, its position, its elasticity, — from the motions which its muscles impress upon it, the epiglottis appears to belong essentially to the apparatus of the voice; but what are its uses? We have already seen that it contributes powerfully to the narrowing of the vocal tube; it may be supposed that it has a more important function.

D. The vocal tube has visibly an influence upon the intensity of the voice. The most intense sounds which the voice can produce cause the mouth to be opened very wide, the tongue to be drawn a little back, and the velum of the palate raised into a horizontal position, and to become elastic, closing all communication with the nostrils.

In this case the pharynx and the mouth evidently perform the office of a speaking trumpet; that is to say, they represent very exactly a tube with a reed, which increases in wideness outwards, the effect of which is to augment the intensity of the sound produced by the reed. If the mouth is in part closed, the lips carried forward and turned towards each other, the sound will acquire rotundity, and an agreeable expression; but it will lose part of its intensity: this result is easily explained after what we have said of the influence of the form of tubes in reed instruments.

For the same reasons, whenever the vocal sound passes into the nose, it will become dull; for the form of the cavities of the nose is well fitted for diminishing the intensity of sounds. If the mouth and nose are shut at the same time, no sound can be produced.

E. We have seen, in considering the production of voice, that a great number of modifications relative to expression arise from changes of the thickness and of the elasticity of the lips of the glottis. The tube may produce a number of others, according to its different degrees of length or breadth; according to its form, the contraction of the pharynx, the position of the tongue, or of the velum of the palate; according as the sound passes wholly or in part through the mouth or the nose, or both together; according to the individual disposition of the mouth or nose, the existence or non-existence of teeth, the size of the tongue, &c.: the expression of the voice is continually modified according to all these circumstances. For example, whenever the sound traverses the nasal cavities, it becomes disagreeably nasal.

Those persons are mistaken who think that the intensity of vocal sound may be augmented by repercussion, in passing through the nasal cavities; these cavities produce quite a contrary effect. Whenever the voice is introduced into them, from whatever cause, it becomes dull.

F. Besides the numerous modifications which the tube of the vocal organ causes in the intensity and the expression of the voice, in alternately permitting or intercepting its productions, there is another very important kind of modification produced by it. By means of this the vocal sound is divided into very small portions, each possessing a distinct character, because each of them is produced by a distinct motion of the tube. This sort of influence of the vocal tube is called the *faculty of articulating*, which presents, besides, an infinite variety of individual differences suitable to the peculiar organisation of the vocal tube.

We have hitherto treated of the human voice in a general manner; we now proceed to speak of its principal modifications: namely, the cry or native voice; the voice properly so called, or acquired voice; speech, or articulate voice; singing, or *appreciable* voice.

The Cry, or Native Voice. — The cry is a sound which cannot be appreciated: it is, like all those sounds produced by the larynx, susceptible of variation in tone, intensity, and expression. The cry is easily distinguished from all other vocal sounds; but as its character depends upon the expression, it is impossible to account physically for the difference between it and the latter. Whatever is the condition of man, or whatever his age, he is capable of crying. The new-born child, the idiot, the person deaf from birth, the savage, the civilised, the decrepit old man, all are capable of producing cries. We ought, then, to consider the cry as particularly attached to organisation; indeed we may be convinced of this in examining its uses.

By the cry we express vivid sensations, whether they proceed from without or within; whether they are agreeable or painful: — there are cries of pleasure and of pain. By the cry we express our most simple instinctive wants, the natural passions. There is a cry of fury, another of fear, &c.

The social wants and passions, not being an indispensable consequence of organisation, and the state of civilisation being necessary for their development, they have no peculiar cry. The cry comprehends, generally, the most intense sounds that the organ of voice can produce: its expression has often something in it which offends the ear, and it has a strong action upon those who are near it.

By means of the cry, important relations are established among mankind. The cry of joy inclines to joy; the cry of pain excites pity; the cry produced by terror causes fear, even in those at a distance, &c. This sort of language is found in most animals; it is almost the only language which has been given them; the song of birds ought to be considered as a modification of their cry.

Acquired Voice, or Voice properly so called. — In the usual state of man, — that is, when he lives in society, and when he is possessed of the faculty of hearing, — he knows, from earliest youth, that mankind utters sounds which are not cries; he very soon finds that he can produce the same sort of sounds with his larynx, and immediately what is called *acquired voice* is developed in him, by the effect of imitation, and the advantages he derives from it. A deaf child cannot make any remark with regard to sound, and therefore he never acquires it. There seems to be no difference between the voice and the cry, except in intensity and expression; for it is likewise formed of inappreciable sounds, or of sounds whose intervals are not exactly distinguished by the ear.

Since the voice is the consequence of hearing, and of an intellectual process, it cannot be developed if those circumstances by which it is produced do not exist. In fact, children born deaf, who have never had any idea of sound; idiots, that establish no relation between the sounds which they hear and those which their larynx can produce, have no voice, though the vocal apparatus of both may be fit to form and modify sounds as well as that of individuals perfectly formed.

For the same reason, those whom we improperly term *savages*, because they have been found wandering in forests since their infancy, can have no voice; the understanding not being developed in a solitary state, but only in social life.

The expression, the intensity, the tone of the voice, are susceptible of numerous modifications on the part of the larynx; the vocal tube also exerts a powerful influence upon the voice: speech and singing are only modifications of the social voice.

Modifications of the Voice by Age. — The larynx is in proportion very small in the fœtus and the new-born infant: its small volume forms a contrast with that of the os hyoides, with the tongue and other organs of deglutition, which are already much developed. Besides, it is round, and the thyroid cartilage forms no projection in the neck.

The lips of the glottis, the ventricles, the superior ligaments, are very short in proportion to what they become afterwards; for the thyroid cartilage not being much developed, they consequently occupy a small space. The cartilages are flexible, and have not near the solidity which they possess afterwards.

The larynx preserves these characters almost till puberty; at this period a general revolution takes place in the economy. The development of the genital organs determines a sudden increase in the nutrition of many of the organs, of which that of the voice is one.

The greatest activity of nutrition is first remarked in the muscles, afterwards, but more slowly, it is seen in the cartilages: the general form of the larynx is then modified; the thyroid cartilage becomes developed in its anterior part, it forms a projection in the neck, but greater in the male than in the female. From this circumstance results a considerable prolongation of the lips of the glottis, or thyro-arythænoid muscles; and this phenomenon is much more worthy of remark than the general increase of the glottis which happens at the same time.

Though these changes in the larynx are rapid, they do not happen all at once; sometimes it is six or eight months before they terminate.

After puberty the larynx does not suffer any other remarkable changes; its volume and the projection of the thyroid cartilage continue to increase, and become more strongly marked. The cartilages become partially ossified in manhood.

In old age the ossification of the cartilages continues, and becomes almost complete; the epiglottic gland diminishes considerably, and the internal muscles, but those particularly that form the lips of the glottis, diminish in volume, assume a colour less deep, and lose their elasticity; in a word, they take the same modifications as the muscular system in general.

The production of voice, as it supposes the passage of air to and from the lungs to take place, cannot exist in the fœtus, plunged as it is in the *liquor amnii*; but the child is capable of producing very acute sounds at the instant of birth.

Vagitus is the name that is given to this voice, or cry of children, by which they express their wants and feelings. We must recollect that this is the object of the cry.

Towards the end of the first year the child begins to form sounds that are easily distinguished from the vagitus. These sounds, at first vague and irregular, very soon become more distinct and connected; nurses then begin to make them pronounce the most simple words, and afterwards those that are more complicated.

The pronunciation of children has very little resemblance to that of adults; but there is also a great difference between them. In children, the teeth have not yet quitted their alveoli; the tongue is comparatively very large; when the lips are closed they are larger than is necessary for covering anteriorly the gums; the nasal cavities are not much developed, &c.

Children advance only by degrees, and in proportion as their organs of pronunciation approach those of the adult, to articulate exactly the different combinations of letters. They are not capable of forming appreciable sounds, or of singing, until long after they have acquired the faculty of speech. This sort of sounds is the voice properly so called or acquired: they could not exist in the child were it deaf. They ought not to be considered as a modification of the vagitus.

Until the period of puberty, the larynx remains proportionably very small, as well as the lips of the glottis: the voice is also composed entirely of acute sounds. It is physically impossible that the larynx should produce grave ones.

At puberty, particularly in males, the voice undergoes a remarkable modification: it acquires in a few days, often all at once, a gravity, and a dull or deaf expression, that it was far from having before.

It sinks in general about an octave. The voice of a young man is said to *moult*, according to the common expression. In certain cases the voice is almost entirely lost for some weeks; it frequently contracts a marked hoarseness. Sometimes it happens that the young man produces, involuntarily, a very acute sound when he wishes to produce a grave one: it is then scarcely possible for him to produce uniform sounds, or to sing true.

This state of things continues sometimes nearly a year, after which the voice becomes more clear, and remains so during life: but some individuals lose entirely, during the *moulting*, of the voice, the faculty of singing; others, who had a fine and extensive voice before the *moulting*, have afterwards only a very ordinary one.

The gravity that the voice acquires depends evidently upon the development of the larynx, and particularly on the prolongation of the lips of the glottis. As these parts cannot stretch backwards, they come forward. it is also at this time that the larynx projects in the neck, and the *pomum Adami* appears. In the female, the lips of the glottis do not present at puberty this increase in breadth; the voice also generally remains acute.

The voice generally preserves the same characters until after adult age; at least, the modifications that it undergoes in the interval are but inconsiderable, and effect principally the expression and the volume. Towards the beginning of old age, the voice changes anew, its expression alters, and its extent diminishes: singing is more difficult, the sounds become noisy, and their production painful and fatiguing. The organs of pronunciation being changed by the effect of age, the teeth become shorter, and frequently being lost, the pronunciation is sensibly changed. All these phænomena are more noted in confirmed old age. The voice is weak, shaken, and broken; singing has the same characters, which depend on impaired muscular contraction. Speech also undergoes remarkable modifications; the slowness of the motions of the tongue, the want of the teeth, the lips proportionally longer, &c., necessarily influence the pronunciation. — *Magendie's Physiology.*

VOLATILE. (*Volatilis;* from *volo*, to fly.) Substances the particles of which have a tendency to evaporate, or diffuse themselves through the air at ordinary temperatures, are called *volatile* substances: such are ether, ammonia, &c.

Volatile alkali. See *Ammonia.*

VOLATILITY. The property of bodies by which they are disposed to evaporate, or diffuse themselves through the air.

VOLSE'LLA. A probang. See *Probang.*

Voltaic pill. See *Galvanism.*

Voltaism. See *Galvanism.*

VOLU'BILIS. (Easy to be rolled or wound.) Twining. Botanists apply it to stems which twine round other plants by their own spiral form, either from left to right, supposing the observer in the centre; (or, in other words, according to the apparent motions of the sun;) as in *Tamus communis* and the honey-suckle: or from right to left, contrary to the sun; as with *Convolvulus sæpium*, the French bean, &c.

VOLUME. The apparent space occupied by a body. The less the density of a body the greater is its volume.

VOLUNTARY. Relating to the will. Those muscles which are thown into action in obedience to the will are called *voluntary muscles*, in opposition to the *involuntary*, those which act independently of it. Motions affected by the action of the voluntary muscles are termed *voluntary motions.*

Voluntary motions. See *Voluntary.*

Voluntary muscles. See *Voluntary.*

VO'LVA. (*a*, *æ*. f.; from *valva.*) The curtain, wrapper, or covering of the fungous tribe, of a membranous texture, concealing their parts of fructification, and in due time bursting all around, forming a ring upon the stalk; as in *Agaricus campestris.* Such is the original meaning of this term, as explained by Linnæus; but it has become more generally used by Linnæus himself for the fleshy external covering of some other fungi, which is scarcely raised out of the ground, and enfolds the whole plant when young. It is *simple*, *double*, or *stellated*, very much cut; as in *Lycopodium stellatum.*

VO'LVULUS. (From *volvo*, to roll up: so called because it was supposed to be a twist-

ing of the bowels.) An old name of *ileus*. See *Iliac passion*.

Volvulus terrestris. Small bind-weed. The *Convolvulus minor*.

VO'MER. (*er, eris.* m.: so named from its great resemblance to a plough-share.) A slender thin bone, separating the nostrils from each other, consisting of two plates much compressed together, very dense and strong, yet so thin as to be transparent; these two plates seem at every edge to separate from each other, and thus a groove is formed at every side. — 1. This groove on the upper edge, or, as it may be called, its base, is wide, and receives into it the projecting points of the ethmoid and sphenoid bones; and thus it stands very firmly and securely on the skull, and capable of resisting blows of considerable violence.—2. The groove, upon the lower part, is narrower, and receives the rising line in the middle of the palate plate, where the bones join to form the palate suture. At the fore part it is united by a ragged surface, and by something like a groove, to the middle cartilage of the nose; and as the vomer receives the other bones into its grooves, it is, as it were, locked in on all sides, receiving support and strength from each, but more particularly from the thick and strong membrane which covers the whole, and which is so continuous as to resemble a periosteum, or rather a continued ligament, from its strength: thus the slender vomer possesses sufficient strength to avert from it all those evils which must inevitably have occurred, had it been less strongly or otherwise constructed.

VO'MICA. (*a, æ.* f.; from *vomo*, to spit up: because the matter is spit up.) In a wide sense, an abscess in any of the viscera: the term, however, is restricted to an abscess in the substance of the lungs, formed by the resolution of tubercles. See *Tubercle*, and *Phthisis*.

VOMITING. *Vomitio.* A forcible ejection of food, or any other substance, from the stomach, through the œsophagus and mouth.

That internal sensation which announces the necessity of vomiting is called *nausea*; it consists of a general uneasiness, with a feeling of dizziness in the head, or in the epigastric region: the lower lip trembles, and the saliva flows in abundance. Instantly, and involuntarily, convulsive contractions of the abdominal muscles, and at the same time of the diaphragm, succeed to this state: the first are not very intense, but those that follow are more so: they at last become such, that the matters contained in the stomach surmount the resistance of the *cardia*, and are thus darted, as it were, into the œsophagus and mouth: the same effect is produced many times in succession: it ceases for a time, and begins again after some interval.

At the instant that the matters driven from the stomach traverse the pharynx and the mouth, the glottis shuts, the *velum* of the palate rises, and becomes horizontal, as in deglutition; nevertheless, every time that one vomits, a certain quantity of liquid is introduced, either into the larynx or the nasal canals.

Vomiting was long believed to depend upon the rapid convulsive contraction of the stomach; but it has been shown, by a series of experiments, that, in the process, this viscus is nearly passive; and that the true agents of vomiting are, on the one hand, the diaphragm, and, on the other, the large abdominal muscles.

This has been brought forward by M. Magendie as a new fact; but the passiveness of the stomach in the act of vomiting was maintained by John Hunter.

In the ordinary state, the diaphragm and the muscles of the abdomen co-operate in vomiting; but each of them can, nevertheless, produce it separately. Thus, an animal still vomits, though the diaphragm has been rendered immoveable by cutting the diaphragmatic nerves; it vomits the same though the whole abdominal muscles have been taken away by the knife, with the precaution of leaving the linea alba and the peritonæum untouched. See *Sickness*.

Vomiting of blood. See *Hæmatemesis*.

Vomituri'tio. (*o. onis.* f.) Retching, or the ineffectual effort to vomit.

Vomitus cruentus. See *Hæmatemesis*.

Voracious appetite. See *Bulimia*.

Voracity. See *Bulimia*.

Voraciousness. See *Bulimia*.

Vox abscissa. A loss of voice. See *Aphonia*.

Vulga'go. The asarabacca was so called. See *Asarum*.

Vulnera'ria. (*a. æ.* f.; from *vulnus*, a wound.) The name of a species of *anthyllis*, from its supposed virtues in healing wounds. See *Anthyllis vulneraria*.

Vulneraria aqua. Arquebusade.

VU'LNUS. (*us, eris.* n.) A wound. See *Wound*.

Vulnus sclope'ticum. A gun-shot wound.

Vulpis morbus. Alopecia, or baldness. See *Alopecia*.

VU'LVA. (*a, æ.* f.; the womb.) Applied by anatomists — 1. To the external parts of generation in the female.

2. To a foramen in the brain, more commonly called *foramen commune anterius*. See *Encephalos*.

Vulva'ria. (*a, æ.* f.; from *vulva*: so named from its smell, or from its former use in disorders of the womb.) Stinking orach. See *Chenopodium vulvaria*.

W.

WADE'S DROPS. Compound tincture of benzoin.

Wakefulness. See *Agrypnia.*

Wake-robin. See *Arum.*

Wall-flower. See *Cheiranthus.*

Wall-pellitory. See *Parietaria.*

Wall-pepper. See *Sedum acre.*

Wall-rue. See *Asplenium murale.*

Wall-wort. The *Sambucus ebulus.*

Walnut. See *Juglans.*

WALTON. A town near Tewkesbury, in Gloucestershire, where there is a mineral chalybeate spring, the waters of which have been found chiefly efficacious in obstructions and other affections of the glands.

WARD'S ESSENCE FOR HEADACH. The compound camphor liniment.

WARD'S PASTE. A remedy for the piles, nearly the same as the *confectio piperis nigri* of the pharmacopœias.

WARD'S RED DROPS. A strong solution of emetic tartar in wine.

WARD'S WHITE DROPS. A preparation made by dissolving mercury in nitric acid, and adding a solution of carbonate of ammonia or a solution of corrosive sublimate and carbonate of ammonia.

WARNER'S CORDIAL. A tincture made with rhubarb, senna, saffron, liquorice, raisins, and brandy.

Warty. See *Verrucosus.*

WASHERWOMAN'S SCALL. A variety of *psoriasis diffusa*, peculiar to washerwomen. See *Psoriasis.*

Watchfulness. See *Agrypnia.*

WATER. *Aqua.* A transparent fluid, without colour, smell, or taste; in a very slight degree compressible; when pure not liable to spontaneous change; liquid in the common temperature of our atmosphere, assuming the solid form at 32° Fahrenheit, and the gaseous at 212°, but returning unaltered to its liquid state on resuming any degree of heat between these points; capable of dissolving a greater number of natural bodies than any other fluid whatever, and especially those known by the name of the saline; performing the most important functions in the vegetable and animal kingdoms, and entering largely into their composition as a constituent part.

Native water is seldom, if ever, found perfectly pure. The waters that flow within, or upon the surface of the earth, contain various earthy, saline, metallic, vegetable, or animal particles, according to the substances over or through which they pass. Rain and snow waters are much purer than these, although they also contain whatever floats in the air, or has been exhaled along with the watery vapours.

The purity of water may be known by the following marks or properties of pure water: —

1. Pure water is lighter than water that is not pure.

2. Pure water is more fluid than water that is not pure.

3. It has no colour, smell, or taste.

4. It wets more easily than the waters containing metallic and earthy salts, called hard waters, and feels softer when touched.

5. Soap, or a solution of soap in alkohol, mixes easily and perfectly with it.

6. It is not rendered turbid by adding to it a solution of gold in aqua regia, or a solution of silver, or of lead, or of mercury, in nitric acid, or a solution of acetate of lead in water.

Water was, till modern times, considered as an elementary or simple substance.

Previous to the month of October 1776, the celebrated Macquer, assisted by Sigaud de la Fond, made an experiment by burning hydrogen gas in a bottle, without explosion, and holding a white china saucer over the flame. His intention appears to have been that of ascertaining whether any fuliginous smoke was produced; and he observes, that the saucer remained perfectly clean and white, but was moistened with perceptible drops of a clear fluid, resembling water; and which, in fact, appeared to him and his assistant to be nothing but pure water. He does not say whether any test was applied to ascertain this purity, neither does he make any remark on the fact.

In the summer of the year 1781, Mr. Henry Cavendish was busied in examining what becomes of the air lost by combustion, and made those valuable experiments which were read before the Royal Society on the 15th of January 1784. He burned 500,000 grain measures of hydrogen gas, with about two and a half times the quantity of common air; and, by causing the burned air to pass through a glass tube eight feet in length, 135 grains of pure water were condensed. He also exploded a mixture of 19,500 grain measures of oxygen gas, and 37,000 of hydrogen, in a close vessel. The condensed liquor was found to contain a small portion of nitric acid, when the mixture of the air was such, that the burned air still contained a considerable proportion of oxygen. In this case it may be presumed, that some of the oxygen combines with a portion of nitrogen present.

In the mean time, Lavoisier, during the winter of 1781–1782, together with Gingembre, filled a bottle of six pints with hydrogen; which being fired, and two ounces of lime-water poured in, was instantly stopped with a cork, through which a flexible tube communicating with a vessel of oxygen was passed. The inflammation ceased, except at the orifice of the tube, through which the oxygen was passed, where a beautiful flame appeared. The combustion con-

tinued a considerable time, during which the lime-water was agitated in the bottle. Neither this, nor the same experiment repeated with pure water, and with a weak solution of alkali instead of lime-water, afforded the information sought after; for the substances were not at all altered.

The inference of Mr. Warltire, respecting the moisture on the inside of the glass in which Dr. Priestley first fired hydrogen and common air, was, that these airs, by combustion, deposited the moisture they contained. Mr. Watt, however, inferred from these experiments, that water is a compound of the burned airs, which have given out their latent heat by combustion; and communicated his sentiments to Dr. Priestley, in a letter dated April 26. 1783.

It does not appear that the composition of water was known or admitted in France till the summer of 1783, when Lavoisier and De la Place, on the 24th of June, repeated the experiment of burning hydrogen and oxygen in a glass vessel over mercury, in a still greater quantity than had been burned by Mr. Cavendish. The result was nearly five gross of pure water. Monge made a similar experiment at Paris nearly at the same time, or perhaps before.

This assiduous and accurate philosopher then proceeded, in conjunction with Meusnier, to pass the steam of water through a red-hot iron tube, and found that the iron was oxidised, and hydrogen disengaged; and the steam of water being passed over a variety of other combustible or oxidable substances, produced similar results, the water disappearing and hydrogen being disengaged. These capital experiments were accounted for by Lavoisier, by supposing the water to be decomposed into its component parts, oxygen and hydrogen, the former of which unites with the ignited substance, while the latter is disengaged.

The grand experiment of the composition of water, by Fourcroy, Vauquelin, and Seguin, was begun on Wednesday, May 13. 1790, and was finished on Friday the 22d of the same month. The combustion was kept up 185 hours with little interruption, during which time the machine was not quitted for a moment. The experimenters alternately refreshed themselves when fatigued, by lying for a few hours on mattresses in the laboratory.

To obtain the hydrogen, 1. Zinc was melted and rubbed into a powder in a very hot mortar. 2. This metal was dissolved in concentrated sulphuric acid, diluted with seven parts of water. The air procured was made to pass through caustic alkali. To obtain the oxygen, two pounds and a half of crystallised hyperoxymuriate of potash were distilled, and the air was transferred through caustic alkali.

The volume of hydrogen employed was 25963·568 cubic inches, and the weight was 1039·358 grains.

The volume of oxygen was 12570·942, and the weight was 6209·869 grains.

The total weight of both elastic fluids was 7249·227.

The weight of water obtained was 7244 grains, or 12 ounces 4 gros 45 grains.

The weight of water which should have been obtained was 12 ounces 4 gros 49·227 grains.

The deficit was 4·227 grains.

The quantity of azotic air before the experiment was 415·256 cubic inches, and at the close of it 467. The excess after the experiment was, consequently, 51·744 cubic inches. This augmentation is to be attributed, the academicians think, to the small quantity of atmospheric air in the cylinders of the gasometers, at the time the other airs were introduced. These additional 51 cubic inches could not arise from the hydrogen, for experiment showed that it contained no azotic air. Some addition of this last fluid, the experimenters think, cannot be avoided, on account of the construction of the machine.

The water being examined, was found to be as pure as distilled water. Its specific gravity to distilled water was as 18671 : 18670.

The decomposition of water is effected by electricity in a most elegant manner.

The composition of water is best demonstrated by exploding 2 volumes of hydrogen and 1 of oxygen, in the eudiometer. They disappear totally, and pure water results. A cubic inch of this liquid, at 60°, weighs 252·52 grains; consisting of

28·06 grains hydrogen, and
224·46 oxygen.

The bulk of the former gas is	1325	cubic inches.
That of the latter is	662	
	1987	

Hence there is a condensation of nearly two thousand volumes into one; and one volume of water contains 662 volumes of oxygen. The prime equivalent of water is 1·125; composed of a prime of oxygen = 1·0 + a prime of hydrogen = 0·125; or 9 parts by weight of water consist of 8 oxygen + 1 hydrogen.

The simple waters are the following: —

1. *Distilled water.* This is the lightest of all others, containing neither solid nor gaseous substances in solution, is perfectly void of taste and smell, colourless and beautifully transparent, has a soft feel, and wets the fingers more readily than any other. It mixes uniformly with soap into a smooth opaline mixture, but may be added to a solution of soap in spirit of wine without injuring its transparency. The clearness of distilled water is not impaired by the most delicate chemical re-agents, such as lime-water, a solution of barytes in any acid, nitrated silver, or acid of sugar. When evaporated in a silver vessel it leaves no residuum: if preserved from access of foreign matter floating in the air, it may be kept for ages unaltered in vessels upon which it has no action, as it does not possess within itself the power of decomposition. As it freezes exactly at 32° of Fahrenheit, and boils at 212° under the atmospherical pressure of 29·8 inches, these points are made use of as the standard ones for thermometrical division; and its specific weight being always the same under the mean pressure and temperature, it is employed for the comparative standard of specific gravity.

Pure distilled water can only be procured

from water which contains no volatile matters that will rise in distillation, and continue still in union with the vapour when condensed. Many substances are volatile during distillation; but most of the gases, such as common air, carbonic acid, and the like, are incapable of uniting with water at a high temperature: other bodies, however, such as vegetable essential oil, and, in general, much of that which gives the peculiar odour to vegetable and animal matter, will remain in water after distillation. So the steam of many animal and vegetable decoctions has a certain flavour which distinguishes it from pure water; and the aqueous exhalation from living bodies, which is a kind of distillation, has a similar impregnation.

To obtain distilled water perfectly pure, much stress was laid by former chemists on repeating the process a great number of times; but it was found by Lavoisier, that rain water once distilled, rejecting the first and last products, was as pure a water as could be procured by any subsequent distillations.

Distilled water appears to possess a higher power than any other as a solvent of all animal and vegetable matter, and these it holds in solution as little as possible altered from the state in which they existed in the body that yielded them. Hence the great practical utility of that kind of chemical analysis which presents the proximate constituent parts of these bodies, and which is effected particularly by the assistance of pure water. On the other hand, a saline, earthy, or otherwise impure water, will alter the texture of some of the parts, impair their solubility, produce material changes on the colouring matter, and become a less accurate analyser on account of the admixture of foreign contents.

Distilled water is seldom employed to any extent in the preparation of food, or in manufactures, on account of the trouble of procuring it in large quantities; but for preparing a great number of medicines, and in almost every one of the nicer chemical processes that are carried on in the liquid way, this water is an essential requisite. The only cases in which it has been used largely as an article of drink, have been in those important trials made of the practicability of procuring it by condensing the steam of sea water, by means of a simple apparatus adapted to a ship's boiler; and these have fully shown the ease with which a large quantity of fresh water, of the purest kind, may be had at sea, at a moderate expense, whereby one of the most distressing of all wants may be relieved. There are one or two circumstances which seem to show that water, when not already loaded with foreign matter, may become a solvent for concretions in urinary passages. At least, we know that very material advantage has been derived in these cases from very pure natural springs; and hence a course of distilled water has been recommended as a fair subject of experiment.

2. *Rain water*, the next in purity to distilled water, is that which has undergone a natural distillation from the earth, and is condensed in the form of rain. This is a water so nearly approaching to absolute purity as probably to be equal to distilled water for every purpose except in the nicer chemical experiments. The foreign contents of rain water appear to vary according to the state of the air through which it falls. The heterogeneous atmosphere of a smoky town will give some impregnation to rain as it passes through, and this, though it may not be at once perceptible on chemical examination, will yet render it liable to spontaneous change; and hence rain water, if long kept, especially in hot climates, acquires a strong smell, becomes full of animalcula, and in some degree putrid. According to Margraaf, the constant foreign contents of rain water appear to be some traces of the muriatic and nitric acids; but as this water is always very soft, it is admirably adapted for dissolving soap, or for the solution of alimentary or colouring matter, and it is accordingly used largely for these purposes. The specific gravity of rain water is so nearly the same as that of distilled water, that it requires the most delicate instruments to ascertain the difference. Rain that falls in towns acquires a small quantity of sulphate of lime and calcareous matter from the mortar and plaster of the houses.

2. *Ice* and *snow water*. This equals rain water in purity, and, when fresh melted, contains no air, which is expelled during freezing. In cold climates, and in high latitudes, thawed snow forms the constant drink of the inhabitants during winter; and the vast masses of ice which float on the polar seas afford an abundant supply to the mariner. It is well known, that in a weak brine, exposed to a moderate freezing cold, it is only the watery part that congeals, leaving the unfrozen liquor proportionably stronger of the salt. The same happens with a dilute solution of vegetable acids, with fermented liquors, and the like; and advantage is taken of this property to reduce the saline part to a more concentrated form. Snow water has long lain under the imputation of occasioning those strumous swellings in the neck which deform the inhabitants of many of the Alpine valleys; but this opinion is not supported by any well-authenticated indisputable facts, and is rendered still more improbable, if not entirely overturned, by the frequency of the disease in Sumatra, where ice and snow are never seen, and its being quite unknown in Chili and in Thibet, though the rivers of those countries are chiefly supplied by the melting of the snow, with which the countries are covered.

4. *Spring water*. Under this comprehensive class are included all waters that spring from some depth beneath the soil, and are used at the fountain head, or at least before they have run any considerable distance exposed to the air. It is obvious that spring water will be as various in its contents as the substances that compose the soil through which it flows. When the ingredients are not such as to give any peculiar medical or sensible properties, and the water is used for common purposes, it is distinguished as a hard or soft spring, sweet or brackish, clear or turbid, and the like. Ordinary springs insensibly pass into *mineral springs*, as their foreign

contents become more notable and uncommon; though sometimes waters have acquired great medical reputation from mere purity. See *Mineral waters*.

By far the greater number of springs are cold; but as they take their origin at some depth from the surface, and below the influence of the external atmosphere, their temperature is, in general, pretty uniform during every vicissitude of season, and always several degrees higher than the freezing point. Others, again, arise constantly hot, or with a temperature always exceeding the summer heat; and the warmth possessed by the water is entirely independent of that of the atmosphere, and varies little winter or summer.

One of the principal inconveniences in almost every spring water, is its hardness, owing to the presence of earthy salts, which, in by far the greater number of cases, are only the insipid substances chalk and selenite, which do not impair the taste of the water; whilst the air which it contains, and its grateful coolness, render it a most agreeable, and generally a perfectly innocent drink; though, sometimes, in weak stomachs, it is apt to occasion an uneasy sense of weight in that organ, followed by a degree of dyspepsia. The quantity of earthy salts varies considerably; but, in general, it appears that the proportion of five grains of these in the pint will constitute a hard water, unfit for washing with soap, and for many other purposes of household use or manufactures. The water of deep wells is always, *ceteris paribus*, much harder than that of springs which overflow their channel; for much agitation and exposure to air produce a gradual deposition of the calcareous earth; and hence spring water often incrusts to a considerable thickness the inside of any kind of tube through which it flows, as it arises from the earth. The specific gravity of these waters is also, in general, greater than that of any other kind of water, that of the sea excepted. Springs that overflow their channel, and form to themselves a limited bed, pass insensibly into the state of stream, or river water, and become thereby altered in some of their chemical properties.

5. River water. This is in general much softer and more free from earthy salts than the last, but contains less air of any kind: for, by the agitation of a long current, and in most cases a great increase of temperature, it loses common air and carbonic acid, and, with this last, much of the lime which it held in solution. The specific gravity thereby becomes less, the taste not so harsh, but less fresh and agreeable, and out of a hard spring is often made a stream of sufficient purity for most of the purposes requiring soft water. Some streams, however, that arise from a clean silicious rock, and flow in a sandy or stony bed, are, from the outset, remarkably pure. Such are the mountain lakes and rivulets in the rocky districts of Wales, the source of the beautiful waters of the Dee, and numberless other rivers that flow through the hollow of every valley. Switzerland has long been celebrated for the purity and excellence of its waters, which pour in copious streams from the mountains, and give rise to some of the finest rivers in Europe. An excellent observer and naturalist, the illustrious Haller, thus speaks of the Swiss waters: — "Vulgaribus aquis Helvetia super omnes fere Europæ regiones excellit. Nusquam liquidas illas aquas et crystalli simillimas se mihi obtulisse memini postquam ex Helvetiâ excessi; ex scopulis enim nostræ per puros silices percolatæ nulla terra vitiantur." Some of them never freeze in the severest winter, the cause of which is probably, as Haller conjectures, that they spring at once out of a subterraneous reservoir so deep as to be out of the reach of frost; and during their short course, when exposed to day, they have not time to be cooled down from 53°, their original temperature, to below the freezing point.

Some river waters, however, that do not take their rise from a rocky soil, and are indeed at first considerably charged with foreign matter, during a long course, even over a rich cultivated plain, become remarkably pure as to saline contents, but often fouled with mud, and vegetable or animal exuviæ, which are rather suspended than held in true solution. Such is that of the Thames, which, taken up at London at low water, is very soft and tolerably good, and, after rest and filtration, it holds but a very small portion of any thing that could prove noxious or impede any manufacture. It is also excellently fitted for sea-store; but it here undergoes a remarkable spontaneous change. No water carried to sea becomes putrid sooner than that of the Thames. When a cask is opened after being kept a month or two, a quantity of inflammable air escapes, and the water is so black and offensive as scarcely to be borne. Upon racking it off, however, into large earthen vessels (oil jars are commonly used for the purpose), and exposing it to the air, it gradually deposits a quantity of black slimy mud, becomes clear as crystal, and remarkably sweet and palatable. The Seine has as high a reputation in France, and appears from accurate experiments to be a river of great purity. It might be expected that a river which has passed by a large town, and received all its impurities, and been used by numerous dyers, tanners, hatters, and the like, that crowd to its banks for the convenience of plenty of water, should thereby acquire such a foulness as to be very perceptible to chemical examination for a considerable distance below the town; but it appears, from the most accurate examination, that where the stream is at all considerable these kinds of impurity have but little influence in permanently altering the quality of the water, especially as they are for the most part only suspended, and not truly dissolved; and, therefore, mere rest, and especially filtration, will restore the water to its original purity. Probably, therefore, the most accurate chemist would find it difficult to distinguish water taken up at London from that procured at Hampton Court, after each has been purified by simple filtration.

6. Stagnated waters. The waters that present the greatest impurities to the senses, are those of stagnant pools, and low marshy countries. They are filled with the remains of animal and vegetable matter undergoing decom-

position, and, during that process, becoming in part soluble in water, thereby affording a rich nutriment to the succession of living plants and insects, thereby supplying the place of those that perish. From the want of sufficient agitation in these waters, vegetation goes on undisturbed, and the surface becomes covered with confervæ and other aquatic plants; and as these standing waters are in general shallow, they receive the full influence of the sun, which further promotes all the changes that are going on within them. The taste is generally vapid, and destitute of that freshness and agreeable coolness which distinguish spring water. However, it should be remarked, that stagnant waters are generally soft, and many of the impurities are only suspended, and therefore separable by filtration; and perhaps the unpalatableness of this drink has caused it to be in worse credit than it deserves, on the score of salubrity. The decidedly noxious effects produced by the air of marshes and stagnant pools, have been supposed to extend to the internal use of these waters; and often, especially in hot climates, a residence near these places has been as much condemned on the one account as on the other; and, in like manner, an improvement in health has been as much attributed to a change of water as of air.

Water-brash. See *Pyrosis.*

Water-cress. See *Sisymbrium nasturtium.*

Water-dock. See *Rumex hydrolapathum.*

Water-flag, yellow. See *Iris pseudacorus.*

Water-germander. See *Teucrium scordium.*

Water-hemp. See *Eupatorium.*

Water-lily, white. See *Nymphæa alba.*

Water-lily, yellow. See *Nymphæa lutea.*

Water-parsnep. See *Sium nodiflorum.*

Water-pepper. See *Polygonum hydropiper.*

Water-plantain. See *Alisma plantago aquatica.*

Water-zizania. See *Zizania aquatica.*

Waters, mineral. See *Mineral waters.*

Waved. See *Undulatus.*

Wax. See *Cera.*

WEB. *Tela.* Applied to that which resembles a web; as the arachnoid membrane, cellular tissue, &c.

Web, mucous. The name adopted by Professor Blumenbach for cellular membrane.

Wedge-shaped. See *Cuneiformis.*

WELD. Woald. The *Reseda luteola* of Linnæus, which is used as a yellow dye.

WELDING. The property which the particles of iron and platina possess of adhering together from the stroke of the hammer: the above are the only metals which have this property.

Wharton's duct. See *Ductus Wartonianus.*

WHEAL. An elevation of the skin, like that produced by a sharp stroke of a cane, and which is seen in some forms of nettle-rash.

Wheal worm. See *Acarus autumnalis.*

WHEAT. *Triticum.* The seeds of the *Triticum hibernum*, and *æstivum*, of Linnæus, are so termed. It is to these plants we are indebted for our bread, and the various kinds of pastry. The wheat is first ground between mill-stones, and then sifted to obtain its farina or flour. The flower of wheat may be separated into its three constituent parts, in the following manner: — The flower is to be kneaded into a paste with water in an earthen vessel, and the water continued pouring upon it from a cock; this liquid, as it falls upon the paste, takes up from it a very fine white powder, by means of which it acquires the colour and consistency of milk. This process is to be continued till the water run off clear, when the flour will be separated into three distinct parts: 1. A grey elastic matter that sticks to the hand, and on account of its properties has gained the name of the glutinous, or vegeto-animal part. 2. A white powder which falls to the bottom of the water, and is the *fæculum* or starch. 3. A matter which remains dissolved in the water, and seems to be a sort of mucilaginous extract.

Flour, from whatever species of corn obtained, is likewise disposed to vinous fermentation, on account of its saccharine contents. The aptitude for fermentation of these mealy seeds increases if they be first converted into malt; inasmuch as by this process the gluten which forms the germ is separated, and the starchy part appears to be converted into saccharine matter. The making of malt, for which purpose barley and wheat are generally chosen, is as follows: — The grains are put in the malting tub, and immersed in cold water, in a temperate and warm season, changing this fluid several times, especially in hot weather; and they are thus kept soaking till they be sufficiently soft to the touch. Upon this they are piled up in heaps on a roomy, clean, airy floor, where, by the heat spontaneously taking place, the vegetation begins, and the grains germinate. To cause the germination to go on uniformly, the heaps are frequently turned. In this state the vegetation is suffered to continue till the germs have about two thirds or three fourths of the length of the corn. It is carried too far when the leafy germs have begun to sprout.

For this reason, limits are set to the germination, by drying the malt, which is effected by transferring it to the kiln, or by spreading it about in spacious airy lofts. Dried in the last way, it is called air-dried malt; in the first, kiln-malt. In drying this latter, care must be taken that it does not receive a burnt smell, or be in part converted into coal.

From this malt, beer is made by extraction with water and fermentation.

Wheat, buck. See *Polygonum.*

Wheat, Eastern buck. See *Polygonum.*

Wheat, Indian. See *Wheat, Turkey.*

Wheat, Turkey. The Turkey wheat, Indian wheat, Indian corn, or maize, is the produce of the *Zea mays*, a native plant of America, where it is much cultivated, as it is also in some parts of Europe, especially in Italy and Germany. There are many varieties, which differ in the colour of the grain, and are frequently raised in our gardens by way of curiosity, whereby the plant is well known. It is the chief bread corn in some of the southern parts of America, but, since the introduction of rice into Carolina, it is but little used in the northern colonies. It makes

a main part, too, of the food of the poor people in Italy and Germany. This is the sort of wheat mentioned in the book of Ruth, where it is said that Boaz treated Ruth with parched ears of corn dipped in vinegar. This method of eating the roasted ears of Turkey wheat is still practised in the East: they gather in the ears when about half ripe, and having scorched them to their minds, eat them with as much satisfaction as we do the best flour bread.

In several parts of South America they parch the ripe corn, never making it into bread, but grinding it between two stones, mix it with water in a calabash, and so eat it. The Indians make a sort of drink from this grain, which they call *bici*. This liquor is very windy and intoxicating, and has nearly the taste of sour small beer: but they do not use it in common, being too lazy to make it often, and therefore it is chiefly kept for the celebration of feasts and weddings, at which times they mostly get intolerably drunk with it. The manner of making this precious beverage, is to steep a parcel of corn in a vessel of water, till it grows sour; then the old women, being provided with calibashes for the purpose, chew some grains of the corn in their mouths, and spitting it into the calabashes, empty them, spittle and all, into the sour liquor, having previously drawn off the latter into another vessel.

The chewed grain soon raises a fermentation; and when this ceases, the liquor is let off from the dregs, and set by till wanted. In some of the islands in the South Sea, where each individual is his own lawgiver, it is no uncommon thing for a near relation to excuse a murderer for a good drunken bout of *ciri*, which is prepared from this grain.

Wheel-shaped. See *Rotatus.*

WHEEZING. A noisy respiration produced by obstruction of the air passages.

WHELK. A small tubercle which does not suppurate, generally situated on the face; the same as *ionthus*. See *Ionthus.*

WHEY. The fluid part of milk which remains after the curd has been separated. It contains a saccharine matter, some butter, and a small portion of cheese. See *Milk.*

Whirl. See *Verticillus.*

WHISKEY. (From *Usquebaugh*, the Irish name for it.) A dilute alkohol obtained by distilling malt.

WHISPERING. A lowness of speech, caused by uttering the words so feebly as not to produce any vibration of the larynx.

White-bait. See *Clupea latulus.*

WHITEHEAD'S ESSENCE OF MUSTARD. Dr. Paris says this is nothing but balsam of tolu and resin. According to Brande, it is made of camphor, oil of turpentine, and spirit of rosemary, mixed with mustard flour.

White-gum. See *Strophulus albidus.*

White-leg. See *Phlegmasia dolens.*

White-swelling. See *Hydarthrus.*

Whites. See *Leucorrhœa.*

Whiting. See *Gadus merlangus.*

Whitlow. See *Paronychia.*

Whorl. See *Verticillus.*

Whortle-berry, bears'. See *Arbutus uva ursi.*

Whortle-berry, red. See *Vaccinium vitis idæa.*

Widow-wail. See *Daphne mezereum.*

Wild carrot. See *Daucus sylvestris.*

Wild cucumber. See *Momordica elaterium.*

Wild navew. See *Brassica napus.*

Wildfire rash. See *Strophulus volaticus.*

Willow. See *Salix.*

Willow, crack. See *Salix fragilis.*

Willow, sweet. See *Myrica gale.*

Willow, white. See *Salix fragilis.*

Willow-herb. See *Lythrum salicaria.*

Willow-herb, rosebay. See *Epilobium angustifolium.*

Willow-leaved oak. See *Quercus phellos.*

WILSON'S GOUT TINCTURE. An infusion of colchicum.

WINE. The name of wine is given in general to all liquors that have become spirituous by fermentation. Thus cider, beer, hydromel, mead, and other similar liquors, are wines.

The principles and theory of the fermentation which produces these liquors are essentially the same. See *Fermentation.*

All those nutritive vegetable and animal matters which contain sugar ready formed, are susceptible of spirituous fermentation. Thus wine may be made of all the juices of plants, the sap of trees, the infusions and decoctions of farinaceous vegetables, the milk of frugivorous animals; and, lastly, it may be made of all ripe succulent fruits. But of all substances susceptible of the spirituous fermentation, none is capable of being converted into so good wine as the juice of the grapes of France, or of other countries that are nearly in the same latitude, or in the same temperature. The grapes of hotter countries, and even those of the southern provinces of France, do indeed furnish wines that have a more agreeable, that is, more of a saccharine taste; but these wines, though they are sufficiently strong, are not so spirituous as those of the provinces near the middle of France: at least from these latter wines the best vinegar and brandy are made. As an example, therefore, of spirituous fermentation in general, we shall describe the method of making wine from the juice of the grapes of France.

This juice, when newly expressed, and before it has begun to ferment, is called *must*, and in common language sweet wine. It is turbid, and has an agreeable and very saccharine taste. It is very laxative; and when drunk too freely, or by persons disposed to diarrhœas, it is apt to occasion these disorders. Its consistence is somewhat less fluid than that of water, and it becomes almost of a pitchy thickness when dried.

When the must is pressed from the grapes, and put into a proper vessel and place, with a temperature between fifty-five and sixty degrees, very sensible effects are produced in it, in a shorter or longer time, according to the nature of the liquor, and the exposure of the place. It then swells, and is so rarefied that it frequently overflows the vessel containing it, if this be nearly full. An intestine motion is excited among its parts, accompanied with a slight hiss-

ing noise and evident ebullition. The bubbles rise to the surface, and at the same time is disengaged a quantity of carbonic acid, of such purity, and so subtle and dangerous, that it is capable of killing, instantly, men and animals exposed to it in a place where the air is not renewed. The skins, stones, and other grosser matters of the grapes are buoyed up by the particles of disengaged air that adhere to their surface, are variously agitated, and are raised in form of a scum, or soft and spongy crust, that covers the whole liquor. During the fermentation, this crust is frequently raised, and broken by the air disengaged from the liquor which forces its way through it; afterwards the crust subsides, and becomes entire as before.

These effects continue while the fermentation is brisk, and at last gradually cease: then the crust, being no longer supported, falls in pieces to the bottom of the liquor. At this time, if we would have a strong and generous wine, all sensible fermentation must be stopped. This is done by putting the wine into close vessels, and carrying these into a cellar or other cool place.

After this first operation, an interval of repose takes place, as is indicated by the cessation of the sensible effects of the spirituous fermentation; and thus enables us to preserve a liquor no less agreeable in its taste, than useful for its reviving and nutritive qualities, when drunk moderately.

If we examine the wine produced by this first fermentation, we shall find that it differs entirely and essentially from the juice of grapes before fermentation. Its sweet and saccharine taste is changed into one that is very different, though still agreeable, and somewhat spirituous and piquant. It has not the laxative quality of must, but affects the head, and occasions, as is well known, drunkenness. Lastly, if it be distilled, it yields, instead of the insipid water obtained from must by distillation with the heat of boiling water, a volatile, spirituous, and inflammable liquor, called spirit of wine, or alkohol. This spirit is consequently a new substance, produced by the kind of fermentation called the vinous or spirituous.

When any liquor undergoes the spirituous fermentation, all its parts seem not to ferment at the same time, otherwise the fermentation would probably be very quickly completed, and the appearances would be much more striking: hence, in a liquor much disposed to fermentation, this motion is more quick and simultaneous than in another liquor less disposed. Experience has shown, that a wine, the fermentation of which is very slow and tedious, is never good or very spirituous; and, therefore, when the weather is too cold, the fermentation is usually accelerated by heating the place in which the wine is made. A proposal has been made by a person very intelligent in economical affairs, to apply a greater than the usual heat to accelerate the fermentation of the wine, in those years in which grapes have not been sufficiently ripened, and when the juice is not sufficiently disposed to fermentation.

A too hasty and violent fermentation is perhaps also hurtful, from the dissipation and loss of some of the spirit; but of this we are not certain. However, we may distinguish, in the ordinary method of making wine of grapes, two periods in the fermentation; the first of which lasts during the appearance of the sensible effects above mentioned, in which the greatest number of fermentable particles ferment. After this first effort of fermentation, these effects sensibly diminish, and ought to be stopped, for reasons hereafter to be mentioned. The fermentative motion of the liquors then ceases. The heterogeneous parts that were suspended in the wine by this motion, and render it muddy, are separated, and form a sediment called the lees; after which the wine becomes clear; but though the operation is then considered as finished, and the fermentation is apparently over, it does not really cease; and it ought to be continued in some degree, if we would have good wine.

In this new wine a part of the liquor probably remains that has not fermented, and which afterwards ferments, but so very slowly, that none of the sensible effects produced in the first fermentation are here perceived. The fermentation, therefore, still continues in the wine, during a longer or shorter time, although in an imperceptible manner; and this is the second period of the spirituous fermentation, which may be called the imperceptible fermentation. We may easily perceive that the effect of this imperceptible fermentation is the gradual increase of the quantity of alkohol. It has also another effect no less advantageous, namely, the separation of the acid salt called tartar from the wine. This matter is, therefore, a second sediment, that is formed in the wine, and adheres to the sides of the containing vessels. As the taste of tartar is harsh and disagreeable, it is evident that the wine, which by means of the insensible fermentation has acquired more alkohol, and has disengaged itself of the greater part of its tartar, ought to be much better and more agreeable; and for this reason chiefly old wine is universally preferable to new wine.

But insensible fermentation can only ripen and ameliorate the wine, if the sensible fermentation have regularly proceeded, and been stopped in due time. We know certainly that if a sufficient time has not been allowed for the first period of the fermentation, the unfermented matter that remains, being in too large a quantity, will then ferment in the bottles, or close vessels, in which the wine is put, and will occasion effects so much more sensible, as the first fermentation shall have been sooner interrupted: hence these wines are always turbid, emit bubbles, and sometimes break the bottles from the large quantity of air disengaged during the fermentation.

We have an instance of these effects in the wine of Champagne, and in others of the same kind. The sensible fermentation of these wines is interrupted, or rather suppressed, that they may have this sparkling quality. It is well known that these wines make the corks fly out of the bottles; that they sparkle and froth when they are poured into glasses; and lastly, that

they have a taste much more lively and piquant than wines that do not sparkle: but this sparkling quality, and all the effects depending on it, are only caused by a considerable quantity of carbonic acid gas, which is disengaged during the confined fermentation that the wine has undergone in close vessels. This air, not having an opportunity of escaping, and of being dissipated as fast as it is disengaged, and being interposed betwixt all the parts of the wine, combines in some measure with them, and adheres in the same manner as it does to certain mineral waters, in which it produces nearly the same effects. When this air is entirely disengaged from these wines, they no longer sparkle, they lose their piquancy of taste, become mild, and even almost insipid.

Such are the qualities that wine acquires in time, when its first fermentation has not continued sufficiently long. These qualities are given purposely to certain kinds of wine, to indulge taste or caprice; but such wines are supposed to be unfit for daily use. Wines for daily use ought to have undergone so completely the sensible fermentation, that the succeeding fermentation shall be insensible, or at least exceedingly little perceived. Wine, in which the first fermentation has been too far advanced, is liable to worse inconveniences than that in which the first fermentation has been too quickly suppressed; for every fermentable liquor is, from its nature, in a continual intestine motion, more or less strong according to circumstances, from the first instant of the spirituous fermentation, till it is completely purified: hence, from the time of the completion of the spirituous fermentation, or even before the wine begins to undergo the acid or acetous fermentation. This acid fermentation is very slow and insensible, when the wine is included in very close vessels, and in a cool place; but it gradually advances, so that in a certain time the wine, instead of being improved, becomes at last sour. This evil cannot be remedied; because the fermentation may advance, but cannot be reverted.

Wine-merchants, therefore, when their wines become sour, can only conceal or absorb this acidity by certain substances, as by alkalis and absorbent earths. But these substances give to wine a dark greenish colour, and a taste which, though not acid, is somewhat disagreeable. Besides, calcareous earths accelerate considerably the total destruction and putrefaction of the wine. Oxide of lead, having the property of forming with the acid of vinegar a salt of an agreeable saccharine taste, which does not alter the colour of the wine, and which, besides, has the advantage of stopping fermentation and putrefaction, might be very well employed to remedy the acidity of wine, if lead and all its preparations were not pernicious to health, as they occasion most terrible colics, and even death, when taken internally. We cannot believe that any wine-merchant, knowing the evil consequences of lead, should, for the sake of gain, employ it for the purpose mentioned; but if there be any such persons, they must be considered as the poisoners and murderers of the public. At Alicant, where very sweet wines are made, it is the practice to mix a little lime with the grapes before they are pressed. This, however, can only neutralise the acid already existing in the grape.

If wine contain litharge, or any other oxide of lead, it may be discovered by evaporating some pints of it to dryness, and melting the residuum in a crucible, at the bottom of which a small button of lead may be found after the fusion: but an easier and more expeditious proof is by pouring into the wine some liquid sulphuret. If the precipitate occasioned by this addition of the sulphuret be white, or only coloured by the wine, we may know that no lead is contained in it; but if the precipitate be dark coloured, brown, or blackish, we may conclude that it contains lead or iron.

The only substances that cannot absorb or destroy, but cover and render supportable the sharpness of wine, without any inconvenience, are sugar, honey, and other saccharine alimentary matters; but they can succeed only when the wine is very little acid, and when an exceedingly small quantity only of these substances is sufficient to produce the desired effect; otherwise the wine would have a sweetish, tart, and not agreeable taste.

From what is here said concerning the acescency of wine, we may conclude that, when this accident happens, it cannot by any good method be remedied, and that nothing remains to be done with sour wine but to sell it to vinegar-makers, as all honest wine-merchants do.

As the *must* of the grape contains a greater proportion of tartar than our currant and gooseberry juices do, Dr. Ure has been accustomed, for many years, to recommend, in his lectures, the addition of a small portion of that salt to our *must*, to make it ferment into a more genuine wine. Dr. M'Culloch has lately prescribed the same addition in his popular treatise on the art of making wine.

The following is Brande's valuable table of the quantity of spirit in different kinds of wine: —

		Proportion of spirit per cent. by measure.
1.	Lissa	26·47
	Ditto	24·35
	Average	25·41
2.	Raisin wine	26·40
	Ditto	25·77
	Ditto	23·20
	Average	25·12
3.	Marsala	26·30
	Ditto	25·05
	Average	25·09
4.	Madeira	24·42
	Ditto	23·93
	Ditto (Sircial)	21·40
	Madeira	19·24
	Average	22·27
5.	Currant wine	20·55
6.	Sherry	19·81
	Ditto	19·83
	Ditto	18·79
	Ditto	18·25
	Average	19·17

7.	Teneriffe	19·79
8.	Colares	19·75
9.	Lachryma Christi	19·70
10.	Constantia, white	19·75
11.	Ditto, red	18·92
12.	Lisbon	18·94
13.	Malaga (1666)	18·94
14.	Bucellas	18·49
15.	Red Madeira	22·30
	Ditto	18·40
	Average	20·35
16.	Cape Muschat	18·25
17.	Cape Madeira	22·94
	Ditto	20·50
	Ditto	18·11
	Average	20·51
18.	Grape wine	18·11
19.	Calcavella	19·20
	Ditto	18·10
	Average	18·65
20.	Vidonia	19·25
21.	Alba Flora	17·26
22.	Malaga	17·26
23.	White Hermitage	17·43
24.	Rousillon	19·00
	Ditto	17·26
	Average	18·13
25.	Claret	17·11
	Ditto	16·32
	Ditto	14·08
	Ditto	12·91
	Average	15·10
26.	Malmsey Madeira	16·40
27.	Lunel	15·52
28.	Sheraaz	15·52
29.	Syracuse	15·28
30.	Sauterne	14·22
31.	Burgundy	16·60
	Ditto	15·22
	Ditto	14·53
	Ditto	11·95
	Average	14·57
32.	Hock	14·37
	Ditto	13·00
	Ditto (old in cask)	8·88
	Average	12·08
33.	Nice	14·63
34.	Barsac	13·86
35.	Tent	13·30
36.	Champagne (still)	13·80
	Ditto (sparkling)	12·80
	Ditto (red)	12·56
	Ditto (ditto)	11·30
	Average	12·61
37.	Red Hermitage	12·32
38.	Vin de Grave	13·94
	Ditto	12·80
	Average	13·37
39.	Frontignac	12·79
40.	Cote Rotie	12·32
41.	Gooseberry wine	11·84
42.	Orange wine — average of six samples made by a London manufacturer	11·26
43.	Tokay	9·88
44.	Elder wine	9·87
45.	Cider, highest average	9·87
	Ditto, lowest ditto	5·21
46.	Perry, average of four samples	7·26
47.	Mead	7·32
48.	Ale (Burton)	8·88
	Ditto (Edinburgh)	6·20
	Ditto (Dorchester)	5·56
	Average	6·87
49.	Brown stout	6·80
50.	London porter (average)	4·20
51.	Ditto small beer (ditto)	1·28
52.	Brandy	53·39
53.	Rum	53·68
54.	Gin	51·60
55.	Scotch whiskey	54·32
56.	Irish ditto	53·90

The wines principally used in medicine are, the *vinum album hispanicum*, or sherry, *vinum canarinum*, canary or sack wine, the *vinum rhenanum*, or Rhenish wine, and the *vinum rubrum*, or Port wine. These differ from each other in the proportion of their constituent principles, and particularly in that of alkohol, which they contain. The qualities of wines depend not only upon the difference of the grapes, as containing more or less of saccharine juice, and the acid matter which accompanies it, but also upon circumstances attending the process of fermentation. New wines are liable to a strong degree of acescency when taken into the stomach, and thereby occasion much flatulency and eructations of acid matter; heartburn and violent pains in the stomach from spasms are also often produced; and the acid matter, by passing into the intestines and mixing with the bile, is apt to occasion colics or excite diarrhœa. Sweet wines are likewise more disposed to become acescent in the stomach than others; but as the quantity of alkohol which they contain is more considerable than appears sensibly to the taste, their acescency is thereby in a great measure counteracted. Red port, and most of the red wines, have an astringent quality, by which they strengthen the stomach, and prove useful in restraining immoderate evacuations; on the contrary, those which are of an acid nature, as Rhenish, pass freely by the kidneys, and gently loosen the belly. But this, and perhaps all the thin or weak wines, though of an agreeable flavour, yet as containing little alkohol, are readily disposed to become acid in the stomach, and thereby to aggravate all arthritic and calculous complaints, as well as to produce the effects of new wine. The general effects of wine are, to stimulate the stomach, exhilarate the spirits, warm the habit, quicken the circulation, promote perspiration, and, in large quantities, to prove intoxicating, and powerfully sedative. In many disorders, wine is universally admitted to be of important service, and especially in fevers of the typhous kind, or those called putrid; in which it is found to raise the pulse, support the strength, promote a diaphoresis, and improve the state of the blood; and in many cases it proves of more immediate advantage than the Peruvian bark. Delirium, which is the consequence of excessive irritability, and a defective state of nervous energy, is often entirely removed by the free use of wine. It is also a well-founded observation, that those who indulge in the use of wine are less subject to fevers of the malignant and intermittent kind.

In the malignant sore throat, in the small-pox, when attended with great debility and fever of the typhous kind, in gangrenes, and in the plague, wine is to be considered as a principal remedy; and in almost all cases of languor, and of great prostration of strength, wine is experienced to be a more grateful and efficacious cordial than can be furnished from the whole class of aromatics.

Wing. See *Ala.*

Winged. See *Alatus*, and *Pinnatus.*

Winter's bark. See *Drimys Winteri*, in the *Supplement.*

Winter cherry. See *Physalis alkekengi.*

WINTERA AROMATICA. The tree which produces the true Winter's bark: so named after Captain Winter, who brought the bark from the Straits of Magellan, in 1579. It is now referred to the genus *Drimys.* See *Drimys Winteri* in the *Supplement.*

WINTERANUS CORTEX. Winter's bark. See *Drimys.*

Winteranus spurius. See *Canella alba.*

Woad. See *Isatis tinctoria.*

Wolf's-bane. See *Aconitum napellus.*

Womb. See *Uterus.*

Womb, inflammation of. See *Hysteritis.*

WOOD. *Lignum.* The hard fibrous substance of which the stems and branches of trees are principally formed. See *Lignum*, in the *Supplement.*

Woodcock. See *Scolopax rusticola.*

Wood-louse. See *Oniscus asellus.*

Wood-sorrel. See *Oxalis acetosella.*

Woody nightshade. See *Solanum.*

WOOLFE'S APPARATUS. A series of glass receivers used in distillation, where it is desired to condense separately the products which come over.

Woolly. See *Lanatus.*

Worm. See *Vermis.*

Worm-bark. See *Geoffræa Surinamensis.*

Worm-grass, perennial. See *Spigelia.*

Worm, guinea. See *Dracunculus.*

Worm, ring. See *Herpes.*

Wormseed. See *Artemisia.*

Wormwood. See *Artemisia.*

Wormwood, mountain. See *Artemisia.*

Wormwood, Roman. See *Artemisia.*

Wormwood, sea. See *Artemisia.*

Wormwood, Tartarian. See *Artemisia.*

WORT. An infusion of malt. This has been found useful in the cure of the scurvy. From one to four pints daily have generally been directed. The proportion recommended in preparing it, is one measure of ground malt to three equal measures of boiling water. The mixture must be well stirred, and left to stand covered three or four hours. It should be made fresh every day.

Wort, St. John's. See *Hypericum.*

Wort, St. Peter's. See *Hypericum.*

Wort, mug. See *Artemisia.*

WOUND. (*Vulnus, eris.* n.) A solution of continuity in any of the soft parts of the body, occasioned by external violence. Wounds are distinguished into *incised, punctured, contused, lacerated*, and *poisoned.* Wounds heal by *adhesion*, or *the first intention* (see *Inflammation*), or by *suppuration, granulation*, and *cicatrisation.* See *Abscess.* Incised wounds, in healthy subjects, will generally heal by the first intention, if properl treated. Wounds attended with slight laceration, and punctured wounds, will sometimes do the same. Severe lacerated wounds, contused wounds, and poisoned wounds, never heal in this manner. The consideration of *gun-shot* wounds forms a particular department of surgery. They were erroneously considered by the old surgeons as poisoned wounds: they are, in reality, *lacerated* and *contused* wounds.

Woundwort. See *Laserpitium.*

Wrapper. See *Volva.*

Wrinkled. See *Rugosus.*

Wrist. See *Carpus.*

WRYNECK. *Torticollis. Caput obstipum.* A permanent inclination of the head towards one of the shoulders, not arising from distortion of the vertebræ. It most frequently arises from a contraction of the integuments of the neck from burns, or cicatrices from other causes; but sometimes from a permanent contraction of the sterno-mastoid or platysma myoides muscle. It has sometimes been cured by a division of the muscles and integuments, with proper attention after the operation.

X.

XALA'PPA. (From the province of Xalappa, in New Spain, whence it comes.) Jalap.

XANTHIC ACID. An acid discovered by Zeise: so named from the yellow precipitate it forms with the solutions of several metallic salts.

XANTHIC OXIDE. A substance found by Dr. Marcet, in a urinary calculus, which gives a yellow product with nitric acid.

XA'NTHIUM. (*um, i.* n.; from ξανθος, yellow: so named because it is said to make the hair yellow.) The name of a genus of plants in the Linnæan system. Class, *Monœcia*; Order, *Pentandria.* The lesser burdock.

XANTHIUM STRUMARIUM. The systematic name of the lesser burdock. This herb, as its specific name implies, was once esteemed in the cure of scrofula, but, like most other remedies against this disease, proves ineffectual. The seeds are administered internally in some countries against erysipelas.

XA'NTHOGEN. The name given by Zeise to the supposed radicale of the hydroxanthic acid, which acid, however, he subsequently found to be an oxyacid. See *Hydroxanthic acid.*

XANTHORRHŒ'A. (From ξανθος, yellow, and ῥεω, to flow, on account of the yellow gum which exudes from it.) A genus of plants of the tribe *Asphodelidæ.*

XANTHORRHŒA HASTI'LIS. The grass tree of New South Wales, formerly called *Acaroïs resinifera.* This plant produces the Botany Bay gum. All the information that has been hitherto collected respecting the history of the yellow gum is the following: — The plant that produces it is low and small, with long grassy leaves; but the fructification of it shoots out in a singular manner from the centre of the leaves, on a single straight stem, to the height of twelve or fourteen feet. Of this stem, which is strong and light, like some of the reed class, the natives usually make their spears. The resin is generally dug up out of the soil under the tree, not collected from it, and may, perhaps, be that which Tasman calls "gum-lac of the ground." Mr. Boles, surgeon of the Lady Penrhyn, gives a somewhat different account; and as this gentleman appears to have paid considerable attention to the subject, his account may certainly be relied upon. After describing the tree in precisely the same manner as above, he observes, that at the top of the trunk of the tree, long grassy leaves grow in great abundance. The gum is found under these leaves in considerable quantities: it commonly exudes in round tears, or drops, from the size of a large pea to that of a marble, and sometimes much larger. These are, by the heat of the sun, frequently so much softened, that they fall on the ground, and in this soft state adhere to whatever they fall upon: hence the gum is frequently found mixed with dirt, wood, the bark of the tree, and various other substances; so that one lump has been seen composed of many small pure pieces of various sizes united together, which weighed nearly half a hundred weight. It is produced in such abundance, that one man may collect thirty or forty pounds in the space of a few hours. The convicts have another method of collecting it: they dig round the tree, and break off pieces of the roots, which always have some, and frequently a considerable quantity of the gum in them. This gum appears nearly, but not entirely, the same as that which exudes from the trunk of the tree; the former is often mixed with a strong smelling resinous substance of a black colour, and is so interwoven in the wood itself, that it is with difficulty separated. The latter appears a pure unmixed resinous substance.

Several experiments have been made, principally with the view of determining what menstrum would dissolve the gum the most readily, and in the greatest quantity, from which it appears alkohol and ether dissolve the most.

The diseases in which this resin is administered are those of the primæ viæ, and principally such as arise from spasm, a debility, a loss of tone, or a diminished action in the muscular fibres of the stomach and bowels, such as loss of appetite, sickness, vomiting, flatulency, heart-burn, pains in the stomach, &c., when they are really idiopathic complaints, and not dependent upon any disease in the stomach, or affections of other parts of the body communicated to the stomach. In debilities and relaxations of the bowels, and the symptoms from thence arising, such as purging and flatulency, it has been found of good effect. In certain cases of diarrhœa, however (and it seemed those in which an unusual degree of irritability prevailed), it did not answer so well, unless given in small doses, and combined with opiates, when the patient seemed to gain greater advantage than when opiates only were had recourse to. In cases of amenorrhœa, depending on (what most of those cases do depend upon) a sluggishness, a debility, and flaccidity of the system, this medicine, when assisted by proper exercise and diet, has, by removing the symptoms of dyspepsia, and by restoring the tone and action of the muscular fibres, been found very serviceable. This medicine does not, in the dose of about half a drachm, appear to possess any remarkably sensible operation. It neither vomits, purges, nor binds the belly, nor does it materially increase the secretion of urine or perspiration. It has, indeed, sometimes been said to purge, and at others to occasion sweating; but they are not constant effects, and when they do occur, it generally depends on some accidental circumstance. It should seem to possess, in a very extensive degree, the property of allaying morbid irritability, and of restoring tone, strength, and action to the debilitated and relaxed fibre. When the gum itself is given, it should always be the pure unmixed part; if given in the form of a draught, it should be mixed in water with mucilage of gum-arabic; if made into pills, a small portion of Castile soap may be employed: it was found the lixiv. sapon. dissolved it entirely. It is commonly, however, made into a tincture, by mixing equal parts of the gum and rectified spirit; one drachm of this tincture (containing half a drachm of the pure gum) made into a draught with water and syrup, by the assistance of fifteen grains of gum-arabic in mucilage, forms an elegant medicine, and at the same time very palatable. Botany Bay gum soon solidifies by the heat of the sun, into pieces of a yellow colour, of various sizes. It pulverises easily without caking; nor does it adhere to the teeth when chewed. It has a slightly sweet, astringent taste. It melts at a moderate heat. When kindled, it emits a white fragrant smoke. It is insoluble in water, but imparts to it the flavour of storax. Out of nine parts, six are soluble in water, and astringent to the taste; and two parts are woody fibre.

XERA'SIA. (*a*, *æ.* f.; Χηρασια; from ξηρος, dry.) A disease of the hair, in which it becomes dry, ceases to grow, and has the appearance of wool covered with dust. — *Galen.*

XEROCOLLY'RIUM. (From ξηρος, dry, and κολλυριον, a collyrium.) A dry collyrium.

XEROMY'RUM. (From ξηρος, dry, and μυρον, an ointment.) A dry ointment.

XEROPHTHA'LMIA. (*a*, *æ.* f. Ξηρος, dry, and ὀφθαλμια, an inflammation of the eye.)

A dry inflammation of the eye, with diminished secretion of tears.

XI'PHIAS. (From ξιφος, a sword.) The generic name of the sword-fish.

Xiphias gladius. The sword-fish. In Sicily this is eaten as a delicacy.

XI'PHIUM. (From ξιφος, a sword: so named from the sword-like shape of its leaves.) The *Iris pseudacorus*.

XI'PHOID. (*Xiphoides*; from ξιφος, a sword, and ειδος, likeness.) Sword-like: applied to parts which have some resemblance to an ancient sword; hence xiphoid cartilage. See *Cartilago ensiformis*.

Xiphoid cartilage. See *Cartilago ensiformis*.

Xyloaloes. See *Lignum aloes*.

Xylobalsamum. See *Amyris gileadensis*.

XYLOSTRO'MA. (*a*, *æ*. f.; from ξυλον, wood, and στρωμα, a layer: so called because it forms indeterminate expansions, like cloth or leather, in the inside of the trunks or branches of trees.) The name of a genus of plants. Class, *Cryptogamia*; Order, *Fungi*.

Xylostroma giganteum. Oak-leather. This fungus is found in the cracks of oaks, and is used in Ireland as a dressing for ulcers, and in Virginia to spread plasters on.

Y.

YAM. See *Dioscorea*.

Yarrow. See *Achillea millefolium*.

YAWNING. (*Oscitatio, onis*. f.) A phenomenon too common to require description. The physiology of yawning is not very obvious. It is attended with a forced inspiration, and hence stimulates the weary frame by an increased aëration of the blood; but this evidently is not all, and the rest remains to be explained.

YAWS. The name of a disease which is endemic in Africa and elsewhere. See *Frambœsia*.

Yellow fever. See *Remittent fever*.

Yellow saunders. See *Santalum album*.

YELLOW-WASH. Red-wash. A lotion made by adding corrosive sublimate to lime-water, in the proportion of two grains to an ounce. A portion of the corrosive sublimate is decomposed, and peroxide of mercury thrown down. So that the wash contains undecomposed bichloride of mercury, and muriate of lime, mixed with peroxide of mercury. It is in common use as an application to venereal sores.

Yest. See *Fermentum*.

Yoked leaf. See *Conjugatus*.

Yolk. See *Vitellus*.

Yorkshire sanicle. See *Pinguicula*.

Ypsi'loglo'ssus. (From υψιλοειδες, the ypsiloid bone, and γλωσσα, the tongue.) A muscle originating in the os hyoides, and terminating in the tongue.

Ypsi'loi'des. (From υ, the Greek letter, called *upsilon*, and ειδος, a likeness.) The os hyoides: so named from its likeness to the Greek letter upsilon.

Y'TTRIA. An earth, discovered in 1794, by Professor Gadolin, in a mineral from Ytterby, in Sweden, since named *Gadolinite*, and found to consist of yttria, silica, and the oxides of iron and cerium. Yttria is of a white colour, insipid, and inodorous. Specific gravity 4·842. It is insoluble in water and in solutions of the pure alkalis, but soluble in solutions of the alkaline carbonates and in the acids. Like other earths it has a metallic base, called *yttrium*, which was discovered by Wöhler in 1828. Yttria is a compound of this substance with oxygen, probably in the proportion of one equivalent of each.

YU'CCA. (*a*, *æ*. f.; *Yucca*, *Yuca*, or *Iucca*, of the original inhabitants of America.) The name of a genus of plants in the Linnæan system. Class, *Hexandria*; Order, *Monogynia*.

Yucca gloriosa. Adam's needle. The roots of this plant are thick and tuberose, and used by the Indians instead of bread, being first reduced into a coarse meal. This, however, is only in times of scarcity.

Z.

ZACCHARUM. See *Saccharum*.

Za'ffran. (Arabic.) Saffron. See *Crocus sativus*.

ZAFFRE. Saffre. The residuum of cobalt after the sulphur, arsenic, and other volatile matters of this mineral have been expelled by calcination.

Zaibac. (Arabic.) Quicksilver.

Za'rza. (Spanish for a briar.) A name of the root called sarsaparilla. See *Sarsaparilla*.

ZE'A. (*a*, *æ*. f.; a name borrowed from the ancient Greeks, whose ζεια appears to have been some kind of *Triticum* or *Hordeum*, agreeing with this genus only as being a grain cultivated for the use of man.) The maize.

Zea mays. The systematic name of the

Indian wheat plant, the common maize, or Indian corn, a native of America, and cultivated in Italy and several parts of Europe, for its grain, which is ground for the same purposes as our wheat. See *Wheat*.

ZEDOA'RIA. (*a*, *æ*. f.) 1. Zedoary.

2. The pharmacopœial name of a species of *Kæmferia*. See *Kæmpferia rotunda*.

ZE'INE. A yellow substance, having the appearance of wax, obtained from maize, or Indian corn.

ZE'RNA. A name given by some barbarous Latin writers to an ulcerated impetigo.

ZERO. The commencement of a scale marked 0: thus we say the zero of Fahrenheit, which is 32° below the melting point of ice; the zero of the centigrade scale, which coincides with the freezing of water. The absolute zero is the imaginary point in the scale of temperature, when the whole heat is exhausted: the term of absolute cold or privation of caloric.

ZIBE'THUM. (*um*, *i*. n.; from *Zobeth*, Arabian.) *Civetta*. Civet. A soft, unctuous, odoriferous substance, about the consistence of honey or butter, of a whitish, yellowish, or brownish colour, sometimes blackish, contained in some excretory follicles near the anus of the *Viverra zibetha*, of Linnæus. It has a grateful smell when diluted, and an unctuous subacrid taste, and is thought to possess stimulating, nervine, and antispasmodic virtues.

Zig-zag. See *Flexuosus*.

ZIMO'ME. (From ζυμη, *fermentum*.) The name given by Taddey, an Italian physician, to one of the constituents of wheat. See *Gluten, vegetable*.

ZINC. (*Zincum*, *i*. n., a German word.) A metal found in nature combined with oxygen, carbonic acid, and sulphuric acid; and mineralised by sulphur. Native oxide of zinc is commonly called *calamine*. It occurs in a loose and in a compact form, amorphous, of a white, grey, yellow, or brown colour, without lustre or transparency. Combined with carbonic acid, it is called *vitreous zinc ore*, or *native carbonate of zinc*. It is found in solid masses, sometimes in six-sided compressed prisms, both ends being covered with pentagons. Its colour is generally greyish, inclining to black. It is often transparent. *Sulphate of zinc* is found efflorescent in the form of stalactites, or in rhombs. *Sulphuret of zinc*, or *blende*, is the most abundant ore.

Metallic zinc is of a bluish-white colour, somewhat brighter than lead; of considerable hardness, and so malleable as not to be broken with the hammer, though it cannot be much extended in this way. It is very easily extended by the rollers of the flatting mill. Its sp. gr. is from 6·9 to 7·2. In a temperature between 210° and 300° of F., it has so much ductility that it can be drawn into wire, as well as laminated.

When broken by bending, its texture appears as if composed of cubical grains. On account of its imperfect malleability, it is difficult to reduce it into small parts by filing or hammering; but it may be granulated, like the malleable metals, by pouring it, when fused, into cold water; or, if it be heated nearly to melting, it is then sufficiently brittle to be pulverised.

It melts long before ignition, at about the 700dth degree of Fahrenheit's thermometer; and, soon after it becomes red-hot, it burns with a dazzling white flame, of a bluish or yellowish tinge, and is oxidised with such rapidity, that it flies up in the form of white flowers, called the *flowers of zinc*, or *philosophical wool*. See *Zinci oxidum*. These are generated so plentifully, that the access of air is soon intercepted; and the combustion ceases, unless the matter be stirred, and a considerable heat kept up. The white oxide of zinc is not volatile, but is driven up merely by the force of the combustion. When it is again urged by a strong heat, it becomes converted into a clear yellow glass. If zinc be heated in closed vessels, it rises without decomposition.

When zinc filings are put into water and atmospheric air, admitted hydrogen is evolved, and the metal becomes incrusted with a grey matter, which has been regarded by some as a suboxide, but which is more generally believed to be a mixture merely of the oxide with metallic zinc.

When zinc is burned in chlorine, a solid substance is formed of a whitish-grey colour, and semitransparent. This is the only chloride of zinc, as there is only one oxide of the metal. It has been called *butter of zinc*, and *muriate of zinc*.

Blende is the native sulphuret of zinc. The mineral, vegetable, and most of the acids act upon zinc; much hydrogen gas is extricated, and salts are formed. The salts used medicinally are the sulphate and acetate. See *Zinci sulphas*.

Zinc, vitriolated. See *Zinci sulphas*.

Zinci acetas. See *Acetas zinci*.

ZINCI OXIDUM. *Zincum calcinatum*. Oxide of zinc. Flowers of zinc. *Nihil album*; *Lana philosophorum*. Throw gradually little pieces of zinc into a large deep crucible placed obliquely, and made of a white heat, another crucible being placed over it, so that the zinc may be exposed to the air, and that it may be frequently stirred with an iron spatula: take out directly the oxide which is formed from time to time; then pass the white and lighter part of it through a sieve. Lastly, pour water upon this, that a very fine powder may be formed, in the same manner as chalk is directed to be prepared. The properties of this oxide are analogous to those of the sulphate (except that it is hardly active enough to excite vomiting), if given in larger doses; but it is more precarious in its effects; and chiefly used at present as an external astringent.

ZINCI SULPHAS. *Zincum vitriolatum*. *Vitriolum album*. Sulphate of zinc. White vitriol. This occurs native, but not sufficiently pure for medicinal use. It is thus prepared in the pharmacopœia: — Take of zinc broken to little pieces, five ounces; diluted sulphuric acid, two pints. Pour gradually the diluted acid on the zinc, and when the effervescence is over, filter the solution through paper; then boil it down till a pellicle appears, and set it by to crystal-

lise. This preparation is given internally in the dose of from ℈ j. to ℈ ss. as a vomit. In small doses it cures dropsies, intermitting headachs, and some nervous diseases; and is a powerful antispasmodic and tonic. A solution of white vitriol is also used to remove gleets, gonorrhœas, and for cleaning foul ulcers, having an astringent or stimulant effect, according to its strength.

Zincum. See *Zinc.*

Zincum calcinatum. See *Zinci oxidum.*

Zincum vitriolatum. See *Zinci sulphas.*

Zincum vitriolatum purificatum. See *Zinci sulphas.*

ZINGI. An ancient name of the stellated aniseed. See *Illicium anisatum.*

ZI'NGIBER. (*Zingiberis, is.* f. *Zingiber, eris.* n. *Zingiberi*, indec. Ζιγγιβερις, of Dioscorides, a name which the Greeks seem to have taken from the Arabians, when they got the plant.) The name of a genus of plants, according to Roscoe. Class, *Monandria*; Order, *Monogynia.*

ZINGIBER ALBUM. Ginger-root when deprived of its radicles and sordes.

ZINGIBER NIGRUM. The root of the *zingiber officinale* is so called when suffered to dry with its radicles and the sordes which usually hang to it.

ZINGIBER OFFICINALE. The systematic name of the ginger plant. *Zingiber album; Zingiber nigrum; Zingiber commune; Zinziber; Amomum zingiber.* The white and black ginger are both the produce of the same plant, the difference depending upon the mode of preparing them. Ginger is generally considered as an aromatic, and less pungent and heating to the system than might be expected from its effects upon the organ of taste. It is used as an antispasmodic and carminative. The cases in which it is more immediately serviceable are flatulent colics, debility, and laxity of the stomach and intestines; and in torpid and phlegmatic constitutions to excite brisker vascular action. It is seldom given but in combination with other medicines. In the pharmacopœias it is directed in the form of a syrup and a tincture, and in many compositions ordered as a subsidiary ingredient.

Zinziber. See *Zingiber.*

ZIRCO'NIA. Zircon. An earth discovered in the year 1793, by Klaproth of Berlin, in the Zircon or Jargon, a gem first brought from the island of Ceylon; but also found in France, Spain, and other parts of Europe. Its colour is either grey, greenish, yellowish, reddish-brown, or purple. It has little lustre, and is nearly opake. Zircon is likewise found in another gem called the hyacinth.

Zircon is a fine white powder, without taste or smell, but somewhat harsh to the touch. It is insoluble in water; yet, if slowly dried, it coalesces into a semi-transparent yellowish mass, like gum-arabic, which retains one third its weight of water. It unites with all the acids. It is insoluble in pure alkalies; but the alkaline carbonates dissolve it. The metallic base of this earth, named *zirconium*, was discovered by Berzelius, in 1824.

ZIZA'NIA. (*a, æ.* f.; an ancient name, ζιζανιον, of the Greeks, synonymous with the *lolium*, of the Latins.) The name of a genus of plants in the Linnæan system. Class, *Monœcia*; Order, *Hexandria.*

ZIZANIA AQUATICA. The systematic name of a reed, the grain of which is much esteemed in Jamaica and Virginia. The Indians are exceedingly fond of it, and account it more delicious than rice.

ZI'ZYPHUS. The jujubes were formerly so called. See *Rhamnus zizyphus.*

ZO'NA. (From ζωννυμι, to surround.) The shingles. See *Erysipelas.*

ZOOCY'STUS. (*us, i.* m.; from ζωον, an animal, and κυστις, a cyst, or bladder: so called because it is an animal formed like a bladder.) A zoocyst, or animal formed of membranous cyst distended with an aqueous fluid.

ZOO'LOGY. (*Zoologia, æ.* f.; from ζωον, an animal, and λογος, a discourse.) That part of natural history which treats of animals.

ZOO'NIC. (*Zoonicus*; from ζωον, an animal.) Appertaining to an animal substance.

ZOONIC ACID. In the liquid procured by distillation from animal substances, which had been supposed to contain only carbonate of ammonia and an oil, Berthollet imagined he had discovered a peculiar acid, to which he gave the name of zoonic. Thénard, however, has demonstrated that it is merely acetic acid combined with animal matter.

ZOONO'MIA. (*a, æ.* f.; from ζωον, an animal, and νομος, a law.) The laws of organic life.

ZOOPHYTE. (*Zoophyton, i.* n.; from ζωον, an animal, and φυτον, a plant, because the animals so called have some external resemblance to plants.) A term which has been very vaguely applied in natural history, and which it would be well to discard altogether. Cuvier calls all the radiated animals zoophytes.

ZOOTOMY. (*Zootomia, æ.* f.; from ζωον, an animal, and τεμνω, to cut.) The dissection of animals.

ZO'STER. (From ζωννυμι, to gird.) A kind of erysipelas which goes round the body like a girdle.

ZU'CHAR. (Arabic.) Sugar.

ZUMATE. A compound of the zumic acid with a salifiable basis.

ZUMIC. (*Zumicus*; from ζυμη, leaven.) Belonging to leaven.

ZUMIC ACID. *Acidum zumicum.* An acid produced from vegetable substances which have undergone the acetous fermentation. Its claim to be considered as a distinct compound is doubtful. See *Nanceic acid.*

ZYGO'MA. (From ζυγος, a yoke: because it transmits the tendon of the temporal muscle like a yoke.) The cavity under the zygomatic process of the temporal bone and os malæ.

ZYGOMATIC. (*Zygomaticus*; from *zygoma.*) Belonging to the zygoma.

ZYGOMATIC PROCESS. An apophysis of the os jugale, and another of the temporal bone, are so called.

Zygomatic suture. *Sutura zygomatica.* The union of the zygomatic process of the temporal bone to the cheek bone.

Zygomaticus major. This muscle arises from the cheek bone near the zygomatic suture, taking a direction downwards and inwards to the angle of the mouth. It is a long slender muscle, which ends by mixing its fibres with the orbicularis oris, and the depressor of the lip.

Zygomaticus minor. This muscle arises a little higher up than the zygomaticus major, upon the cheek bone, but nearer the nose; it is much more slender than that muscle, and is often wanting. It is the zygomatic muscle that marks the face with that line which extends from the cheek bone to the corner of the mouth, which is particularly distinguishable in some persons. The zygomatic muscles pull the angles of the mouth up as in laughter, and from, in this way, rendering the face distorted, it has obtained the name of distortor oris. The strong action of this muscle is more particularly seen in laughter, rage, or grinning,

ZYGO'PHYLLUM. (*um, i.* n.; from ζυγος, a yoke, and φυλλον, a leaf.) Each leaf of most of this species is composed of a pair of leaflets, yoked as it were together.

Zygophyllum fabago. This plant, called also *Fabaginea, Fabago, Capparis portulago, Capparis fabago*, and *Peplios lutetianorum*, is a good bitter, and much used by the Syrians as an helminthogogue.

Zytho'gala. (From ζυθος, beer, and γαλα, milk.) A mixture of beer and milk, forming the old beverage known by the name of *posset-drink.*

ZZ. The ancients signify *Myrrh* by these two letters, from ζμυρνη, a name for it common amongst them. They have also been used for *Zingiber.*

SUPPLEMENT.

ABDOMINA'LES. An order of fishes which have the ventral fins behind the pectoral.

ACANTHA'CEÆ. A natural family of plants of which the genus *Acanthus* is the type.

ACA'NTHOPTERY'GII. (From ακανθα, a spine, and πτερυξ, a fin.) An order of fishes which have fins furnished with hard and pointed rays.

ACERA'CEÆ. *Acerineæ.* A natural family of plants, of which the genus *Acer* is the type.

ACETAS FERRI. A compound of acetic acid and oxide of iron. It is ordered by the Dublin College, and is a mild and efficacious chalybeate. It is seldom used.

ACIDUM HYDROCYANICUM DILUTUM. Diluted hydrocyanic acid. The London College, in the last edition of their pharmacopœia, have very properly introduced a formula for a diluted hydrocyanic acid adapted for medicinal use. The directions are as follows: take of ferrocyanide of potassium, two ounces; sulphuric acid, an ounce and a half; distilled water, a pint and a half. Mix the acid with four fluid ounces of the water, and to these when cool and put into a glass retort, add the ferrocyanide of potassium, first dissolved in half a pint of the water. Pour eight fluid ounces of the water into a cooled receiver; then, the retort being fitted on, let six fluid ounces of acid, distilled with a gentle heat in a sand bath, pass over into this water; lastly, add six more fluid ounces of distilled water, or as much as may be sufficient, that 12·7 grains of nitrate of silver dissolved in distilled water may be accurately saturated by 100 grains of this acid.

Diluted hydrocyanic acid may be also prepared when it is more immediately wanted, from forty-eight grains and a half of cyanide of silver, added to a fluid ounce of distilled water, mixed with thirty-nine grains and a half of hydrochloric acid. Shake all these in a well-stopped phial, and after a short interval pour off the clear liquor into another vessel. Keep this for use, the access of light being prevented. The dose is from ♏ ij. to ♏ vj. or viij.

ACIDUM SULPHURICUM AROMATICUM. Aromatic sulphuric acid. The Edinburgh and Dublin Colleges give the following formula for this medicine. Take of alkohol, two pounds; sulphuric acid, six ounces. Drop the acid gradually into the alkohol. Digest the mixture with a very gentle heat in a covered vessel for three days; then add cinnamon bark bruised, an ounce and a half; ginger root bruised, an ounce. Digest again in a close vessel for six days; then filter through paper placed in a glass funnel. This preparation has generally been regarded as an imperfect ether, but Dr. A. T. Thomson regards it as merely an alkohol solution of the acid and oils. It is a good form for exhibiting sulphuric acid as a tonic, and may be advantageously combined with the decoction of cinchona. The dose is from ten to thirty minims twice or thrice a day.

Aconitum anthora. See *Anthora.*

ACONITUM LYCOCTONUM. A species of aconite which has the same poisonous qualities as the *Aconitum napellus.*

AGA'VE. The name of a genus of plants. Class, *Hexandria;* Order, *Monogynia.*

AGAVE AMERICANA. The American aloe. This plant abounds in a saccharine sap, which flows freely from incision made in the root or leaves, and from this sap the Mexicans prepare the alkoholic liquor called pulque. An absurd belief used to prevail that the American aloe blossomed only once in a century. It flowers like any other plant.

A'LÆ INGRA'SSII. The lesser pterygoid processes of the sphenoid bone, are so named after Philip Ingrassias.

ALPI'NIA. A genus of plants named in honour of Prosper Alpinus. Class, *Monandria;* Order, *Monogynia.*

ALPINIA CARDAMO'MUM. The plant which produces the lesser or common cardamom seeds. It was formerly referred to the genus *Amomum,* and had also a genus made for it under the name of *Matonia,* in honour of the late Dr. Maton. It is an East Indian plant, growing to the height of about twelve feet. Cardamom seeds have an agreeable aromatic flavour, which they owe to an essential oil. They yield their active matter to alkohol and ether, and less perfectly to water. They are in constant use as a stomachic and carminative, and enter into many officinal preparations. The dose of the powdered seeds is from five to twenty grains, but they are generally given in the form of the compound tincture. See *Tinctura cardamomi composita.*

AMBULANCE. A movable hospital attached to the French armies, provided with everything necessar for the care of the wounded.

Amygdaline. *Amygdalina.* A crystallisable principle found by MM. Robiquet and Boutron Charlard in the bitter almond.

Anacardium orientale. The plant which produces the Malacca bean, nearly resembling the Cashew nut.

Anæmia, partial. An account of the disease called anæmia, or bloodlessness, as it affects the whole system, has already been given in the article *Anæmia.* M. Andral has described certain local or partial forms of anæmia, which he has particularly observed in the brain, heart, liver, stomach, intestinal canal, and some of the voluntary muscles. The causes of partial anæmia are referred by M. Andral, 1. To diminution of a principal artery. 2. To certain states of the nervous system. 3. To hyperæmia, or sanguine plethora of other organs. 4. To a previous hyperæmia of the organ affected with anæmia. Lastly, in some cases the state of anæmia exists in particular organs, without our being able to trace it to any of the above causes.

ANANA'SSA. The name of a genus of plants. Class, *Hexandria*, Order, *Monogynia*; so named from the Peruvian word *Nanas*, a pine-apple.

Ananassa sativa. Formerly called *Bromelia ananas.* The pine-apple, generally considered the finest flavoured of all fruits. In tropical countries the pine-apple has been considered medicinal in diseases of the kidneys.

Andra'chne. *Adrachne.* Ανδραχνη. Αδραχνη. A name which has been given to a variety of plants, but chiefly to the *purslane — Portulaca oleracea* of Linnæus.

Antimonii potassio-tartras. The name given by the London College of Physicians in the recent edition of their pharmacopœia, to the emetic tartar, *antimonium tartarizatum* of the former pharmacopœia.

Aqua vitriolica camphorata. *Aqua camphorata.* Camphorated water. Take of white vitriol, Armenian bole, of each four ounces; camphor, an ounce; and powder them together. Sprinkle this powder, one ounce at a time, into four pounds of boiling water, and stir it briskly: then take it off the fire, and filter off the clear liquor. A preparation formerly much used as a detergent to ulcers and a collyrium in chronic ophthalmia.

Aqua naphæ. Orange-flower water.

Anomalies of organization. The expression used by M. Isidore Geoffroy de St. Hilaire, for what are generally called monsters. See *Monsters.* The study of these anomalies he calls *Teratology.* See *Teratology.* Various classifications of monsters have been published, from that of Fortunius Licetus, in his work *De Monstrorum Causis, Naturâ, et Differentiis*, first printed in 1616, to that of M. Breschet, in the article *Déviation Organique*, in the *Dictionnaire de Médecine.* The latter has been generally adopted in the present day; but the work of M. Isidore G. St. Hilaire, which has been recently completed, contains the most philosophical and extended classification of monsters, as well as the most ingenious views and elaborate investigation of the subject that have yet appeared. It was intended to have given a tabular view of his system, but the size to which the present edition of this Dictionary has grown, and the necessity for its immediate publication, oblige us to omit it, and refer the reader to M. St. Hilaire's work, entitled *Histoire Générale et Particulière des Anomalies de l'Organization chez l'Homme et les Animaux*, the first volume of which was published at Paris in 1832, and the last in 1836.

Aqua labyrinthi. A fluid contained within the labyrinth of the ear. See *Auris.*

Arbor saturni. Lead tree. If a piece of zinc be suspended in a solution of acetate of lead, metallic lead is deposited in an arborescent form upon the zinc. This is called *arbor saturni*, or the lead tree.

Arcus senilis. *Gerontoxon*, or more properly, *gerontotoxon. Leucoma gerontoxon.* An arched or circular opacity of the cornea, generally of a whitish colour; mostly found at the circumference of the cornea with a pellucid circle in the centre, and hence not impeding vision. — *Sauvages.* It occurs in old persons, and cannot be removed.

ARMENI'ACA. The name of a genus of plants. Class, *Icosandria*; Order, *Monogynia*: detached from the genus *prunus*, and called *Armeniaca*, because it was originally brought from Armenia.

Armeniaca vulgaris. *Prunus Armeniaca.* The apricot, a fine-flavoured and wholesome fruit, but less juicy than the peach or nectarine. There are very numerous varieties of the apricot.

Arteria centralis retinæ. A very small branch of the ophthalmic artery, which penetrates the substance of the optic nerve, and runs embedded within it till it arrives at the retina, on the internal surface of which it is dispersed in numerous minute branches. One branch passes through the vitreous humour to the posterior surface of the capsule of the crystalline lens.

Astakillos. *Araneum.* Names given by Paracelsus to a gangrenous ulceration of the feet and legs.

ATA'XO-ADYNA'MIC. (*Ataxo-adynamicus*; from αταξια, disorder, and αδυναμια, debility.) A term applied by the French to typhus fever — *fièvre ataxo-adynamique.*

Balsam of liquorice. A nostrum which, according to Dr. Paris, consists principally of Paregoric elixir, very strongly impregnated with oil of anise.

Baynton's adhesive plaster. This consists of six drachms of resin, melted with a pound of lead plaster.

Baynton's bandage. This consists in the application of strips of adhesive plaster round the leg in regular order, one above the other, and with their edges in contact. It is of the greatest use in indolent ulcers of the leg, and acts, both by approximating the edges of the ulcers to each other, and by its uniform pressure on the neighbouring parts.

Bellows sound. *Bruit de soufflet.* A sound resembling that which is produced by the action of a pair of bellows. It is heard in cases of enlargement of the heart, or contraction of its orifices. It is rarely constant, but ceases and

returns abruptly, often without any apparent cause. It sometimes exists in a heart that is perfectly healthy, especially in hysterical or highly nervous subjects. The same sort of sound, only sharper and more whizzing, is heard in different arteries, often without any assignable cause. It is always loud and distinct in cases of aneurismal varix. When the bellows sound, as heard at the heart, becomes somewhat rough to the ear, it passes into what is called the *rasp sound*. See *Rasp sound*.

BI'MANA. (From *bis*, twice, and *manus*, a hand.) An order of the class *Mammalia*, formed to receive the genus *homo*, man being the only animal that has two hands and no more, for all the other animals which have hands, as the monkeys, have in reality four hands, the lower pair of which are vulgarly called the feet.

Black drop. See *Gutta nigra*.

Boerhaave's red pill. A nostrum, the basis of which is cinnabar.

Boletus laricis. *Agaricus albus.* The agaric of the larch. It grows parasitically on the larch tree. The internal part of the fungus is light and friable, and has been used as a drastic purgative in the dose of one or two drachms in powder.

BONPLA'NDIA. (So named after M. Bonpland.) A genus of plants. Class, *Pentandria*; Order, *Monogynia*. The plant which produces the Angustura bark. It was formerly called *Cusparia febrifuga*. It is a lofty tree, growing in the forests of South America. The bark called *Angustura bark* and *Cortex cuspariæ*, is brought to Europe in flat pieces, gray and wrinkled externally, and yellowish brown and smooth within. Its taste is bitter and slightly aromatic. Water, assisted by heat, extracts its virtues, which do not appear to be dissipated by decoction. Proof spirit takes up all its active matter. It was originally introduced in the West Indies as a febrifuge, in which character it has failed. It is however a good tonic bitter, and has been found useful in typhoid fevers, chronic dysentery, &c. It may be given in powder in the dose of from ten to twenty grains. An infusion made with two drachms of the bark, to half a pint of water, may be exhibited in the dose of from one to three ounces three or four times a day. The Edinburgh College orders a tincture made with two ounces of the bruised bark to two pounds and a half of proof spirit: the dose is one or two drachms.

A few years since, Angustura bark got into undeserved disgrace from a spurious and poisonous bark being imported along with it, and mistaken for it. See *Brucea pseudo-ferruginea*, and *Brucia*.

Brodum's nervous cordial. A nostrum said by Dr. Paris to consist of gentian, columba, cardamom, and cinchona, with compound spirit of lavender and wine of iron.

Bro'ncho-hæmorrha'gia. (From βρογχος, the wind-pipe, and αἱμορραγια, a flow of blood.) A term applied by M. Andral to an exudation of blood from the bronchial membrane, as opposed to *pneumo-hæmorrhagia*, or hæmorrhage from the rupture of vessels in the lungs.

Bruit de frottement. See *Friction, sound of.*

Bruit de rape. See *Rasp sound.*

Bruit de soufflet. See *Bellows sound.*

Bu'tea frondo'sa. An East Indian leguminous plant, which yields a red astringent gum, which has been reckoned as a species of kino.

CALOPHY'LLUM. (From καλος, beautiful, and φυλλον, a leaf.) A tropical genus of plants, distinguished for the beauty of their leaves. Class, *Polyandria*; Order, *Monogynia*. The *Calophyllum inophyllum, tacamahaca, calaba*, and *spectabile*, afford a kind of tacamahaca, called *Mauritius tacamahaca*. They also yield an oil used for burning. That of C. *Calaba* is called *Oleum sanctæ Mariæ*, and is used also for the table.

CAMBO'GIA. (From Kamboja, a river of Siam, on the banks of which the tree that affords the gum grows.) Gamboge. A well known gum-resin, extensively used as a yellow pigment, and employed also in medicine. It has generally been thought to be the produce of the *Stalagmites cambogioides*; but there is reason to believe that the best is procured from a species of *Garcinia*, named accordingly *Garcinia cambogioides*. Several species of *Stalagmites*, however, as the *S. pictorius, cambogioides, Cochinchinensis*, and *elliptica*, afford a gum-resin differing very little from the genuine gamboge, and often substituted for it. Gamboge is obtained both by breaking the leaves and young shoots of the plants, and from incisions in the bark. According to M. Braconnot, gamboge contains one part of cerasine and four of resin. It is not known on what its cathartic power depends. Gamboge is a drastic, irritating, and hydragogue purgative, acting frequently also as an emetic. As a hydragogue it is best given along with bitartrate of potash, which both assists and mitigates its action. It is given as an anthelmintic combined with calomel. As a purgative merely, it is usually combined with rhubarb, or aloes, and aromatics. The *Pilula cambogiæ composita* of the pharmacopœia, is a convenient form for its administration. The dose of gamboge, in substance, is from two to six grains.

Ce'ntrum semicircula're ge'minum. The name given by Vieussens to the small band of medullary substance in the brain, more generally called *Tænia semicircularis*, which see.

Ce'ruline. *Cerulī'na.* If indigo be dissolved in concentrated sulphuric acid, and potash added to the solution, a substance of an intensely blue colour is precipitated. This consists of sulphate of potash, combined with a peculiar colouring matter, which, according to Berzelius, does not saturate any portion of the acid, but stands related to the salt in the same manner as water of crystallisation. The blue colouring matter of this salt is called *ceruline*. Mr. Crum first discovered the nature of this and similar salts, which he named *caruleo-sulphates*.

Cerusse of antimony. *Cerussa antimonii.* An old preparation, made by throwing into a crucible heated to a white heat, a mixture of one part of regulus of antimony and two of nitre, in successive portions, and then washing

the product with water to abstract the saline matter. The result is an oxide of antimony, which was given as a diaphoretic in the dose of from ten grains to a drachm.

Cetra'ria isla'ndica. The name now given to the species of liver-wort, formerly called *Lichen Islandicus*, or *Iceland moss*. It was formerly extolled as a specific in phthisis. Its real virtues are those of a mucilaginous demulcent, with a slight bitter and tonic property. It is given in the form of decoction. See *Decoctum lichenis*.

Chin cough. Kin cough. (According to S. Johnson, from the Dutch *kinken*, to pant or cough.) An old popular name of the hooping cough.

Chittick's remedy for stone. A fixed alkali dissolved in veal broth. A remedy in vogue half a century ago.

Chloro'xylon vertacilla'tum. A Peruvian plant which affords a green balsam.

Chymia'ter. The same as Iatrochemist. See *Iatrochymicus*.

Cinnabar of antimony. This name was given to the cinnabar formed during an old process for making butter of antimony, in which the muriate of mercury was employed. The cinnabar had no antimony in it, but was common cinnabar or sulphuret of mercury.

Citrate of ammonia. A salt formed by neutralising the sesqui-carbonate of ammonia with citric acid. It is a light diaphoretic.

Citrus limetta. The plant which produces the lime, a fruit resembling a small lemon. The juice has a very fine flavour, varying much in the different varieties.

Citrus paradi'si. The plant which produces the Paradise apple or forbidden fruit, so called from a whimsical notion that it was the fruit with which Eve was tempted. It somewhat resembles the shaddock.

Clairvoyance. The French name for one of those states produced by the imaginary agent called animal magnetism. See *Magnetism, animal*.

Colchi'cia. This name has been given to the alkali supposed to be the active principle of *colchicum*. Veratria was formerly believed to be the active principle of colchicum, as well as of the veratrum, but, according to Geiger and Hesse, this is an error.

Cold cream. *Ceratum Galeni*. This is generally made by melting together a pound of almond oil, and four ounces of white wax, pouring them into a warm mortar, and adding by degrees a pint of rose water. It is a common application to chapped lips, &c.

Confectio archi'genis. A Greek medicine, the same with the *Antidotus Paulina* of Aristarchus. See *Aristarchi Antidotus Paulina*.

Coria'ria myrtifo'lia. A poisonous plant, the leaves of which are used in tanning. In France fatal results have followed from the adulteration of senna with these leaves.

CO'RMUS. (*us*, *i.* m. Κορμος.) Properly a trunk or stem, but now generally applied in *Botany* to a solid bulb, as that of the *colchicum*.

Co'rnua sphenoida'lia. *Ossicula Bertini*. The *ossa triangularia* attached to the sphenoid bone.

Cotyle'don umbili'cus ven'eris. *Cotyledon umbilicus*. Navel-wort. The leaves of this plant have been esteemed emollient, and have been used as an external application to piles.

Cou'marine. A concrete volatile substance which constitutes the odoriferous principle of the Tonka bean. See *Dipterix odorata*.

Creasote. In conformity to usage, this word has been thus spelled in the present work, but it ought to be *creatosote*, the genitive of κρεας being κρεατος.

Cri de cuir. See *New leather sound*.

Crim evil. A disease believed to be endemic in the Crimea, though Guckenberger denies its existence in that country, and asserts its frequency in Astrachan. It seems to be allied to tubercular elephantiasis, and, like it, is intractable and fatal. It commences with fever and violet-coloured tumefaction of the face, followed by red spots or patches on the extremities and various parts of the body.

Davy's safety lamp. See *Carburetted hydrogen*.

DEVE'LOPMENT. The term development is sometimes used synonymously with *growth*, but it is highly necessary to correct physiological reasoning that they should be discriminated. The following observations on this subject are translated from the work of M. Isidore Geoffroy St. Hilaire on the anomalies of organisation: —

In that series of phenomena, hitherto so little observed, but in reality so worthy of attention, which, in a certain number of years, mark the transition from infancy to youth, and from this to adult age, we should carefully distinguish those connected with simple *growth* of the frame, from those which characterise its *development*. Growth results from the gradual augmentation of all parts of the body, quite independently of their number, structure, or functions: development, on the contrary, consists essentially in a modification, — a change more or less obvious. In simple growth, all the previous conditions of organs are preserved, except their volume: every true development, on the contrary, may be compared to the metamorphoses of the fœtus, though the changes be less extensive and remarkable. The first appearance of the deciduous teeth, that of the permanent teeth, and the period of puberty, are the three principal epochs of development in man, and the animals most nearly allied to him. After each of these, the general growth is usually more or less retarded. Thus, the growth is extremely rapid till the appearance of the first set of teeth; somewhat less so from this time till the appearance of the second set; and still a little less till the period of puberty; after which it undergoes a remarkable diminution. When, indeed, the individual has attained complete puberty, — that is to say, perfect aptitude for the generative functions, — the increase of stature becomes almost insensible, or is entirely arrested.

Growt and development, although essen-

tially distinct, have nevertheless a very intimate relation to each other. A certain degree of growth of the whole frame induces a new development, and every development, in its turn, indicates the termination of one period of growth, and the commencement of another, in which the growth proceeds more slowly; as if the apparatus newly developed had appropriated, and concentrated in itself, a great part of the formative energy, which was before more equally distributed among all the organs; or, (in more exact terms, and banishing the abstract phraseology too long used by anatomists,) because the apparatus newly developed necessarily diminishes the activity of the general nutrition, by the increased activity of its own.

These observations apply universally, as well to the earlier periods of development, as to that of puberty. If an infant is remarkable for the rapidity of its growth, and surpasses the ordinary dimensions at the age of two, three, or four months, the teeth almost always speedily appear; and it has even been sometimes observed, that, in very large children, the development of the teeth has preceded birth, or followed it almost immediately. On the other hand, where the general growth of an infant is unusually slow, there is almost always a corresponding retardation of the dentition.

The same remarks hold good with respect to the second dentition as the first; and a comparison of the different species of animals most nearly allied to man in their organisation, discovers the same constant relation between the rapidity of the general growth and the protrusion of the deciduous and permanent teeth. But it is especially between puberty and the general growth that an intimate and very remarkable relation subsists. It may be stated, in a general way, that very precocious growth induces also premature puberty, while complete puberty, in its turn, puts a stop to the general growth. Thus we find, as it were, a circle formed by a series of remarkable phenomena, of which one, resulting from that which precedes it, reacts upon the latter, and causes its cessation.

Dipsacus fullo'num. *Dipsacus sativus.* Fuller's teazle. The root of this plant is somewhat bitter. In France it passes for a diuretic and diaphoretic.

Dipsacus sylvestris. *Labrum veneris.* Wild teazle. The root has been esteemed antiscorbutic.

DI'PTERIX. A genus of plants of the Class *Didelphia*, and Order *Octandria*.

Dipterix odorata. The tree which produces the *Tonka*, or *Tonquin bean*. It is a large and fine tree, growing in the forests of Guiana, and is called by the natives *coumarou*. The wood has been used medicinally, with the same intentions as guaiacum. The beans contain a peculiar principle, named *Coumarine*. See *Coumarine*. They are used in this country to scent snuff, and in the West Indies and America are put into chests of clothes to preserve them from insects.

DRI'MYS. A genus of plants of the Class *Dodecandria*, and Order *Monogynia*.

Drimys Winteri. The plant which produces the Winter's bark, which was found very useful in curing scurvy among the crew of Captain Winter, who accompanied Drake in his voyage round the world. The bark was introduced into Europe by Captain Winter, in 1579. It has also been called *cortex Magellanicus*, because Winter brought it from the straits of Magellan. It is in long quills, somewhat thicker than those of cinnamon. It has a warm, aromatic, bitterish taste, and a pleasant spicy odour. The *canella alba*, or false Winter's bark, is often confounded with the true. The canella has very similar properties to the Winter's bark, and has now generally superseded it.

DYSENTERY. The view taken of this subject in the body of the work is somewhat antiquated; and the editor would gladly have supplied a new article had time permitted. One error in particular requires to be noticed. Dysentery is there spoken of as generally a contagious disease, whereas, in the present day, nobody believes it to be so, except when it occurs epidemically, in connexion with contagious fever.

EMBALMING. *Balsamatio. Conditura cadaverum.* A process by which a dead body is rendered capable of resisting putrefaction, and retaining its form and consistence, for an indefinite period of time. A body so prepared is called a *mummy*. The ancient Egyptians excelled all other people in the art of embalming.

Several processes were in use among them, which were costly or cheap, according to the circumstances of the deceased. These processes are learnedly descanted on by Mr. Pettigrew, in his excellent "History of Ægyptian Mummies," to which we refer the curious reader. Mummy was at one time a very prominent article of the Materia Medica. See *Mummy*.

ENTO'PHYTA. (From *εντος*, within, and *φυτον*, a plant.) Parasitical fungi growing on the surface, or within the substance, of other plants.

Epipastic silk. Vesicatory silk. Several preparations are sold under these names as substitutes for the common blister; they consist of some preparation of cantharides, spread on silk, and have no advantage over the blister plaster in common use.

Essence of sarsaparilla, compound. A preparation lately invented, which appears to possess all the virtues of the compound decoction in a concentrated form. Half an ounce of it is equal to about half a pint of the ordinary compound decoction. It is given diluted with water.

ETIOLA'TION. (From the French *étiolement*.) That state of plants in which they are pale and watery from the privation of light. It is sometimes applied also by medical writers to paleness of complexion in the human subject, arising from the same cause, or from chronic diseases.

EUCALY'PTUS. The name of a genus of plants. Class, *Icosandria*; Order, *Monogynia*.

Eucalyptus resini'fera. This species, which, as well as the others, grows in New South Wales, produces a gum resin which resembles kino, and is said to be equally efficacious.

Everlasting pills. Pills made of metallic antimony, which are intended to purge; but they must be nearly inert, since they can have no activity but from the slight degree of oxidation they may receive in the alimentary canal.

EXOSMO'SIS. (From $\epsilon\xi\omega$, without, and $\omega\sigma\mu\omega\varsigma$, impulsion.) The passage of liquids through the membranes of the living body from within outwards. The opposite of *endosmosis.*

EXTROVE'RSION. *Extroversio. Ecstrophia.* That kind of malformation in which a part is turned wrong side outwards. This occurs principally with reference to the urinary bladder. In the case called extroversion of the bladder, there is a congenital defect of the anterior part of the organ, and of the corresponding portion of the abdominal parietes, so that the internal or mucous surface of the bladder projects in the form of a red tumour above the pubes, in which two papillæ are observed, which are the orifices of the ureters.

Flores martiales. See *Ferri ammonio-chloridum.*

Fluctuation périphérique. A mode of detecting effusion of fluid within the abdomen lately introduced by M. Tarral. It consists in placing both hands on the abdomen, two or three inches apart, and with the two fore-fingers parallel, and then slightly striking the abdomen with the fore-finger of the right hand: this produces an undulation of the fluid, which is readily felt by the fore-finger of the left hand. The same result is obtained if the right hand be quite raised in giving the stroke, provided it be given obliquely as if brushing the surface. —*Piorry, Du Procédé Opératoire.*

Frémissement cataire. See *Purring tremour.*

Friars' balsam. The compound tincture of benzoin.

FRITILLA'RIA. A genus of plants. Class, *Hexandria;* Order, *Monogynia.*

Fritillaria imperialis. The crown imperial. A plant which grows wild in this country, and is also cultivated in gardens. The bulb has been used externally as a resolvent.

Galactode'ndron u'tile. The *Palo di Vaca,* or cow tree of South America. It belongs to a genus allied to *Brosimum.* The generic name is derived from $\gamma\alpha\lambda\alpha$, milk, and $\delta\epsilon\nu\delta\rho\sigma\nu$, a tree, and is applied to this tree because it yields, when tapped, an abundance of white liquid, which is wholesome and nutritious, and is used as milk.

GA'LBANUM. The umbelliferous plant which produces the gum resin called galbanum was formerly referred to the genus *Bubon;* but it has lately been constituted a distinct genus on the authority of Mr. Don, who calls the plant *Galbanum officinale.* It is a native of Persia. The gum resin, as we receive it, is in ductile masses, composed of whitish tears, agglutinated by a pale brown substance. When it is of a dark brown or blackish colour it is considered bad. All the specimens are generally mixed with stalks, seeds, and impurities. It agrees in its general properties with the gum resins, and its proper menstruum is proof spirit, which dissolves it slowly, but entirely. Galbanum possesses nearly the same medicinal qualities as assafœtida, but in an inferior degree. The dose is from ten grains to half a drachm, in the form of pills, or triturated into an emulsion with gum-arabic and water. It enters into several officinal preparations, as the *Pilulæ galbani compositæ, Emplastrum galbani,* &c.

GALIPE'A. The tree which produces the Angustura, or cusparia bark, is now referred by some botanists to a new genus, under the name *Galipea cusparia.* See *Bonplandia trifoliata.*

GARDE'NIA. A genus of plants of the Class *Pentandria,* and Order *Monogynia.* The roots of the *Gardenia dumetorum* are said by Ainslie to be emetic. The *Gardenia gummifera* affords the East Indian elemi, which exudes from its leaves and bark.

Garotillo. The name given to the malignant sore throat by the Spanish writers who first described it. See *Tonsillitis.*

GENERAL ANATOMY. The anatomy of the common textures of which the body is composed, as distinguished from *descriptive anatomy,* which regards the situation, shape, size, colour, connexions, and distribution of parts, without reference to the particular characters of the textures of which they are composed. General anatomy was first established as a distinct branch of the science by Bichat. See *Texture.*

HE'LIX. A class of molluscous animals of the Order *Pulmonea.* The snail. Several varieties of this animal have obtained reputation in the cure of phthisis, atrophy, &c. They were made into a decoction with milk or water, and seem to be in reality very nutritious. They are never used in the present day.

Henbane of Peru. An old name of tobacco.

HIPPO'MANE. A genus of plants of the Class *Monœcia,* and Order *Monadelphia.*

Hippomane mancinella. The manchineel tree. The milky sap is very acrid and poisonous, blistering and sphacelating the skin when applied to the surface of the body, and causing death when swallowed, or inserted into a wound. The Indians use it to poison their arrows. It has been generally asserted that a deleterious exhalation proceeds from this tree, which renders it dangerous to remain under its shade. MM. Jacquin and Ricord have, however, remained under the shade of the manchineel for several hours, and passed through forests of these trees without experiencing any bad effect.

HIPPO'MANES. ($\Imath\pi\pi o\mu\alpha\nu\epsilon\varsigma$, from $\imath\pi\pi o\varsigma$, a horse, and $\mu\alpha\iota\nu o\mu\alpha\iota$, to rage.) A name given by the ancients, 1. To a poisonous herb said to drive horses mad if they ate of it.

2. To the fluid which drops from the genital organs of the mare when desirous of the horse.

3. To masses of a gelatinous matter which

are found floating in the fluid of the allantois in mares. Great magical virtues were attributed to this substance, and it was much used in philtres or love potions.

Hooper's pills. These are said by Dr. Paris to be composed of the aloes and myrrh pill, with sulphate of iron, canella alba, and a portion of ivory black.

HYGIE'NE. The definition of this term given in the body of the work is faulty, but escaped the attention of the editor. Hygiene means that branch of medicine which relates to the preservation of health.

HYMENO'LOGY. (*Hymenologia*, from *ὑμην*, a membrane, and *λογος*, a discourse.) That branch of anatomy which treats of membranes.

Hy'stera-pe'tra. (From *ὑστερον*, the womb, and *πετρα*, a stone.) The ancient name of a stone which was said to resemble the uterus in shape, and supposed to act as an emmenagogue when bound on the thigh.

INHALATION. The drawing in of vapours or gases along with the breath. This is practised with a view to the immediate effect of certain substances on the mucous membrane of the air-passages. The vapours of the following substances have been employed in this way, by means of a simple contrivance called an *inhaler*, of which there are several modifications, unnecessary to be described here.

1. *The steam of hot water.* This is often very useful in slight cases of bronchitis, and sometimes allays the cough in phthisis. Various emollient substances have been added to the water, but these have little or no effect. Narcotic substances, as opium, the seeds of henbane, &c., have also been used to medicate the water, and a slight tincture of their virtues seems to be communicated to the steam, as they often produce drowsiness, and have more effect in allaying irritation than the simple vapour of the water. In slight inflammatory sore throat, the vapour of hot water gives great relief, and may be advantageously conjoined with a little vinegar.

2. *Tar vapour.* This was highly extolled by Sir Alexander Crighton as a remedy for phthisis, in the cure of which disease, however, it has entirely failed, as might have been anticipated. In chronic bronchitis this remedy has in many cases proved eminently useful, and the cases of supposed phthisis which have been cured by it have doubtless been of this nature. The vapour is procured by heating tar over a spirit lamp, having previously added a little carbonate of potash, to neutralise any pyrolygneous acid which the tar may contain.

3. *Chlorine gas.* This has been much extolled in France of late years, in the cure of phthisis. In England no such success has attended its use; it has, however, been found extremely serviceable in allaying dyspnœa. The inhalation should be continued for five or six minutes at a time, several times a day. In some cases it will not answer at all, but increases cough and irritation. The mode of exhibiting this remedy is to pour five drops of a saturated aqueous solution of chlorine into a proper glass inhaler, containing water at 86° Fahr., and let the patient inhale the vapour of the chlorine, along with that of the water. The quantity of the solution of chlorine may be gradually increased to forty drops.

4. *The vapour of iodine.* This also has been recommended in phthisis, but it appears to have less efficacy than chlorine. Its most obvious operation, is that of increasing the bronchial secretion.

5. Oxygen and hydrogen gases have been employed in the cure of asthma and phthisis; and carbonic acid, and nitrous oxide, in the latter disease. They are now deservedly discarded.

Intercalary days. *Dies intercalares. Dies intercedentes. Dies provocatorii.* Those days in the course of a fever in which there is an attempt at a crisis, which is seldom perfect or salutary; as the third, fifth, ninth, thirteenth, and nineteenth. See *Critical days.*

Ipecacuanha lozenges. These are made of ipecacuan, sugar, and mucilage of tragacanth. The proportion of ipecacuan is a quarter of a grain in some, and half a grain in others. They afford a very convenient means of exhibiting small doses of ipecacuan to act upon the bronchial membrane.

Jessop's well. A spring four miles from Epsom, in Surry. The water is sulphureous, and resembles that of Harrogate.

Juniperus oxycedrus. *Juniperus phœnicea.* Berry-bearing cedar. The wood of this plant yields by distillation the fetid oil called *huile de cade.* The substance called American olibanum exudes from this species of juniper.

Lac lunæ. A name of the agaric mineral.

Lac virgineum. *Lac virginis.* A name given, 1. To the *mercurius philosophorum*, a substance much talked of by the alchemists.

2. To an old preparation made by dissolving litharge, cerusse, and camphor, in vinegar, with the addition of water of solanum, of white lily, and of lettuce. It was named from its milky appearance, and its use by young women as a cosmetic.

3. To a mixture of the alkoholic solution of a balsam with water, by which the benzoic acid and the resin of the balsam are precipitated, and a milky appearance thus given to the mixture.

Lambdoides os. The os hyoides.

Lapis specularis. An old name of selenite or sparry gypsum, formerly used as a remedy for epilepsy and other diseases.

LIGNIN. The woody fibre which constitutes the fibrous structure of vegetable substances, and is the most abundant principle in plants. The different kinds of wood contain about 96 per cent. of lignin. It is prepared by digesting the sawings of any kind of wood successively in alkohol, water, and dilute muriatic acid, until all the substances soluble in the menstrua are removed.

Lignin has neither taste nor odour, undergoes no change by keeping, and is insoluble in alkohol, water, and the dilute acids. By digestion in a concentrated solution of pure potash, it is converted, according to M. Braconnet, into a substance similar to ulmin. Mixed with strong sulphuric acid it suffers decomposition,

and is changed into a matter resembling gum; and on boiling the liquid for some time the mucilage disappears, and a saccharine principle like the sugar of grapes is generated. M. Braconnot finds that several other substances which consist chiefly of woody fibre, such as straw, bark, or linen, yield sugar by a similar treatment. (An. de Ch. et de Ph. vol. xii.) Digested in nitric acid, lignin is converted into the oxalic, malic, and acetic acids.

The ligneous fibre was found by Gay-Lussac and Thenard to consist of carbon 51·43, oxygen 42·73, and hydrogen 5·82. According to Dr. Prout it contains 50 per cent. of carbon. — *Turner.*

Liquor anodynus vegetabilis. A mixture of equal parts of acetic ether, and highly rectified spirit of wine.

Longitudinal sinus, inferior. The small sinus situated at the lower margin of the falx cerebri. It receives the blood from the falx, and from the corpus Callosum and adjacent parts of the brain, and discharges it into the *torcular Herophili.*

Luz. *Lus.* The name of a bone in the human body, much celebrated in Rabbinical writings. It was supposed to be indestructible by any agency whatever, and to contain in it as it were the principle of the resurrection of the body. According to some, it was one of the vertebræ; according to others the sesamoid bone of the great toe, and according to others again, one of the triangular bones near the lambdoidal suture.

MARGARITIC ACID. An acid discovered by MM. Bussy and Lecanu, as one of the products of the saponification of castor oil. It is named from its pearly appearance.

METALLIC TINKLING. *Tintement metallique* of Laennec. An auscultatory sound heard where there exists within the chest, a preternatural cavity containing air, or when air is present in the cavity of the pleura. It resembles the sound produced by gently striking with a pin, a glass or metallic cup, or by letting grains of sand fall into a glass.

Laennec supposed that this sound was always indicative of the co-existence of pneumo-thorax empyema, and a fistulous communication between the pleura and the bronchi. It is now ascertained, however, that neither the effusion of a liquid, nor a bronchial fistula are necessary to its development, although these circumstances are most frequently co-existent with pneumothorax, and a fistulous opening is generally instrumental in the production of the sound. The metallic tinkling occurs as a sign of pneumothorax, or of a large excavation in the substance of the lungs, the former being the cause in a great majority of instances. There is a variety of the metallic tinkling called the *amphoric resonance* or *metallic resonance*—*bourdonnement amphorique* of Laennec: it resembles the sound produced by blowing quickly and forcibly into an empty decanter, or other large vessel with a small aperture. The two sounds above mentioned often pass into each other, or co-exist or alternate with each other, in the same case; generally speaking, however, the sound seems to partake more of the amphoric character, when the cavity containing the air is very large.

Mistura spiritus vini gallici. A compound directed in the recent London Pharmacopœia, consisting of brandy, cinnamon water, each four fluid ounces; the yolks of two eggs; refined sugar, half an ounce; and oil of cinnamon two minims. It is used as a stimulant in the last stage of low fever, and is well adapted to that purpose. The dose is from half an ounce, to an ounce and a half.

Morbid temperature. The natural temperature of the human body, as ascertained by a thermometer placed in the axilla or under the tongue, is generally from 96° to 98° Fahr. Various morbid causes produce considerable changes in the temperature of the body. Thus in the cold stage of ague, the temperature of the surface is much reduced, and in that of malignant cholera still more so. In the hot stage of fevers, on the contrary, the heat of the surface is considerably increased. In common continued fever, the heat of the surface is generally from 100° to 105° Fahr., and varies at different parts of the surface: in the inflammatory form of scarlet fever, the skin generally becomes hotter than in any other disease, the temperature having sometimes risen as high as 112°. The actual degree of morbid temperature is by no means indicated by the feelings of the patient, for in some diseases the individual will often complain of being hot when he feels very cold to the bystanders, and *vice versâ*: thus in the congestive stage of malignant cholera, the patient generally throws off the bedclothes, and complains of distressing heat, although to the touch he is as cold as marble; again at the commencement of fevers after the skin has become uniformly hot to the touch, the patient often complains of alternate heat and cold.

The subject of morbid temperature does not appear to have been sufficiently taken into consideration by physiologists, in connexion with that of animal heat in general. If we regard the phenomena of disease, we meet with almost insurmountable objections, to the theory of animal heat which is most generally received; namely that of Dr. Crawford, which connects it with respiration, and the conversion of arterial into venous blood in the capillary vessels. Confront this view of the subject with the following cases related by John Hunter.

Case I. A gentleman lying apoplectic whilst in bed, would become suddenly cold, and as quickly would become extremely hot: and here there was no alteration in the pulse or breathing.

Case II. A man lying comatose in consequence of injury to the brain, and breathing with only half his usual frequency, was yet extremely hot.

Case III. A boy, who appeared to be dying, breathed so slow that twenty-three seconds elapsed between each act of breathing; the pulse was weak and very slow; the body of purple hue, the blood not passing often enough through the lungs to acquire its scarlet hue: he was very warm, though in the midst of winter, and in a room without a fire.

Again it has been repeatedly observed in malignant cholera, that when the disease is within a few minutes of its fatal termination, when the surface has been deadly cold for hours, the pulse entirely extinct, and respiration almost so, the heat of the surface has suddenly returned, so that at the moment of death and for a short time after, it has been not at all below the natural standard in a state of health. Now in this case no heat can either be developed in the lungs, or become latent in the blood, by the process of arterialisation, because that process does not take place, the blood being as black as pitch; nor can any heat be evolved at the surface of the body, by the change of arterial into venous blood, because the circulation through the minute vessels does not go on; and, if it did, there is no arterialised blood to be changed. The fact here stated has been remarked by several writers, and has been frequently witnessed by the editor. The foregoing observations throw no light on what *is* the source of animal heat; but it seems to demonstrate pretty clearly, that respiration is not the only, nor the principal source.

Morbus cæruleus. Blue disease. A name given to that state produced by a congenital malformation of the heart, or its great vessels, in which the two sides of the heart have a direct communication with each other, so as to interfere with the proper aeration of the blood in the lungs. This may arise from the foramen ovale or ductus arteriosus remaining pervious, or from absence of the partition between the auricles or ventricles. The disease is named from the purple or livid colour of the skin, arising from the circulation of imperfectly arterialised blood.

MORI'NGA. A genus of plants. Class, *Diadelphia;* Order, *Decandria.*

Moringa a'ptera. The plant which produces the Ben nut. This nut affords an oil, which separates, on standing, into two parts, one of which bears a very low temperature without coagulating.

Mo'rphiæ ace'tas. Acetate of morphia. The present London Pharmacopœia directs this salt to be made as follows: — Take of morphia, six drachms; acetic acid, three fluid drachms; distilled water, four fluid ounces. Mix the acid with the water, and add the acid to saturation. Evaporate with a gentle heat, that crystals may be formed. Acetate of morphia is a very powerful and direct sedative. Its dose is from the fourth of a grain to a grain. Half a grain generally produces a full effect.

Mo'rphiæ citra'tis li'quor. Dr. Porter has introduced, under this name, a preparation made by digesting, for twenty-four hours, four ounces of opium, and two ounces of citric acid, in a pint of water. This, however, contains all the other principles of opium, as well as morphia. Dr. Magendie dissolves sixteen grains of pure morphia, and eight of citric acid, in an ounce of distilled water, and colours the solution with cochineal. The dose is from six to thirty drops during the day. The citrate of morphia appears to agree very much with the acetate in its operation.

Mo'rphiæ hydrochlo'ras. Hydrochlorate of morphia. Muriate of morphia. Take of opium, sliced, a pound; crystals of chloride of lead, two ounces, or as much as may be sufficient; purified animal charcoal, three ounces and a half; hydrochloric acid, distilled water, solution of ammonia, each as much as may be sufficient. Macerate the opium in four pints of distilled water for thirty hours, and bruise it; afterwards digest it for twenty hours more and press it. Macerate what remains again and a third time in water, that it may become free from taste, and as often bruise and press it. Evaporate the mixed liquors, with a heat of 140°, to the consistence of a syrup. Then add three pints of distilled water, and when the impurities have subsided pour off the supernatant liquor. Gradually add to this two ounces of chloride of lead, or as much as may be sufficient, first dissolved in four pints of boiling distilled water, till no further precipitate takes place. Pour off the liquor and wash what remains frequently with distilled water. Then evaporate the mixed liquors as before, with a gentle heat, that crystals may be formed. Press these in a cloth, then dissolve them in a pint of distilled water, and digest with an ounce and a half of animal charcoal, with a heat of 120°, and strain. Lastly, the charcoal being thoroughly washed, evaporate the liquors cautiously that pure crystals may be produced. To the liquor poured off from the crystals first separated, previously mixed with a pint of water, gradually drop in as much solution of ammonia, frequently shaking it, as may be sufficient to precipitate all the morphia. To this, washed with distilled water, add hydrochloric acid that it may be saturated: afterwards digest it with two ounces of animal charcoal and strain. Lastly, the animal charcoal being thoroughly washed, evaporate the liquors cautiously, that pure crystals may be produced. The muriate of morphia is considered, by some practitioners, as a more certain and direct sedative than the acetate. The dose is the same.

Morphiæ sulphas. Sulphate of morphia. This may be obtained by dissolving, with a gentle heat, pure morphia in diluted sulphuric acid: the salt is deposited on cooling in silky crystals. According to M. Magendie, the sulphate of morphia sometimes agrees with patients who cannot bear the acetate. The dose is the same as that of the acetate.

MUMMY. (*Mumia;* from the Arabic *mum*, wax.) An embalmed body. Egyptian mummy was highly esteemed for its medicinal virtues by the Arabian physicians, and subsequently a perfect rage for mummy prevailed in Europe. Avicenna declares it to be subtle and resolvent, useful in abscesses and eruptions, fractures, concussions, palsy, hemicrania, epilepsy, vertigo, hæmoptysis, diseases of the throat, cough, palpitation of the heart, weakness of the stomach, nausea, disorders of the liver and spleen, and internal ulcers; he also speaks of it as alexipharmic, and pronounces it to be the best of all remedies for contusions. Its great virtues in healing bruises and wounds were universally admitted; and it was prescribed by practitioners of all nations. The great demand for mummies, and the high price they

bore, induced the Jews to prepare all the dead bodies they could get, in such a manner as to resemble the ancient mummies, which they did by filling the cranium and other cavities with asphaltum, pouring the same substance into incisions made in the limbs, and binding them up; and lastly, exposing the bodies to the heat of the sun, whereby they were quickly dried. This factitious mummy was sold for the real; the Jews realised immense sums of money, and mummy retained its efficacy, till unfortunately, towards the latter end of the sixteenth century, the Christian slave of a Jew at Damietta, who carried on a great traffic in mummies, having been ill used by his master, disclosed the mystery of the mummies to the Pacha, who imprisoned the Jew, and extorted a heavy sum for his release. This was a signal for a universal demand upon the coffers of the Jewish manufacturers, and the traffic consequently ceased. The doctors found that they had been outwitted, and mummy went out of fashion.

Mu'sico-ma'nia. *Musomania.* A species of melancholy characterised by an extreme passion for music. Sauvage gives the specific name, *Muso-mania* to the variety of tarantism in which the patients were music-mad. See *Tarantism.*

Myra'copon. (Μυρακοπον; from μυρον, an ointment, and ακοπον, a remedy against weariness.) An ointment used by the Greeks to relieve lassitude and weariness.

NA'JA. A genus of highly venomous serpents.

Naja vulgaris. *Cobra de capello.* The hooded or spectacled snake. Of this there are numerous varieties, all natives of the East Indies. The bite of the cobra has been considered as more deadly than that of any other serpent; but its fatal effect seems to be hardly so rapid as that of the bite of the rattlesnake. They produce very similar symptoms, and are both almost inevitably fatal, unless the absorption of the poison be prevented by local means used instantaneously after the bite.

Naja hagè. The asp, or aspic. It is only since Napoleon's expedition to Egypt, that the true species of the asp has been distinguished: various Egyptian serpents have been confounded under this name.

The asp is, without doubt, a very deadly serpent; but the exact effects of its bite are hitherto little known. The ancients had a notion that the bite of the asp, though inevitably fatal, was attended by no pain or violent symptoms, and that the person bitten died in a state of profound sleep.

Ne'nuphar. An Arabic name of the white water-lily. See *Nymphæa alba.*

Nerium oleander. The rose laurel, rose bay, or South Sea rose. This plant is common throughout the south of Europe. The wood is poisonous. A decoction of the leaves or bark forms an acrid stimulating wash, which is used by the peasantry in the south of France to cure the itch and destroy vermin.

New leather sound. *Cri de cuir.* A sound somewhat resembling the creaking of the leather of a new saddle. It is believed to arise from the friction of the heart on the pericardium, when the polish of one or both surfaces has been destroyed by consolidated lymph. It is analogous to the sound of friction produced by the grating of the pulmonary on the costal pleura, when either is rendered rough by disease.

Nitric acid. The chemical relations of this acid have been already stated, but an account of its medicinal properties has been omitted. The diluted acid of the pharmacopœia is an excellent tonic, when administered internally, and has been found especially useful in chronic hepatitis. It has been observed also, especially in warm climates, to produce a degree of ptyalism, and sometimes actual salivation. It has been highly recommended in syphilis, but has not sustained its reputation. See *Syphilis.* It has probably done good in cases of venereal ulceration, in virtue of its being a general tonic and stimulant, for it frequently improves the aspect of indolent and ill-conditioned sores, which are not venereal. Nitric acid, combined with muriatic acid, and properly diluted, has been much used of late years as a bath, especially in cases of chronic hepatitis. The practice was introduced by Mr. Scott. See *Balneum.*

The undiluted nitric acid has been lately recommended by Mr. Welbank as an escharotic application to phagedenic ulcers. The surface of the sore is to be well cleansed and dried, and the surrounding skin protected by a thick coating of lard; then a pledget of lint, wetted with the acid, is to be pressed steadily on every point of the diseased surface: by this treatment a slough is formed, which, being cast off, the ulcer assumes a healthy aspect.

A lotion, consisting of two drachms of the diluted acid to a pint of water, is found useful in carious ulcers, and other indolent and ill-conditioned sores.

The dose of the diluted acid, taken internally, is from ten minims to a half drachm, in a cupful of water.

Nomenclature, anatomical. The terms above, below, inside, outside, can convey correct ideas of the relative position of the different parts of a body only while the body and all its parts remain in the same position; now this not being the case with the living animal body, infinite confusion arises from the use of such terms. The late Dr. Barclay, of Edinburgh, made a very praiseworthy attempt to introduce terms which should apply equally well in all positions of the body; and it is a great pity that his "Anatomical Nomenclature" has not been generally adopted, for it is very simple, and admirably suited to the end in view. The following table exhibits the names given by Dr. Barclay to the different aspects of the body: —

1. *Aspects of the head, neck, and trunk.* — A perpendicular plane, dividing the body in halves, is called the *mesial plane.* The aspect of any part looking towards this plane, is called its *mesial* aspect; the aspect of a part looking to the right of this plane is its *dextral* aspect, and to the left its *sinistral* aspect.

2. Aspects of the head: —

Inial. Looking towards the occiput (ινιον).

Coronal. Towards the crown of the head.
Basilar. Towards the base of the skull.
Glabellar or *antinial.* Toward the space between the eyebrows.

3. Aspects of the neck and trunk: —
Atlantal. Looking towards the atlas.
Sacral. Towards the sacrum.
Dorsal. Towards the back.
Sternal. Towards the sternum.

4. Aspects of the four extremities: —
Proximal. Looking towards the end nearest the trunk.
Distal. Towards the end furthest from the trunk.

5. Aspects of the atlantal extremities: —
Radial. Looking towards the radius.
Ulnar. Towards the ulna.
Anconal. Towards the *ancon* or olecranon.
Thenal. Towards the palm of the hand (θεναρ).

6. Aspects of the sacral extremities: —
Tibial. Looking towards the tibia.
Fibular. Towards the fibula.
Rotular. Towards the *rotula* or patella.
Popliteal. Towards the *poples* or ham.

7. Terms of aspect common to the head, neck, trunk, extremities, and viscera: —
Dermal. Looking towards the skin.
Peripheral. Towards the circumference.
Central. Towards the centre.

All these adjective terms are converted into adverbs by substituting *d* for the terminal *l*, or *r*.

Thus, what is generally called the *upper* surface of the diaphragm, is the *atlantal* surface; and adverbially that surface is said to be situated *atlantad.*

The under surface of the brain is its *basilar* surface; and adverbially it is said to be situated *basilad.*

These adverbs are not particularly euphonic; but that is of little consequence.

OLEUM MACIS STILLATITIUM. Distilled oil of mace. An essential oil obtained by distillation from mace. It is of a pale lemon colour, and has the smell of the spice. It is different from the oil commonly called oil of mace, which is a fixed oil obtained by expression from the nutmeg. See *Oleum macis.* There is yet another oil of mace, which is expressed from the mace itself. It is of a red colour, and is more liquid than the nutmeg oil. It is called *true oil of mace, by expression; oleum macis expressum verum.*

OPHTHALMIC ARTERY. A branch of the internal carotid, which enters the orbit through the foramen opticum. It runs at first below and outside of the optic nerve, and then passes above and inside of it to the inner wall of the orbit, along which it runs to the corner of the eye and root of the nose. It gives off the *lachrymal branch* to the lachrymal gland; the *centralis retinæ* to the retina; the *supra orbital,* which passes out at the supra-orbitary foramen, to the forehead; the *ciliary* to the choroid membrane and ciliary processes; *muscular* branches to the muscles of the eyeball; two *ethmoidal* branches, one passing through the posterior internal orbitary foramen, and the other through anterior; *palpebral* branches, to the eyelids; the *nasal* branch, which goes to the root of the nose, where it inosculates minutely with the termination of the facial artery; lastly, the *frontal,* which first runs close to the nasal, and then turns upwards on the forehead, where it anastomoses with the supra-orbital.

OPOPANAX CHIRONIUM. The plant which affords the opopanax of commerce, formerly called *Pastinaca opopanax*, is now referred to a new genus under the above name. Opopanax is a gum-resin which exudes from incisions made in the roots of the plant, and is dried in the sun. It is imported from Turkey and the East Indies. It has been used as an antispasmodic and emmenagogue, but is now seldom prescribed. Dose from ten grains to half a drachm.

PANIS SANCTI MARCI. *Martius panis. Pasta regia.* This name was given to small cakes made of decorticated almonds, sugar, and rose water. They are said to have been made in memory of a dreadful famine which occurred in Saxony in 1407.

PANIS MARTIUS LAXATIVUS SENNERTI. A paste made of almonds, melon seeds, white mechoacan, white sugar, prepared hartshorn, mucilage of tragacanth, and rose water. It was used as a laxative, and particularly recommended in dysentery. Dose six drachms or more.

PESTIS NIGRA. *Black pestilence. The black death.* A most destructive pestilence which occurred in the fourteenth century. It originated in Asia, and traversed the whole of the world then known. The mortality arising from it was so great, that one fourth of the human species are calculated to have fallen victims to it. It was an intense form of the Oriental plague, characterised, like it, by buboes and carbuncles. It received its epithet of black on account of the black petechiæ which appeared on the skin. The fever seems to have been everywhere complicated with a typhoid pneumonia. Dr. Hecker, in his "Epidemics of the Middle Ages," has given a full and interesting account of this pestilence, which was the most severe that has ever ravaged the world.

PHLEBITIS. (From φλεψ, a vein, and *itis*, the terminal denoting inflammation.) Inflammation of a vein. Veins are liable to two forms of inflammation, namely, the *circumscribed* and the *diffuse.* The first occurs only from injuries, and we have continual examples of it in the healing of wounded veins, which takes place by adhesive inflammation, as in other textures. The diffuse inflammation of veins may arise spontaneously, or from injuries. It has most frequently been observed in consequence of the operation of venesection. A striking instance of its idiopathic occurrence is presented in the case of uterine phlebitis. See *Puerperal fever.* The veins of the brain have been found inflamed by Abercrombie, and Gendrin, and the veins in various other parts of the body have occasionally been similarly affected.

Diffuse inflammation of veins gives rise to the most formidable symptoms. The patient is

affected with adynamic fever, and extreme restlessness, anxiety, and depression. Severe and frequent rigors take place, and secondary inflammations occur in various parts of the body, which terminate rapidly in effusion of pus or lymph; more frequently the former. The cellular membrane, the joints, the eye, and the substance of the viscera, are the most frequent seats of the secondary inflammation: the lungs are especially liable to become affected. Diffuse inflammation of veins generally terminates in death, preceded by a highly typhoid state; a black tongue, fluttering pulse, and low delirium. It was, till lately, supposed that the fatal effects of inflammation of a vein arose from the extension of the diseased action to the heart; but it is now ascertained that the bad symptoms arise from the introduction of pus into the blood, which acts as a poison, and is a frequent cause of abscess in the viscera and other parts. It has been further proved that the abscesses in the viscera, joints, &c., which occasionally follow great surgical operations, and which have hitherto appeared so unaccountable, have their real origin in phlebitis. Diffuse inflammation of veins, though generally suppurative, is not necessarily so; and veins, as well as arteries, have sometimes had a portion of their canal obliterated by adhesive inflammation. The treatment of diffuse phlebitis, arising from injury, must at first be decidedly antiphlogistic, as the only chance of preventing suppuration and its formidable consequences resides in the early subjugation of the inflammatory action. Leeches should be applied very numerously and repeatedly along the course of the inflamed vein; and the arm, or other part affected, covered with cold lotions, or emollient or saturnine poultices, according to circumstances. Saline purgatives and diaphoretics should be administered, and a low diet, and absolute rest, enjoined. It is not easy to determine how far general bleeding is likely to be serviceable in this case, because, although it be the most powerful of all the means of arresting the primary inflammation, it is calculated rather to accelerate than to retard the progress of suppuration, if this have actually commenced in any part distant from that first affected. When pus has been taken into the blood and contaminated the whole system, and given rise to secondary suppuration, much need not be said about the treatment, as the evil is quite beyond our control. The only remedies indicated are stimulants, opium, &c., as in the worst form of typhus.

PHLE'BOLITE. (*Phlebo'lithus;* from φλεψ, a vein, and λιθος, a stone.) A venal calculus. Small calculi, varying in size from that of a millet seed to that of a pea, have been found in different veins, most frequently in those of the uterus, bladder, prostate gland, and rectum. They appear to be generally of an oval form, a yellow colour, and concentric lamellated texture. According to the observations of John, Gmelin, and Prout, they consist chiefly of carbonate and phosphate of lime, and animal matter. Various opinions have been entertained as to the mode of their formation. The observations of Dr. Carswell seem to be decisive in favour of their being gradually deposited from the blood.

PLOMBIE'RES. A town in the department of Vosges, in France, which has several mineral springs. One of them is called *Savonneuse*, soapy, from the appearance of the water. It contains subcarbonate, sulphate, and muriate of soda, silica, carbonate of lime, and much vegetable and animal matter. The waters of Plombieres are used as deobstruents in obstructions of the abdominal viscera, and alteratives in chronic cutaneous diseases.

POLYGA'MIA. The twenty-third class of Linnæus's sexual system of plants. In the article Polygamia, in this Dictionary, the orders of the class are incorrectly stated, those of the class Syngenesia having been substituted for them. The orders of the class Polygamia are, *Monœcia*, *Diœcia*, and *Triœcia*. See *Vegetable kingdom*.

Porus opticus. A small foramen in the sclerotic coat of the eye, which gives passage to the central artery of the retina. See *Oculus*.

Potassæ carbonatis liquor. *Liquor potassæ subcarbonatis. Aqua kali. Lixivium tartari. Oleum tartari per deliquium.* Solution of carbonate of potash, formerly called *oil of tartar*. Take of carbonate of potash, twenty ounces; distilled water, a pint. Dissolve the carbonate of potash in the water, and strain. Dose from ♏ x to ʒ ij.

Potassæ hydras. *Potassa fusa. Kali purum. Lapis infernalis. Lapis septicus. Causticum commune acerrimum.* Hydrate of potash. Fused potash. Take of solution of potash, a gallon. Evaporate the water in a clean iron vessel over the fire, until, the ebullition being finished, the hydrate of potash melts; then pour it into proper moulds. This is a stronger caustic than the potassa cum calce, but more deliquescent, and therefore less manageable. The potassa cum calce is more generally used.

Potassii chlo'ridum. Chloride of potassium. Muriate of potash. Hydrochlorate of potash. *Sal febrifugus Sylvii. Sal digestivus.* This salt is laxative and diuretic. It was formerly in high esteem for the cure of intermittents. Dose twenty grains.

Pulvis ad guttetam. A celebrated antiepileptic powder formerly in use. It consisted of the roots of cassumuniar, dittany of crete and of peony, missletoe, and seeds of peony, of each half an ounce; human skull, elk's hoof, of each three drachms; castor, red coral, of each two drachms; root of wild valerian, one ounce; with three drops of volatile oil of rue, received on sugar.

Pulvis viennensis albus virgineus. *Arcanum album. Bezoarticum lunare. Nives mariæ. Panacea mineralis specificum virgineum.* A powder made by calcining in a crucible one part of *Glacies mariæ* (fibrous amianthus), and two of *Lapis specularis*, rubbing them together, separating the finer part by washing with water, and drying. It was once in vogue as a refrigerant.

Purring tremor. *Bruissement* of Corvisart. *Frémissement cataire* of Laennec. A peculiar

vibration communicated to the hand, in those states of the heart or arteries in which the *bellows*, or *rasp sound*, is detected by the ear. According to Dr. Hope, the purring tremor, though resulting from the same causes as these sounds, requires a stronger current for its production, whence it more frequently accompanies the passage of the blood from the ventricles into the arteries, or, by a retrograde movement, from the ventricles into the auricles, than its passage from the auricles into the ventricles: hence also it is seldom strong, unless the ventricle be hypertrophied, or the circulation hurried. It very much resembles the vibration produced by the purring of a cat, whence its name.

RASP SOUND. *Bruit de râpe.* An auscultatory sound, resembling that caused by the action of a rasp on a piece of wood. A still rougher sound of the same kind, is called *Bruit de scie, Saw sound.* These sounds originate from the same causes as the *bellows sound*, and the three pass into each other by insensible gradations, the difference being merely in the roughness of the sound: the rasp and saw sounds, however, require the presence of the cause in a more intense degree; hence they are more distinctly indicative of disease, while the bellows sound is often heard where the heart is perfectly healthy: the rougher sounds, however, also exist sometimes independently of any organic lesion. The rasp and saw sounds are most frequently connected with contraction of the orifices of the heart from disease of the valves.

Rhamnus infectorius. The plant which produces the grains of Avignon, used as a yellow die. The berries of several other species are used for the same purpose, and Turkey berries are preferred as being larger. The unripe berries are used by the dyers. The ripe berries are purgative.

Rhamnus paliu'rus. *Paliurus aculeatus.* Christ's thorn. The seeds are said to be diuretic, and the leaves astringent.

Riga balsam. The same as the Carpathian balsam. See *Balsamum carpathicum.*

Salvia lyrata. Cancer weed. The radical leaves of this plant, bruised, have been used as an application to cancers and to warts.

Sapo sapientiæ. An alchemical preparation of common salt. — *Ruland.*

Sarsaparilla. In the article on this drug, the observations on its antisyphilitic powers are such as passed current when mercury was believed to be an all powerful specific, and syphilis a disease which never underwent a spontaneous cure. The real efficacy of sarsaparilla in syphilis, seems to be much the same as in other cachectic diseases: it is sometimes very useful, but nobody now believes it to have any specific virtue.

SIGAULTIAN OPERATION. The division of the *symphysis pubis*, with a view to increase the capacity of the pelvis in cases of impracticable labour. It is named from a French surgeon named Sigault, who first performed it. It is entirely discarded.

Smi'lacine. *Smilacina.* An alkaline substance found by Folchi in the inner part of the root of the *smilax sarsaparilla.*

Sodæ chloras. Chlorate of soda. This may be prepared in the same manner as the chlorate of potash, by substituting soda for potash; but it is not easy to obtain it separate, as it is nearly as soluble as the muriate of soda, requiring only three parts of cold water. In its other properties it resembles the chlorate of potash.

Sphæranthus indicus. *Adaca.* A plant of Malabar which is acrid and aromatic. The leaves are used internally against the colic, and externally against the piles and the itch.

SPU'TA. (*Sputum*, *i.* n.; from *spuo*, to spit.) The matters discharged by expectoration from the air-passages. The quantity and characters of the sputa are variously modified in different diseases, and hence form one of the grounds of diagnosis. Thus, in *acute bronchitis*, there is generally at first a diminution of the natural secretion; then, when the inflammation is at its height, a transparent, ropy, viscid matter, sometimes streaked with blood, is expectorated with much effort, and with no relief to the patient; lastly, when the inflammation is declining, the sputa become opake, yellow, or greenish white; they are easily brought up, and the expectoration gives great relief. In *chronic bronchitis* the matters ejected are very various, according to the degree of inflammation from which they result, and which is continually changing with the state of the atmosphere, and is different in different parts of the same membrane at one and the same time. It is therefore viscid and ropy, thin and serous, purulent, or tinged with blood. It is sometimes highly fœtid, a state which has been considered as diagnostic of dilated bronchial tubes. In *acute pneumonia*, the matter expectorated is of a rusty colour and viscid, and as the inflammation reaches its height, becomes almost gelatinous. This state of the sputa is very diagnostic of pneumonia. In *tubercular phthisis*, expectoration is either absent in the first stage, or resembles that of bronchitis. In the second or suppurative stage of phthisis, the sputa present the variable characters of those of chronic bronchitis, with some peculiarities, which however are not particularly to be depended on as aids in diagnosis. Fine whitish streaks are often seen, which consist of softened tubercular matter, or small yellowish white masses of crude tubercular matter. Globular, yellowish white masses, apparently composed of pus held together by viscid mucus, have been thought characteristic of phthisis, but they occur also in chronic bronchitis. In the advanced stage of phthisis, when the excavations in the lungs have attained some size, masses of matter of a greenish white or brown colour are spit up, which, from their outline, have the appearance of having filled irregular cavities. Sputa of this kind flatten at the bottom of the vessel into the shape of a piece of money, whence they have been called *nummulary* sputa. These are more characteristic of phthisis than any of the preceding varieties. In a few instances, small

portions of the substance of the lungs have been discharged along with them.

SPHYGMO'METER. (From *σφυγμος*, the pulse, and *μετρον*, a measure.) An instrument invented by M. Herisson, to render the force and frequency of the pulse appreciable to the eye.

Sympathetic ointment. See *Unguentum armarium.*

SYMPATHETIC POWDER. A powder composed of vitriol effloresced by exposure to the heat of the sun, to which some added the usnea of the human skull. It was believed to heal wounds, if it only touched the blood which flowed from them. Sir Kenelm Digby wrote a book full of absurdities about this powder.

TEMPERAMENT. Four temperaments were acknowledged by the ancients, namely, the *sanguine*, the *choleric*, the *phlegmatic*, and the *melancholic*; to these modern physiologists add the *nervous*. The following account of the temperaments is taken from Professor Richerand.

Of the sanguine temperament. — If the heart, and the vessels which carry the blood through every part, are of predominant activity, the pulse will be sharp, frequent, regular, the complexion ruddy, the countenance animated, the shape good, the form softened though distinct, the flesh of tolerable consistence and moderate plumpness, the hair fair and inclining to chestnut; the nervous susceptibility will be lively, and attended with rapid *successibility*, that is to say, that being easily affected by the impressions of outward objects, men of this temperament will pass rapidly from one idea to another; conception will be quick, memory prompt, the imagination lively; they will be addicted to the pleasures of the table and of love, will enjoy a health seldom interrupted by disease, and all their diseases, and these slight, modified by the temperament, will have their seat principally in the circulatory system, as inflammatory fever, the different phlegmasiæ, and active hemorrhage, and will terminate, when moderate, by the mere force of nature, and require the use of the remedies called antiphlogistic, among which bleeding is the chief. The ancients applied the name of *sanguine* to this disposition of body; they considered it as produced by the combination of warmth and moisture, and had very correctly perceived that it existed in the young of both sexes, and was heightened by the spring, the season which has been justly compared to youth, calling that age the spring-time of life.

That the specific characters of the temperament just described may show themselves in all their truth, it is requisite that the moderated development of the lymphatic system coincide with the energy of the sanguiferous system, so that these two sets of vascular organs may be in true equipoise.

If men of this temperament apply themselves, from circumstances, to labours which greatly exert the organs of motion, the muscles, plentifully supplied with nourishment, and disposed to acquire a development proportioned to that of the sanguiferous system, increase in bulk, the sanguineous temperament undergoes a great modification, and there results from it the muscular or athletic temperament, conspicuous by all the outward signs of vigour and strength. The head is very small, the neck sunk, especially backward, the shoulders broad, the chest large, the haunches solid, the intervals of the muscles deeply marked.

The hands, the feet, the knees, all the articulations not covered by muscles, seem very small; the tendons are marked through the skin which covers them; the susceptibility is not great: feeling dull and difficult to rouse, the athletic surmounts all resistance when he has once broken from his habitual tranquillity.

Of the bilious temperament. — If sensibility, which is vivid and easily excited, can dwell long upon one object; if the pulse is strong, hard, and frequent, the sub-cutaneous veins prominent, the skin of a brown, inclining towards yellow, the hair black, moderate fulness of flesh, but firm, the muscles marked, the form harshly expressed — the passions will be violent, the movements of the soul often abrupt and impetuous, the character firm and inflexible. Bold in the conception of a project, constant and indefatigable in its execution, it is among men of this temperament we find those who, in different ages, have governed the destinies of the world: full of courage, boldness, and activity, all have signalised themselves by great virtues or great crimes, and have been the terror or admiration of mankind.

This temperament is further characterised by the premature development of the moral faculties. Scarcely past their youth, the men just described have projected and carried into execution enterprises which would have been sufficient for their fame. An excessive development of the liver, a remarkable superabundance of the biliary juices, most commonly accompanying this constitution of body, in which the sanguiferous system enjoys the greatest energy, to the prejudice of the cellular and lymphatic system,—the ancients gave it the name of *bilious*. The diseases to which those distinguished by it are subject, involve, in fact, either as their principal characteristic, as accessory circumstances, or as complications, the derangement of the action of the hepatic organs, joined to changes of composition in the bile. Among the remedies directed against this sort of diseases, evacuants, and especially emetics, are the best.

If all the characteristics assigned to the bilious temperament are carried to the highest degree of intensity, and to this state is added great susceptibility, — men are irascible, impetuous, violent on the slightest occasions.

Of the melancholic temperament. — When to the bilious temperament is added a disposition to obstruction of any one of the abdominal organs, or derangement of the functions of the nervous system, so that the vital functions are feebly or irregularly performed, the skin takes a deeper hue, the look becomes uneasy and gloomy, the bowels sluggish, all the excretions difficult, the pulse hard and habitually contracted. The general uneasiness affects the mind; the imagination becomes gloomy, the disposition suspicious. The exceedingly multi-

plied varieties of this temperament, called by the ancients the *melancholic*; the diversity of accidents that may bring it on, such as hereditary disease, long grief, excessive study, the abuse of pleasures, &c., justify the opinion which Clerc has proposed in his natural history of man in a state of disease, where he considers the melancholic temperament less as a primitive and natural constitution, than as a diseased affection hereditary or acquired. Distrust and fearfulness, joined to all the disorders of imagination, compose the moral character of this temperament.

As Professor Pinel very justly observes, in his treatise on insanity, the history of men celebrated in the sciences, letters, and arts, has shown us the melancholic under a different light: endowed with exquisite feeling and the finest perception, devoured with an ardent enthusiasm for the beautiful, capable of realising it in rich conceptions, living with men in a state of reserve bordering upon distrust, analysing with care all their actions, catching in sentiment its most delicate shades, but ready in unfavourable interpretations, and seeing all things through the dingy glass of melancholy.

It is extremely difficult to delineate this temperament in a general or abstract manner. Though the groundwork of the picture remains always the same, its numerous circumstances give room for an infinite number of variations.

Of the pituitous or lymphatic temperament. — If the proportion of the fluids to the solids is too great, this superabundance of the humours, which is constantly in favour of the lymphatic system, gives to the whole body considerable bulk, determined by the development and repletion of the cellular tissue. The flesh is soft, the countenance pale, the hair fair, the pulse weak, slow, and soft, the form rounded and without expression, all the vital actions more or less languid, the memory treacherous, the attention not continuous. Men of this temperament, to which the ancients gave the name of *pituitous*, and which we should call *lymphatic*, because it depends really on the excessive development of this system, have, in general, an insurmountable inclination to sloth, averse alike to labours of the mind and body: accordingly, we are not to wonder if we find none of them among Plutarch's illustrious men. Little fitted for business, they have never exercised great empire over their fellow-creatures: they have never changed the face of the globe by their negotiations or their conquests.

In the pituitous, from the excess of watery particles in the fluid which should carry everywhere heat and life, the circulation goes on slowly, the imagination is weak, the passions languid; and from this moderation of the desires spring, on many occasions, those *virtues of temperament*, which, to say it by the by, should not supply their possessors with matter of quite so much self-complacency.

Of the nervous temperament. — The property, by which we are more or less sensible to impressions on our organs, weak in the pituitous, almost nothing in athletes, moderate in those of sanguine temperament, rather quick in the bilious, constitutes by its excess the nervous temperament; — it is seldom natural or primitive, but commonly acquired, and depending on a sedentary and too inactive life, on habitual indulgence in sensuality, on the morbid action of the brain, promoted by reading works of imagination, &c. This temperament shows itself in the emaciation, in the smallness of the muscles (which are soft, and, as it were, in an atrophy), in the vivacity of the sensations, in the suddenness and mutability of the determinations and judgments. Nervous women, whose wills are absolute but changeable, with excess of sensibility, frequently exhibit it with all these characteristics. Often, however, they have something of good looks, the extreme preponderance of the nervous system still allowing a moderate development of the lymphatic. Spasmodic affections are not uncommon amongst them; and when it is observed that, on the other hand, the athletic constitution, directly opposite to the nervous temperament, predisposes to tetanus, may we not say, that the two extremes meet, or produce the same effects?

Antispasmodics are employed with success in the treatment of their diseases, which partake always, more or less, of the temperament. Stimulants, on the contrary, are very suitable to those of a pituitous or lymphatic temperament. The nervous temperament, like the melancholic, is not so much a natural constitution of the body as the first stage of a disease. This temperament, like the nervous affections which are the result of it, has never shown itself but among societies brought to that state of civilisation in which man is the farthest possible from nature.

TERATO'LOGY. (*Teratologia*, æ. f.; from τερας, a monster, and λογος, a discourse.) The name given by M. I. Geoffroy de St. Hilaire to the study of monsters or anomalies of organisation.

Tinctura opii ammoniata. Ammoniated tincture of opium. Take of opium, two drachms; benzoic acid, saffron cut into shreds, of each three drachms; volatile oil of aniseed, half a drachm; ammoniated alkohol, sixteen ounces. Digest for seven days and filter through paper. This is an Edinburgh formula. It is used chiefly in spasmodic asthma and coughs, unconnected with inflammation. A drachm contains one grain of opium.

TISANE. A form of medicine much used in France, consisting for the most part of an aqueous infusion or decoction of substances of no great activity, which is drunk in considerable quantity. See *Ptisan*.

The following are some of the tisanes most used: —

Tisane antiscorbutique. An infusion of buck bean and the fresh roots of horseradish.

Tisane apéritive. A decoction of the roots of couch-grass, dandelion, strawberry, and sorrel, sweetened with liquorice.

Tisane astringente. A decoction of harts-horn, ivory, rice, and the roots of tormentil and bistort.

Tisane commune. A decoction of barley and couch-grass, sweetened with liquorice root.

Tisane de feltz. *Tisane antivenerienne.* A decoction of sarsaparilla, china root, the barks of ivy and box, and sulphuret of antimony, to which is added isinglass and corrosive muriate of mercury.

Tisane pectorale. An infusion of the roots of liquorice and marsh-mallow, Canadian maidenhair, and the flowers of red poppy and coltsfoot, in a decoction of rice.

Tisane royale. *Tisane de vinache.* A decoction of guiac, sarsaparilla, china root, rhubarb, senna, liquorice, sassafras, and coriander, acidulated with lemon juice.

Tolu lozenges. These are made with two pounds of sugar, three ounces of cream of tartar, one ounce of starch, half an ounce of the tincture of balsam of tolu, and a sufficiency of mucilage of tragacanth.

Tonka bean. *Tonquin bean.* See *Dipterix odorata.*

Transcendental anatomy. A term adopted from the French *Anatomie transcendante*, to designate that branch of anatomy which treats of the development of parts; their analogies; the primary model or type according to which they are formed; and their approximations to or deviations from it. It is synonymous with *philosophical anatomy.*

UNICO'RNU. The unicorn. The horn of this fabulous animal was believed, in credulous times, to possess extraordinary cordial and anti-epileptic virtues; and hence it was much sought for, though never found, and divers spurious horns were passed off for it. The fossil bones of various large animals, as the elephant, rhinoceros, &c., were called *Unicornu fossile, Ebur fossile*, fossil unicorn, and were esteemed for their astringent, diaphoretic, and other virtues. The tooth of the narwhal, or sea unicorn, *Unicornu marinum*, was also officinal, and had similar medicinal qualities attributed to it.

Urethritis venerea. In the article on the disease thus named, or *Gonorrhœa virulenta*, as it is more commonly called, the treatment recommended in the inflammatory stage is that which was current twenty years ago. All judicious surgeons now use anti-phlogistic means till inflammation has subsided. In ordinary cases, cold lotions to the penis, laxatives, and an anti-phlogistic regimen, with mucilaginous drinks, and the internal use of the liquor potassæ, are sufficient; but when the inflammation runs high, or spreads to the neck of the bladder, leeches to the perinæum, or venesection, are called for. Under this treatment the discharge sometimes ceases, along with the inflammatory action which occasioned it; more frequently however it continues, but is thinner and less puriform. It is in this state of the disease that balsamic medicines and cubebs are useful, and astringent injections, if other means should prove ineffectual.

Warwicensis pulvis. The Earl of Warwick's powder. See *Pulvis cornachinus.*

Webster's, Lady, dinner pills. *Lady Crespigny's dinner pills. Pilulæ stomachicæ Mesues. Pilulæ ante cibum.* Take of aloes, six drachms; mastich, and rose leaves, of each two drachms; syrup of wormwood, as much as may be sufficient. Form them into a mass, to be divided into pills of three grains each. This prescription is nearly similar to one of Mesue, the Arabian. One or more of the pills, taken immediately before dinner, have often an excellent stomachic and laxative effect in dyspeptic cases.

WEIGHTS AND MEASURES. So much obscurity hangs over the weights and measures of the Greeks, and the estimate of their proportions by different authors is so various, that it would be futile to attempt any thing like a condensed or tabular view of them.

Dr. Milligan, in his notes to Celsus, gives the annexed table of the Roman weights and measures reduced to grains troy.

	Urna.	Libra.	Uncia.	Denarius.	Scrupulus.	Sextans.	Chalcus.	Grana.
Amphora	= 2	= 80	= 960	= 6720	= 20160	= 40320	= 403200	= 420480
Urna	1	= 40	= 480	= 3360	= 10080	= 26160	= 210600	= 210240
Congius	$\frac{1}{4}$	= 10	= 120	= 840	= 2540	= 5040	= 50400	= 52920
Sextarius	-	$1\frac{2}{3}$	= 20	= 140	= 420	= 840	= 8400	= 8760
Libra	-	1	= 12	= 84	= 252	= 504	= 5040	= 5256
Hemina	-	-	$8\frac{4}{7}$	= 60	= 180	= 360	= 3600	= 3759
Acetabulum	-	-	$2\frac{1}{7}$	= 15	= 45	= 90	= 900	= 939
Sesqui-cyathus		-	$2\frac{1}{7}$	= 15	= 45	= 90	= 900	= 939
Cyathus	-	-	$1\frac{3}{7}$	= 10	= 30	= 60	= 600	= 626
Sescuncia	-	-	$1\frac{1}{2}$	= $10\frac{1}{2}$	= $31\frac{1}{2}$	= 63	= 630	= 657
Uncia	-	-	1	= 7	= 21	= 42	= 420	= 438
Cochleare	-	-	-	$2\frac{1}{2}$	= $7\frac{1}{2}$	= 15	= 150	= 156
Drachma	-	-	-	1	= 3	= 6	= 60	= $62\frac{4}{7}$
Denarius	-	-	-	1	= 3	= 6	= 60	= $62\frac{4}{7}$
Scrupulus	-	-	-	-	- 1	= 2	= 20	= $20\frac{2}{3}$
Scrupulus dimidiatus	-	-	-	-	$\frac{1}{2}$	= 1	= 10	= $10\frac{1}{3}$
Obolus	-	-	-	-	-	- 1	= 10	= $10\frac{1}{3}$
Sextans	-	-	-	-	-	- 1	= 10	= $10\frac{1}{3}$
Chalcus	-	-	-	-	-	-	- 1	= $1\frac{1}{50}$

In the five last lines the *denarius* is calculated, for the sake of round numbers, at sixty-two grains.

The following very complete and useful view of the weights and measures used in England and France, is taken from Mr. Gray's Supplement to the Pharmacopœias.

Medicines, except a few hereafter mentioned,

were formerly sold, and the prescriptions of physicians made up, by the common English weight, called Avoirdupois. The ounce of that weight being then, as appears by all the old authors on arithmetic, subdivided into 8 drams, 24 scruples, and 480 English grains; the medical pound differing from the common by its containing only twelve ounces, while the Troy ounce had for its fractions pennyweights and Troy grains. At length, the College of Physicians, in the edition of the Pharmacopœia of 1720, ordered the drams, scruples, and grains, to be adjusted to the Troy ounce, and hence, as the dispensers of medicines were the only persons who used these small weights, those adjusted to the Avoirdupois ounce went out of use, and were no longer made, and the quarter ounce was the smallest Avoirdupois weight in common use, as it still continues; but as the Italian rotolo for raw silk has been adjusted to the Avoirdupois weight, and made 24 ounces a pound; a smaller weight, the Spanish adarme, equal to the 16th part of the Avoirdupois ounce, was used under the name of a dram, for weighing silk, and this has now become an established fraction of this ounce, but it is scarcely used by any other persons than haberdashers, and for all weights less than the quarter of an ounce Troy, Apothecaries' weights are employed, although, as the Avoirdupois pound is established by statute at 7000 Troy grains, the quarter ounce containing 109 gr. 375, and the dram 27 gr. 34375, are most inconvenient numbers for reduction.

Table of Avoirdupois Weight.

Commercial Fractions.		Troy Grains.	Dec. Fractions.
1 pound	-	7000·	1·0000
15 ounces	-	6562·50	0·9375
14 ...	-	6125·00	0·8750
13 ...	-	5687·50	0·8125
12 ...	or ¾ po.	5250·00	0·7500
11 ...	-	4812·50	0·6875
10 ...	-	4375·00	0·6250
9 ...	-	3937·50	0·5625
8 ...	or ½ po.	3500·00	0·5000
7 ...	-	3062·50	0·4375
6 ...	-	2625·00	0·3750
5 ...	-	2187·50	0·3125
4 ...	or ¼ po.	1750·00	0·2500
3 ...	-	1312·50	0·1875
2 ...	-	875·00	0·1250
1 ...	-	437·50	0·0625 = 1·0000
15 drams	-	410·16	0·0586 = 0·9375
14 ...	-	382·81	0·0547 = 0·8750
13 ...	-	355·47	0·0508 = 0·8125
12 ...	or ¾ oz.	328·13	0·0469 = 0·7500
11 ...	-	300·78	0·0430 = 0·6875
10 ...	-	273·44	0·0391 = 0·6250
9 ...	-	246·90	0·0352 = 0·5625
8 ...	or ½ oz.	218·75	0·0313 = 0·5000
7 ...	"	191·41	0·0273 = 0·4375
6 ...	-	164·06	0·0234 = 0·3750
5 ...	-	136·72	0·0195 = 0·3125
4 ...	or ¼ oz.	109·35	0·0156 = 0·2500
3 ...	-	82·03	0·0117 = 0·1875
2 ...	-	54·69	0·0078 = 0·1250
1 ...	-	27·34	0·0039 = 0·0625
½ ...	-	13·67	0·0019 = 0·0313

APOTHECARIES' WEIGHT.

A few choice articles of the Materia Medica, as lapis bezoar, seed pearl, white amber, balm of Mecca, oil of cinnamon, and some electuaries, high in popular estimation, and imported from Italy, as Venice treacle and orvietan, were always weighed by the Troy ounce, and its subdivisions into pennyweights and grains, and still pay duties at the Custom-house by that weight, as may be seen in the Book of Rates. But it was not until the directions given in the London Pharmacopœia, edition of 1720, that the Troy ounce was divided into the same fractions of drams, scruples, and grains, as the Avoirdupois, for the purpose of dispensing all such drugs as were ordered by weight. This alteration must have been, and is still, productive of very great confusion, by obliging the same person to have two sets of weights — one for buying and selling, the other for preparing the officinal preparations and compounds, and for making up prescriptions. It does not clearly appear why this alteration was made in respect only to drugs ordered by weight, by which their proportion in the officinal preparations and compositions was increased 1-10th; as the Avoirdupois ounce, with its old divisions into 2 drams, and drops, 60 of which were presumed equal to the dram, was, and is still retained, in respect to drugs that are dispensed by measure.

Table of Apothecaries' Weight.

Usual Fractions.		Troy Grains.	Dec. Fractions.
1 pound	-	5760	1·0000
11 ounces	-	5280	0·9167
10 ...	-	4800	0·8333
9 ...	or ¾ lb.	4320	0·7500
8 ...	-	3840	0·6667
7 ...	-	3360	0·5833
6 ...	or ½ lb.	2880	0·5000
5 ...	-	2400	0·4167
4 ...	-	1920	0·3333
3 ...	or ¼ lb.	1440	0·2500
2 ...	-	960	0·1667
1 ...	-	480	0·0833 = 1·0000
7 drams	-	20	0·0729 = 0·7850
6 ...	-	360	0·0625 = 0·7500
5 ...	-	300	0·0521 = 0·6250
4 ...	or ½ ounce	240	0·0417 = 0·5000
3 ...	-	180	0·0315 = 0·3750
2 ...	-	120	0·0208 = 0·2500
1 ...	-	60	0·0101 = 0·1250
2 scruples	-	40	0·0070 = 0·0833
½ dram	-	30	0·0052 = 0·0625
1 scruple	-	20	0·0035 = 0·0416
½ ...	-	10	0·0017 = 0·0212
		5	0·0008 = 0·0106
		3	0·0005 = 0·0062
		2	0·0003 = 0·0041
		1	0·0002 = 0·0021

As apothecaries or chemists seldom keep Troy weight beyond 4 or 8 ounces, the relation between the Apothecary or Troy pounds and ounces and the common weight, is often required in preparing the officinal preparations, and is here given; the quarter ounce being used instead of the avoirdupois dram, as the latter weight is seldom or never kept by chemists or dispensers.

Troy or Apothecary Pounds.		Avoirdupois. lb.	oz.	qr.	grains.
100	=	82	4	2	31·250
50	=	41	2	1	15·625
30	=	24	10	3	96·875
20	=	16	7	1	28·125
10	=	8	3	2	68·749
5	=	4	1	3	34·375
3	=	2	7	1	108·125
2	=	1	10	1	35·625
1	=		13	0	72·500

Apothecary Weight.		Avoirdupois. oz.	qr.	grains.
℥ ix	=	9	3	54·375
℥vj, or lbss	=	6	2	36·250
℥iij	=	3	1	18·125
℥ij	=	2	0	85·000
℥j	=	1	0	42·500
ʒ iv, or ℥ss	=		2	21·250
ʒ ij	=		1	10·625

Although the quarter ounce is only 109 grains 375, it will be convenient, in adding two or more of these reductions together, to take the even 110 grains as its value.

The Scotch pound trone is equal to 9600 grains Scotch Troy weight, or 527 gr. English 925: the Scotch Dutch Troy pound is equal to 7680 Scotch grains, or 7620 gr. Engl. 8: both pounds are divided into 16 ounces, the ounce Dutch equal to 476 gr. Engl. 3.

Besides the regular weights, articles are sometimes quoted by the weight of seeds or kernels, as the weight of a nutmeg, or of so many black pepper-corns. In India they use the paddy weight, or that of the grains of rough rice, each of which is equal to about 2-5ths of a grain; the gulivindum weight, or that of a jumble bead, equal to about 1 grain 5-16ths; the retti weight, equal to about 2 grains 5-16ths. Gold coins are sometimes used, as the gold fanam weight, equal to 8 grains; the star pagoda weight, equal to about 84 grains.

FRENCH WEIGHTS.

Before the Revolution there was only one pile of weights in common use: in endeavouring to introduce one upon philosophical principles, there are now no less than four.

The old French Poids de Marc, established by Charlemagne.

French Weight.		Troy Grains.	Avoirdupois. lb.	oz.	dr.	gr.
1 livre, poids de marc	=	7561·000	= 1	1	4	13·125
1 livre, poids de médecine	=	5670·750	=	12	15	10·594
1 marc, or 8 ounces	=	3780·500	=	8	10	7·062
4 ounces - -	=	1890·250	=	4	5	3·529
2 ounces - -	=	945·125	=	2	2	15·468
1 ounce - -	=	472·562	=	1	1	7·717
6 gros or dragmes -	=	344·121	=		12	16·296
⅛ ounce, or 4 gros -	=	236·281	=		8	17·531
2 gros - -	=	118·140	=		4	8·765
1 .. - -	=	59·070	=		2	4·383
½ .. or 36 grains -	=	29·535	=		1	2·192
¼ ... or 18 grains -	=	14·767				
12 grains - -	=	9·843				
6 ... - -	=	4·922				
3 ... - -	=	2·461				
2 .. - -	=	1·640				
1 grain - -	=	0·820				

The Revolutionists, misled by the apparent facility of a decimal scale, introduced the metrical system in 1795.

Metrical Weights.	Old Fr. Weight. lb.	oz.	gros.	gr.	Avoirdupois. lb.	oz.	dr.	gr.
1 myriogramme -	20	6	6	63·500	22	1	0	2·450
1 kilogramme, or kilo	2	0	5	35·150	2	3	4	22·125
1 hectogramme -		3	2	10·710		3	8	2·152
1 decagramme -			2	44·270			5	17·721
1 gramme - -				18·320				15·444
1 decigramme -				1·880				1·544
1 centigramme -				0·180				0·154
1 milligramme -				0·018				0·015

A metrical quintal is 10 myriogrammes.
A millier is 1000 kilos.

The academicians complain much that the great government departments of the navy and artillery have never adopted this weight, not considering the great expense that it would occasion to recast all the artillery and balls.

The faculty of medicine at Paris, in translating their Codex Medicamentorum, or Pharmacopœia, into this new system of weights, did not esteem it necessary to use the exact reduction, but adopted a system of round numbers, and in some parts quoted both the old and the new weights, that the preparers might use either: thus a third system of weights was established.

Old French Weight.	Exact Metrical Weight. Grammes.	Round Numbers of the Codex. Grammes.
2 lb. -	970·02 -	1000·
1 lb. -	489·51 -	500·
½ lb. -	244·75 -	250·
4 ounces -	122·376 -	128·
2 ... -	61·188 -	64·
1 ounce -	30·594 -	32·
½ ... -	15·297 -	16·
2 gros -	7·6485 -	8·
1 ... -	3·82 -	4·
36 grains -	1·91 -	2·
20 ... -	1·062 -	1·
10 ... -	0·531 -	0·5
2 ... -	0·1062 -	0·1
1 grain -	00·531 -	0·05
½ ... -	0·0265 -	0·0

It is not a little singular, that the medical faculty of Paris should, like that of London, prefer creating a new pile of weights, to employing those which are used by all other persons.

In 1812, the metrical system was abandoned; but instead of reverting to the old pound of Charlemagne, a new pound was decreed; and thus four systems of weights are in common use, including that of the Codex.

New French Weight.	Metrical Weight. Grammes.	lb.	Avoirdupois. oz.	dr.	grains.
1 lb. -	= 500·	= 1	1	10	11·07
½ lb. -	= 250·	=	8	13	5·03
¼ lb., or 4 oz.	= 125·	=	4	6	16·18
2 oz. -	= 62·5	=	2	3	8·09
1 oz. -	= 31·25	=	1	1	17·71
½ oz., or 4 gros	= 15·625	=		8	22·52
2 gros -	= 7·812	=		4	11·26
1 gros -	= 3·906	=		2	5·63
⅕ gros -	= 1·9021	=		1	2·81
1 grain -	= 0·0542	=			0·90

The franc piece of silver, with 1-10th of copper, weighs 5 grammes.

The sous of copper also weighs 5 grammes.

The confusion thus introduced by continual alterations may be easily conceived. The same confusion exists even in their linear measures,

so that persons are obliged to carry a triangular rule, containing on one side the old royal foot equal to 12 inches ·792 English, with its inches, lines, and points; on a second, the decimetres centimetres of the metrical system; and on the third, the new foot of 1812, being the third part of the metre, and equal to 13 inches ·123 English.

ENGLISH MEASURES.

In the old editions of the London Pharmacopœia, the liquids were compounded by Avoirdupois weight; and the following terms were used for expressing a determinate number of ounces.

The cyathus, or cup -	for	1½ oz.
Hemina, or cotyle -	...	9 ...
Libra, or pint -	...	12 ...
Sextarius, or 1-6th of a congius -	...	18 ...
Congius, or gallon -	..	108 ..

In 1720, when the Pharmacopœia was improved by Sir Hans Sloane and Dr. Quincy, the liquids were ordered by measure, and the gallon adopted by the London College was that just enacted for wine and spirituous liquors, containing 231 cubic inches, divided into 8 pints; they divided the pint which holds 16 Avoirdupois ounces, 10 drachms, 17 grains of water, into 16 ounces, and these into 8 drachms. Smaller quantities were ordered by drops, supposed to be equal to grains; but now the drachm measure is divided into 60 minims, and graduated tubes used to measure them, so that the old divisions of the Avoirdupois ounce were, and are still, retained in respect to liquids.

Aëriform fluids are measured by cubic inches.

The relation between wine measure, with the College divisions, and cubic inches, is thus expressed.

Wine and Medical Measure.	Cubic inches.	1000th parts.
10 gallons - - -	2310	·000
5 ... - - -	1155	·000
3 ... - - -	693	·000
2 ... - - -	462	·000
1 ... - - -	231	·000
½ gallon, or 4 pints - -	115	·500
2 pints - - -	57	·750
1 pint - - -	28	·875
¾ pint, or 12 oz. medical measure	21	·645
½ pint, or 8 oz. - - -	14	·437
¼ pint, or 4 oz. - - -	7	·218
2 oz. - - -	3	·609
1 oz. - - -	1	·804
6 drachms - - -	1	·353
4 ... - - -	0	·902
2 ... - - -	0	·451
1 drachm - - -	0	·225
½ drachm, or 30 minims -	0	·112
20 minims - - -	0	·074
10 ... - - -	0	·037
5 ... - - -	0	·018
3 ... - - -	0	·011
2 ... - - -	0	·007
1 ... - - -	0	·003
Scotch gill - - -	6	·462
——— mutchken - -	25	·85
Scotch choppen - - -	51	·7
——— pint - - -	103	·4
——— quart - - -	206	·8
——— gallon - - -	827	·28

The Scotch pint is equal to 41 oz. trone of Tay water, or 55 oz. Troy of Leith water: specific gravity of Tay water 100, of Leith water 103.

Ale and beer measure is seldom mentioned by medical or chemical writers: the gallon contains 282 cubic inches; 32 gallons are a London barrel of ale, 34 a country barrel of either ale or beer, and 36 a London barrel of beer. Nor is dry measure often used; the Winchester bushel, of 8 gallons, measures 2150 cubic inches ·4, or one cubic foot ·822, and the quarter 8 bushels.

The imperial gallon, lately added to the others in use, is established by the weight of distilled water it will hold at 62 deg. Fahr., the barometer standing at 30 inches.

The gallon is to hold 10 Avoird. pounds of water, and must consequently measure 277 cubic inches ·274.

The pint is to hold 20 Avoird. ounces, and should of course measure 34 cubic inches ·659.

The Avoird. ounce measure of water is therefore 1 cubic inch ·73298.

The Troy ounce of water measures 1 cubic inch ·9013214.

The weight of a cubic inch of water is 252 grains ·456; and that of a cubic foot is 62 Avoirdupois pounds ·3206.

A cubic foot of air, or 1728 cubic inches, weighs 528 Troy grains ·367, or 1 Avoird. oz., 3 dr., 8 grains ·23.

Besides these measures, other irregular measures of uncertain content, are used: —

A table spoonful, *cochlearium magnum*, of syrop, ℥ ss.; distilled waters, ʒ iijss. to ℥ ss.; spirits and tinctures, ʒ ij. to ʒ iij.

A desert spoonful, *cochlearium mediocre*, of water, ʒ ij.

A tea or coffee spoonful, *cochlearium parvum*, of syrop, ʒ j. to ʒ ij.; distilled waters, ℈ jss. to ℈ ij.; spirit and tinctures, ℈ j. to ℈ jss.; light powder, as magnesia, ℈ ss. to ℈ j.; heavy powder, as sulphur, ℈ jss. to ℈ ij.; metallic oxide, ʒ j. to ℈ iiij.

A thimbleful, *clypeola metallica pro digitis*, is usually the same as tea spoonful.

A tea-cup, *vasculum pro thea*, ℥ iij. to ℥ iv.

A wine-glass, *scyphus pro vino*, *cyathus*, ℥ jss.

FRENCH MEASURES.

In the Codex the liquids are used by weight, and the chemists do the same; so that it is only in common affairs that measures are employed.

Old French Measure.	English cubic inches.
Liquid Measure.	
Poisson - .. - -	3 ·631
Pinte - - - -	58 ·110
Dry Measure.	
Litron - - - -	49 ·617
Boisseau .. - -	793 ·856

	ubic feet.
Minot - - - -	1·378
Mine - - - -	2·756
Septier - - - -	5·512
Muid - - - -	66·146
Mine, charcoal - - -	7·350
Voie, fire wood - - -	65·489

Metrical Measure of 1795.	English cubic feet.
Myriolitre - - -	353·1712
Kilolitre, or 1 metre cube - -	35·3171
Stere of firewood - - -	
Hectolitre - - -	3·5377
Decistere of charcoal - -	

	Cubic inches.
Decalitre - - -	610·2800
Litre, or 1 decimetre cube -	61·0280
Decilitre - - -	6·1028
Centilitre - - -	0·6102
Millilitre, or 1 centimetre cube -	0·0610

In the new French measures, decreed in 1812, the pinte is to be the same as the metrical litre, and the boisseau is to be 12 litres and a half, equal to 763 English cubic inches ·35.

Une verre à vin, ℥ viij. ; une verre d'un seul traite, ℥ v. ; une verre au liqueur, ʒ vj. ; une cuiller à bouche, ʒ v. ; une cuiller à café, 5-4ths of a dram; un seau, 48 lb., of 16 ounces ; un bassin, 4 lb.

WOORA'RA. *Ourari.* A very destructive poison of Guiana, which contains *strychnia.* The plant from which it is prepared is unknown ; but it most likely belongs to the genus *strychnos,* or some one nearly allied to it.

THE END.

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ERRATA ET CORRIGENDA.

Art. ACANTHA, line 1. for *i.* read *f.*
ACAULIS, line 4. for *aculis*, read *acaulis.*
ACERATE, line 1. for *m.* read *f.*
ACETAS ZINCI, line 2. for *composed of zinc and acetic acid*, read *composed of oxide of zinc and acetic acid.*
ACHOLUS, for *deficiency of bile*, read *deficient in bile.*
ACMELLA, for *Spillanthus*, read *Spilanthus.*
ACTINOBOLISMUS, line 2. for *Iradiatio* read *Irradiatio.*

Page 33. line 1. for *Brettoncau*, read *Bretonneau.*

Art. ALBA PITUITA, for *Leucophlegmatia*, read *Leucophlegmasia.*
ALKOHOL, in the table, p. 67., for *butryacea*, read *butyracea.*
Amaranth, esculent, for *Amarrnthus*, read *Amaranthus.*
Anachrempsis, for Αναχρεψις, read Αναχρεμψις.
ANACONCHYLISMOS, line 1. for αναπογχυλιζω, read αναπογχυλιζω.
ANADOSIS, for *Anado'sis*, read *Ana'dosis.*
ANDIRA, last line, for *Andina*, read *Andira.*
ANETICUS, line 1. for ανιημαι, read ανιημι.
ANIMAL, p. 114. column 1. in the enumeration of acids, for *dephinic*, read *delphinic.*
ANIMAL KINGDOM, p. 116. line 18. from the bottom, for *Jugalares*, read *Jugulares.*
ANIMAL TEMPERATURE, p. 130. column 1. line 25. from the bottom, for 40° Fahr. read —40° Fahr.
ANTEPILEPTIC, line 1. for *Antilepticus*, read *Antepilepticus.*
ANTIASTHMATIC, for *Anthasmatic*, read *Antasthmatic.*
ANTIHYSTERIC, for *Anhysteric*, read *Anthysteric.*
ANTIPERISTASIS, line 1. for ANTIPERISTATIS, read ANTIPERISTASIS; and line 2. for περιϊστημι, read περιϊστημι.
ANTIRRHINUM, line 1. for ANTIRRHI'NUM, read ANTI'RRHINUM.
APOZEM, for *Apothema*, read *Apozema.*
AQUA SAPPHIRINA, line 2. for *ammonicati*, read *ammoniati.*
ARCTIUM LAPPA, for line 1. *Artium*, read *Arctium.*
Aurate, line 1. for *m.* read *f.*
AURICULA, line 6. for *leaves of other parts*, read *leaves or other parts.*
Aurigo, line 1. for *onis*, read *inis.*
Balm of Gilead, for *Dracocephalum*, read *Amyris Gileadensis.*
BALNEUM SICCUM, line 14. for *empyric*, read *empiric.*
BATHRON, line 1. for *Hippocrates*, read *Hippocratis*, and line 3. for *vertebra*, read *vertebræ.*
Battley's solution, for *sedatuus* read *sedativus.*
BLEPHARONCUS, line 2. for αγκος, read ογκος.
BRUCEA PSEUDO-FERRUGINEA, line 4. for *Bracea*, read *Brucea.*
BUPEINA, line 1. for BU'PEINA, read BUPEI'NA.
Calaba, for *Catophyllum*, read *Calophyllum.*
CALAMUS ROTANG, line 4. for *sciopionum*, read *scipionum.*
CALCII CHLORIDI LIQUOR, line 2. for 1837, read 1836.
Calcis murias, for *Calcis chloridum*, read *calcii chloridum.*
Calcis muriatis liquor, for *Calcis chloridi liquor*, read *calcii chloridi liquor.*
CALEFACIENT, line 2. for *calefacis*, read *calefacio.*
CALEFACTION, line 1. for CALLEFACTION, read CALEFACTION.
CAMPANULATUS, for CAMPA'NULATUS, read CAMPANULA'TUS.
CAPSELLA, line 4. for *Cisalpinus*, read *Cæsalpinus.*
CARBAZOTIC ACID, line 1. for *Carbarotic*, read *Carbazotic*; and line 31. for *carboratic*, read *carbazotic.*

Page 336. line 2. for *perodide*, read *periodide.*

Art. CAULEDON. line 1. for καυλις, read καυλος.
CEPHALALGIA, line 1. for CEPHA'LALGIA, read CEPHALA'LGIA.
CHEIROPTERA, line 2. for πτερονα, *wing*, read πτερον, *a wing.*
CHIA TERRA, line 1. for TERRÆ, read TERRA.
CHOLERA, line 6. for *intestinal fluid*, read *intestinal flux.*
CHOLOLITHUS, for CHOLOLI'THOS, read CHOLO'LITHOS.
CHORDÆ WILLISII, for CHORDA, read CHORDÆ.
CHORDEE, line 3. for *Furethritis*, read *Urethritis.*
CHYLE, line 7. from the end, for *by aqueous latex*, read *by its aqueous latex.*
CHYMIATRIA, line 1. for CHYMIA'TRIA, read CHYMIATRI'A.
CINARA, line 2. for *movet*, read *moveat.*
CLAUSURA, line 5. for *Fallopiarum*, read *Fallopianarum.*
COLUBRINUM LIGNUM, last line, for *Colubria*, read *Colubrina.*
COMPTONIA, line 3. for *Asplenifolius*, read *Asplenifolia.*
CONTINENS FEBRIS, line 1. for CONTI'NENS, read CON'TINENS.
CORDIA, line 2. for *Cordius*, read *Cordus.*
CORRIGIA, line 1. for CO'RRIGIA, read CORRI'GIA.
CRATÆGUS, for *torminalis*, read *terminalis.*
CRITHMUM MARITIMUM, line 1. for CRITHUM, read CRITHMUM.
CROTON TINCTORIUM, last line, for *lacca carnea*, read *lacca carnea.*
CRYPTOGAMIA, last line but one, for *the other class*, read *any of the other classes.*
CRYSTALLI, line 1. for CRYSLALLI, read CRYSTALLI.
CYCLAMEN, line 2. for *circular*, read *a circle.*
CYLLOSIS, line 1. for Κυλλυσις, read Κυλλωσις.
CYNIPS QUERCUSFOLII, line 1. for QUERCUSFOLLII, read QUERCUSFOLII.
DECAMYRON, line 1. for DECAMY'RON, read DECA'MYRON.
DELPHINIA, last line, for *Stavysagria*, read *Staviagria.*
DEOPPILANS, line 1. for DEO'PPILANS, read DEOPPI'LANS.
DIADELPHIA, line 2. for αδελφις, a brotherhood, read αδελφος, a brother.
DIAPHORESIS, line 1. omit the first accent on the word DIAPHORESIS.
DIATESSADELTON, for *Diacellatesson*, read *Diacceltatesson.*
DICOCCUS, line 1. omit the syllables *us*, *i.* m.
DRAGON'S BLOOD, line 5. from the end, for *monctarus*, read *monetarius.*
DYSODES, line 1. for *bad*, read *badly.*

Page 575. 2d column, line 33. for *cephalitis*, read *encephalitis.*

Art. EPICHROSIS, line 1. for επιχεσις, read επιχεωσις.
EPIGONUM, line 1. for Επιγινον, read Επιγονον.
ERYTHROEIDES, line 1. for Ερυθοειδες, read Ερυθροειδες.
ERYTHRUS, line 1. for E'RYTHRUS, read ERY'THRUS.
ETHMOID, line 1. for ETHMOI'D, read E'THMOID.
FIDICINALIS, line 3. for *lucubricales*, read *lumbricales.*
FILAMENT, line 26. for *gesneriani*, read *Gesneriana*; and line 35. for *hemerocalis*, read *hemerocallis.*
FIMBRIA, line 1. and 2. for *quasi fimbria*, read *quasi fimbria.*
FRAXINUS ORNUS, line 4. for *Drysomeli*, read *Drosomeli.*

Art. *Ganglia*, *abdominal*, line 2. for *plerus*, read *plexus*.
Ganglia, *semilunar*, for *semiluna*, read *semilunar*.
Gemma, line 4. for *genus*, read *gems*.
Page 658. column 2. line 20. from the bottom, for *Valisneri*, read *Valisnieri*.
Art. GENERATION, EQUIVOCAL, line 15. from the end, for *Valisneri*, read *Valisnieri*; and line 14. from the end, omit the comma between *Tuberville* and *Needham*.
GONGYLION, line 2. for γογγρυλος, read γογγυλος.
GONORRHŒA, last line, for *Urethrites*, read *Urethritis*.
GRAVEDO, line 1. for *onis*. read *inis*.
GRAVIMETER, line 2. for *arocmeter*, read *arcometer*.
HALOID. It should have been mentioned at the end of this article that it is taken from Dr. Turner.
HAUTERIVE, last line, for *celestius*, read *celestins*.
HEART. At the end of the anatomical description of this organ a reference should have been made to Dr. Quain's Manual, from which it is taken.
HEADACHE, line 1. for *Cephalagia*, read *Cephalalgia*.
Page 698. for HEMIOPSIA, read HEMIOPIA; and in the same article, for ωψ, *an eye*, read οπτομαι, to see.
Art. HISPIDUS, line 3. for *caulus*, read *caulis*.
HYDNUM, line 8. for *crinaceum*, read *erinaceum*.
HYDRO-FLUORIC ACID. In the third line omit the word *manna*, which has been accidentally transposed.
HYSTEROTOMUS, line 1. for HYSTEROTO'MUS, read HYSTERO'TOMUS.
IMPETIGO, line 1. for *onis*, read *inis*.
Impotency, for *impo'tency*, read *im'potency*.
INDUSIUM, line 1. and 2. for *induco*, to *cover or draw over*, read *induo*, to *put on*; and line 9. for *inducium*, read *indusium*.
ISCHIADIC ARTERY, lines 3. and 6. for *puriform*, read *pyriform*.
JUGLANS REGIA, line 22. for *the present century*, read *the last century*.
LEY, for *Lixionum*, read *Lixivium*.
LILIUM CANDIDUM, line 4. for *are directed*, read *were formerly directed*.
LOBATUS, line 2. for *lobes*, read *lobed*.
Membrana cellulosa, for *feature*, read *texture*.
MILIUM, line 3. for *Milaceum*, read *Miliaceum*.
MILZADELLA, line 1. for *Spanish*, read *Italian*.
MOLARES DENTES, line 1. for *Molarisa*, *millstone*, read *Molaris*, *a mill stone*.
MORPHIA, line 3. for *papava*, read *papaver*.
NEPENTHES, line 18. for βαλη, read βαλε.
ŒA, line 2. for *torminalis*, read *terminalis*.
Page 974. column 2. line 31. from the bottom, for *anandsolid*, read *allantoid*; and line 19. from the bottom, for *vinosus*, read *venosus*.
Art. OXALATE, line 1. for *m.* read *f.*
PARURIA, line 1. for παρω. read παρα.
PASSULA, for PASSU'LA, read PA'SSULA.
Paulina confectio, for *antidolus*, read *antidotus*.
PELECANUS, line 2. for *to perforate*, read *to cleave*.
PHYTOLACCA DECANDRA, line 1. for DECANDRIA, read DECANDRA.
Page 1054. column 1. line 21. for *form with soluble salts*, read *form with it soluble salts*.
Idem, line 38. omit the comma after *largely*.
Art. PNEUMATOMETER, last line, for *meausused*, read *measured*.
POLLENIN, line 1. for POLENIN, read POLLENIN.
POLYGAMIA. For the correction of an error in this article, see Art. *Syngenesia*.
POLYPODIUM CALAGUALA, line 2. for *calalaluæ*, read *calagualæ*.
POTASSÆ ACETAS, line 1. for ACETATIS, read ACETAS.
Potassæ hydriodas, for *iodiodum*, read *iodidum*.
PULMONARIA OFFICINALIS, for *Pulmanaria*, read *Pulmonaria*.
PYRIFORMIS, line 5. for *Periformis*, read *Pyriformis*.
Quarantine, for *quarantana*, read *quarantina*.
QUINIA, line 3. for *Quinea*, read *Quinia*.
RACEMUS, line 4. from the end, for *legustrinum*, read *ligustrinum*.
SCALENUS, line 1. for σκαλληνος, read σκαληνος.
SCITAMINEUS, line 1. for SCITAMINE'US, read SCITAMI'NEUS. A similar error in the accent is to be corrected in the succeeding art. SCITAMINEÆ.
SERICEUS, for SE'RICEUS, read SERI'CEUS.
SERRATUS, line 6. for *polyfolius*, read *polifolius*.
SISON, line 2. for *by Dioscorides*, read *from Dioscorides*.
SOLEUS, line 1. for SO'LEUS, read SOLE'US.
SPATHA, line 10. for *Stratiates*, read *Stratiotes*; and line 20. for *Alpina*, read *Alpinia*.
THORAX, line 1. for f. read m.
Page 1334. column 2. line 11. from the bottom, for VAPRECULÆ, read VEPRECULÆ; and instead of what follows read, *The name of an order of plants in Linnæus's Fragments of a Natural Method. The characters of the order are wanting.*
1340. column 1. near the top, for *Picotroxia*, read *Picrotoxia*.
1341. column 2. line 9. from the bottom, for *I have*, read *Sir J. Smith has*.
1344. column 1. near the middle, for *Monœpigynia*, read 1. *Monœpigynia*.
1588. column 1. line 1. for AMYDALINE, read AMYGDALINE.

